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SAMPLING AND ANALYSIS REPORT FOR DETECTION MONITORING EVENT NUMBER 2 AT SANITARY WASTE LANDFILL SEPTEMBER 20-27 1999NSA CRANE IN
7/1/2001
TETRA TECH

7769-3.7-37

TETRA TECH NUS, INC.
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PITT-02-0-115

February 17, 2000

Project Number 7769

Commanding Officer
Department of the Navy
SOUTHNAVFACENGCOM
Attn: E.P. Johns (Code 1829)
2155 Eagle Drive
North Charleston, South Carolina 29406

Reference: CLEAN Contract No. N62472-90-D-1298
Contract Task Order 0048

Subject: Report for Detection Monitoring Event Number 2 (September 20 - 27, 1999)
for Naval Surface Warfare Center (NSWC)
Crane, Indiana

Dear Mr. Johns:

Detection Monitoring Event No. 2 has been completed. During this monitoring event ground water was collected from 17 of the 21 monitoring wells of the Sanitary Waste Landfill (SWL) and analyzed. All field sampling was conducted in accordance with the field sampling procedures described in the Field Sampling Plan (FSP). Enclosed are a Field Report (Attachment 1) and a Sampling and Analysis Report (Attachment 2) for Detection Monitoring Event No. 2. These reports were prepared in accordance with 329 IAC 10-21-2(b)(12) and 329 IAC 10-21-1(t), respectively, as summarized in Section 5.0 of the FSP.

Please contact Ralph Basinski at 412/921-8308 (e-mail basinskir@ttnus.com), or Daneen Resnick at 412/912-8714 (e-mail resnickd@ttnus.com) regarding questions and or comments.

Sincerely,

Ralph R. Basinski

Ralph R. Basinski
Task Order Manager

RRB/vvp

Enclosures

c: Mr. Tom Brent, NSWC Crane, (w/enclosures - 3 copies plus 2 unbound copies of Sampling and Analysis Report Appendix 1)
Ms. D. Wroblewski, (w/o enclosures)
M. Perry, Project File CTO 0048 (w/ enclosures - 1 unbound copy)

Sampling and Analysis Report Detection Monitoring Event No. 2 at the Sanitary Waste Landfill September 20-27, 1999

Naval Surface Warfare Center Crane Division Crane, Indiana

Southern Division Naval Facilities Engineering Command

Contract Number N62467-94-D-0888
Contract Task Order 0048

July 2001

020013/p

SAMPLING AND ANALYSIS REPORT
FOR
GROUND WATER MONITORING
AT THE
SANITARY WASTE LANDFILL

DETECTION MONITORING EVENT NO. 2
SEPTEMBER 20 - 27, 1999

NAVAL SURFACE WARFARE CENTER, CRANE DIVISION
CRANE, INDIANA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29406

Submitted by:
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, Pennsylvania 15220

CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0048

JULY 2001

PREPARED UNDER THE SUPERVISION OF

Date 7/10/01

RALPH R. BASINSKI, Q.E.P.
TASK ORDER MANAGER
TETRA TECH NUS, INC.

APPROVED FOR SUBMITTAL BY

Date 7/11/01

DEBBIE WROBLEWSKI
PROGRAM MANAGER
TETRA TECH NUS, INC.

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ATTACHMENT

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ATTACHMENT 1
FIELD REPORT

DETECTION MONITORING EVENT NO. 2
SEPTEMBER 20 - 27, 1999
SANITARY WASTE LANDFILL

NSWC CRANE
CRANE, INDIANA
SANITARY WASTE LANDFILL FIELD REPORT
DETECTION MONITORING EVENT NO. 2, SEPTEMBER 1999

The following is a summary of field activities conducted September 20, 1999 through September 27, 1999 at the NSWC Crane facility, Crane, Indiana. Detection Monitoring Event No. 2 sampling was completed for 17 of the 21 monitoring wells at the Sanitary Waste Landfill (SWL). Wells MW1A, MW201, MW203 and WES14 3 93 were not sampled due to insufficient water levels in these four wells.

Keith Simpson, Scott Neil and Seth Pelepko of Tetra Tech NUS, Inc., (TtNUS) completed ground water sampling in accordance with the April 1999 Field Sampling Plan (FSP). All samples to be analyzed were shipped, via over-night courier, to Laucks Testing Laboratory, Inc. Purge water generated during the sampling effort was transported (via 8 gallon containers) and discharged into the NSWC-permitted sanitary sewer system on site via manhole number 327.

Section 5.1 of the FSP describes information which is to be included in the Field Report, in accordance with 329 IAC 10-21-2(b)(12). Following is the required information:

1. Time and date each well was sampled.

   Table 1 of the Field Report includes a summary of the time and date each monitoring well was sampled. Also, the Groundwater Sample Log Forms for each monitoring well, which provide time and date of sampling, are included in Appendix 1 of the Field Report.

2. The location of each well that was sampled, including identifying the wells as upgradient or downgradient of the solid waste boundary.

   Wells 14-1-93, 14-4-93, MW201, and MW1B are upgradient; all other wells are downgradient. Figures 1, 2, and 3 of the Field Report show the location and up- or down-gradient status of each monitoring well in the Lower Mudstone Aquifer, the Lower Sandstone Aquifer, and the overburden, respectively.

3. The condition of well heads and well security devices.

   The condition and security of each monitoring well has been recorded on Monitoring Well Inspection Forms. Copies of these forms are provided in Appendix 2 of the Field Report.

4. The weather conditions during sample collection.

   Weather and site conditions are recorded in the Site Log Books. Copies of the applicable Site Log Book pages are provided in Appendix 3 of the Field Report.

5. The condition of purged water with regard to odor, turbidity, and the conditions of the collected samples.

   The condition of purged water and all field parameters are recorded on the Low Flow Purge Data Forms. Copies of these forms are provided in Appendix 1 of the Field Report.

6. The in-situ temperature, in degrees Celsius, of the ground water as measured in line or immediately after removal of water form the well.

   The in-situ temperature, in degrees Celsius, of the ground water as measured in line from the well is recorded on the Low Flow Purge Data Forms and Ground Water Sample Log Forms. Copies of these forms are provided in Appendix 1 of the Field Report.

7. The static water elevations, referenced to mean sea level and measured to the nearest one-hundredth (0.01) foot.

   The static water elevations are summarized in Table 1 of the Field Report.

8. The equipment used to purge and sample the well.

   The following equipment was used to purge and sample each well:

   - Well Key
   - Electronic water level indicator
   - Electronic Programmable Controller, Model 400
   - Compressed nitrogen gas cylinder with regulator
   - Multiple parameter water quality meter
   - Flow-through cell adapter for water quality meter
   - Purge water container
   - Graduated cylinder and stop watch
   - Decontamination supplies
   - Dedicated bladder pumps

9. The source and type of all field equipment calibration standards.

Equipment Calibration Log Sheets are included in Appendix 4 of the Field Report. Calibration solutions for each parameter (pH, and specific conductance) are obtained in sealed plastic bottles from the supplier of the Multiple Parameter Water Quality Meter. Calibration of the instrument is checked daily.

10. The type of equipment used for purging and for collection of samples, and where applicable, the cord's chemical composition.

Dedicated 1.66-inch-diameter PVC bladder pumps with Teflon-lined PVC tubing were installed in each monitoring well prior to purging and sampling. Refer to Appendix C of the approved FSP for a complete list of equipment used to purge and sample the wells.

11. A copy of the chain-of-custody (COC) for the samples.

Copies of the COCs are provided in Appendix 5 of the Field Report.

12. The location and elevation of the referenced measuring mark on the well casing used to measure the static water elevations.

Table 1 of the Field Report lists the top-of-casing elevation used to measure static elevations. Elevations are measured to the V-notch in the top of the PVC riser pipe.

13. The time equipment was decontaminated at each well location.

Dedicated sampling equipment was used at each monitoring well. Therefore, it was not necessary to decontaminate sampling equipment. Water level measurement equipment was decontaminated by rinsing with deionized water and wiping in between each well in which the water levels were measured. The time each water level was measured is noted on the Water Level Measurement Forms contained in Appendix 6 of the Field Report.

14. The reactions of the ground water to the preserving agent when the sample is containerized.

Any reactions of the ground water to the preserving agent are recorded on the Ground Water Sample Log Forms included in Appendix 1 of the Field Report.

TABLE 1

WELL AND SAMPLING INFORMATION SUMMARY
DETECTION MONITORING EVENT NUMBER 2
SANITARY WASTE LANDFILL
NSWC CRANE, INDIANA

Well ID	Sample ID	Pump Installation	Date Sampled	Water Level (1)	Start Purge	Sample Time	Water Level Elevations (2)	Comments
MW1A	NA	NA	NA	20.93	NA	NA	694.11	DRY
MW1B	S1B3B99	3/13/99	9/20/99	28.27	1250	1655	686.72	
MW201	NA	3/13/99	NA	8.59	NA	NA	706.57	DRY
MW203	NA	3/24/99	NA	9.14	NA	NA	672.40	DRY
MW2A	S2A3A99	3/13/99	9/23/99	26.08	1311	1715	647.12	
MW3A	S3A3A99	3/13/99	9/24/99	36.91	0742	1145	642.41	
MW4A	S4A3A99	3/13/99	9/24/99	19.89	0735	1105	669.64	
MW5A	S5A3A99	3/13/99	9/21/99	20.28	1244	1650	675.13	
MW6A	S6A3A99	3/13/99	9/21/99	8.61	1121	1525	681.47	FD09219901
MW7A	S7A3A99	3/13/99	9/20/99	30.28	1310	1530	681.83	
MW3B	S3B3A99	3/13/99	9/25-26/99	7.79	1434	0906	671.55	LOW VOLUME
MW4B	S4B3A99	3/24/99	9/23/99	24.00	1350	1755	665.50	
MW5B	S5B3A99	3/13/99	9/22/99	7.72	0725	1130	687.64	
MW6B	S6B3A99	3/13/99	9/22/99	8.17	0730	1130	681.92	
14-1-93	S141933A99	3/13/99	9/22/99	27.31	1421	1625	682.08	
14-2-93	S142933A99	3/13/99	9/21/99	52.92	0740	1015	658.39	
14-3-93	NA	NA	NA	43.94	NA	NA	661.27	DRY
14-4-93	S144933A99	3/13/99	9/22/99	20.04	1408	1733	690.87	
14-5-93	S145933A99	3/26/99	9/21/99	27.96	0823	1053	647.78	
14-6-93	S146933A99	3/13/99	9/23/99	35.78	0742	0900	650.18	
14-7-93	S147933A99	3/13/99	9/25/99	28.66	0740	1045	681.86	FD09259901

1 Measurements are from the top of the riser (inner case) to the nearest 0.01'.

2 Feet above mean sea level.

FD = Field Duplicate.

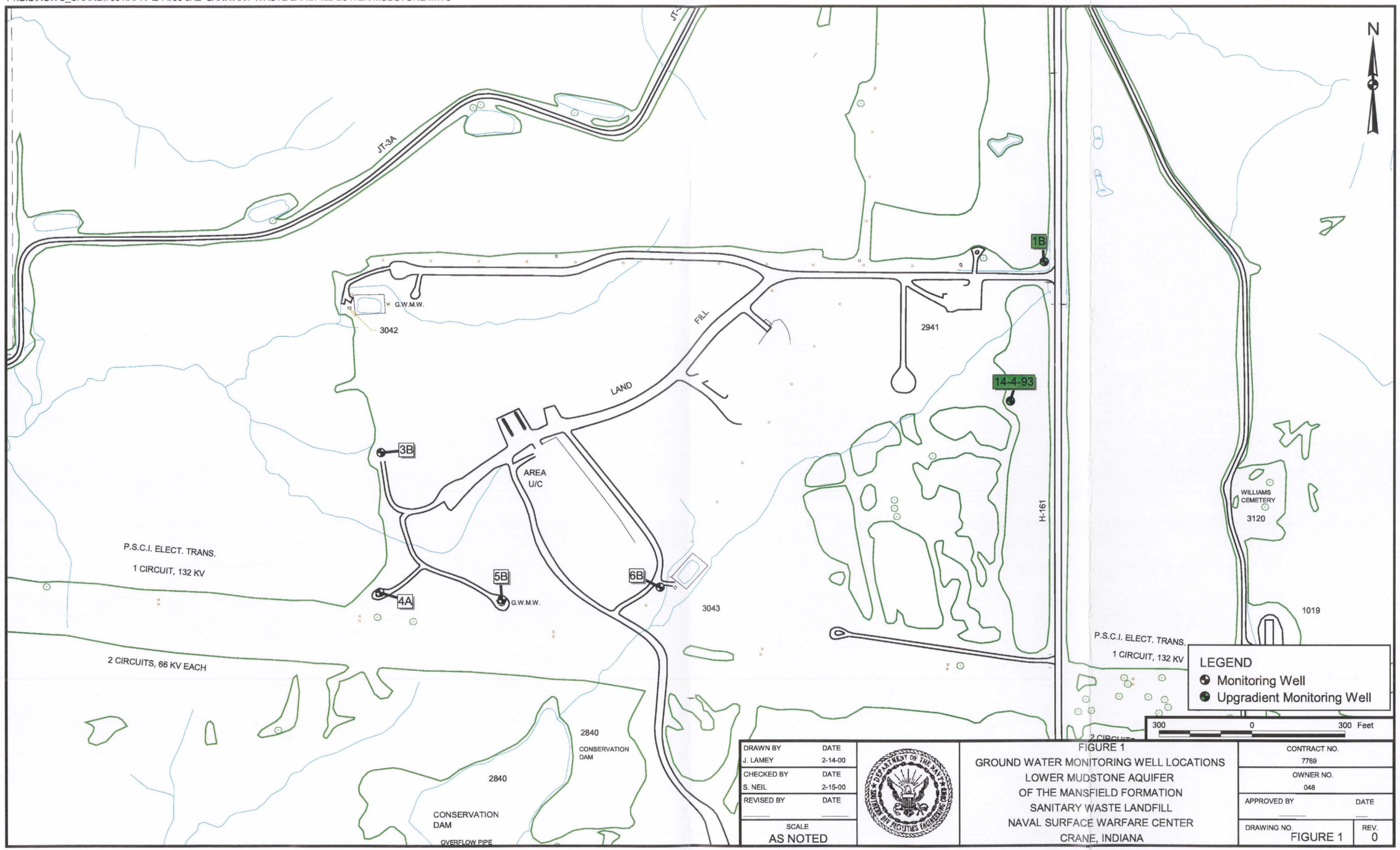
NA = Not applicable.

DRY wells have ≤0.5' of water, which is below the pump inlet.

Matrix spike/matrix spike duplicate anlayses were also performed for samples from well MW6A.

Wells 14-1-93, 14-4-93, MW1B, and MW201 are upgradient.

P:\GIS\NSWC_CRANE\7651.APR 2/14/00 JAL SANITARY WASTE LANDFILL-LOWER MUDSTONE MWS

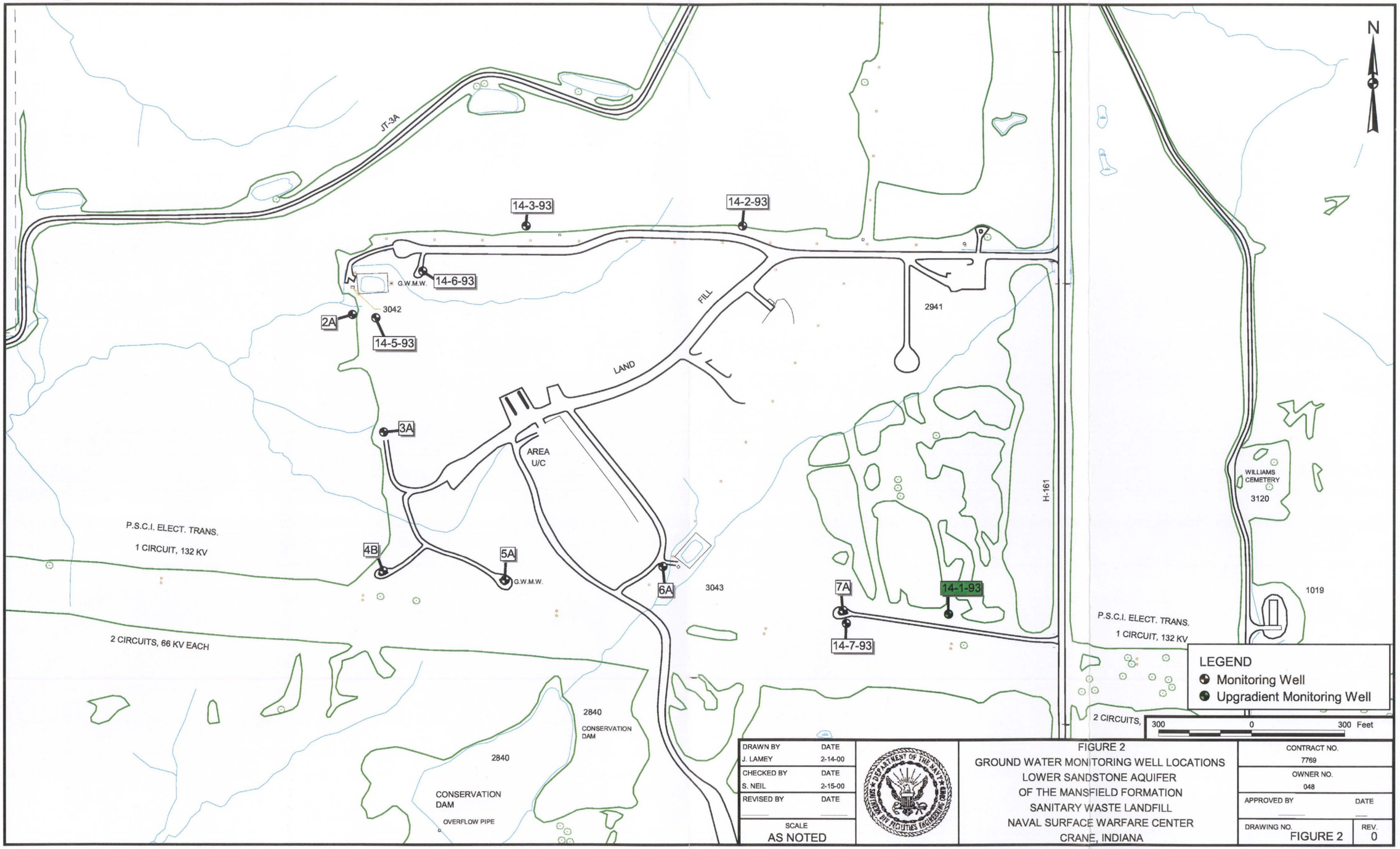


DRAWN BY	DATE
J. LAMEY	2-14-00
CHECKED BY	DATE
S. NEIL	2-15-00
REVISED BY	DATE
SCALE	
AS NOTED	

FIGURE 1
GROUND WATER MONITORING WELL LOCATIONS
LOWER MUDSTONE AQUIFER
OF THE MANSFIELD FORMATION
SANITARY WASTE LANDFILL
NAVAL SURFACE WARFARE CENTER
CRANE, INDIANA

CONTRACT NO.	
7769	
OWNER NO.	
048	
APPROVED BY	DATE
DRAWING NO. FIGURE 1	REV. 0

P:\GIS\NSWC_CRANE\7651.APR 2/14/00 JAL SANITARY WASTE LANDFILL-LOWER SANDSTONE MWS

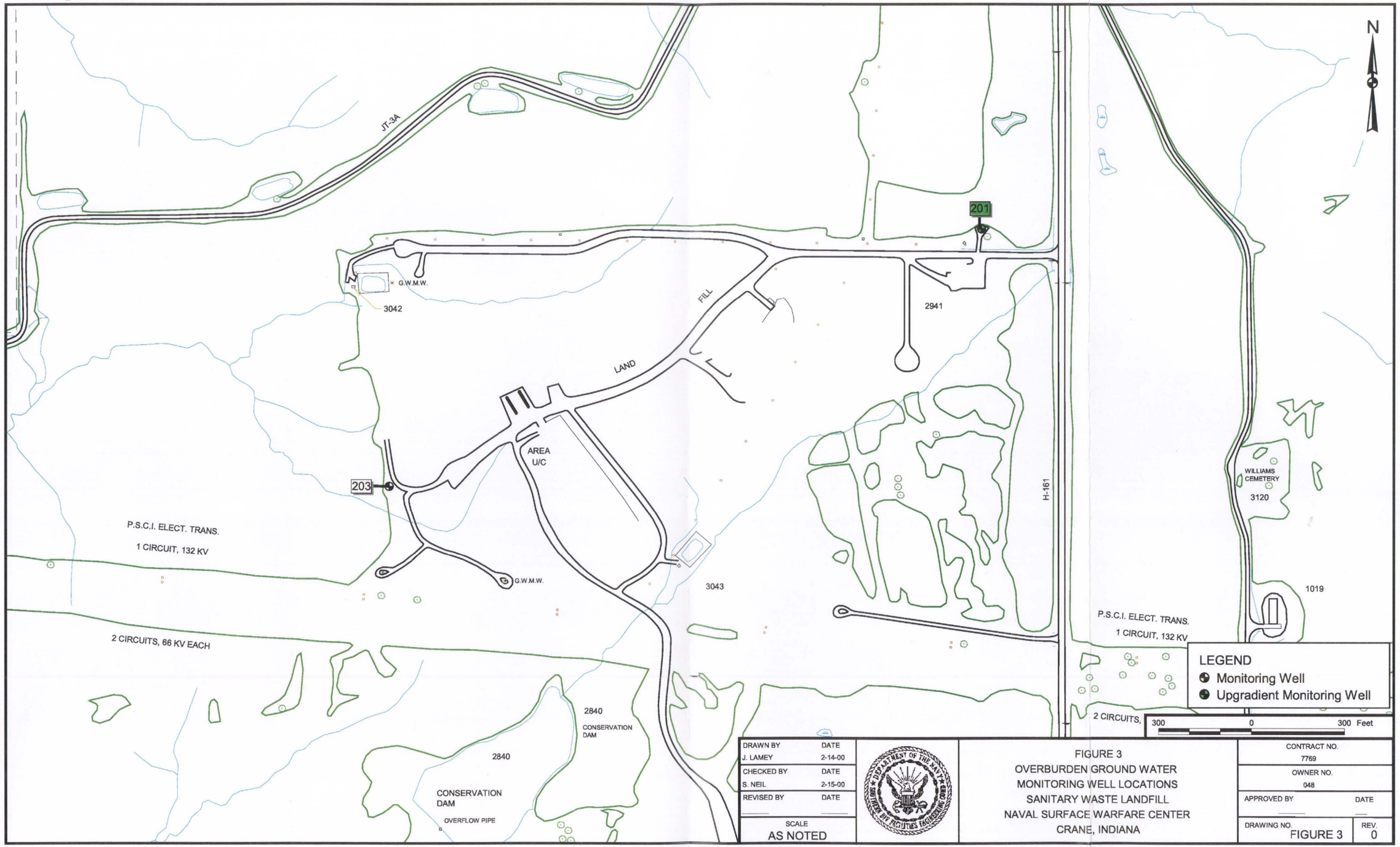


DRAWN BY	DATE
J. LAMEY	2-14-00
CHECKED BY	DATE
S. NEIL	2-15-00
REVISED BY	DATE
SCALE	
AS NOTED	

FIGURE 2
GROUND WATER MONITORING WELL LOCATIONS
LOWER SANDSTONE AQUIFER
OF THE MANSFIELD FORMATION
SANITARY WASTE LANDFILL
NAVAL SURFACE WARFARE CENTER
CRANE, INDIANA

CONTRACT NO.	
7769	
OWNER NO.	
048	
APPROVED BY	DATE
DRAWING NO. FIGURE 2	REV. 0

P:\GIS\NSWC_CRANE\7651.APR 2/14/00 JAL SANITARY WASTE LANDFILL-OVERBURDEN MWS



DRAWN BY	DATE
J. LAMEY	2-14-00
CHECKED BY	DATE
S. NEIL	2-15-00
REVISED BY	DATE
SCALE	
AS NOTED	

FIGURE 3
OVERBURDEN GROUND WATER
MONITORING WELL LOCATIONS
SANITARY WASTE LANDFILL
NAVAL SURFACE WARFARE CENTER
CRANE, INDIANA

CONTRACT NO.	
7769	
OWNER NO.	
048	
APPROVED BY	DATE
DRAWING NO. FIGURE 3	REV. 0

FIELD REPORT
APPENDIX 1

GROUND WATER SAMPLE LOG SHEETS/LOW FLOW PURGE DATA FORMS

DETECTION MONITORING EVENT NO. 2
SEPTEMBER 20 - 27, 1999
SANITARY WASTE LANDFILL

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: SD013699
Sample Location: SWL- MW201
Sampled By: S. NEIL
C.O.C. No.: —
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 9/23/99								
Time:								
Method: Dedicated Bladder pump								

PURGE DATA:

Date: 1245								
Method: Dedicated Bladder pump								
Monitor Reading (ppm):			SEE LOW FLOW PURGE DATA SHEET					
Well Casing Diameter & Material								
Type: 4" PVC								
Total Well Depth (TD): 9.3 FT.								
Static Water Level (WL): 8.71 FT								
One Casing Volume(gal):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal):								

DRY
NO SAMPLE

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene	
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	

OBSERVATIONS / NOTES:

Reaction to Preservative: 9.23.99 DRY <0.6' WATER (BELOW PUMP)

Screen length = 2 FT.

Water level is below screen - did not sample.

Circle if Applicable:

MS/MSD	Duplicate ID No.:
✓	—

Signature(s): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S2033A99
Sample Location: SWL-MW203
Sampled By: S. Polepko
C.O.C. No.: -n.a.-
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: -n.a.-								
Time: -n.a.-								
Method: Dedicated Bladder pump								

PURGE DATA:

Date: 09-25-99								
Method: Dedicated Bladder pump								
Monitor Reading (ppm): 0.0			SEE LOW FLOW PURGE DATA SHEET					
Well Casing Diameter & Material								
Type: 4" Sched. 40 PVC								
Total Well Depth (TD): 9.43 FT								
Static Water Level (WL): 9.31 FT								
One Casing Volume(gal):								
Start Purge (hrs): -n.a.-								
End Purge (hrs): -n.a.-								
Total Purge Time (min): -n.a.-								
Total Vol. Purged (gal): -n.a.-								

DRY, NO SAMPLE

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirement	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass vials	
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	

OBSERVATIONS / NOTES:

Reaction to Preservative: -n.a.-

0.12-FT Water Column (Dry)
W.L. below pump intake → no sample collected.

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s): Scott Polepko

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S1A3B99
Sample Location: SWL MW 1A
Sampled By: KEITH SIMPSON
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 9.20.99								
Time: 0830								
Method: Dedicated Bladder pump								

PURGE DATA:

Date:								
Method: Dedicated Bladder pump								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL): 20.93								
One Casing Volume(gal): 21.37								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal):								

DRY NO SAMPLE

SEE LOW FLOW PURGE DATA SHEET

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	

OBSERVATIONS / NOTES:

Reaction to Preservative:

<0.5' OF WATER BELOW PUMP INLET

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S1B3B99
Sample Location: SWL-MW1B
Sampled By: S. Pekopke
C.O.C. No.: 316
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 09-20-99 Time: 1655	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Method: Dedicated Bladder pump	clear	6.80	1.902	18.09	0.0	5.03	144.5	-n.a.-

PURGE DATA:

Date: 09-20-99								
Method: Dedicated Bladder pump								
Monitor Reading (ppm): 0.0			SEE LOW FLOW PURGE DATA SHEET					
Well Casing Diameter & Material								
Type: 4" sched 40 PVC								
Total Well Depth (TD): 43.6 FT								
Static Water Level (WL): 28.35 FT								
One Casing Volume(gal): 9.96								
Start Purge (hrs): 1250								
End Purge (hrs): 1655								
Total Purge Time (min): 245								
Total Vol. Purged (gal): 3.28 *								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: none

top of screened interval = 40.5 FT (TIC)

* Total volume purged less than one casing volume. Began collecting samples after purging monitoring well for maximum of 4 hours as specified in FSP.
End water level = 29.19 FT (TIC)
Upgradient monitoring point.

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Scott Pekopke

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48
WELL ID.: SWL-MW11B
DATE: 09-20-99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
1300	28.42	45	6.83	1.882	0.1	6.50	17.47	192.8	
1305	28.44	60	6.82	1.884	0.0	5.36	17.61	169.5	increase flow rate
1310	28.46	60	6.81	1.893	0.1	6.62	17.64	182.3	
1320	28.48	60	6.79	1.896	0.2	7.06	17.35	163.1	
1330	28.52	50	6.79	1.901	0.1	6.47	17.24	172.2	lower flow rate
1340	28.55	50	6.79	1.898	0.2	5.71	17.20	184.3	
1350	28.57	50	6.79	1.899	0.2	7.65	17.40	141.6	
1400	28.58	50	6.79	1.898	0.1	7.00	18.13	144.6	
1410	28.60	50	6.80	1.904	0.1	4.47	18.59	158.0	
1420	28.63	50	6.80	1.903	0.1	4.62	18.38	158.9	
1430	28.65	50	6.79	1.904	0.2	4.55	18.28	159.0	
1440	28.68	50	6.80	1.903	0.1	4.63	18.30	164.2	
1450	28.69	50	6.79	1.903	0.1	4.57	18.30	166.4	
1500	28.72	50	6.80	1.903	0.1	4.70	18.69	168.7	
1510	28.75	50	6.79	1.906	0.1	4.12	17.93	151.4	
1520	28.77	50	6.79	1.902	0.0	4.65	17.63	129.4	
1530	28.80	50	6.80	1.901	0.2	4.26	18.25	141.2	
1540	28.81	50	6.80	1.903	0.1	4.67	18.50	150.6	
1550	28.83	50	6.80	1.905	0.1	4.78	18.48	149.4	
1600	28.86	50	6.80	1.904	0.1	5.60	18.19	142.9	
1610	28.88	50	6.80	1.902	0.0	4.99	18.08	154.5	
1620	28.91	50	6.80	1.903	0.1	5.07	18.04	132.9	
1630	28.94	50	6.80	1.903	0.0	4.31	17.99	133.7	
1640	28.95	50	6.80	1.902	0.0	5.23	18.11	139.1	
1650	28.96	50	6.80	1.902	0.0	5.03	18.09	144.5	
									note: temp fluctuations suspicious → poss malfunc. probe? Sunlight not a factor; overcast skies.

SIGNATURE(S): [signature]

PAGE 2 **OF** 2

NSWC Crane
Field Form
Revision: 0
January 1999

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S2A3A99
Sample Location: SWL-MW2A
Sampled By: S. Petropko
C.O.C. No.: 318
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 09-23-99 / Time: 1715	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Method: Dedicated Bladder pump	clear	5.47	0.742	14.65	0.3	3.80	241.9	-n.a.-

PURGE DATA:

Date: 09-23-99	
Method: Dedicated Bladder pump	
Monitor Reading (ppm): 0.0	SEE LOW FLOW PURGE DATA SHEET
Well Casing Diameter & Material	
Type: 4" Sched. 40 PVC	
Total Well Depth (TD): 43.9 FT	
Static Water Level (WL): 26.02 FT	
One Casing Volume(gal): 11.69	
Start Purge (hrs): 1311	
End Purge (hrs): 1715	
Total Purge Time (min): 244	
Total Vol. Purged (gal): 8.39*	

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: None

2-FT Screened Interval

Final Water Level = 26.04 FT (TIC)

* Total volume purged less than one casing volume. Began collecting samples after maximum purge time of 4 hours as specified by FSP even though volume requirement was not satisfied.

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Seth Petropko

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48
WELL ID.: SWL - MW2A
DATE: 09-23-99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
1320	26.05	100	4.99	0.723	1.9	7.04	16.45	279.3	
1330	26.06	100	4.86	0.716	1.2	4.21	15.54	296.5	clean turbidity probe
1340	26.06	100	4.96	0.717	2.2	5.43	15.40	288.1	" " "
1350	26.06	100	4.88	0.717	1.4	5.74	15.40	276.1	
1400	26.06	100	4.90	0.718	2.5	5.71	15.51	283.4	clean turbidity probe
1410	26.06	100	4.99	0.719	1.4	4.43	15.68	272.4	" " "
1420	26.06	100	5.11	0.725	1.7	4.46	15.71	266.3	" " "
1430	26.06	100	5.22	0.731	1.5	3.43	15.43	257.8	
1440	26.06	100	5.30	0.734	1.2	2.29	15.26	254.4	clean turbidity probe
1450	26.06	100	5.36	0.740	0.8	4.34	15.42	251.5	" " "
1500	26.04	100	5.41	0.743	0.3	4.36	15.24	249.0	" " "
1510	26.03	100	5.44	0.745	4.4	5.17	15.22	245.1	" " "
1520	26.03	164	5.45	0.747	0.0	4.36	15.18	224.8	increase flow rate
1530	26.05	164	5.45	0.747	0.0	4.14	15.24	231.0	clean turb. probe
1540	26.05	164	5.47	0.749	0.2	4.49	15.13	237.0	clean turbidity probe
1550	26.05	164	5.47	0.749	0.1	4.43	15.07	239.6	
1600	26.05	164	5.49	0.747	0.3	5.09	15.10	239.8	clean turbidity probe
1610	26.05	164	5.47	0.747	0.2	4.57	15.04	238.2	
1620	26.05	164	5.47	0.745	0.1	4.48	15.03	238.1	clean turbidity probe
1630	26.03	164	5.47	0.745	0.0	4.76	14.99	241.2	bladder volume ↓, increase ~~SP~~
1640	26.04	164	5.47	0.744	0.3	4.79	14.86	245.0	refill/discharge frequency
1650	26.05	164	5.47	0.743	0.0	4.32	14.73	237.0	clean turbidity probe
1700	26.04	164	5.47	0.744	0.0	4.17	14.74	240.9	
1710	26.05	164	5.47	0.742	0.3	3.80	14.65	241.8	clean turbidity probe
									abundant air bubbles in
									discharge interfering
									with turbidity probe

SIGNATURE(S): Seth [illegible]

PAGE 2 **OF** 2

NSWC Crane
Field Form
Revision: 0
January 1999

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S3A3A99
Sample Location: SWL-MW3A
Sampled By: S. Alcorn
C.O.C. No.: 318
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 09-24-99 Time: 1145								
Method: Dedicated Bladder pump	clear	6.00	0.851	20.95	4.3	6.81	79.6	-n.a.-

PURGE DATA:

Date: 09-24-99	
Method: Dedicated Bladder pump	
Monitor Reading (ppm): 0.0	SEE LOW FLOW PURGE DATA SHEET
Well Casing Diameter & Material Type: 4" Sched 40 PVC	
Total Well Depth (TD): 48.4 FT	
Static Water Level (WL): 36.79 FT	
One Casing Volume(gal): 7.58	
Start Purge (hrs): 0742	
End Purge (hrs): 1145	
Total Purge Time (min): 243	
Total Vol. Purged (gal): 3.19 *	

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: None

2-FT Screened Interval

Final water level = 39.58 FT (TIC)

*Total volume purged less than one casing volume. Began collecting samples after maximum 4-hr purge time as specified in FSP even though volume requirement was not satisfied.

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48
WELL ID.: SWL-MW3A
DATE: 09-24-99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp.* (Celcius)	ORP mV	Comments
0754	37.04	69	6.05	0.822	40.0	6.94	14.42	256.7	
0800	37.14	~~350~~ 48	6.04	0.824	33.1	6.83	14.69	236.3	lower flow rate
0810	37.24	48	6.06	0.825	24.4	6.88	14.94	222.1	clean turbidity probe*
0820	37.33	48	6.06	0.827	20.5	6.79	15.03	195.6	" " "
0830	37.43	48	6.05	0.827	13.5	6.82	14.77	184.5	" " "
0840	37.57	48	6.04	0.825	11.9	6.91	15.06	172.0	" " "
0850	37.64	48	6.04	0.827	10.2	6.34	15.78	165.4	" " "
0900	37.74	48	6.04	0.829	9.6	6.60	16.46	158.9	" " "
0910	37.85	48	6.03	0.830	8.1	7.42	16.92	153.7	" " "
0920	37.93	48	6.02	0.829	7.7	6.46	17.21	147.5	" " "
0930	38.04	48	6.01	0.829	8.0	6.89	17.61	143.2	" " "
0940	38.13	48	6.01	0.834	8.5	6.29	17.98	135.9	" " "
0950	38.22	48	6.02	0.835	8.4	6.54	18.68	127.2	" " "
1000	38.27	48	6.03	0.832	7.7	6.91	19.37	121.0	" " "
1010	38.35	48	6.00	0.841	7.9	6.05	19.25	111.0	" " "
1020	38.44	48	6.03	0.843	7.6	6.13	19.97	109.2	" " "
1030	38.54	48	6.00	0.845	8.0	6.93	19.54	104.5	" " "
1040	38.61	48	6.00	0.846	6.1	6.44	19.63	100.0	" " "
1050	38.71	48	5.99	0.849	6.7	7.14	20.10	94.8	" " "
1100	38.78	48	6.00	0.850	6.0	7.59	20.33	90.1	" " "
1110	38.86	48	5.99	0.850	5.3	7.41	20.56	87.3	" " "
1120	38.92	48	6.01	0.850	4.3	5.32	21.24	83.6	" " "
1130	39.03	48	5.99	0.852	6.0	6.57	20.94	81.5	" " "
1140	39.07	48	6.00	0.851	4.3	6.81	20.95	79.6	" " "
									*Temp. readings pass. being influenced by increasing air temp./sunlight.
									*Abundant air bubbles in discharge interfering with turbidity probe.

SIGNATURE(S): [signature]

PAGE 2 **OF** 2

NSWC Crane
Field Form
Revision: 0
January 1999

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S3B3A99
Sample Location: SWL - ~~3B~~ MW3B
Sampled By: S. Pelepko
C.O.C. No.: 317
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: SP 09-~~24~~ 23-99, 09-26-99	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Time: 0906, 0726								
Method: Dedicated Bladder pump	clear	6.84	1.126	21.42	1.2	10.28	207.3	-n.a.-

PURGE DATA:

Date: 09-24-99								
Method: Dedicated Bladder pump								
Monitor Reading (ppm): 0.0			SEE LOW FLOW PURGE DATA SHEET					
Well Casing Diameter & Material								
Type: 4" Sched. 40 PVC								
Total Well Depth (TD): 12.5 FT								
Static Water Level (WL): 7.94 FT								
One Casing Volume(gal): 3.17								
Start Purge (hrs): 1434								
End Purge (hrs): 1611								
Total Purge Time (min):								
Total Vol. Purged (gal):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	0906	
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered) (~700 mL)	0920	
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb *	4°C	(1) 1000 mL Polyethylene	0927	07-25-9
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene (~700 mL)	0726	07-26-9
		Sample Flow Rate Information:		
		VOCs ≈ 40 mL/min		
		Diss. metals, Sulfate, Chloride, ...		
		≈ 100 mL/min decreasing to		
		60 mL/min as bladder volume		
		decreased		
		Ammonia ≈ 50 mL/min		

OBSERVATIONS / NOTES:

Reaction to Preservative: none

3-FT screened interval

09-25-99
- purge approx. 100 mL before collecting VOC samples in order to remove any stagnant water from discharge tube.
- Initial W.L. = 9.72' (TIC) - W.L. after VOCs = 9.87' (TIC) - Final W.L. = 10.74' (TIC)

* note: stop sampling activities after Sulfate, Chloride, ... bottle → water level at or near pump intake → bladder volume ≈ 20 mL. Will complete sample collection on 09-26-99

09-26-99 → purge approx. 100 mL before collecting ammonia sample

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Scott Pelepko

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48
WELL ID.: SWL-MW3B
DATE: 09-24-99

	Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
	1438	8.28	110	6.81	1.177	18.6	8.54	21.45	191.0	
	1443	8.36	50	6.73	1.156	0.9	7.66	20.95	203.2	lower flow rate
	1448	8.48	50	6.75	1.149	1.0	8.43	21.50	197.3	
	1458	8.62	50	6.74	1.147	1.3	9.05	21.88	206.2	clean turbidity probe
	1508	8.80	50	6.75	1.144	2.2	8.50	21.96	214.1	" " "
	1518	8.93	50	6.75	1.143	0.5	9.90	21.98	215.9	
	1528	9.09	50	6.76	1.140	1.4	9.48	22.04	216.2	clean turbidity probe
	1538	9.19	SP ~~50~~ 20*	6.77	1.139	2.4	10.04	22.05	214.2	" " "
	1548	9.34	50	6.81	1.132	2.3	9.36	22.43	223.4	*W.L. close to pump intake → ?→
	1555	9.54	50	6.81	1.129	1.2	9.03	21.59	225.1	bladder volume decreasing
	1600	9.63	39*	6.82	1.130	0.7	9.07	21.56	215.8	significantly. Increase
	1605	9.72	50	6.82	1.129	1.0	9.39	21.52	214.8	refill/discharge frequency
	1610	9.77	50	6.84	1.126	1.2	10.28	21.42	207.3	
	1611	9.80 SP	—	—	—	—	—	—	—	Stop pump → W.L. at
	1626	9.83	—	—	—	—	—	—	—	top of screened interval
	1636	9.82	—	—	—	—	—	—	—	Will monitor recovery
09-24-99	1641	9.81	—	—	—	—	—	—	—	rate.
09-25-99	0810	9.72	—	—	—	—	—	—	—	
	0945	10.74	—	—	—	—	—	—	—	note: well recovering at
09-26-99	0720	10.64	—	—	—	—	—	—	—	an extremely slow
	0750+	10.95+	—	—	—	—	—	—	—	rate. Will allow well
										to recover overnight.
										+well goes 'dry' → water
										level below pump intake

SIGNATURE(S): Seth Jelepe

PAGE 2 **OF** 2

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S4A3A99
Sample Location: SWL MW4A
Sampled By: KEITH SIMPSON
C.O.C. No.: 318
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 9-24-99 Time: 1105 Method: Dedicated Bladder pump	CLEAR	5.88	0.137	16.7	6.7	5.08	106.0	NONE

PURGE DATA:

Date: 9-24-99	
Method: Dedicated Bladder pump	
Monitor Reading (ppm): 0	SEE LOW FLOW PURGE DATA SHEET
Well Casing Diameter & Material Type: 4" PVC	
Total Well Depth (TD): 27.52	
Static Water Level (WL): 20.46	
One Casing Volume(gal): 4.6	
Start Purge (hrs): 0735	
End Purge (hrs): 1100	
Total Purge Time (min): 205	
Total Vol. Purged (gal): 3.8	

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: NONE

2' SCREEN TOP @ 25.52

.653 - 4"

WELL IS NOT MAKING ANY WATER
0735-0935 DRAWDOWN = 3.7' = 2.4GAL±
70ML/MIN X 2 HRS = 2.2 GAL±

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [illegible]

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48
WELL ID.: SWL MW4A
DATE: 9.24.99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
0742	20.95	75	5.91	0.140	117	4.32	14.9	121.4	
0750	21.22		5.85	0.138	7.9	4.09	14.9	146.7	
0800	21.40	↓	5.85	0.138	8.3	4.04	15.8	136.2	
0810	21.68	70	5.91	0.137	8.3	5.57	15.7	119.1	
0820	22.00		5.72	0.136	7.5	4.51	15.7	111.1	
0830	22.26		5.76	0.136	7.0	4.10	15.5	116.4	
0840	22.45		5.79	0.135	7.1	4.11	15.7	105.3	
0850	22.66		5.81	0.135	6.9	4.48	16.0	117.7	
0900	22.97		5.72	0.135	7.0	4.54	16.5	116.9	
0910	23.34		5.85	0.135	7.0	4.91	16.5	107.7	
0920	23.43		5.80	0.135	6.9	5.06	16.5	112.4	
0930	23.42		5.80	0.135	7.1	5.21	16.5	106.9	
0940	23.43		5.86	0.135	6.9	5.01	16.6	112.7	
0950	23.68		5.87	0.136	6.9	5.16	16.6	114.5	
1000	23.95		5.76	0.136	6.9	5.03	16.6	110.3	
1010	24.16		5.83	0.136	6.7	5.07	16.6	121.5	
1020	24.21		5.90	0.136	6.8	5.20	16.7	111.5	
1030	24.36		5.93	0.136	6.7	5.03	16.7	93.2	
1040	24.42		5.82	0.137	6.7	4.90	16.7	112.0	
1050	24.54		5.87	0.137	6.7	4.90	16.7	94.4	
1100	24.65	↓	5.88	0.137	6.7	5.08	16.7	106.0	WL <1' FROM TOP
									OF SCREEN, PARAMETERS
	START	SAMPLING 1100							STABLE, START
	END	SAMPLING 1142		WL	= 25.34				SAMPLING BEFORE
									DRAWDOWN TO SCREEN
									PURGE TIME 205 MIN

SIGNATURE(S): [illegible]

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NSWC Crane
Field Form
Revision: 0
January 1999

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S4B3A99
Sample Location: MW4B (SWL)
Sampled By: S. NEIL
C.O.C. No.: 318
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 9/23/99 Time: 1755 Method: Dedicated Bladder pump	CLEAR	6.64	1.121	19.0	3	5.17	108	NONE

PURGE DATA:

Date: 9/23/99								
Method: Dedicated Bladder pump								
Monitor Reading (ppm):			SEE LOW FLOW PURGE DATA SHEET					
Well Casing Diameter & Material								
Type: 4" PVC								
Total Well Depth (TD): 49.50 FT								
Static Water Level (WL): 23.06 FT.								
One Casing Volume(gal): 17.3								
Start Purge (hrs): 1350								
End Purge (hrs): 1750								
Total Purge Time (min): 240								
Total Vol. Purged (gal): 2.8 *								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: NONE

SCREEN LENGTH = 3 FT.
TOP OF SCREEN = 46.50 FT.
*Purged for 4 hours then sampled as outlined in the FSP. Only 28 gallons purged.

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): Scott M. Neil

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48 / 7769
WELL ID.: MW 4B (SWL)
DATE: 9/23/99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
1350	23.06								BEGIN PURGING. Purged 2
1400	24.30	52	6.69	1.295	15	4.29	23.5	152	BLADDER VOLUMES TO REMOVE
1410	24.43	43	6.70	1.182	1	3.59	23.7	152	ANTS FROM DISCHARGE LINE.
1420	24.52	43	6.72	1.169	3	3.85	23.8	143	Decreased flow. Bubbles on
1430	24.61	43	6.71	1.164	4	4.01	24.1	135	turbidity probe causing
1440	24.70	43	6.72	1.169	3	4.19	24.0	134	high readings - must tap
1450	24.83	43	6.72	1.167	4	3.39	24.3	116	flow-thru cell in order
1500	24.92	43	6.74	1.166	6	4.05	24.3	130	to get the bubbles off of
1510	25.05	43	6.74	1.155	2	3.02	24.0	128	the probe and get an
1520	25.14	43	6.71	1.157	6	4.23	24.4	125	accurate reading of turbidity.
1530	25.25	43	6.70	1.156	3	4.95	24.1	121	
1540	25.35	43	6.68	1.151	4	5.60	23.7	117	
1550	25.43	43	6.68	1.149	2	5.25	23.8	106	
1600	25.50	43	6.71	1.138	2	5.97	23.9	110	
1610	25.58	43	6.68	1.141	3	6.01	23.5	118	
1620	25.70	43	6.67	1.138	3	4.99	22.9	98	
1630	25.78	43	6.67	1.128	4	4.42	22.4	97	
1640	25.92	43	6.67	1.122	1	4.74	22.3	103	
1650	25.98	43	6.66	1.146	2	5.13	22.4	103	
1700	26.10	43	6.64	1.144	5	4.30	21.9	102	Setting sun causing drop
1710	26.19	43	6.66	1.137	2	4.68	21.2	107	in temp. readings
1720	26.27	43	6.66	1.137	4	4.80	20.5	97	
1730	26.39	43	6.62	1.131	5	4.15	20.2	98	
1740	26.47	43	6.64	1.130	1	4.82	19.4	106	
1750	26.56	43	6.64	1.121	3	5.17	19.0	108	End purging. Water level
									dropped continuously - tried
BEGIN SAMPLING @ 1755 - SAMPLE ID 54B3A99									to purge as much of the
									one casing volume as
									possible at a low flow
									rate.

SIGNATURE(S): [signature]

PAGE 1 **OF** 1

NSWC Crane
Field Form
Revision: 0
January 1999

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S5A3A99
Sample Location: MW5A - SWL
Sampled By: S. NEIL
C.O.C. No.: 316
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 9/21/99 Time: 1650 Method: Dedicated Bladder pump	BROWN TINT	6.11	0.448	16.1	6	5.28	-46	LGT SULPHUR

PURGE DATA:

Date:	9/21/99
Method:	Dedicated Bladder pump
Monitor Reading (ppm):	0
Well Casing Diameter & Material Type:	4" PVC
Total Well Depth (TD):	44.0 FT.
Static Water Level (WL):	20.47 FT.
One Casing Volume(gal):	15.4
Start Purge (hrs):	1244
End Purge (hrs):	1644
Total Purge Time (min):	240
Total Vol. Purged (gal):	3.4 *

SEE LOW FLOW PURGE DATA SHEET

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: Effervescence in VOAs.
Screen length = 2 FT.
Top of screen = 42 FT.
* Less than one casing purged due to 4 hour purge limit outlined in FSP.

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): Scott W. Neil

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48 / 7769
WELL ID.: MW3A (SWL)
DATE: 9/21/99

	Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
	1244	20.47							→	START PURGING - PRIOR TO
DEC. FLOW	1254	20.62	64	6.18	0.463	75	4.70	17.6	-74	BEGINNING OF PURGING.
	1304	20.67	60	6.17	0.459	4	5.30	17.3	-74	MANUALLY PURGED & BLADDERS
DEC. FLOW	1314	20.77	60	6.12	0.453	3	5.90	17.2	-71	DUE TO ANTS NESTING IN
	1324	20.78	56	6.13	0.457	5	6.13	17.6	-69	THE DISCHARGE TUBING.
	1334	20.79	56	6.14	0.456	3	6.78	18.2	-66	SUN/CLOUDS CAUSING TEMP. FLUCTUATIONS.
	1344	20.83	56	6.11	0.458	5	6.33	17.5	-63	
	1354	20.86	56	6.11	0.457	7	6.13	17.9	-65	
	1404	20.87	56	6.12	0.458	2	6.63	17.3	-65	
1.4	1414	20.91	56	6.10	0.455	3	6.07	17.3	-63	Decrease flow rate.
	1424	20.91	53	6.10	0.455	3	6.42	18.5	-65	TEMP. INCREASE DUE TO DIRECT
	1434	20.92	53	6.10	0.458	8	6.19	18.3	-60	SUNLIGHT.
	1444	20.93	53	6.12	0.451	2	5.89	17.6	-58	
	1454	20.95	53	6.06	0.453	5	5.55	17.4	-59	
	1504	20.96	53	6.07	0.443	8	5.37	16.8	-58	
	1514	20.96	53	6.06	0.452	3	5.05	16.8	-59	
	1524	20.97	53	6.07	0.451	2	5.72	17.0	-59	
	1534	20.98	53	6.06	0.451	2	5.28	16.3	-57	
	1544	20.98	53	6.06	0.451	3	5.54	16.5	-57	
	1554	20.99	53	6.13	0.451	6	5.73	16.7	-57	
	1604	21.01	53	6.06	0.449	5	5.46	16.4	-52	
	1614	21.01	53	6.08	0.448	5	6.69	16.5	-48	
	1624	21.01	53	6.09	0.446	2	5.27	16.5	-47	
	1634	21.01	53	6.14	0.447	4	6.03	16.3	-49	
2	1644	21.01	53	6.11	0.448	6	5.28	16.1	-46	End of purging after 4
										hours per FSP.
	BEGIN SAMPLING @ 1650 - SAMPLE ID SSA3A99.									

SIGNATURE(S): [signature]

PAGE 1 **OF** 1

NSWC Crane
Field Form
Revision: 0
January 1999

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S583A99
Sample Location: MW5B - SWL
Sampled By: S. NEIL
C.O.C. No.: 316
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 9/22/99 Time: 1130 Method: Dedicated Bladder pump	YELLOW	6.08	0.340	19.2	2	2.19	56	SLIGHT SULPHUR

PURGE DATA:

Date:	9/22/99
Method:	Dedicated Bladder pump
Monitor Reading (ppm):	0
Well Casing Diameter & Material Type:	4" PVC
Total Well Depth (TD):	18.70 FT.
Static Water Level (WL):	8.03 FT.
One Casing Volume(gal):	7.0
Start Purge (hrs):	~~0825~~ 0725
End Purge (hrs):	1125
Total Purge Time (min):	240
Total Vol. Purged (gal):	3.1 *

SEE LOW FLOW PURGE DATA SHEET

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) ~~500 mL~~ Polyethylene 1000 mL	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: NONE

Screen length = 3 FT.

Top of screen = 15.7 FT.

* Less than one casing volume removed due to 4 hour purge limit outlined in the FSP.

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Scott W. Neil

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48 / 7769
WELL ID.: MW5B - SWL
DATE: 9/22/99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
0725 ~~0825~~ (SW)	8.03							→	BEGIN PURGING - MANUALLY
0735 ~~0835~~ (SW)	8.11	54	6.24	0.417	4	3.81	13.6	-50	PURGED 2 BLADDER VOLUMES
0745	8.16	54	6.24	0.416	11	4.00	14.0	-49	DUE TO ANTS NESTING IN
0755	8.18	51	6.20	0.409	6	3.18	14.1	-42	DISCHARGE TUBING.
0805	8.21	51	6.19	0.403	12	3.73	14.3	-27	Decrease flow @ 0745.
0815	8.21	48	6.17	0.396	18	3.65	14.6	-16	
0825	8.22	48	6.17	0.384	21	4.11	14.9	9	
0835	8.24	48	6.12	0.382	13	2.56	15.4	9	Elevated temp readings
0845	8.25	48	6.13	0.376	8	2.42	15.8	14	due to sun / rising
0855	8.25	48	6.11	0.373	14	2.40	16.0	19	ambient temps.
0905	8.26	48	6.12	0.369	12	2.58	16.3	23	
0915	8.27	48	6.09	0.365	18	2.78	16.8	26	
0925	8.28	48	6.11	0.364	9	2.50	17.3	28	
0935	8.29	48	6.10	0.360	15	2.41	17.8	32	
0945	8.30	48	6.08	0.359	4	2.51	18.2	33	
0955	8.30	48	6.09	0.357	5	2.53	18.6	42	
1005	8.31	48	6.07	0.355	7	2.81	19.2	40	↓
1015	8.32	48	6.09	0.352	3	1.80	19.1	52	-Place flow-trough cell
1025	8.33	48	6.08	0.349	2	1.80	18.5	54	inside vehicle to move
1035	8.34	48	6.06	0.346	8	2.21	18.7	67	it out of direct
1045	8.33	48	6.04	0.346	6	2.12	18.9	69	sunlight.
1055	8.33	48	6.06	0.344	3	2.26	19.0	60	
1105	8.32	48	6.06	0.342	5	2.35	19.0	59	
1115	8.33	48	6.10	0.342	6	2.36	19.1	55	
1125	8.34	48	6.08	0.340	2	2.19	19.2	56	End PURGING -- LESS THAN
									ONE CASING VOLUME
BEGIN	SAMPLING @ 1130 - SAMPLE ID			S5B3A99					PURGED DUE TO 4 HOUR
									PURGE LIMIT OUTLINED
									IN THE FSP.

SIGNATURE(S): [signature]

PAGE 1 **OF** 1

NSWC Crane
Field Form
Revision: 0
January 1999

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S6A3A99
Sample Location: SWL-MW6A
Sampled By: S. Pelepko
C.O.C. No.: 316
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 09-21-99 / Time: 1525	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Method: Dedicated Bladder pump	Clear	5.34	0.190	17.23	1.0	3.36	244.1	-n.a.-

PURGE DATA:

Date: 09-21-99	
Method: Dedicated Bladder pump	
Monitor Reading (ppm): 0.0	SEE LOW FLOW PURGE DATA SHEET
Well Casing Diameter & Material	
Type: 4" sched. 40 PVC	
Total Well Depth (TD): 44.5 FT	
Static Water Level (WL): 8.75 FT	
One Casing Volume(gal): 23.34	
Start Purge (hrs): 1121	
End Purge (hrs): 1525	
Total Purge Time (min): 244	
Total Vol. Purged (gal): 4.80 *	

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C (12)	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C (4)	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C SP (4)	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C (4)	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: none

* Total volume purged less than one casing volume. Began collecting samples after maximum 4-hour purge as stated in FSP even though volume requirement was not satisfied.
2-FT screened interval
Final water level = 8.95 FT (TIC)

Circle if Applicable:

MS/MSD	Duplicate ID No.:
yes	FD092199 01

Signature(s): [signature]

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48
WELL ID.: SWL-MW6A
DATE: 09-21-99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
1130	9.00	155	5.53	0.208	1.3	4.72	16.75	280.0	
1135	8.93	72.5	5.52	0.206	1.3	3.46	17.14	253.2	lower flow rate
1140	8.92	72.5	5.49	0.204	2.0	3.55	18.00	269.7	
1150	8.92	72.5	5.44	0.199	1.3	3.51	17.25	279.8	clean turbidity probe
1200	8.94	72.5	5.43	0.198	1.3	3.73	16.83	285.6	clean turbidity probe
1210	8.94	72.5	5.39	0.194	2.9	3.29	16.91	281.9	
1220	8.95	72.5	5.38	0.193	0.4	3.24	16.73	278.9	note: variably sunny/cloudy skies
1230	8.96	72.5	5.36	0.193	0.4	3.07	16.98	276.9	poss. influencing temp.
1240	8.96	72.5	5.36	0.191	2.3	3.10	17.51	274.6	readings
1250	8.96	72.5	5.35	0.192	1.7	3.29	16.65	271.0	
1300	8.96	72.5	5.34	0.191	0.4	3.18	17.50	271.1	
1310	8.97	72.5	5.34	0.191	1.7	3.37	16.86	262.9	
1315	8.96	70	5.33	0.190	0.7	3.55	16.77	264.7	lower flow rate, clean turb. probe
1325	8.96	70	5.33	0.190	1.6	3.50	17.07	263.2	
1335	8.96	70	5.32	0.190	1.7	3.25	16.98	262.8	clean turbidity probe
1345	8.96	70	5.33	0.190	0.4	3.47	16.93	266.8	clean turbidity probe
1355	8.96	70	5.33	0.190	1.2	3.80	16.85	267.1	
1405	8.96	70	5.33	0.190	1.0	3.82	16.80	264.5	clean turbidity probe
1415	8.96	70	5.34	0.190	0.4	3.71	17.25	262.2	" " "
1425	8.96	70	5.33	0.190	1.1	3.91	17.10	261.4	" " "
1435	8.96	70	5.33	0.190	1.1	4.00	17.25	267.1	" " "
1445	8.96	70	5.34	0.189	0.5	3.93	17.44	257.7	" " "
1455	8.96	70	5.34	0.190	0.3	3.26	17.78	235.5	" " "
1505	8.96	70	5.33	0.190	0.3	3.33	17.02	251.9	" " "
1515	8.96	70	5.35	0.191	0.6	3.46	17.21	252.3	" " "
1520	8.96	70	5.34	0.190	1.0	3.36	17.23	244.1	" " "
									note: abundant bubbles in
									discharge interfering with
									turbidity probe

SIGNATURE(S): Scott [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S6B3A99
Sample Location: SWL-MW6B
Sampled By: S. Pelepko
C.O.C. No.: 316
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 09-22-99								
Time: 1130								
Method: Dedicated Bladder pump	Slightly to clear	6.42	0.531	19.54	3.6	2.24	-2.3	-n.a.-

PURGE DATA:

Date: 09-22-99								
Method: Dedicated Bladder pump								
Monitor Reading (ppm): 0.0			SEE LOW FLOW PURGE DATA SHEET					
Well Casing Diameter & Material								
Type: 4" Sched. 40 PVC								
Total Well Depth (TD): 16.5 FT								
Static Water Level (WL): 8.31 FT								
One Casing Volume(gal): 5.35								
Start Purge (hrs): 0730								
End Purge (hrs): 1130								
Total Purge Time (min): 240								
Total Vol. Purged (gal): 2.72*								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: none

3-FT SCREENED INTERVAL

FINAL WATER LEVEL = 11.30 FT (TIC)

* Purge volume less than one casing volume. Sample collected after maximum purge time of 240 min (4 hr) as specified in FSP even though volume requirement was not satisfied.

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Scott Pelepko

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48
WELL ID.: SWL - MW 6B
DATE: 09-22-99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp.* (Celcius)	ORP mV	Comments
0740	8.59	52	6.49	0.527	25.7	6.40	14.66	122.3	
0750	8.74	42	6.43	0.510	8.0	3.46	14.80	124.8	clean turb. probe lower flow rate
0800	8.94	42	6.44	0.509	6.4	3.00	14.82	122.7	
0810	9.11	42	6.43	0.508	6.4	2.50	14.86	114.0	
0820	9.28	42	6.42	0.508	6.3	2.79	14.90	103.6	
0830	9.41	42	6.43	0.509	6.0	1.70	15.00	90.6	
0840	9.57	42	6.43	0.509	5.5	1.80	15.41	82.1	
0850	9.67	42	6.43	0.511	6.1	2.76	15.72	74.4	
0900	9.82	42	6.43	0.511	5.5	1.77	16.09	64.7	
0910	9.94	42	6.43	0.513	4.8	3.25	16.44	56.8	clean turbidity probe
0920	10.05	42	6.43	0.516	3.9	1.82	16.86	47.3	
0930	10.16	42	6.43	0.518	3.9	2.15	17.17	37.9	
0940	10.29	42	6.43	0.520	~~4.3~~ 3.9	2.80	17.45	27.6	
0950	10.36	42	6.43	0.524	4.0	1.57	17.73	21.3	
1000	10.46	42	6.43	0.525	4.3	1.64	17.98	14.6	
1010	10.56	42	6.43	0.527	4.3	2.16	18.17	10.2	clean turbidity probe
1020	10.62	42	6.43	0.528	4.4	1.81	18.43	9.7	" " "
1030	10.70	42	6.43	0.527	3.6	2.27	18.69	6.4	" " "
1040	10.78	42	6.44	0.529	3.7	2.55	18.65	6.6	
1050	10.82	42	6.43	0.529	3.7	2.93	18.77	6.6	clean turbidity probe
1055	10.85	42	6.44	0.531	3.7	2.81	18.97	5.1	
1105	10.92	42	6.42	0.532	3.4	2.43	19.09	1.4	clean turbidity probe
1115	10.96	42	6.41	0.532	3.5	2.62	19.13	1.0	
1125	11.02	42	6.42	0.531	3.6	2.24	19.54	-2.3	
									*note: temp. readings
									poss. artificially high
									due to increasing exposure
									to sunlight / rising air temp.

SIGNATURE(S): [signature]

PAGE 2 **OF** 2

NSWC Crane
Field Form
Revision: 0
January 1999

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S7A3A99
Sample Location: MW7A - SWL
Sampled By: S. Neil
C.O.C. No.: 316
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 9/20/99	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Odor
Time: 1530	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	
Method: Dedicated Bladder pump	Clear	6.49	0.307	17.0	7	8.18	127	None

PURGE DATA:

Date: 9/20/99								
Method: Dedicated Bladder pump								
Monitor Reading (ppm): 0			SEE LOW FLOW PURGE DATA SHEET					
Well Casing Diameter & Material								
Type: 4" PVC								
Total Well Depth (TD): 43.60 Ft.								
Static Water Level (WL): 30.38 Ft.								
One Casing Volume(gal): 2.2								
Start Purge (hrs): 1310								
End Purge (hrs): 1525								
Total Purge Time (min): 135								
Total Vol. Purged (gal): 3.1*								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: None

Screen length = 2 FT.

* Extra volume purged due to turbidity > 10 NTUs.

Circle if Applicable:

MS/MSD	Duplicate ID No.:
✓	

Signature(s): Scott A. Neil

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48 7769

WELL ID.: MW 7A (SWL)
DATE: 9/20/99

	Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
	1310	30.38								START PURGING
	1320	30.42	90	6.62	0.318	48	8.86	17.2	81	
	1330	30.44	90	6.39	0.310	55	7.66	16.6	140	
	1340	30.46	90	6.36	0.304	18	8.04	16.2	129	
	1350	30.46	90	6.45	0.308	25	8.30	16.4	124	
	1400	30.47	90	6.48	0.308	22	9.41	17.1	112	
	1410	30.47	90	6.44	0.305	11	7.31	17.2	119	
	1420	30.47	90	6.48	0.307	15	9.07	17.0	115	
	1430	30.48	90	6.48	0.301	24	7.39	17.1	128	
	1440	30.48	90	6.55	0.297	43	7.84	17.0	117	
	1450	30.49	90	6.56	0.296	40	8.46	17.0	112	
2.6	1500	30.49	90	6.48	0.307	32	7.53	17.0	109	Decrease flow.
	1510	30.49	(SW) ~~90~~ 75	6.44	0.309	5	7.89	17.2	97	
	1520	30.49	75	6.48	0.307	8	8.05	17.2	126	
0.5	1525	30.50	75	6.49	0.307	7	8.18	17.0	127	End of purging –
										turbidity readings
										were primarily affected
		BEGIN SAMPLING @	1530.	SAMPLE #	57A3A99					by numerous bubbles in
										flow-thru cell.

SIGNATURE(S): Scott W. Neil

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NSWC Crane
Field Form
Revision: 0
January 1999

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S141933A99
Sample Location: SWL-WES-14-1
Sampled By: S. Paleolko
C.O.C. No.: 318
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 09-22-99 / Time: 1625	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Method: Dedicated Bladder pump	clear	6.76	1.410	18.88	1.2	5.78	134.4	-n.a.-

PURGE DATA:

Date: 09-22-99								
Method: Dedicated Bladder pump								
Monitor Reading (ppm): 0.0			SEE LOW FLOW PURGE DATA SHEET					
Well Casing Diameter & Material								
Type: 2" schd. 40 PVC								
Total Well Depth (TD): 45.17 FT								
Static Water Level (WL): 27.38 FT								
One Casing Volume(gal): 2.9								
Start Purge (hrs): 1421								
End Purge (hrs): 1625								
Total Purge Time (min): 124								
Total Vol. Purged (gal): 3.20 *								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: NONE

top of screened interval ≈ 35.17 FT (TIC)

final water level = 27.72 FT (TIC)

* purged additional volume to account for initial drawdown.

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48
WELL ID.: SWL-WES-14-1
DATE: 09-22-99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
1427	27.66	~~64~~ 109	6.78	1.435	2.1	6.68	19.14	150.3	
1437	27.70	SP ~~64~~ 109	6.69	1.427	2.9	4.30	18.66	152.6	
1447	27.73	~~64~~ 109	6.72	1.429	2.1	4.93	18.55	143.8	
1452	27.69	94	6.72	1.425	1.6	6.49	18.79	141.3	lower flow rate, clean turb. probe
1502	27.68	94	6.70	1.425	1.1	4.59	19.25	143.6	clean turbidity probe
1512	27.70	94	6.73	1.427	2.7	4.61	19.37	140.7	clean turbidity probe
1522	27.71	94	6.73	1.425	1.5	5.45	19.46	134.0	
1532	27.70	94	6.73	1.423	1.5	4.42	19.27	134.1	clean turbidity probe
1542	27.71	94	6.74	1.421	1.6	5.27	19.16	141.1	" " "
1552	27.71	94	6.74	1.418	1.5	5.28	19.15	145.4	
1602	27.71	94	6.75	1.416	0.0	5.34	19.01	138.3	clean turbidity probe
1612	27.71	94	6.76	1.415	0.0	5.29	18.90	135.4	
1622	27.71	94	6.76	1.410 SP	~~2~~ 1.2	5.78	18.88	134.4	clean turbidity probe
									note: abundant air bubbles in discharge interfering with turbidity probe.

SIGNATURE(S): [signature]

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Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S142933A99
Sample Location: WES 14-2-93 (SWL)
Sampled By: S. NEIL
C.O.C. No.: 316
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 9/21/99								
Time: 1015								
Method: Dedicated Bladder pump	CLEAR	6.41	2.028	14.5	2	5.08	145	NONE

PURGE DATA:

Date: 9/21/99								
Method: Dedicated Bladder pump								
Monitor Reading (ppm): 0			SEE LOW FLOW PURGE DATA SHEET					
Well Casing Diameter & Material								
Type: 2" PVC								
Total Well Depth (TD): 65.31 FT.								
Static Water Level (WL): 53.13 FT.								
One Casing Volume(gal): 2.0								
Start Purge (hrs): 0740								
End Purge (hrs): 1010								
Total Purge Time (min): 150								
Total Vol. Purged (gal): 2.2								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: NONE

Screen length = 10 FT.
Top of screen = 55.3 FT.

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Scott W. Neil

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48 / JOB # 7769
WELL ID.: WES 14-2-93 (SWL)
DATE: 9/21/99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
0740	53.13	—						→	BEGIN PURGING
0750	53.18	55	6.44	2.121	2	4.68	13.3	215	Bubbles in flow thru
0800	53.19	55	6.48	2.124	1	5.16	13.2	189	cell cause high turbidity
0810	53.18	55	6.50	2.127	2	4.69	13.1	175	(SP) ~~test~~ readings - tapping
0820	53.19	55	6.49	2.116	3	5.49	13.1	168	the cell lightly frees
0830	53.20	55	6.48	2.049	1	4.50	13.4	164	bubbles and gives a
0840	53.20	55	6.50	2.074	2	4.39	13.5	153	more accurate reading
0850	53.20	55	6.50	2.072	4	5.10	13.6	150	of turbidity.
0900	53.20	55	6.50	2.060	2	4.76	13.7	153	
0910	53.20	55	6.49	2.042	1	4.81	13.7	148	
0920	53.20	55	6.50	2.048	3	4.65	13.8	146	
0930	53.20	55	6.50	2.036	1	4.73	13.9	146	
0940	53.20	55	6.49	2.031	2	4.73	14.2	146	
0950	53.21	55	6.49	2.020	2	4.84	14.3	149	
1000	53.20	55	6.46	2.034	1	4.95	14.4	148	
1010	53.20	55	6.41	2.028	2	5.08	14.5	145	End purging.
START	SAMPLING @	1015 - SAMPLE ID		5142933A99.					

SIGNATURE(S): Scott W. Neil

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NSWC Crane
Field Form
Revision: 0
January 1999

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S143933A99
Sample Location: SWL 14393
Sampled By: KEITH SIMPSON
C.O.C. No.: —
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 9.20.99								
Time: 0952								
Method: Dedicated Bladder pump								

PURGE DATA:

Date:								
Method: Dedicated Bladder pump								
Monitor Reading (ppm):			SEE LOW FLOW PURGE DATA SHEET					
Well Casing Diameter & Material Type:								
Total Well Depth (TD): 44.37								
Static Water Level (WL): 43.94								
One Casing Volume(gal):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal):								

DRY NO SAMPLE

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	

OBSERVATIONS / NOTES:

Reaction to Preservative:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Keith E Simpson

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S144933A99
Sample Location: WES 14-4-93 (SWL)
Sampled By: S. NEIL
C.O.C. No.: 318
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 9/22/99								
Time: 1733								
Method: Dedicated Bladder pump	CLEAR	6.40	1.111	21.0	6	7.21	151	NONE

PURGE DATA:

Date: 9/22/99								
Method: Dedicated Bladder pump								
Monitor Reading (ppm): 0			SEE LOW FLOW PURGE DATA SHEET					
Well Casing Diameter & Material								
Type: 2" PVC								
Total Well Depth (TD): 35.30 FT.								
Static Water Level (WL): 20.17 FT								
One Casing Volume(gal): 2.5								
Start Purge (hrs): 1408								
End Purge (hrs): 1728								
Total Purge Time (min): 200								
Total Vol. Purged (gal): 2.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: NONE

Screen length = 10 FT.
Top of Screen = 25.30 FT.

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48/7769

WELL ID.: WES 14-4-93 (SWL)
DATE: 9/22/99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
1408	20.17							→	START PURGING.
1418	20.39	48	6.53	0.606	7	7.35	26.2	95	
1428	20.53	48	6.54	1.126	16	6.44	23.6	114	
1438	20.53	48	6.52	1.115	14	6.20	23.4	119	
1448	20.56	48	6.48	1.110	3	6.74	23.2	123	
1458	20.56	48	6.46	1.113	2	7.78	23.5	128	
1508	20.61	48	6.47	1.114	4	8.08	23.4	128	
1518	20.62	48	6.45	1.113	5	6.97	22.7	134	
1528	20.64	48	6.46	1.110	4	7.65	22.9	137	
1538	20.63	48	6.46	1.113	1	8.16	22.8	137	
1548	20.64	48	6.46	1.108	2	8.33	22.6	143	
1558	20.63	48	6.44	1.111	2	7.97	22.2	146	
1608	20.65	48	6.44	1.110	5	7.44	22.4	144	
1618	20.64	48	6.44	1.109	4	7.61	22.0	144	
1628	20.66	48	6.45	1.107	7	7.87	22.0	148	
1638	20.66	48	6.44	1.108	4	7.93	21.8	150	
1648	20.66	48	6.43	1.111	5	7.81	21.3	150	
1658	20.67	48	6.41	1.111	5	7.54	21.2	148	
1708	20.67	48	6.42	1.113	2	7.51	21.1	150	
1718	20.66	48	6.40	1.112	3	7.34	21.0	148	
1728	20.67	48	6.40	1.111	6	7.21	21.0	151	END PURGING
BEGIN SAMPLING @ 1733 - SAMPLE ID S144933A99.									

SIGNATURE(S): Scott W. Neo

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NSWC Crane
Field Form
Revision: 0
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Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S145933AG9
Sample Location: WES 14-5-93 (SWL)
Sampled By: S. NEIL
C.O.C. No.: 318
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 9/23/99								
Time: 1053								
Method: Dedicated Bladder pump	CLEAR	4.47	0.439	19.3	4	6.41	254	NONE

PURGE DATA:

Date: 9/23/99	
Method: Dedicated Bladder pump	
Monitor Reading (ppm): 0	SEE LOW FLOW PURGE DATA SHEET
Well Casing Diameter & Material Type: 2" PVC	
Total Well Depth (TD): 42.78 FT.	
Static Water Level (WL): 28.06 FT.	
One Casing Volume(gal): 2.4	
Start Purge (hrs): 0823	
End Purge (hrs): 1048	
Total Purge Time (min): 145	
Total Vol. Purged (gal): 2.6	

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: NONE

SCREEN LENGTH = 10'
TOP OF SCREEN = 42.78'

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): Scott W. Neil

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48/7769

WELL ID.: WES 14-5-93 (SWL)
DATE: 9/23/99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
0823	28.06								BEGIN PURGING.
0833	28.11	60	4.52	0.433	17	5.69	16.2	224	
0843	28.11	60	4.56	0.433	17	4.62	16.2	213	
0853	28.12	60	4.59	0.430	14	4.25	16.3	212	
0903	28.14	60	4.55	0.432	9	4.48	16.9	216	INCREASING TEMP. READING
0913	28.14	60	4.53	0.430	3	4.70	17.1	221	DUE TO SUNLIGHT/INCREASING
0923	28.14	60	4.51	0.433	5	4.36	17.4	228	DAYTIME TEMPERATURE.
0933	28.15	60	4.49	0.431	2	4.39	18.0	236	
0943	28.14	60	4.48	0.428	3	4.89	18.5	241	INCREASE FLOW. 4800
0953	28.17	75	4.46	0.430	1	4.04	18.5	249	
1003	28.17	75	4.45	0.427	4	4.14	19.0	254	
1013	28.17	75	4.47	0.430	2	2.96	19.3	252	
1023	28.17	75	4.51	0.439	3	4.28	19.6	253	
1033	28.18	75	4.48	0.440	2	6.50	18.9	251	
1043	28.18	75	4.46	0.436	2	5.99	19.1	253	
1048	28.17	75	4.47	0.439	4	6.41	19.3	254	End purging
BEGIN SAMPLING @		1053 -	SAMPLE ID	S14993A99.					

SIGNATURE(S): Scott Reid

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NSWC Crane
Field Form
Revision: 0
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Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S146933A99
Sample Location: SWL-WES-14-6
Sampled By: S. Polepko
C.O.C. No.: 316
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 09-21-99	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Odor
Time: 0900	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	
Method: Dedicated Bladder pump	clear	5.67	0.842	14.89	0.3	2.28	165.0	-n.a.-

PURGE DATA:

Date: 09-21-99								
Method: Dedicated Bladder pump								
Monitor Reading (ppm): 0.0			SEE LOW FLOW PURGE DATA SHEET					
Well Casing Diameter & Material								
Type: SP 11-21-99 4" 2" sched 40 PVC								
Total Well Depth (TD): 51.42 FT								
Static Water Level (WL): 35.87 FT								
One Casing Volume(gal): 2.53								
Start Purge (hrs): 0742								
End Purge (hrs): 0900								
Total Purge Time (min): 78								
Total Vol. Purged (gal): 2.89 *								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓

OBSERVATIONS / NOTES:

Reaction to Preservative: none

Top of screened interval = 41.4 FT (TIC)
Additional volume purged to insure stabilization of field parameters
Final water level = 35.98 FT (TIC)

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48

WELL ID.: SWL - WES - 14 - 6
DATE: 09-21-99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
0749	35.94	~~90~~ 140	5.80	0.898	0.1	4.66	14.79	164.7	
0759	35.95	140	5.71	0.885	10.7 *	4.40	14.48	161.1	* water looks clear
0809	35.95	140	5.69	0.875	0.1	4.84	14.51	161.0	clean turbidity probe
0819	~~36~~ 35.95	140	5.68	0.865	1.3	4.11	14.67	150.9	clean turbidity probe
0824	35.97	140	5.68	0.864	2.1	2.15	14.55	158.5	
0834	35.96	140	5.67	0.854	1.8	2.60	14.55	157.3	clean turbidity probe
0839	35.97	140	5.68	0.853	1.2	2.59	14.65	159.7	clean turbidity probe
0844	35.96	140	5.67	0.851	0.4	2.59	14.68	158.7	clean turbidity probe
0854	35.97	140	5.67	0.842	0.3	2.28	14.89	165.0	clean turbidity probe
									note: abundant bubbles in discharge interfering with turbidity probe.

SIGNATURE(S): [signature]

PAGE 2 **OF** 2

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG FORM

Project Site Name: NSWC Crane, IN
Project No.: CTO 48 7769

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: S147933A99
Sample Location: SWL 14793
Sampled By: KEITH SIMPSON
C.O.C. No.: 317
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Odor
Date: 9.25.99 Time: 1045 Method: Dedicated Bladder pump	CLEAR	5.79	0.872	15.6	1.5	4.96	135.6	NONE

PURGE DATA:

Date:	9.25.99
Method:	Dedicated Bladder pump
Monitor Reading (ppm):	0
Well Casing Diameter & Material Type:	2" PVC
Total Well Depth (TD):	45.33
Static Water Level (WL):	28.70
One Casing Volume(gal):	2.7
Start Purge (hrs):	0740
End Purge (hrs):	1040
Total Purge Time (min):	180
Total Vol. Purged (gal):	3.6

SEE LOW FLOW PURGE DATA SHEET

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatile Organic Compounds (VOC)	HCl/4°C	(3) 40 mL Glass Vials	✓
Dissolved Metals	HNO_3/4°C	(1) 1000 mL Polyethylene (field filtered)	✓
Sulfate, Chloride, TS, TDS, Alk, Bicarb, Carb	4°C	(1) 1000 mL Polyethylene	✓
Ammonia	H_2SO_4/4°C	(1) 500 mL Polyethylene	✓
		X2 FOR FD	

OBSERVATIONS / NOTES:

Reaction to Preservative: NONE

10' SCREEN TOP @ 35.3'

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	FD 09259901

Signature(s): K. S. Simp

LOW FLOW PURGE DATA FORM

PROJECT SITE NAME: NSWC CRANE
PROJECT NUMBER: CTO 48
WELL ID.: SWL - WES 14793
DATE: 9.25.99

Time (Hrs.)	Water Level (Ft. below TOC)	Pump Rate (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	ORP mV	Comments
0750	28.65	75	5.56	0.847	1.7	15.63	14.9	148.7	
0800	28.67		5.58	0.870	2.0	7.43	15.0	~~16~~ 146.3	
0810	28.68		5.77	0.876	1.9	7.30	15.3	141.4	
0820	28.70		5.70	0.876	1.9	4.64	15.3	138.9	
0830			5.73	0.875	1.6	10.46	15.3	145.1	
0840			5.66	0.875	1.7	5.61	15.5	142.0	
0850			6.26	0874	1.6	8.48	15.5	139.7	
0900			5.89	0.873	1.6	10.13	15.5	139.7	
0910			5.44	0.872	1.5	9.06	15.5	140.6	
0920			6.36	0.871	1.5	4.89	15.5	141.1	
0930			5.53	0.870	1.5	6.77	15.5	143.0	
0940			6.09	0.872	1.6	10.04	15.6	142.7	
0950			5.82	0.877	1.5	5.25	15.6	136.5	
1000			5.76	0.878	1.5	5.87	15.6	135.7	ONE VOL. REMOVED
1010			5.74	0.890	1.5	4.78	15.6	133.8	
1020			5.73	0.877	1.5	9.75	15.6	139.7	
1030			5.81	0.870	1.5	4.99	15.6	132.1	
1040			5.79	0.872	1.5	4.96	15.6	135.6	
	END PURGE 1040								
	START SAMPLING @ 1043								
	END SAMPLING @ 1138 WL = 28.7								

SIGNATURE(S): [illegible]

PAGE 2 **OF** 2

NSWC Crane
Field Form
Revision: 0
ary 1999

' OF SCREEN @ 35.3'±

FIELD REPORT
APPENDIX 2

MONITORING WELL
INSPECTION FORMS

DETECTION MONITORING EVENT NO. 2
SEPTEMBER 20 - 27, 1999
SANITARY WASTE LANDFILL

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: MW201

Time: 0943 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
January: 1999

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: MW 203

Time: 1015 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		ANTS HAVED FILLED RISER PIPE WITH SOIL COVERING WELL CAP, CLEANED out RISER
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
Ja 1999

NSWC CRANE, IN
MONITORING WELL INSPECTION FORM

Well ID: MW 1A **Project No.:** CTO 48 7769

Time: 0830 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of…	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of…			NONE INSTALLED (DRY)
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [signature]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC CRANE, IN
MONITORING WELL INSPECTION FORM

Well ID: MW 1 B **Project No.:** CTO 48 7769

Time: 0833 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of…	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of…	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: MW2A

Time: 1005 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
January: 1999

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: MW3A

Time: 1007 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
Ja 1999

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: NW 3 B

Time: 1009 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
January: 1999

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: MW 4A

Time: 1020 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) Keith S. Simpson

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
Ja : 1999

MONITORING WELL INSPECTION FORM

CTO 4-8

Well ID: MW 4B

Time: 1022 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) Keith E. Simpson

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
January: 1999

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: MW5A

Time: 1027 **Date:** 9.20.99 **Inspector's Name:** Keith S. Simpson

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) KEITH SIMPSON

Keith S. Simpson

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
Ja : 1999

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: MW 5B

Time: 1029 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	/		
Well security	Condition protective case, cap, lock	/		
Well pad	Concrete or gravel & condition	/		
Well seal	Condition of...	/		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	/		
Dedicated sampling equipment	Condition of...	/		
PVC Riser	Condition of riser & survey reference point	/		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
January: 1999

MONITORING WELL INSPECTION FORM

CTO 4-8

Well ID: MW 6A

Time: 1032 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) Keith E. Simpson

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
Ja : 1999

MONITORING WELL INSPECTION FORM

CTO 4-8

Well ID: MW 6B

Time: 1034 **Date:** 9-20-99 **Inspector's Name:** [illegible]

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
January: 1999

MONITORING WELL INSPECTION FORM

Well ID: MW 7A

Time: 1049 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		~~NA~~ PUMP IS OK KES
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
[illegible]ry: 1999

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: WES ~~#~~ KS 14.1.993

Time: 1044 **Date:** 9.20.93 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [signature]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
January: 1999

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: WES 14-2-93

Time: 0949 Date: 9.20.97 Inspector's Name: KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
y: 1999

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: WES 14.3.93

Time: 0952 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of... KS	✓		NOT INSTALLED (DRY)
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
January: 1999

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: WES 14 4 93

Time: 1038 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
Ja 1999

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: WES 14-5-93

Time: 1002 **Date:** 9-20-99 **Inspector's Name:** R. SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

MONITORING WELL INSPECTION FORM

CTO 48

Well ID: WES 14.6.93

Time: 0957 **Date:** 9.20.99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s) [illegible]

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

MONITORING WELL INSPECTION FORM

Well ID: WES 14 7 93

Time: 1051 **Date:** 9-20-99 **Inspector's Name:** KEITH SIMPSON

Inspection Item	Types of Problems	Status		Observation
		S	U	
Well Tag	Is it in-place, legible	✓		
Well security	Condition protective case, cap, lock	✓		
Well pad	Concrete or gravel & condition	✓		
Well seal	Condition of...	✓		
Area Immediately around well pad	Record any evidence of/or standing water in area of well	✓		
Dedicated sampling equipment	Condition of...	✓		~~NA~~ PUMP IS OK KES
PVC Riser	Condition of riser & survey reference point	✓		

Comments:

Signature(s)

Note: S= Satisfactory, U= Unsatisfactory
Check one, if unsatisfactory explain

NSWC Crane
Field Form
Revision: 1
January: 1999

FIELD REPORT
APPENDIX 3

SITE LOG BOOK PAGES

DETECTION MONITORING EVENT NO. 2
SEPTEMBER 20 - 27, 1999
SANITARY WASTE LANDFILL

TITLE NSWC CRANE CTO 48 PROJECT NO. 7769
9/20/99 BOOK 2448

Work continued from Page

0700 Keith Simpson (KS), Seth Pelepko (SP), and Scott Neil (SN) arrive at trailer.

0710 SN and SP depart for building 3260 to check for sample containers.

0715 SN talks w/ Tom Brent about arrival of supplies - 2 packages arrived at building 3260.

0720 SN & SP depart for Building 41 - coolers from Laucks are there - load them into the vehicle and return to trailer.

0740 Arrive at trailer and unload coolers. SN begins bottle inventory and makes up bottle sets for SWL.

1130 Lunch

1155 Arrive at trailer - prepare for field work.

1219 Depart for SWL.

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

Work continued to Page 25

SIGNATURE Scott W. Neil DATE 9/20/99

WITNESS DATE

TITLE NSWC CRANE PROJECT NO. 7769
BOOK 2448

Work continued from Page 24

1232 Arrive at well MW201 and start setting up to purge

1250 Depart MW201 - water level is below the screen. 9.30 ft. depth, 8.71 ft. is the static H_2O level, screen length = 2 feet.

1256 Arrive at well MW7A and start setting up to purge.

1310 Begin purging. One casing volume = 2.2 gal. Flow rate = 90 mL/min. Refer to Low Flow Purge Data Form for MW7A for purging data.

1500 Purged required volume but turbidity is not less than 10 NTUs. Will reduce flow rate to try to get turbidity decreased. Flow rate = 75mL/min

1525 Purging ends - volume purged = 3.1 gallons - turbidity problem primarily due to the volume of bubbles in the flow-thru cell. All parameters stable before sampling begins

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

Work continued to Page 26

SIGNATURE Scott W. Neil DATE 9/20/99

WITNESS DATE

TITLE NSWC CRANE

PROJECT NO. 7769

BOOK 2448

Work continued from Page 25

1530 Begin sampling. Fill VOAs, Ammonia, Dis. Metals, and unpreserved one liter for several parameters. Refer to corresponding GW Sample Log Form for specific sampling information.

1615 Sampling ends load vehicle w/ equipment and samples. Depart for trailer.

1630 Stop by well MW1B to check if SP needs any help - return to trailer

1642 Arrive at trailer - unload van and place samples in ~~for~~ refrigerator.

1655 Retrieve messages from answering machine. Return call from Hugh Prentice at Lauck's. Answer his question of if we were monitoring REDOX potential and at what wells we sampled for sulfide and the REDOX readings at those wells.

1805 SN departs for the BOQ.

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

Work continued to Page

SIGNATURE Scott W. Reid DATE 9/20/99

WITNESS DATE

TITLE NSWC CRANE

9/21/99

PROJECT NO. 7769

BOOK 2448

Work continued from Page

0655 SN arrives at trailer - begins prep for the day's purging and sampling.

0716 SN departs trailer for SWL - will show SP his well then set up on SN's well.

0726 SN arrives at well WES-14-2-93 and sets up equipment to purge.

0740 Purging begins - one casing volume = 20 gallons. Refer to corresponding Low Flow Purge Data Form for specific purge data on this well.

1010 End purging. Purged 22 gallons - all parameters are stable.

1015 Begin sampling - sample ID S142933A99. Fill VOAs, Ammonia, Metals (Dis.), and a one liter unpreserved plastic for sulfate, chloride, TS, TDS, Alkalinity, Carbonate, and Bicarbonate.

1103 End sampling. Load vehicle and depart SWL.

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

Work continued to Page 28

SIGNATURE Scott W. Reid DATE 9/21/99

WITNESS DATE

TITI NSWC CRANE

PROJECT NO. 776c

BOOK 2448

Work continued from Page 27

1127 Arrive at trailer. Put samples in refrigerator and go to lunch.

1226 Arrive at wells MW5A + 5B. Will start settingup to purge well MW5A.

1244 Begin purging. One casing volume = 15.4 gallons. Prior to purging, 2 bladder volumes were purged manually ~~to~~ (FM) due to auto resting in discharge line. Refer to Low Flow Purge Data Form for this well for specific data on purging.

- Abundance of bubbles in flow-through cell causing erratic turbidity readings. When readings are taken, tapping the cell lightly to remove bubbles is necessary to obtain true turbidity readings.

1644 Purging ends due to 4 hour purge limit outlined in FSP - less than one casing volume purged (total gallons purged = 3.4)

1650 Begin sampling. Sample ID 55A3A99.

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SIGNATURE Scott W. Reid DATE 9/21/99

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BOOK 0448

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Light sulphur odor and brown tint (light) noticed. Fill VOAs, Ammonia, Metals (dis.), and a one liter unpreserved poly for TSS, TDS, chloride, SO_4, alkalinity, carbonate, and bicarbonate.

1754 Sampling ends. Load van with equipment and depart SWL for trailer.

1826 Arrive at trailer. Unload samples into refrigerator.

1856 Depart trailer for BOQ.

END

WEATHER: Partly sunny, mid 40's in (AM), sunny, upper 60's (PM).

VOID 9/21/99 SWR

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Work continued from Page

0646 Arrive at trailer and prep for today's purging and sampling

0658 SN departs trailer for SWL.

0709 SN arrives at well MW5B and sets up to begin purging.

0725 Purging begins - one casing volume = 7.0 gallons. Manually purged 2 bladder volumes due to ants nesting in discharge tubing. Refer to corresponding Low Flow Purge Data Sheet for this well for specific data on purging.

- Elevated temperature readings are due to direct sunlight / increased daytime temperature
- water has a yellowish color.
- Bubbles in flow-through cell giving high turbidity readings - light tapping of the cell corrects this problem.

1125 End purging. Purged less than one casing volume due to 4 hour purge limit outlined in the FSP

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1130 Begin sampling. Sample has a yellowish color and slight odor of sulphur. Fill VOAs, Ammonia, Metals (Dis.), and a one (1) liter poly for TDS, TSS, Chloride, SO_4, Alkalinity, Carbonate, and Bicarbonate. Refer to GW Sample Log Form.

1232 End sampling. Lock vehicle and depart SWL for trailer / Lunch.

1355 Arrive at SWL well # WES 14-4-93 and set up equipment to begin purging.

1408 Begin purging. One casing volume = 2.5 gallons. Purge rate = 48 ml/min. Refer to the corresponding Low Flow Purge Data Form for this well for specific purge information

1728 End purging. One casing volume removed with all parameters stable.

1733 Begin sampling. Sample ID 514493.1.99 Fill VOAs, Ammonia, Dis. Metals, and a one (1) liter poly for TSS, TDS, Chloride, SO_4, Alkalinity, Carbonate, and Bicarbonate.

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Refer to corresponding GW Sample Log Form for specific sampling data on this well.

1830 End sampling. Load equipment into vehicle and return to trailer.

1844 Place samples in refrigerator and depart for BOQ.

WEATHER: Sunny, low 40's - upper 60's.

END

VOID 9/22/99 SWN

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SIGNATURE Scott W. Neil DATE 9/22/99

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TITLE NSWC CRANE

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BOOK 2448

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0700 SWN arrives at trailer and preps for today's purging and sampling.

0752 SWN departs trailer for SWL.

0807 Arrive at SWL well # WES 14-5-93 and begins setting up equipment for purging and sampling.

0823 Begin purging. One casing volume = 2.4 gallons. Refer to the corresponding Low Flow Purge Data Form for this well.

- Increased daytime sunlight / temperature causing elevated temperature readings.
- Abundance of bubbles in flow-through cell - tapping the cell lightly to loosen bubbles before turbidity readings.

0958 Increase flow rate based on previous data for this well.

1048 End purging. Purged 2.6 gallons; all parameters stable.

1053 Begin sampling. Sample ID S145933AAA. →

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Filled VOAs, Ammonia, Dis. Metals, and a one (1) liter poly for TSS, TDS, Chloride, SO_4, Alkalinity, Carbonate, and Bicarbonate. Refer to the corresponding GW Sample Log Form for specific sampling data.

1139 End sampling. Load equipment into vehicle and depart for the trailer.

1203 Arrive at trailer and place samples in refrigerator, then go to lunch.

(SD) ~~1333~~ 1331 Arrive back at trailer SD and prep for the field. Call US Airways to change plane reservations for 9/24/99.

1350 Depart trailer for SWL.

1302 Arrive at SWL well MW4A and set up for purging. Ants in discharge line - try to purge them out - appears that they have been removed but water is trickling out of the discharge line and also, water is being diverted thru freeze →

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protection line. Will attempt to purge and sample well MW4B.

1350 Begin purging MW4B. Refer to field forms that correspond to this well for specific purge data.

1424 Worked on discharge tubing on well MW4A to try to correct earlier problem (see page 34 @ 1302). Discovered ants had clogged "elbow" of discharge tube extension. Cleaned out ants and this should rectify the problem.

1440 Pumping @ 43 mL/min but water level is still dropping @ ≈ 0.1 FT/10 min. At this rate, will not be able to purge one casing volume, so will continue to purge at this rate and monitor drawdown.

- Direct sunlight / sun setting causing temperature readings to fluctuate.

1750 End purging - purged less than one casing -

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volume. Only 2.8 gallons purged.

1755 Begin sampling. Fill VOAs, Ammonia, Dis. Metals, and a one (1) liter poly for TSS, TDS, Chloride, SO_4, Alkalinity, Carbonate, and Bicarbonate. Refer to the GW Sample Log Form that corresponds to well MW4B for specific sampling data.

1841 End sampling. Load equipment in vehicle and return to trailer.

1857 Arrive at trailer. Place samples in refrigerator and clean-up.

WEATHER: Sunny, low 40's – mid 70's.

END

VRD 9/23/99 SWM

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SIGNATURE Scott W. Neil DATE 9/23/99

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SAMPLE SUMMARY OF SWL WELLS

WELL ID	SAMPLE ID	DATE	COMMENTS
MW1A	S1A3B99	NA NO PUMP	DRY WELL
MW1B	S1B3B99	9/20/99	
MW2A	S2A3A99	9/23/99	
MW3A	S3A3A99	9/24/99	
MW3B	S3B3A99	9.25/26.99	
MW4A	S4A3A99	9/24/99	
MW4B	S4B3A99	9/23/99	
MW5A	S5A3A99	9/21/99	
MW5B	S5B3A99	9/22/99	
MW6A	S6A3A99	9/21/99	DUPLICATE MS/MSD
MW6B	S6B3A99	9/22/99	
MW7A	S7A3A99	9/20/99	
MW201	S2013A99	DRY	
MW203	S2033A99	DRY	
WES14-1-93	S141933A99	9/22/99	
WES14-2-93	S142933A99	9/21/99	
WES14-3-93	S143933A99	NA NO PUMP	DRY WELL
WES14-4-93	S144933A99	9/22/99	
WES14-5-93	S145933A99	9/21/99	
WES14-6-93	S146933A99	9/23/99	
WES14-7-93	S147933A99	9.25.99	DUP

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

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SIGNATURE Scott W. Neil DATE 9/23/99

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TITLE NSWC CRANE **PROJECT NO.** 7769

FRIDAY 9-24-99 **BOOK** 2448

Work continued from Page WEATHER: NICE, SUNNY 64-75°F

SCOTT NEIL DEPARTS FROM BOQ TO AIRPORT / P&H OFFICE / HOME FRIDAY AM

0650 KS & SP @ TRAILER CAL. EQUIPMENT LOAD SUV. TO SWL KS SET-UP ON MW4A PURGING & SAMPLING

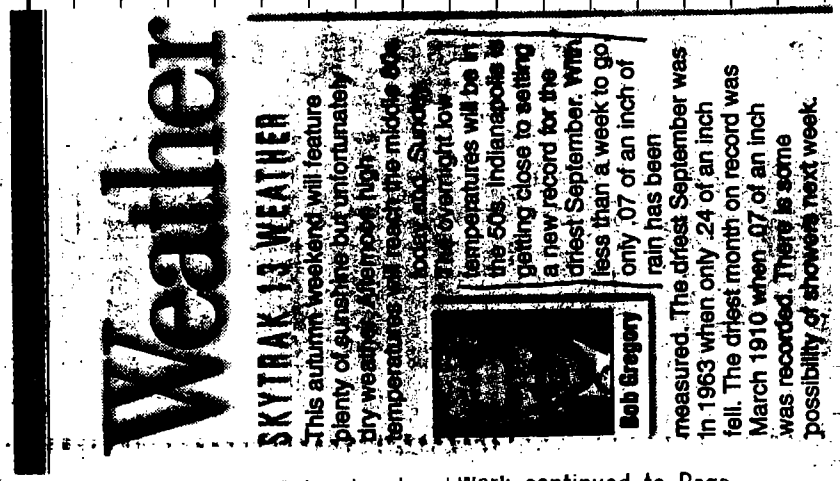
1150 COMPLETE SAMPLING @ MW4A. DEPART SWL TO LUNCH/TRAILER

1220 PACKING SAMPLES FOR FEDEX, CALL WEEKLY HOURS TO P&H OFFICE. PAPER WORK

1620 KS TO SWL TO CHECK ON SETH PROGRESS. SETH COMPLETED PURGING 3B WILL ALLOW TO RECHARGE AND THEN SAMPLE SAT. AM

1650 RETURN TO TRAILER UNLOAD EQUIPMENT

1745 ~~SP~~ KS DEPART TRAILER FOR BOQ



Weather

SKYTRAK 13 WEATHER

This autumn weekend will feature plenty of sunshine but unfortunately dry weather. Afternoon high temperatures will reach the middle 60s today and Sunday. The overnight low temperatures will be in the 50s. Indianapolis is getting close to setting a new record for the driest September. With less than a week to go only .07 of an inch of rain has been measured. The driest September was in 1963 when only .24 of an inch fell. The driest month on record was March 1910 when .07 of an inch was recorded. There is some possibility of showers next week.

Bob Gregory

Work continued to Page

SIGNATURE [signature] DATE 9-24-99

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TITLE NSWC CRANE **PROJECT NO.** 7769

SAT. 9-25-99 **BOOK** 2448

Work continued from Page WEATHER: NICE, SUNNY 65-80°F

0650 KS & SP @ TRAILER PREP. FOR GW SAMPLING @ SWL CAL. EQUIPMENT.

0720 DEPART TRAILER TO SWL KS SET-UP & PURGING @ WES 14 7 93 COMPLETE SAMPLING + DUP FD 09259901 @ 14-7-93

1205 TO TRAILER PACKING EQUIPMENT FOR RENTAL RETURN

1340 TO CREEK A CTO 38 TO CHECK ON FLOW NO FLOW @ CREEK A RETURN TO TRAILER WORKING ON FRZ. PROTECTION FOR TRAILER WATER SUPPLY.

CONTINUE PACKING RENTED EQUIPMENT AND PAPER WORK.

1725 DEPART TRAILER FOR BOQ

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TIT NSWC CRANE PROJECT NO. 7769

SUNDAY 9.26.99 BOOK 2448

Work continued from Page WEATHER: SUNNY CLOUDS 62-85°F

0650 KS & SP @ TRAILER SP TO SWL TO COMPLETE SAMPLING OF MW3B.

— SWL 3 QTR 1999 SUMMARY —

ALL WELLS WERE SAMPLED FOLLOWING THE APPROVED FSP (APRIL '99). PURGE WATER WAS CONTAINERIZED AND DISCHARGED TO THE ON SITE WWTP. THIS AREA HAS HAD A VERY DRY SUMMER LESS THAN 0.07" RAIN FALL IN SEPT., THERE IS A BAN ON OPEN BURNING IN THE STATE. AS A RESULT OF THE DROUGHT THE WATER LEVEL IN THE SWL* WELLS HAS DROPPED.

* 7 WELL HAD SIGNIFICANT DROPS IN WL, WELL 4A DROPPED 14'+ TWO WELL NORMALLY SAMPLED HAD INSUFFICIENT WATER TO SAMPLE; WELLS 201 & 203.

SEE TABLE ON PG 37 ALSO SEE COC's, FIELD FORMS & LOG BOOK # 2449. ON SITE THIS EVENT TETRA TECH NUS

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605 Work continued to Page

SIGNATURE K. Simpson DATE 9.26.99

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9.26.99 BOOK 2448

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KEITH SIMPSON, SETH PELEPKO 9.19 THRU 9.27.99 & SCOTT NEIL 9.19 THRU 9.24.99.

0820 SP RETURNS FROM SWL, CLEAN AND PACK EQUIPMENT. CLEAN/INVENTORY TRAILER

KS, SP TO OFFICE MAX COPY NOTES & WAL-MART FOR SUPPLIES.

1340 RETURN TO TRAILER, COMPLETE EQUIPMENT PACKING, TRAILER CLEANING & PAPERWORK

INSULATE TRAILER WATER LINE

COMPLETE WHAT WAS STARTED YESTERDAY

DEPART TRAILER FOR BOQ

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605 Work continued to Page

SIGNATURE K. Simpson DATE 9.26.99

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TITLE NSWC CRANE PROJECT NO. 7707

MONDAY 9.27.99 BOOK 2448

Work continued from Page WEATHER: SUNNY w/some clouds 70-85°F

0650 KS @ BLD 41 CHECK ON PICK-UP 500 GAL. IDW TANK. WILL NEED A TRUCK FROM ENVIRONMENTAL.

0720 CALLED TOM B. TO SEE IF HE COULD HELP OUT. LEFT MESSAGE

SETH TO SWL PICK-UP LOCK WE PUT ON SWL GATE.

SP @ TRAILER LOADED ALL EQUIPMENT & SAMPLES INTO SUV.

0830 SETH TO FED EX/AIRPORT/HOME

0840 KS TO BLD 41 TO PICK-UP 500 GALLON IDW TANK.

FILL TANK w/ 40 GAL OF TAP WATER & LABEL TO KEEP TANK IN PLACE IF THERE IS HIGH WIND.

KS & TOM B. PLACE 500 GAL. TANK @ TRAILER.

KS "SHUT DOWN" TRAILER (END OF SHIFT)

0940 DEPART SITE AIRPORT/PGH/HOME

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TITLE NSWC CRANE **PROJECT** 7769

MONDAY 9.20.99 **BOOK** 2449

Work continued from Page WEATHER: cool and overcast, acc drizzle, temp 60s (°F)

SUNDAY PM KEITH SIMPSON, SETH PELEPKO & SCOTT NEIL TRAVEL FROM HOME TO SITE CHECK INTO BCQ ON SITE

0650 KS, SN & SP @ TRAILER PREPING FOR SAMPLING @ SWL.

0620 KS & SP TO SWL FOR SITE WIDE WATER LEVELS & INVENTORY

~~0720~~ 9-20-99

1100 KS and SP to landfarm to conduct site wide water levels / well inventory.

1140 KS and SP break for lunch.

1210 KS, SP, and SN back at field trailer. SP and SN collect supplies for well purging / sampling activities at SWL.

1235 SP and SN arrive at SWL. SP sets up to purge / sample SWL-MW1B. Refer to Groundwater Sample Log Form SIB3B99 and attached Low Flow Purge Data Form(s) for details.

1250 Begin purging SWL-MW1B.

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SIGNATURE K. S. Simpson DATE 9.20.99

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BOOK 2449

MON, 09-20-99

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1625 SN stops at SWL-MW1B to check progress. Discusses activities with SP briefly and returns to field trailer.

1655 End purge at SWL-MW1B. Begin collecting samples.

1735 Complete Sample collection at SWL-MW1B. Demob, secure well head, and return to field trailer.

1955 SP back at field trailer. Off-load equipment + samples. SP labels and refrigerates samples.

1800 SN leaves site for the day

1815 SP leaves site for the day.

04-20-99

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

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SIGNATURE Seth Pokopko

DATE 09-20-99

WITNESS

DATE

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BOOK 2449

TUES., 09-21-99

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0655 Seth Pokopko (SP), TENUS, arrives at field trailer. Loads equipment/supplies for sampling activities. Assists Keita Simpson (KS), TENUS, → load poly-tank onto pick-up truck bed for land farm well dev. activities

Weather: cool and clear, temp. in mid 40s (°F). Forecast high for low 60s (°F)

0720 Scott Neil (SN), TENUS, and SP proceed to SWL.

0730 SP sets up to purge/sample SWL-WES-14-6

0742 Begin purging SWL-WES-14-6. Refer to Ground water Sample Log Form SN46933A99 and attached Low Flow Purge Data Form(s) for details.

0900 End purge at SWL-WES-14-6. Begin collecting samples.

0930 Sample collection complete. SP completes demob activities, secures wellhead and returns

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

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SIGNATURE Seth Pokopko

DATE 09-21-99

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TIT NSWC CRANE

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TUES, 09-21-99

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to field trailer.

0955 SP at field trailer. Refrigerates samples and loads supplies for this afternoon's purging/sampling activities.

1015 SP breaks for lunch.

1105 SP arrives at SWL-MW6A. Sets up to conduct purging/sampling activities.

1121 SP begins purging SWL-MW6A. Refer to Groundwater Sample Log Form SGA3099 and attached Low Flow Purge Data Form(s) for details.

1525 End purge at SWL-MW6A. Begin collecting samples. (note: MS/MSD and Field Duplicate Samples will be collected at this location.).

1805 Scott Neil (SN), HNUS, stops at SWL-MW6A. Discusses progress with SP and returns to field trailer.

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

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SIGNATURE Scott Yelpaster

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PROJECT NO. 110

BOOK 149

TUES, 09-21-99

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1830 Complete sample collection at SWL-MW6A. SP decomms., secures well head, and returns to the field trailer.

1855 SP back at trailer. Off-loads equipment/samples. Refrigerates samples and files paperwork.

1915 SP locks trailer, leaves site for the day.

09-21-99

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

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SIGNATURE Scott Yelpaster

DATE 09-21-99

WITNESS

DATE

TITLE NSWC CRANE **PROJECT NO.** 7769

BOOK 2449

WED., 09-22-99

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0655 Seth Peleptio (SP), TtNUS, Keith Simpson (KS), TtNUS, and Scott Neil (SN), TtNUS, arrive at field trailer.

Weather: cool and clear, temp. in mid 40s (°F). Forecast high for low 60s (°F)

SP, KS, and SN load supplies for purging/sampling and development activities.

0710 SP and SN proceed to SWL.

0720 SP sets up to purge/sample SWL-MW5B.

0730 Begin purging SWL-MW5B. Refer to Groundwater Sample Log Form S6B3099 and attached Low Flow Purge Data Form(s) for details.

1130 End purge at SWL-MW5B. Begin collecting samples.

1250 Complete sample collection at SWL-MW5B. Remove, secure well head, and break for lunch.

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SIGNATURE Seth Peleptio

WITNESS

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TITLE NSWC CRANE **PROJECT NO.** 7769

BOOK 2449

WED., 09-22-99

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1330 SP returns to field trailer - off-loads and refrigerates samples. Discusses this afternoon's sampling activities with SN; load supplies.

1345 KS returns to field trailer. Begins packaging/paperwork for today's sample shipment.

1355 SP and SN proceed to SWL.

1410 SP sets up to purge/sample SWL-WES-14-1.

1421 Begin purging SWL-WES-14-1. Refer to Groundwater Sample Log Form S141933A99 and attached Low Flow Purge Data Form(s) for details.

1625 End purge at SWL-WES-14-1. Begin collecting samples.

1713 Sample collection complete. SP demobs. and secures well head.
note: plastic bladder pump discharge tube became damaged by weight of overlying lockable protective steel cap.

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

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SIGNATURE Seth Peleptio

WITNESS

DATE 09-22-99

DATE

TIT NSWC CRANE

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BOOK 2449

WED., 09-22-99

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1725 SP returns to field trailer. Off-loads supplies + samples → refrigerator samples. Discusses planned activities for tomorrow with KS. → will sample water supply well at the ABC office in morning.

KS decides that SP will likely not be needed at the conclusion of tomorrow's activities; SP will make travel arrangements tomorrow.

1910 SP leaves site for the day.

09-22-99

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

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SIGNATURE Seth Pelopka

DATE 09-22-99

WITNESS

DATE

TITLE NSWC CRANE

PROJEC 0. 7769

BOOK 2449

THURS., 09-23-99

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1255 Seth Pelopka (SP), TNWD, arrives at SWL-MW2A. Sets up to conduct purging/sampling activities.

Weather: mild and sunny, breezy, temp in upper 60s (°F).

1311 Begin purging SWL-MW2A. Refer to Groundwater Sample Log Form SDA3A99 and attached Low Flow Purge Data Form(s) for details.

1715 End purge at SWL-MW2A. Begin collecting samples.

1735 Sample collection complete. SP decontaminates, secures wellhead, and returns to field trailer.

1800 SP back at field trailer. Off-loads samples and supplies → refrigerator samples.

SP assists KS with poly-tank off-loading activities. Make preparations for tomorrow's sampling event.

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SIGNATURE Seth Pelopka

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TITLE NSWC CRANE

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BOOK 2449

THURS, 09-23-99

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1930 SP, SW, and KS leave site for the day.

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WITNESS

DATE 09-23-99

DATE

TITLE NSWC CRANE

PROJECT NO. 7769

BOOK 2449

FRI., 09-24-99

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0700 Seth Pelepko (SP), JENUS, arrives at field trailer. Load supplies for purging/sampling activities at SWL; discuss activities with Keith Simpson (KS), JENUS.

Weather: cool and partly cloudy, temps in low 50s (°F). Forecast high for mid 70s (°F).

0715 SP proceeds to SWL. Sets up to purge/sample SWL-MW3A.

0742 Begin purging SWL-MW3A. Refer to Groundwater Sample Log Form S3A3099 and attached Low Flow Purge Data Form(s) for details.

1145 End purge at SWL-MW3A. Begin collecting samples.

1250 Sample collection complete. SP demobilizes well head, and breaks for lunch.

1325 SP returns to field trailer off-loads and refrigerates samples.

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FRI, 09-24-99

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SP calls KOP, PA office → reports hours.

SP and KS discuss proposed activities.

1405 SP proceeds to SWL to continue purging/sampling activities. KS remains at field trailer → begins sample packaging/paperwork.

1415 SP sets up to purge/sample SWL-MW3B.

1434 Begin purging SWL-MW3B. Refer to Groundwater Sample Log Form S3B3099 and attached Low Flow Purge Data Form(s) for details.

1611 Stop purging SWL-MW3B. Water level at top of screened interval.

SP monitors recovery rate.

1630 KS arrives at SWL-MW3B. Discuss progress with SP.

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SIGNATURE

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FRI, 09-24-99

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1635 Well recovering at extremely slow rate → ~0.01 FT/10 MIN. Will allow well to recover overnight and sample within 24 hours.

SP and KS decon, secure well head.

1700 SP and KS back at field trailer. Off-load supplies.

1715 SP and KS leave site for the day.

09-24-99

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SIGNATURE

WITNESS

DATE 09-24-99

DATE

TITLE NSWC CRANE

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BOOK 2449

SAT., 09-25-99

Work continued from Page

0700 Seth Pelopka (SP), TENUS, and Keith Simpson (KS), TENUS, arrive at field trailer. Load supplies for purging/sampling activities.

Weather: Cool and clear, temp. in upper 50s (°F). Forecast high for upper 70s (°F).

0730 SP proceeds to SWL

0740 SP stops at SWL-MW203 to measure static water level.

Static W.L. = 9.31 FT (TOC)
T.D. = 9.43 FT (TOC)
L.W.C. = 9.43 FT - 9.31 FT = 0.12 FT

note: monitoring well SWL-MW203 is 'dry' → W.L. below pump intake. Well will not be sampled.

0900 SP arrives at SWL-MW3B. Measures W.L.

0910 W.L. = 9.72 FT (TOC) Well recovered approx. 0.1 FT

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SIGNATURE Seth Pelopka

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BOOK 2449

SAT., 09-25-99

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in 16 hours. Probably not enough water above screened interval to fill sample bottleware.

0915 SP proceeds to SWL-WES-14-7 to discuss options with KS.

SP and KS decide to collect VOCs from interval above screen within SWL-MW3B. Will then begin collecting other parameters, draining W.L. down to pump intake if necessary.

0945 SP returns to SWL-MW3B. Sets up to collect samples. Refer to Groundwater Sample Log Form S3B3A99 and Low Flow Purge Data Form for details. SP 09-25-99

0945 W.L. at or very near pump intake. End sampling after SO_4^{2-}, Cl, TS, TDS, ... bottle. Will allow well to recover before collecting Ammonia sample.

SP conducts demob. activities, secures well head.

1010 SP returns to SWL-WES-14-7. Discusses

SCIENTIFIC BINDERY PRODUCTS CHICAGO 60605

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SIGNATURE Seth Pelopka

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BOOK 2449

SAT., 09-25-99

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Progress with KS

1025 SP proceeds to field trailer to drop off samples, complete paperwork, begin packaging equipment for return shipment.

1230 KS returns to field trailer. Off-loads samples; assists SP with demob. activities. Refer to Logbook No. 2448 for remainder of today's activities.

SP 09-25-99

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

Work continued to Page

SIGNATURE

WITNESS

DATE 09-25-99

DATE

TITLE

PROJECT NO. 7769

BOOK 149

SUN, 09-26-99

Work continued from Page

0700 Seth Pelepko (SP), TENUS, arrives at field trailer (checks supplies for sampling at SWL-MW3B) and proceeds to SWL.

Weather: mild and clear, temp in upper 50s (°F). Forecast highs for mid 80s (°F).

0715 SP arrives at SWL-MW3B. Sets up to collect Ammonia sample.

0725 SP begins collecting Ammonia sample. Refer to Groundwater Sample Log Form S3B3A99 and attached Low Flow Purge Data Form for details.

0750 End sampling at SWL-MW3B → monitoring well goes 'dry' → w/l below pump intake. SP decands and secures well head.

0815 SP returns to field trailer. Refrigerates sample. Refer to Logbook No. 2448 for remainder of today's activities.

SP 09-26-99

SCIENTIFIC BINDERY PRODUCTIONS CHICAGO 60605

Work continued to Page

SIGNATURE

WITNESS

DATE 09-26-99

DATE

FIELD REPORT
APPENDIX 4

EQUIPMENT CALIBRATION LOGS

DETECTION MONITORING EVENT NO. 2
SEPTEMBER 20 - 27, 1999
SANITARY WASTE LANDFILL

NSWC Crane
Field Form
Revison: 0
January 1999

EQUIPMENT CALIBRATION LOG

INSTRUMENT NAME/MODEL : PE Photovac 2020 PID

PROJECT NAME : NSWC Crane

SERIAL NUMBER: NU10903

PROJECT NUMBER : 7769

MANUFACTURER : PE Photovac

CALIBRATION DATE	INITIAL SETTINGS	STANDARDS USED	PROCEDURE	ADJUSTMENTS MADE	FINAL SETTINGS	SIGNATURE	COMMENTS
09-20-99	0.0 ppm	100 ppm isobutylene	zero and span to 100 ppm	- n.a. -	0.0 ppm	SP	
09-21-99	"	"	"	"	"	SP	
09-22-99	"	"	"	"	"	SP	
09-23-99	"	"	"	"	"	SP	
09-24-99	"	"	"	"	"	SP	
09-25-99	"	"	"	"	"	SP	

Instrument Rented From: Pittsburgh Warehouse (Tom Patton)

NSWC Crane
Field Form
Revison: 0
January 1999

EQUIPMENT CALIBRATION LOG

INSTRUMENT NAME/MODEL : YSI 610-D Meter and Sonde PROJECT NAME : NSWC Crane

SERIAL NUMBER: 21771 4R / 98K1154 PROJECT NUMBER : 7769

MANUFACTURER : YSI

CALIBRATION DATE	INITIAL SETTINGS	STANDARDS USED *	PROCEDURE	ADJUSTMENTS MADE	FINAL SETTINGS	SIGNATURE	COMMENTS
09-20-99	Calibrate	according to	manufacturer's	procedures		SP	Field Parameters
09-21-99	"	"	"	"	"	SP	2-Point pH (standards):
09-22-99	"	"	"	"	"	SP	* pH 4.0 Buffer (QED)
09-23-99	"	"	"	"	"	SP	- Exp. Date: 12-02-2000
09-24-99	"	"	"	"	"	SP	- Lot No: 91202
09-25-99	"	"	"	"	"	SP	* pH 7.0 Buffer (QED)
							- Exp. Date: 11-13-2000
							- Lot No: 91113
							2-Point Turbidity (NTU):
							* AMCO AEPA-10.0 NTU
							TURB. STD.
							- Lot. No: 106 PW
							* YSI 100 NTU 603 TURB. STD.
							- Exp. Date: 09-15-2000
							- Lot No: 98T39101K
							- opened: 09-14-99
							* 73.9 µS Cond. Std. (QED)
							- Lot No: 90407
							- Exp. Date: 10-07-99
							* YSI 3682 Feb 11 Sol. (ORP)
							231 mV
							- Lot No: 990 05 71
							- Exp. Date: 04-2001
							* Standard D.O. sol. (mg/L)

Instrument Rented From: QED

NSWC Crane
Field Form
Revison: 0
January 1999

EQUIPMENT CALIBRATION LOG

INSTRUMENT NAME/MODEL : YSI 610-D Meter and Sonde PROJECT NAME : NSWC Crane

SERIAL NUMBER: 21771 IR / 98J1342 PROJECT NUMBER : 7769

MANUFACTURER : YSI

CALIBRATION DATE	INITIAL SETTINGS	STANDARDS USED *	PROCEDURE	ADJUSTMENTS MADE	FINAL SETTINGS	SIGNATURE	COMMENTS
09-20-99	Calibrate	according to	manufacturer's	procedures		SP	Field Parameters
09-21-99	"	"	"	"	"	SP	2-Point pH (standard):
09-22-99	"	"	"	"	"	SP	* pH 4.0 Buffer (QED)
09-23-99	"	"	"	"	"	SP	-Exp. Date: 12-02-2000
09-24-99	"	"	"	"	"	SP	-Lot No: 81202
09-25-99	"	"	"	"	"	SP	* pH 7.0 Buffer (QED)
							-Exp. Date: 11-13-2000
							-Lot No: 81113
							2-Point Turbidity (NTU):
							* AMCO AEPA-1 0.0 NTU
							TURB. STD.
							-Lot. No: 106 PW
							* YSI 100 NTU 6073 TURB STD:
							-Exp. Date: 09-15-2000
							-Lot No: 98J39101K
							-opened: 09-14-99
							* 73.9 µS Cond. Std. (QED)
							-Lot No: 90~~225~~407 SP
							-Exp. Date: 10-07-99
							* YSI 3682 Zobell Std. (ORP)
							231 mV
							-Lot. No: 99D0571
							-Exp. Date: 04/2001
							* Standard D.O. cal. (mg/L)

Instrument Rented From: QED

FIELD REPORT
APPENDIX 5

CHAIN OF CUSTODY FORMS

DETECTION MONITORING EVENT NO. 2
SEPTEMBER 20 - 27, 1999
SANITARY WASTE LANDFILL

CHAIN OF CUSTODY RECORD

00316

PROJECT NO.: 7769 CTO 4-8

SITE NAME: NSWC CRANE, IN

SAMPLERS (SIGNATURE): [signature] FOR SCOTT NEIL SETH PEVEPKO

STATION NO.	DATE 1999	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOC	AMMONIA	DISSOLVED METALS	ALK, BICARB, CARB, CHLORIDE, SULFATE	TDS, TSS		REMARKS
TB	9/20	1200		✓	TB 092099 01	2	2						TRIP BLANK
SWL	↓	1530		✓	S 7A 3A 99	6	3	1	1	1			
↓	↓	1655		✓	S 1B 3B 99	6	3	1	1	1			
	9/21	0900		✓	S 146933A 99	6	3	1	1	1			
	↓	1015		✓	S 142933A99	6	3	1	1	1			
		1525		✓	S 6A 3A 99	18	9	3	3	3			RUN ALSO MS/MSD
		1650		✓	S 5A 3A 99	6	3	1	1	1			
	↓	0000		✓	FD 092199 01	6	3	1	1	1			DUP = S6A3A99
	9/22	1130		✓	S 6B 3A 99	6	3	1	1	1			
↓	↓	1130		✓	S 5B 3A 99	6	3	1	1	1			

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
[signature]	9.22.99 1630	FEDEX			
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: FEDEX AB# 811736935337 TEMP. BLANK AT SHIPMENT = 4°C	

Order No. 70440 (0693)

00318

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7769 CTO 48

SITE NAME: NSWC CRANE IN

SAMPLERS (SIGNATURE): [illegible]

STATION NO.	DATE 1999	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOC	AMMONIA	DISSOLVED METALS	ALK, SIO2, CARB, CHLORIDE, SULFATE	TDS, TSS		REMARKS
TB	9/23	0730		✓	TB09239901	2	2						TRIP BLANK
SWL	9/22	1625		✓	S141933A99	6	3	1	1	1			
	↓	1733		✓	S144933A99	6	3	1	1	1			
	9/23	1053		✓	S145933A99	6	3	1	1	1			
		1715		✓	S2A3A99	6	3	1	1	1			
		1755		✓	S4B3A99	6	3	1	1	1			
	9/24	1105		✓	S4A3A99	6	3	1	1	1			
↓	↓	1145		✓	S3A3A99	6	3	1	1	1			

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
[illegible]	9 24 99 1630	FEDEX			
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: FEDEX AB # 9117 3693 5359 TEMP. BLANK AT SHIPMENT = 4°C	

Order No. 70440 (0693)

00317

CHAIN OF CUSTODY RECORD

PROJECT NO.:	SITE NAME:
7769 CTO 48	NSWC CRANE, IN

SAMPLERS (SIGNATURE): [signature] [signature]

STATION NO.	DATE 1999	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOC	AMMONIA	DISSOLVED METALS	ALK, BICARB, CNDS, CHLORIDE, SULFATE	TDS, TSS			REMARKS
TB	9/25	0710		✓	TB 09259901	2	2							TRIP BLANK
SWL	9/25	0906		✓	S3B3A99	5	3		1	1				S3B3A99 SAMPLED BOTH 9.25 & 9.26.99
↓	9/26	0726		✓	S3B3A99	1		1						
	9/25	1045		✓	S147933A99	6	3	1	1	1				
↓	9/25	0000		✓	FD09259901	6	3	1	1	1				DUP OF S147933A99

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
[signature]	9.27.99 1000	FED EX			
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: FED EX AB# 9117 3683 5462 TEMP. BLANK AT SHIPMENT = 4°C	

Order No. 70440 (0693)

FIELD REPORT
APPENDIX 6

WATER LEVEL MEASUREMENT FORMS

DETECTION MONITORING EVENT NO. 2
SEPTEMBER 20 - 27, 1999
SANITARY WASTE LANDFILL

WATER LEVEL MEASUREMENT FORM

Project Name: NSWC Crane
Location: Crane, IN
Weather Conditions: OVERCAST 73°F
DRY OVER THE LAST MONTH

Project No.: CTO 48
Personnel: K. SIMPSON, S. PEIEPKO
Measuring Device: HERON (NUS 0001)
Remarks:

Well ID	Date	Time	Water Level *	Thickness of Free Product *	PID Reading ppm RP	PID Reading ppm BZ	Comments
MW201	9.20.99	0843	8.59	NA	0	0	
MW1A		0830	20.93		0	0	DRY ≈ 0.3' WATER
MW1B		0833	28.27		0	0	
MW203		1015	9.14		0	0	ANTS FILLED RISER WITH DIRT COVER WELL CAP. CLEANED
MW2A		1005	26.08		0	0	
MW3A		1007	36.91		0	0	
MW4A		1020	19.89		0	0	
MW5A		1027	20.29		0	0	
MW6A		1032	8.61		0	0	
MW7A		1049	30.28		0	0	
MW3B		1009	7.79		0	0	
MW4B		1022	24.00		0	0	

* All measurements to the nearest 0.01 foot

Signature(s): K. S. Simpson

WATER LEVEL MEASUREMENT FORM

Project Name: NSWC Crane
Location: Crane, IN
Weather Conditions: OVERCAST 73°F

Project No.: CTO 48
Personnel: KEITH SIMPSON, SETH PELEDRO
Measuring Device: HERON
Remarks:

Well ID	Date	Time	Water Level *	Thickness of Free Product *	PID Reading ppm RP	PID Reading ppm BZ	Comments
MW5B	9.20.99	1029	7.72	NA	0	0	
MW 6B		1034	8.17 ~~7.87~~ KS		0	0	8.17' WL
WES 14.1.93		1044	27.31		0	0	
WES 14.2.93		0948	52.92		0	0	
WES 14.3.93		0952	43.94		0	0	DRY = 0.3' WATER
WES 14.4.93		1038	20.04		0	0	
WES 14.5.93		1002	27.96		0	0	
WES 14.6.93		0957	35.78		0	0	
WES 14.7.93		1051	28.66		0	0	

* All measurements to the nearest 0.01 foot

Signature(s): Keith E. Simpson

ATTACHMENT

2

ATTACHMENT 2
SAMPLING AND ANALYSIS REPORT

DETECTION MONITORING EVENT NO. 2
SEPTEMBER 20 - 27, 1999
SANITARY WASTE LANDFILL

NSWC CRANE
CRANE, INDIANA
SANITARY WASTE LANDFILL SAMPLING AND ANALYSIS REPORT
DETECTION MONITORING EVENT NO. 2, SEPTEMBER 1999

Section 5.2 of the Field Sampling Plan (FSP) for Ground Water Monitoring at the Sanitary Waste Landfill describes information which is to be included in the Sampling and Analysis Report in accordance with 329 IAC 10-21-1(t). Following is the required information:

1. All static water elevations measured to the nearest 0.01 foot.

   Static water levels were measured to the nearest 0.01 foot. These water levels are presented as part of the Field Report (specifically, Appendix 6 of the Field Report includes the Water Level Measurement Forms). The Field Report is included as Attachment 1.

   Low water levels prevented sampling of wells MW1A, MW201, MW203, and WES14 3 93. This is the fourth consecutive event for which sampling was not performed at well MW1A due to low water levels. Section 4.2.5 of the FSP requires notification of IDEM regarding improperly functioning wells. MW1A meets the definition of improperly functioning wells because it has not been possible to sample the well for four rounds due to low water levels.

   Upon request by the Navy, TtNUS conducted an evaluation of the need for well MW1A. It was determined that MW1A, which was labeled as an upgradient well, does not correspond to any downgradient wells screened in the same formation and that two wells previously designated as downgradient are in fact upgradient. A report, dated January 21, 2000, was submitted to the Navy, recommending that MW1A be abandoned and not replaced. The report recommended that well 14-1-93 be designated as the upgradient well for the Lower Sandstone Aquifer in place of MW1A. Monitoring wells MW-1B and 14-4-93 were recommended as upgradient wells for the Lower Mudstone Aquifer. Monitoring well MW201 was recommended as the upgradient well for the overburden.

2. Ground water potentiometric-surface maps, or flow maps, as specified in subsection 329 IAC 10-21-1(p).

   Figures 1 and 2 of the Sampling and Analysis Report show the potentiometric maps for the Lower Mudstone Aquifer and the Lower Sandstone Aquifer, respectively, of the Mansfield Formation. A potentiometric map is not provided for the overburden because an insufficient number of wells is screened in overburden to generate a potentiometric map.

3. Two unbound laboratory certified reports, including one original copy, that include the following information:

- The detection limit for each chemical constituent
- The date samples were collected
- The date samples were received by the laboratory
- The date samples were analyzed by the laboratory
- The date the laboratory report was prepared
- The method of analysis used for each constituent
- The sample identification number for each sample
- The results of all sample analyses
- The results of all laboratory quality control sample analyses, including
  blanks
  spikes
  duplicates
  standards

The required information from the laboratory data packages is included as Appendix 1 of the Sampling and Analysis Report. Two additional, unbound copies of Appendix 1 are included with this report for submission to IDEM by NSWC Crane.

4. Field report sheets for each ground water monitoring well sampled as specified in FSP Section 5.1 and the field chain of custody form for each sample as described in FSP Section 4.2.11.

The Field Report in Attachment 1 contains all field forms including Ground Water Sampling Logs and Low Flow Purge Sheets (Appendix 1 of the Field Report), Monitoring Well Inspection Forms (Appendix 2 of the Field Report), field log book pages (Appendix 3 of the Field Report), Equipment Calibration Logs (Appendix 4 of the Field Report), Chain-of-Custody Forms (Appendix 5 of the Field Report) and Water Level Measurement Forms (Appendix 6 of the Field Report).

5. A report correlating sample identification numbers with the corresponding well identification number and blank identification numbers.

Table 1 of the Field Report contains a correlation between the sample identification and the wells monitored.

6. An explanation of how the well sampling sequence, as described in 329 IAC 10-21-2(a)(6), was established for the sampling event.

Dedicated sampling pumps were installed at all monitoring wells at the SWL. As a result, no cross-contamination from the use of shared sampling equipment is possible, making the sequence in which the wells are sampled irrelevant. The date and time that each well was sampled have been included in Table 1 of the Field Report.

7. The statistical evaluation report.

This report will be completed following the collection of four quarters of sampling data, and after IDEM approves the statistical evaluation procedure. The statistical evaluation report will be provided under separate cover.

8. When requested by IDEM, one copy of the results of the laboratory analyses on computer diskette or by other electronic means will be submitted to IDEM. The electronic format of the submission will be established by IDEM.

Two diskettes containing the laboratory results of the analyses are included in Appendix 2 of one of the copies of the Sampling and Analysis Report provided to NSWC Crane. One diskette contains the Electronic Data Deliverable (EDD) as received from the laboratory. The second diskette contains the analytical data as contained in the TtNUS database after data validation was completed. The diskettes are being provided so that they are available to NSWC Crane should IDEM request them. The diskettes are not included in the remaining copies of the Sampling and Analysis Report.

9. When requested by IDEM, the following information will be submitted:

- Raw data
- Laboratory bench sheets
- Laboratory work sheets
- Chromatograms
- Instrument printouts
- Instrument calibration records

The data package as received from Laucks Testing Laboratories, Inc., including all raw data, laboratory bench sheets, laboratory work sheets, chromatograms, instrument printouts, and

calibration records, will be stored at the TtNUS warehouse in Pittsburgh, PA. This data is available upon request.

Results of the laboratory analysis of the ground water samples are included in this report. Table 1 of the Sampling and Analysis Report presents a list of those parameters detected at least once in any of the ground water samples. A complete listing of all laboratory results is included as Appendix 3 of the Sampling and Analysis Report.

No organic compounds were detected in any of the wells. Several metals and miscellaneous parameters were detected in one or more of the ground water samples.

TABLE 1

SUMMARY OF PARAMETERS DETECTED AT LEAST ONCE
DETECTION MONITORING EVENT NO. 2
SANITARY WASTE LANDFILL
NSWC CRANE, INDIANA
PAGE 1 OF 2

nsample	S141933A99	S142933A99	S143933A99	S144933A99	S145933A99	S146933A99	S147933A99	S147933A99-D	S1A3B99	S1B3B99	S2013B99	S2033A99	S2A3A99
sample	S141933A99	S142933A99	S143933A99	S144933A99	S145933A99	S146933A99	S147933A99	FD09259901	S1A3B99	S1B3B99	S2013B99	S2033A99	S2A3A99
sacode	NORMAL	NORMAL	DRY	NORMAL	NORMAL	NORMAL	DUP	DUP	DRY	NORMAL	DRY	DRY	NORMAL
lab_id	9909619-02	9909597-05		9909619-03	9909619-04	9909597-04	9909639-03	9909639-04		9909597-03			9909619-05
qc_type	NM	NM		NM	NM	NM	NM	NM		NM			NM
samp_date	09/22/99	09/21/99		09/22/99	09/23/99	09/21/99	09/25/99	09/25/99		09/20/99			09/23/99
Dissolved Metals (ug/L)													
CALCIUM	148000	458000		139000	20700	77500	95100	92700		234000			57100
IRON	210	111 U		111 U	13000	270	111 U	111 U		111 U			111 U
LITHIUM	40.8	161		43.7	109	54.6	23.3	23.4		53.1			110
MAGNESIUM	74900	292000		97800	16200	47500	51200	50800		111000			32500
MANGANESE	16.7 U	3690		52.6	3720	811	16.7 U	16.7 U		16.7 U			2420
POTASSIUM	3810	5170		2480	4380	2250	1110 U	1110 U		2960			2690
SODIUM	57600	71900		165000	22400	35500	30200	30400		101000			49500
ZINC	22.2 U	30.1		22.2 U	434	62.1	22.2 U	22.2 U		22.2 U			318
Miscellaneous Parameters (mg/L)													
ALKALINITY	440	690		270	2 U	56	370	370		390			36
AMMONIA	0.01 UJ	0.08 J		0.01 UJ	0.17 J	0.01 UJ	0.01 U	0.01 U		0.01 UJ			0.01 UJ
BICARBONATE ALKALINITY	440	690		270	2 U	56	370	370		390			36
CHLORIDE	140 J	43 J		85 J	22 J	36 J	37 J	37 J		160 J			35 J
DISSOLVED OXYGEN-METER-FIELD	5.78	5.08		7.21	6.41	2.28	4.96			5.03			3.8
OXIDATION REDUCTION POTENTIAL-FIELD MV	134.4	145		151	254	165	135.6			144.5			241.8
PH-FIELD	6.76	6.41		6.4	4.47	5.67	5.79			6.8			5.47
SPECIFIC CONDUCTIVITY-FIELD MS/CM	1.410	2.028		1.111	0.439	0.842	0.872			1.902			0.742
SULFATE	150 J	1700 J		710 J	190 J	350 J	79 J	70 J		560 J			300 J
TEMPERATURE-FIELD C	18.88	14.5		21.0	19.3	14.89	15.6			18.09			14.65
TOTAL DISSOLVED SOLIDS	880	3100 J		1300	380	640 J	570 J	540 J		1400 J			570
TOTAL SOLIDS	930	3400 J		1500	370	690 J	540 J	400 J		1500 J			620
TURBIDITY-FIELD NTU	1.2	2		6	4	0.3	1.5			0			0.3

BOLD INDICATES RESULT IS A POSITIVE DETECTION.

020013/p

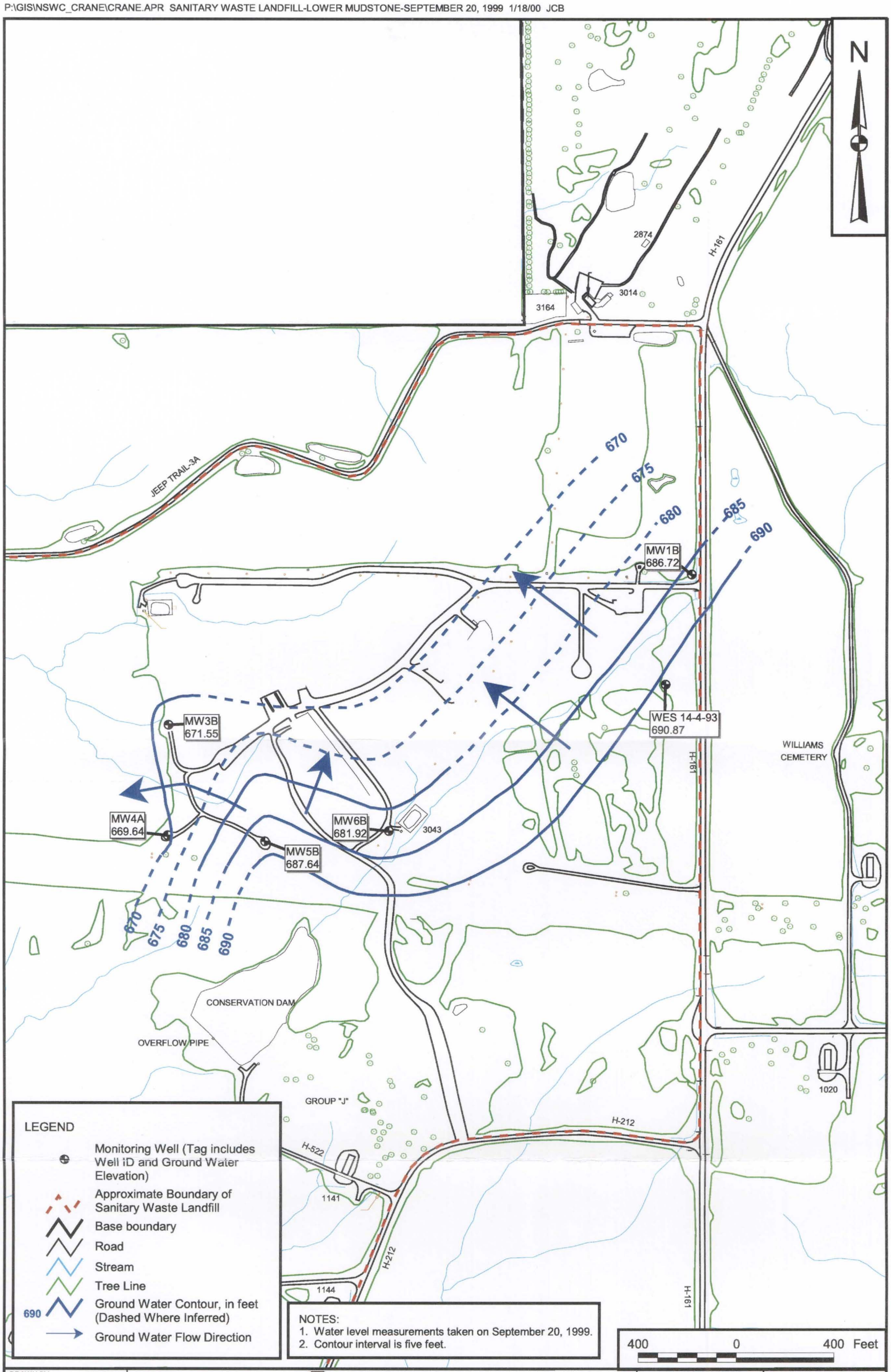
TABLE 1

SUMMARY OF PARAMETERS DETECTED AT LEAST ONCE
DETECTION MONITORING EVENT NO. 2
SANITARY WASTE LANDFILL
NSWC CRANE, INDIANA

nsample	S3A3A99	S3B3A99	S4A3A99	S4B3A99	S5A3A99	S5B3A99	S6A3A99	S6A3A99-D	S6B3A99	S7A3A99	TB09209901	TB09239901	TB09259901
sample	S3A3A99	S3B3A99	S4A3A99	S4B3A99	S5A3A99	S5B3A99	S6A3A99	FD09219901	S6B3A99	S7A3A99	TB09209901	TB09239901	TB09259901
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
lab_id	9909619-08	9909639-02	9909619-07	9909619-06	9909597-07	9909597-10	9909597-06	9909597-08	9909597-09	9909597-02	9909597-01	9909619-01	9909639-01
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	TB	TB	TB
samp_date	09/24/99	09/25/99	09/24/99	09/23/99	09/21/99	09/22/99	09/21/99	09/21/99	09/22/99	09/20/99	09/20/99	09/23/99	09/25/99
Dissolved Metals (ug/L)													
CALCIUM	66100	120000	10000	125000	74200	56500	12100	12400	59900	51400			
IRON	9370	111 U	111 U	111 U	7110	5730	111 U	111 U	9500	111 U			
LITHIUM	115	87.1	11.1 U	52.7	303	48.6	11.1 U	11.1 U	11.1 U	23.1			
MAGNESIUM	34400	56500	5010	71500	25800	12700	4750	4800	21600	22800			
MANGANESE	1450	16.7 U	16.7 U	16.7 U	2920	479	182	184	1700	16.7 U			
POTASSIUM	2360	1130	1110 U	3240	2060	1110 U	1110 U	1110 U	1340	1110 U			
SODIUM	63300	67700	9230	34000	40800	44800	15300	15000	18100	20000			
ZINC	43.3	22.2 U	22.2 U	22.2 U	28.3	22.2 U	27.1	27.4	23.2	22.2 U			
Miscellaneous Parameters (mg/L)													
ALKALINITY	83	320	37	240	200	180	25	24	210	200			
AMMONIA	0.08	0.01 U	0.04	0.01 UJ	0.25 J	0.64 J	0.01 UJ	0.01 UJ	0.15 J	0.01 UJ			
BICARBONATE ALKALINITY	83	320	37	240	200	180	25	24	210	200			
CHLORIDE	31 J	20 J	1 U	17 J	22 J	8 J	41 J	43 J	26 J	29 J			
DISSOLVED OXYGEN-METER-FIELD	6.81	10.28	5.08	5.17	5.28	2.19	3.36		2.24	8.18			
OXIDATION REDUCTION POTENTIAL-FIELD MV	79.6	207.3	106.0	108	-46	56	244.1		-2.3	127			
PH-FIELD	6.00	6.84	5.88	6.64	6.11	6.08	5.34		6.42	6.49			
SPECIFIC CONDUCTIVITY-FIELD MS/CM	0.851	1.126	0.137	1.121	0.448	0.340	0.190		0.531	0.307			
SULFATE	330 J	280 J	34 J	410 J	180 J	110 J	1 J	2 J	42 J	20 J			
TEMPERATURE-FIELD C	20.95	21.42	16.7	19.0	16.1	19.2	17.23		19.54	17.0			
TOTAL DISSOLVED SOLIDS	630	760 J	110	870	500 J	410 J	170 J	170 J	320 J	310 J			
TOTAL SOLIDS	690	780 J	120	880	500 J	420 J	160 J	170 J	370 J	330 J			
TURBIDITY-FIELD NTU	4.3	1.2	6.7	3	6	2	1.0		3.6	7			

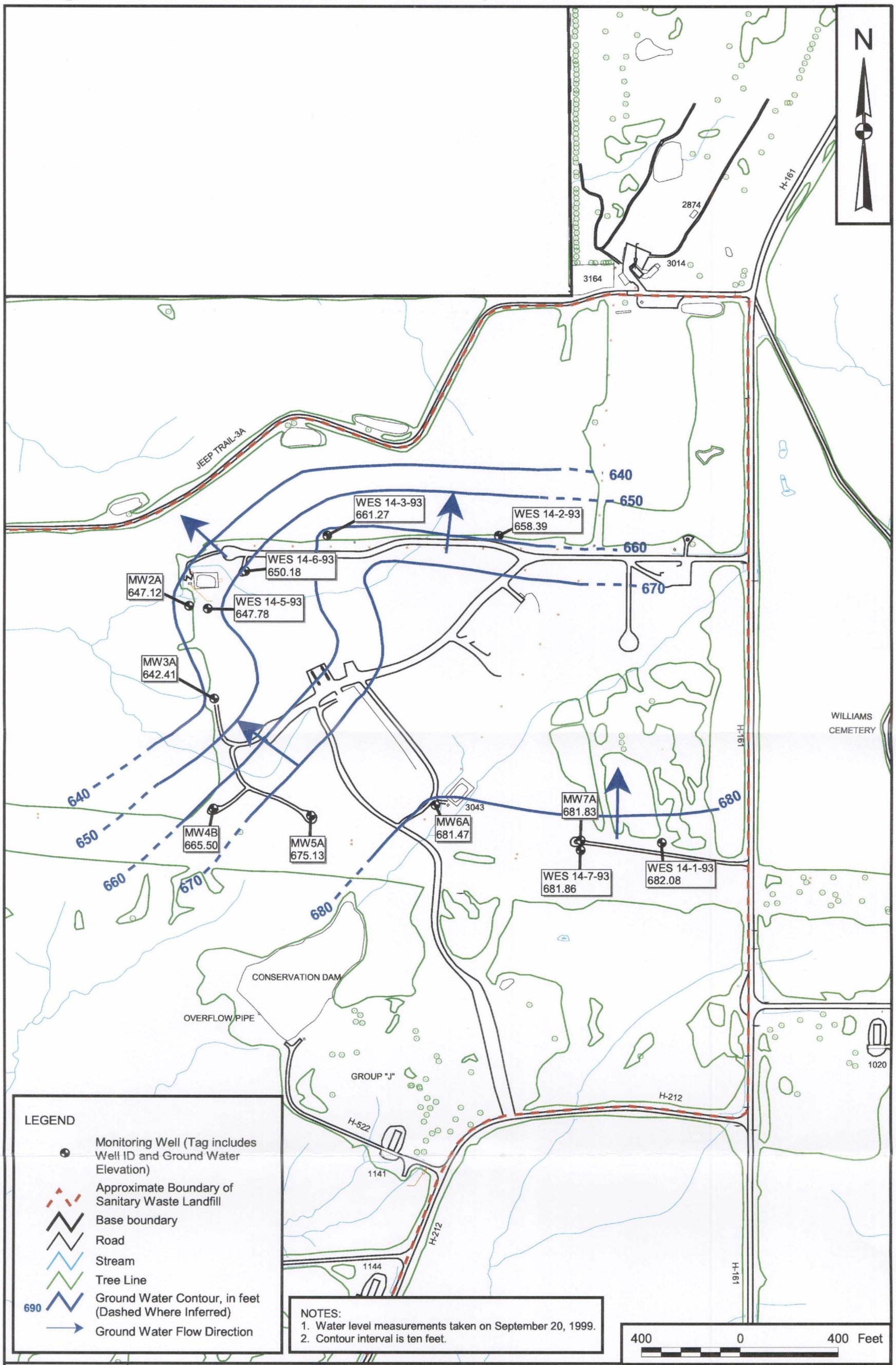
BOLD INDICATES RESULT IS A POSITIVE DETECTION.

P:\GIS\NSWC_CRANE\CRANE.APR SANITARY WASTE LANDFILL-LOWER MUDSTONE-SEPTEMBER 20, 1999 1/18/00 JCB



DRAWN BY J. LAMEY	DATE 10/18/99	Tetra Tech NUS, Inc.	CONTRACT NUMBER N7769 / OWNER NUMBER 0048
CHECKED BY S. NEIL	DATE 1/7/00	GROUND WATER CONTOUR MAP LOWER MUDSTONE AQUIFER OF THE MANSFIELD FORMATION SANITARY WASTE LANDFILL NAVAL SURFACE WARFARE CENTER CRANE, INDIANA	APPROVED BY S. CONTI / DATE 1/18/00
COST/SCHEDULE-AREA			APPROVED BY — / DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 1 / REV 0

P:\GIS\NSWC_CRANE\CRANE.APR SANITARY WASTE LANDFILL-LOWER SANDSTONE-SEPTEMBER 20, 1999 1/17/00 JCB



DRAWN BY J. LAMEY — DATE 10/18/99	Tetra Tech NUS, Inc.	CONTRACT NUMBER N7769	OWNER NUMBER 0048
CHECKED BY S. NEIL — DATE 1/7/00	GROUND WATER CONTOUR MAP LOWER SANDSTONE AQUIFER OF THE MANSFIELD FORMATION SANITARY WASTE LANDFILL NAVAL SURFACE WARFARE CENTER CRANE, INDIANA	APPROVED BY S. CONTI	DATE 1/18/00
COST/SCHEDULE-AREA		APPROVED BY —	DATE —
SCALE AS NOTED		DRAWING NO. FIGURE 2	REV 0

SAMPLING AND ANALYSIS REPORT
APPENDIX 1

REQUIRED LABORATORY INFORMATION

DETECTION MONITORING EVENT NO. 2
SEPTEMBER 20 - 27, 1999
SANITARY WASTE LANDFILL

FORMS SUMMARY PACKAGE

SDG C4801

LABORATORY NUMBERS 9909597, 9909619 & 9909639

VOLATILES ANALYSES

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: C4801

	SAMPLE NO.	SMC1 #	SMC2 #	SMC3 DFM #	SMC4 #	TOT OUT
01	VBLKO1	86	107	87	120	0
02	VBLKSPKO1	81	99	89	108	0
03	TB09209901	88	103	91	106	0
04	S7A3A99	91	100	87	105	0
05	S1B3B99	90	96	90	110	0
06	S146933A99	86	99	90	109	0
07	S142933A99	91	98	91	112	0
08	S6A3A99	90	98	94	108	0
09	S6A3A99MS	96	99	90	103	0
10	S6A3A99MSD	92	93	94	106	0
11	S5A3A99	85	94	91	113	0
12	FD09219901	89	96	91	103	0
13	S6B3A99	84	101	90	107	0
14	TB09239901	89	101	91	107	0
15	S141933A99	87	95	92	115	0
16	S5B3A99	86	100	89	105	0
17	VBLKO2	87	99	91	108	0
18	VBLKSPKO2	88	101	92	101	0
19	TB09259901	84	98	92	110	0
20	S144933A99	90	101	91	111	0
21	S145933A99	89	98	93	108	0
22	S2A3A99	87	101	93	105	0
23	S4B3A99	85	101	89	109	0
24	S4A3A99	83	100	89	113	0
25	S3A3A99	83	96	89	105	0
26	S3B3A99	85	95	90	113	0
27	S147933A99	83	97	90	105	0
28	FD09259901	81	101	89	106	0

			QC LIMITS
SMC1		= 1,2-Dichloroethane-d4	(62-139)
SMC2		= Toluene-d8	(75-125)
SMC3	DFM	= Dibromofluoromethane	(60-140)
SMC4		= 4-Bromofluorobenzene	(75-125)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

Blank Spike Report

Lab Name : LAUCKS TESTING LABS

Description : SW 8260
Lab ID : S092899MVOW01
Matrix : W
Units : UG/L

(Database Reference: S092899_MVOW01)

Analyte	Spike Added	Amount Found	% Rec	Recovery Limits	
1,1-Dichloroethene----------	10.00	9.1300	91	60	140
Trichloroethene----------	10.00	8.5800	86	60	140
Benzene----------	10.00	9.4900	95	60	140
Toluene----------	10.00	9.1900	92	60	140
Chlorobenzene----------	10.00	8.4300	84	60	140

* = Recovery exceeded control limit

Form BLKSPK-1

Blank Spike Report

Lab Sample ID: S092899MVOW01
Description : SW 8260
Matrix : W
Units : UG/L

(Database Reference: S092899_MVOW01)

Work Orders Verified

Work Order	Sample Fractions Verified
9909597	1-10
9909619	1-3

Form BLKSPK-2

Blank Spike Report

Lab Name : LAUCKS TESTING LABS

Description : SW 8260
Lab ID : S092999MVOW01
Matrix : W
Units : UG/L

(Database Reference: S092999_MVOW01)

Analyte	Spike Added	Amount Found	% Rec	Recovery Limits	
1,1-Dichloroethene----------	10.00	10.170	102	60	140
Trichloroethene----------	10.00	9.5000	95	60	140
Benzene----------	10.00	10.670	107	60	140
Toluene----------	10.00	10.140	101	60	140
Chlorobenzene----------	10.00	9.0000	90	60	140

* = Recovery exceeded control limit

Form BLKSPK-1

Blank Spike Report

Lab Sample ID: S092999MVOW01
Description : SW 8260
Matrix : W
Units : UG/L

(Database Reference: S092999_MVOW01)

Work Orders Verified

Work Order	Sample Fractions Verified
9909619	3-8
9909639	1-4

Form BLKSPK-2

MS/MSD Report

Lab Name : LAUCKS TESTING LABS

Client ID : S6A3A99

Lab ID : 9909597-06
Matrix : WATER
Units : UG/L

Description : Crane CTO48 VOA 10/92 Cmpds

(Database Reference: K092899_MVOW02)

Matrix Spike Data

Analyte	Spike Added	Sample Found	MS Found	MS Rec		Recovery Limits	
Chloromethane----------	10.000	0	12.240	122		75	125
Vinyl chloride----------	10.000	0	11.470	115		46	134
Bromomethane----------	10.000	0	9.7500	98		72	175
Chloroethane----------	10.000	0	9.8700	99		65	125
1,1-Dichloroethene----------	10.000	0	9.6400	96		59	145
Methylene chloride----------	10.000	0	7.1900	72	*	75	125
trans-1,2-Dichloroethene------	10.000	0	9.0300	90		75	125
1,1-Dichloroethane----------	10.000	0	10.390	104		72	125
cis-1,2-Dichloroethene--------	10.000	0	8.9400	89		75	125
Chloroform----------	10.000	0	8.4900	85		74	125
1,1,1-Trichloroethane---------	10.000	0	7.1200	71	*	75	125
Carbon tetrachloride----------	10.000	0	7.5200	75		62	125
Benzene----------	10.000	0	10.340	103		62	142
1,2-Dichloroethane----------	10.000	0	8.9700	90		68	127
Trichloroethene----------	10.000	0	9.1100	91		54	141
1,2-Dichloropropane----------	10.000	0	10.910	109		70	125
cis-1,3-Dichlropropene--------	10.000	0	8.5800	86		74	125
Toluene----------	10.000	0	10.190	102		59	139
trans-1,3-Dichlropropene------	10.000	0	8.1900	82		66	125
1,1,2-Trichloroethane---------	10.000	0	10.070	101		75	127
Tetrachloroethene----------	10.000	0	8.1900	82		71	125
Chlorobenzene----------	10.000	0	8.8200	88		62	135
Ethylbenzene----------	10.000	0	9.8200	98		75	125
Styrene----------	10.000	0	5.4500	54	*	75	125
1,1,2,2-Tetrachloroethane-----	10.000	0	10.210	102		74	125
1,4-Dichlorobenzene----------	10.000	0	8.5900	86		60	140
1,2-Dichlorobenzene----------	10.000	0	9.2000	92		60	140
Total xylenes----------	30.000	0	26.290	88		75	125

Matrix Spike Duplicate Data

Analyte	Spike Added	MSD Found	MSD Rec		RPD	Control Limits Recov		RPD
Chloromethane----------	10.000	12.400	124		1	75	125	20
Vinyl chloride----------	10.000	11.470	115		0	46	134	20
Bromomethane----------	10.000	9.8000	98		1	72	175	20
Chloroethane----------	10.000	10.050	100		2	65	125	20
1,1-Dichloroethene----------	10.000	9.7600	98		1	59	145	20
Methylene chloride----------	10.000	7.4300	74	*	3	75	125	20
trans-1,2-Dichloroethene------	10.000	9.2300	92		2	75	125	20

1,1-Dichloroethane----------	10.000	10.860	109		4	72	125	20
cis-1,2-Dichloroethene--------	10.000	9.1100	91		2	75	125	20
Chloroform----------	10.000	8.8900	89		5	74	125	
1,1,1-Trichloroethane---------	10.000	7.4000	74	*	4	75	125	20
Carbon tetrachloride----------	10.000	7.8400	78		4	62	125	20
Benzene----------	10.000	10.650	106		3	62	142	20
1,2-Dichloroethane----------	10.000	8.8200	88		2	68	127	20
Trichloroethene----------	10.000	9.2200	92		1	54	141	20
1,2-Dichloropropane----------	10.000	10.860	109		0	70	125	20
cis-1,3-Dichlropropene--------	10.000	8.4400	84		2	74	125	20
Toluene----------	10.000	9.3600	94		8	59	139	20
trans-1,3-Dichlropropene------	10.000	7.9900	80		2	66	125	20
1,1,2-Trichloroethane---------	10.000	9.5300	95		6	75	127	20
Tetrachloroethene----------	10.000	7.9700	80		3	71	125	20
Chlorobenzene----------	10.000	8.9300	89		1	62	135	20
Ethylbenzene----------	10.000	9.5900	96		2	75	125	20
Styrene----------	10.000	5.5800	56	*	2	75	125	20
1,1,2,2-Tetrachloroethane-----	10.000	10.870	109		6	74	125	20
1,4-Dichlorobenzene----------	10.000	8.8200	88		3	60	140	30
1,2-Dichlorobenzene----------	10.000	9.3500	94		2	60	140	30
Total xylenes----------	30.000	26.280	88		0	75	125	20

Comments

Form MS/MSD-1

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* = Recovery or RPD exceeded control limit

Form MS/MSD-1

MS/MSD Report

Client ID : S6A3A99
Spike Sample: 9909597-06
Description : Crane CTO48 VOA 10/92 Cmpds
Matrix : WATER
Units : UG/L

(Database Reference: K092899_MVOW02)

Work Orders Verified

Work Order	Sample Fractions Verified
9909597	1-10
9909619	1-8
9909639	1-4

Form MS/MSD-2

4A

VOLATILE METHOD BLANK SUMMARY

SAMPLE NO.

VBLKO1

Lab Name: Laucks Testing Labs

SDG No.: C4801

Lab File ID: O0928006.D

Lab Sample ID: B092899MVOWO1

Date Analyzed: 09/28/99

Time Analyzed: 11:56

GC Column: DB-624 ID: 0.45 (mm)

Heated Purge: (Y/N) N

Instrument ID: ORCA

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VBLKSPKO1	S092899MVOWO1	O0928007.D	12:43
02	TB09209901	9909597-01	O0928008.D	13:19
03	S7A3A99	9909597-02	O0928010.D	14:31
04	S1B3B99	9909597-03	O0928011.D	15:07
05	S146933A99	9909597-04	O0928012.D	15:43
06	S142933A99	9909597-05	O0928013.D	16:19
07	S6A3A99	9909597-06	O0928014.D	16:55
08	S6A3A99MS	9909597-06MS	O0928015.D	17:31
09	S6A3A99MSD	9909597-06MSD	O0928016.D	18:07
10	S5A3A99	9909597-07	O0928017.D	18:43
11	FD09219901	9909597-08	O0928018.D	19:19
12	S6B3A99	9909597-09	O0928019.D	19:56
13	TB09239901	9909619-01	O0928020.D	20:32
14	S141933A99	9909619-02	O0928021.D	21:09
15	S5B3A99	9909597-10	O0928022.D	21:45

COMMENTS

4A

VOLATILE METHOD BLANK SUMMARY

SAMPLE NO.

VBLKO2

Lab Name: Laucks Testing Labs

SDG No.: C4801

Lab File ID: O0929007.D

Lab Sample ID: B092999MVOWO1

Date Analyzed: 09/29/99

Time Analyzed: 12:36

GC Column: DB-624 ID: 0.45 (mm)

Heated Purge: (Y/N) N

Instrument ID: ORCA

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VBLKSPKO2	S092999MVOWO1	O0929008.D	13:19
02	TB09259901	9909639-01	O0929010.D	14:31
03	S144933A99	9909619-03	O0929012.D	15:44
04	S145933A99	9909619-04	O0929013.D	16:20
05	S2A3A99	9909619-05	O0929014.D	16:56
06	S4B3A99	9909619-06	O0929015.D	17:32
07	S4A3A99	9909619-07	O0929016.D	18:08
08	S3A3A99	9909619-08	O0929017.D	18:44
09	S3B3A99	9909639-02	O0929018.D	19:20
10	S147933A99	9909639-03	O0929019.D	19:56
11	FD09259901	9909639-04	O0929020.D	20:32

COMMENTS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Laucks Testing Labs SAS No.: _____ SDG No.: C4801

Lab File ID: O0622004.D BFB Injection Date: 06/22/99

Instrument ID: ORCA BFB Injection Time: 09:44

GC Column: DB-624 ID: 0.45 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	28.7
75	30.0 - 66.0% of mass 95	59.5
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	86.2
175	4.0 - 9.0% of mass 174	5.9 (6.9)1
176	93.0 - 101.0% of mass 174	84.6 (98.2)1
177	5.0 - 9.0% of mass 176	6.0 (7.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD010	10 UG/L LAB STD	O0622005.D	06/22/99	10:29
02	VSTD005	5 UG/L LAB STD	O0622006.D	06/22/99	11:06
03	VSTD025	25 UG/L LAB STD	O0622008.D	06/22/99	12:20
04	VSTD050	50 UG/L LAB STD	O0622009.D	06/22/99	12:57
05	VSTD100	100 UG/L LAB STD	O0622010.D	06/22/99	13:34
06	VSTD001	1 UG/L LAB STD	O0622012.D	06/22/99	14:56

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Laucks Testing Labs SAS No.: _____ SDG No.: C4801

Lab File ID: O0928003.D BFB Injection Date: 09/28/99

Instrument ID: ORCA BFB Injection Time: 09:59

GC Column: DB-624 ID: 0.45 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	28.7
75	30.0 - 66.0% of mass 95	56.8
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.5 (0.6)1
174	50.0 - 120.0% of mass 95	76.7
175	4.0 - 9.0% of mass 174	6.3 (8.2)1
176	93.0 - 101.0% of mass 174	71.7 (93.5)1
177	5.0 - 9.0% of mass 176	6.4 (8.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD010	10 UG/L LAB STD	O0928004.D	09/28/99	10:32
02	VBLKO1	B092899MVOWO1	O0928006.D	09/28/99	11:56
03	VBLKSPKO1	S092899MVOWO1	O0928007.D	09/28/99	12:43
04	TB09209901	9909597-01	O0928008.D	09/28/99	13:19
05	S7A3A99	9909597-02	O0928010.D	09/28/99	14:31
06	S1B3B99	9909597-03	O0928011.D	09/28/99	15:07
07	S146933A99	9909597-04	O0928012.D	09/28/99	15:43
08	S142933A99	9909597-05	O0928013.D	09/28/99	16:19
09	S6A3A99	9909597-06	O0928014.D	09/28/99	16:55
10	S6A3A99MS	9909597-06MS	O0928015.D	09/28/99	17:31
11	S6A3A99MSD	9909597-06MSD	O0928016.D	09/28/99	18:07
12	S5A3A99	9909597-07	O0928017.D	09/28/99	18:43
13	FD09219901	9909597-08	O0928018.D	09/28/99	19:19
14	S6B3A99	9909597-09	O0928019.D	09/28/99	19:56
15	TB09239901	9909619-01	O0928020.D	09/28/99	20:32
16	S141933A99	9909619-02	O0928021.D	09/28/99	21:09
17	S5B3A99	9909597-10	O0928022.D	09/28/99	21:45

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Laucks Testing Labs SAS No.: _____ SDG No.: C4801

Lab File ID: O0929004.D BFB Injection Date: 09/29/99

Instrument ID: ORCA BFB Injection Time: 10:39

GC Column: DB-624 ID: 0.45 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	24.9
75	30.0 - 66.0% of mass 95	54.9
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	74.7
175	4.0 - 9.0% of mass 174	5.6 (7.5)1
176	93.0 - 101.0% of mass 174	72.3 (96.8)1
177	5.0 - 9.0% of mass 176	6.3 (8.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD010	10 UG/L LAB STD	O0929005.D	09/29/99	11:12
02	VBLKO2	B092999MVOWO1	O0929007.D	09/29/99	12:36
03	VBLKSPKO2	S092999MVOWO1	O0929008.D	09/29/99	13:19
04	TB09259901	9909639-01	O0929010.D	09/29/99	14:31
05	S144933A99	9909619-03	O0929012.D	09/29/99	15:44
06	S145933A99	9909619-04	O0929013.D	09/29/99	16:20
07	S2A3A99	9909619-05	O0929014.D	09/29/99	16:56
08	S4B3A99	9909619-06	O0929015.D	09/29/99	17:32
09	S4A3A99	9909619-07	O0929016.D	09/29/99	18:08
10	S3A3A99	9909619-08	O0929017.D	09/29/99	18:44
11	S3B3A99	9909639-02	O0929018.D	09/29/99	19:20
12	S147933A99	9909639-03	O0929019.D	09/29/99	19:56
13	FD09259901	9909639-04	O0929020.D	09/29/99	20:32

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: C4801

Lab File ID (Standard): O0928004.D Date Analyzed: 09/28/99

Instrument ID: ORCA Time Analyzed: 10:32

GC Column: DB-624 ID: 0.45 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR ST	151635	10.61	96046	16.89	49969	22.24
	UPPER LIMIT	303270	11.11	192092	17.39	99938	22.74
	LOWER LIMI	75818	10.11	48023	16.39	24985	21.74
	SAMPLE NO.						
01	VBLKO1	150184	10.60	85093	16.89	38039	22.23
02	VBLKSPKO1	150021	10.60	94319	16.88	47135	22.23
03	TB09209901	143853	10.61	89657	16.89	42137	22.22
04	S7A3A99	148654	10.59	90812	16.88	45661	22.22
05	S1B3B99	146409	10.60	93560	16.88	43598	22.23
06	S146933A99	151964	10.60	92873	16.88	44936	22.22
07	S142933A99	147034	10.61	94794	16.87	43969	22.22
08	S6A3A99	148189	10.60	94002	16.88	44232	22.23
09	S6A3A99MS	155541	10.59	101925	16.87	52946	22.23
10	S6A3A99MSD	154140	10.60	103606	16.88	51699	22.23
11	S5A3A99	156926	10.60	100395	16.89	45267	22.23
12	FD09219901	155893	10.60	99982	16.89	46177	22.23
13	S6B3A99	154942	10.60	96400	16.88	46685	22.24
14	TB09239901	155242	10.60	94802	16.89	46119	22.23
15	S141933A99	154943	10.60	99755	16.88	44945	22.24
16	S5B3A99	156447	10.60	93589	16.89	46789	22.25

IS1 = Fluorobenzene
IS2 = Chlorobenzene-d5
IS3 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: C4801

Lab File ID (Standard): O0929005.D Date Analyzed: 09/29/99

Instrument ID: ORCA Time Analyzed: 11:12

GC Column: DB-624 ID: 0.45 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR ST	169882	10.61	110200	16.90	61719	22.23
	UPPER LIMIT	339764	11.11	220400	17.40	123438	22.73
	LOWER LIMI	84941	10.11	55100	16.40	30860	21.73
	SAMPLE NO.						
01	VBLKO2	165177	10.60	98623	16.88	47600	22.24
02	VBLKSPKO2	161572	10.61	103645	16.88	53534	22.23
03	TB09259901	156349	10.61	97736	16.88	48208	22.23
04	S144933A99	162241	10.59	100001	16.87	47884	22.23
05	S145933A99	158813	10.60	98187	16.88	48255	22.23
06	S2A3A99	160709	10.59	96383	16.88	48470	22.23
07	S4B3A99	166875	10.61	101254	16.88	48331	22.24
08	S4A3A99	164666	10.60	100692	16.89	46860	22.24
09	S3A3A99	163303	10.61	102122	16.89	48676	22.23
10	S3B3A99	160245	10.61	104096	16.89	48416	22.24
11	S147933A99	166540	10.62	99735	16.89	47358	22.25
12	FD09259901	162692	10.61	97546	16.89	47003	22.24

IS1 = Fluorobenzene
IS2 = Chlorobenzene-d5
IS3 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

TB09209901

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909597-01

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928008.D

Level: (low/med) LOW

Date Received: 09/23/99

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

FORM I VOA

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S7A3A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909597-02

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928010.D

Level: (low/med) LOW

Date Received: 09/23/99

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

FORM I VOA

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S1B3B99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909597-03

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928011.D

Level: (low/med) LOW

Date Received: 09/23/99

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S146933A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909597-04

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928012.D

Level: (low/med) LOW

Date Received: 09/23/99

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S142933A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909597-05

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928013.D

Level: (low/med) LOW

Date Received: 09/23/99

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S6A3A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909597-06

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928014.D

Level: (low/med) LOW

Date Received: 09/23/99

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S5A3A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909597-07

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928017.D

Level: (low/med) LOW

Date Received: 09/23/99

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

FORM I VOA

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

FD09219901

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909597-08

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928018.D

Level: (low/med) LOW

Date Received: 09/23/99

% Moisture: not dec. _____

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S6B3A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909597-09

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928019.D

Level: (low/med) LOW

Date Received: 09/23/99

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

FORM I VOA

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S5B3A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909597-10

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928022.D

Level: (low/med) LOW

Date Received: 09/23/99

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 10.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10 ~~0.5~~	U ~~J~~
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
630-20-6	1,1,1,2-Tetrachloroethane	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-47-6	Xylene (total)	10	U

AH 10-26-99

FORM I VOA

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

TB09239901

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909619-01

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928020.D

Level: (low/med) LOW

Date Received: 09/25/99

% Moisture: not dec. _____

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S141933A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909619-02

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928021.D

Level: (low/med) LOW

Date Received: 09/25/99

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S144933A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909619-03

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0929012.D

Level: (low/med) LOW

Date Received: 09/25/99

% Moisture: not dec.

Date Analyzed: 09/29/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

FORM I VOA

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S145933A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909619-04

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0929013.D

Level: (low/med) LOW

Date Received: 09/25/99

% Moisture: not dec.

Date Analyzed: 09/29/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

FORM I VOA

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S2A3A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909619-05

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0929014.D

Level: (low/med) LOW

Date Received: 09/25/99

% Moisture: not dec.

Date Analyzed: 09/29/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

FORM I VOA

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S4B3A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909619-06

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0929015.D

Level: (low/med) LOW

Date Received: 09/25/99

% Moisture: not dec.

Date Analyzed: 09/29/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

FORM I VOA

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S4A3A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909619-07

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0929016.D

Level: (low/med) LOW

Date Received: 09/25/99

% Moisture: not dec.

Date Analyzed: 09/29/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S3A3A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909619-08

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0929017.D

Level: (low/med) LOW

Date Received: 09/25/99

% Moisture: not dec.

Date Analyzed: 09/29/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg) UG/L		Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

TB09259901

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909639-01

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0929010.D

Level: (low/med) LOW

Date Received: 09/28/99

% Moisture: not dec.

Date Analyzed: 09/29/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0 ~~0.8~~	U ~~B~~
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

10-26-99

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S3B3A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909639-02

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0929018.D

Level: (low/med) LOW

Date Received: 09/28/99

% Moisture: not dec.

Date Analyzed: 09/29/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S147933A99

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909639-03

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0929019.D

Level: (low/med) LOW

Date Received: 09/28/99

% Moisture: not dec.

Date Analyzed: 09/29/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

FORM I VOA

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

FD09259901

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909639-04

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0929020.D

Level: (low/med) LOW

Date Received: 09/28/99

% Moisture: not dec.

Date Analyzed: 09/29/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg) UG/L		Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Laucks Testing Labs Contract:

Lab Code: Case No.: SAS No.: SDG No.: C4801

Instrument ID: ORCA Calibration Date(s): 06/22/99 06/22/99

Heated Purge (Y/N): N Calibration Times: 10:29 14:56

GC Column: DB-624 ID: 0.45 (mm)

LAB FILE ID RRF1 = O0622012.D RRF5 = O0622006.D RRF100 = O0622010.D
RRF10 = O0622005.D RRF25 = O0622008.D RRF50 = O0622009.D

COMPOUND	RRF1	RRF5	RRF10	RRF25	RRF50	RRF100	$\overline{RRF}$	% RSD
Chloromethane	0.196	0.160	0.142	0.142	0.143		0.157	14.9
Vinyl chloride	0.204	0.187	0.182	0.180	0.176		0.186	5.9
Bromomethane	0.299	0.325	0.291	0.309	0.304		0.305	4.1
Chloroethane	0.152	0.144	0.138	0.133	0.132		0.139	6.0
Trichlorofluoromethane	0.827	0.848	0.808	0.815	0.779		0.815	3.1
1,1-Dichloroethene	0.258	0.261	0.262	0.269	0.257		0.261	1.8
Methylene chloride	0.604	0.285	0.253	0.245	0.232		0.324	48.7
trans-1,2-Dichloroethene	0.331	0.316	0.318	0.321	0.317		0.321	1.9
1,1-Dichloroethane	0.507	0.466	0.465	0.498	0.488		0.485	3.9
cis-1,2-Dichloroethene	0.295	0.284	0.287	0.298	0.291		0.291	1.9
Chloroform	0.705	0.628	0.648	0.681	0.678		0.668	4.5
1,1,1-Trichloroethane	0.645	0.584	0.628	0.650	0.639		0.629	4.2
Carbon tetrachloride	0.689	0.661	0.679	0.715	0.708		0.690	3.2
1,2-Dichloroethane-d4	0.226	0.218	0.224	0.213	0.206	0.216	0.217	3.4
Benzene	0.659	0.623	0.639	0.665	0.658		0.649	2.7
1,2-Dichloroethane	0.208	0.192	0.203	0.205	0.202		0.202	3.0
Trichloroethene	0.367	0.404	0.405	0.413	0.412		0.400	4.8
1,2-Dichloropropane	0.232	0.206	0.209	0.219	0.220		0.217	4.6
cis-1,3-Dichloropropene	0.223	0.241	0.256	0.269	0.269		0.252	7.8
Toluene-d8	1.112	1.112	1.069	1.082	1.089	1.039	1.084	2.6
Toluene	0.601	0.599	0.606	0.629	0.627		0.613	2.4
trans-1,3-Dichloropropene	0.243	0.226	0.241	0.261	0.265		0.247	6.4
1,1,2-Trichloroethane	0.160	0.171	0.172	0.183	0.179		0.173	5.1
Tetrachloroethene	0.766	0.723	0.749	0.793	0.778		0.762	3.6
Dibromofluoromethane	0.964	0.949	0.950	0.950	0.945	0.952	0.951	0.7
Chlorobenzene	0.938	0.813	0.807	0.841	0.820		0.844	6.4
1,1,1,2-Tetrachloroethane	0.522	0.512	0.523	0.530	0.516		0.521	1.4
Ethylbenzene	1.018	1.153	1.156	1.234	1.229		1.158	7.5
m,p-Xylene	0.433	0.438	0.439	0.464	0.461		0.447	3.2
o-Xylene	0.445	0.403	0.398	0.438	0.428		0.422	4.9
Styrene	0.531	0.588	0.583	0.655	0.666		0.605	9.2
4-Bromofluorobenzene	1.367	1.338	1.275	1.227	1.246	1.447	1.317	6.3
1,1,2,2-Tetrachloroethane	0.502	0.458	0.431	0.429	0.446		0.453	6.5
1,4-Dichlorobenzene	1.445	1.248	1.195	1.172	1.193		1.251	9.0
1,2-Dichlorobenzene	0.990	0.938	0.919	0.929	0.973		0.950	3.2

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: C4801

Instrument ID: ORCA Calibration Date(s): 06/22/99 06/22/99

Heated Purge (Y/N): N Calibration Times: 10:29 14:56

GC Column: DB-624 ID: 0.45 (mm)

LAB FILE ID	RRF1 = O0622012.D	RRF5 = O0622006.D	RRF100 =
RRF10 = O0622005.D	RRF25 = O0622008.D	RRF50 = O0622009.D	O0622010.D

COMPOUND	RRF1	RRF5	RRF10	RRF25	RRF50	RRF100	$\overline{RRF}$	% RSD
Average % RSD								6.0

FORM VI VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Laucks Testing Labs Contract:

Lab Code: Case No.: SAS No.: SDG No.: C4801

Instrument ID: ORCA Calibration Date: 09/28/99 Time: 10:32

Lab File ID: O0928004.D Init. Calib. Date(s): 06/22/99 06/22/99

Heated Purge: (Y/N) N Init. Calib. Times: 10:29 14:56

GC Column: DB-624 ID: 0.45 (mm)

COMPOUND	$\overline{RRF}$	RRF10	MIN RRF	% D	MAX % D
Chloromethane	0.157	0.201	0.100	-28.1	
Vinyl chloride	0.186	0.217		-16.6	20
Bromomethane	0.305	0.330		-8.0	
Chloroethane	0.139	0.159		-14.0	
Trichlorofluoromethane	0.815	0.684		16.1	
1,1-Dichloroethene	0.261	0.232		11.2	20
Methylene chloride	0.324	0.231		28.6	
trans-1,2-Dichloroethene	0.321	0.292		9.0	
1,1-Dichloroethane	0.485	0.514	0.100	-6.0	
cis-1,2-Dichloroethene	0.291	0.267		8.1	
Chloroform	0.668	0.590		11.6	20
1,1,1-Trichloroethane	0.629	0.495		21.3	
Carbon tetrachloride	0.690	0.541		21.7	
1,2-Dichloroethane-d4	0.217	0.198		8.9	
Benzene	0.649	0.645		0.6	
1,2-Dichloroethane	0.202	0.166		17.8	
Trichloroethene	0.400	0.352		12.1	
1,2-Dichloropropane	0.217	0.219		-0.9	20
cis-1,3-Dichloropropene	0.252	0.231		8.2	
Toluene-d8	1.084	1.109		-2.3	
Toluene	0.613	0.625		-2.0	20
trans-1,3-Dichloropropene	0.247	0.214		13.3	
1,1,2-Trichloroethane	0.173	0.173		0.1	
Tetrachloroethene	0.762	0.712		6.5	
Dibromofluoromethane	0.951	0.825		13.3	
Chlorobenzene	0.844	0.774	0.300	8.3	
1,1,1,2-Tetrachloroethane	0.521	0.440		15.5	
Ethylbenzene	1.158	1.174		-1.4	20
m,p-Xylene	0.447	0.426		4.6	
o-Xylene	0.422	0.407		3.7	
Styrene	0.605	0.587		2.9	
4-Bromofluorobenzene	1.317	1.407		-6.8	
1,1,2,2-Tetrachloroethane	0.453	0.488	0.300	-7.7	
1,4-Dichlorobenzene	1.251	1.103		11.8	
1,2-Dichlorobenzene	0.950	0.901		5.1	

FORM VII VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: C4801

Instrument ID: ORCA Calibration Date: 09/28/99 Time: 10:32

Lab File ID: O0928004.D Init. Calib. Date(s): 06/22/99 06/22/99

Heated Purge: (Y/N) N Init. Calib. Times: 10:29 14:56

GC Column: DB-624 ID: 0.45 (mm)

COMPOUND	$\overline{RRF}$	RRF10	MIN RRF	% D	MAX % D
Average %D				10.1	

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: C4801

Instrument ID: ORCA Calibration Date: 09/29/99 Time: 11:12

Lab File ID: O0929005.D Init. Calib. Date(s): 06/22/99 06/22/99

Heated Purge: (Y/N) N Init. Calib. Times: 10:29 14:56

GC Column: DB-624 ID: 0.45 (mm)

COMPOUND	$\overline{RRF}$	RRF10	MIN RRF	% D	MAX % D
Chloromethane	0.157	0.186	0.100	-18.8	
Vinyl chloride	0.186	0.206		-10.7	20
Bromomethane	0.305	0.304		0.5	
Chloroethane	0.139	0.149		-7.1	
Trichlorofluoromethane	0.815	0.638		21.8	
1,1-Dichloroethene	0.261	0.214		18.0	20
Methylene chloride	0.324	0.215		33.6	
trans-1,2-Dichloroethene	0.321	0.272		15.1	
1,1-Dichloroethane	0.485	0.479	0.100	1.2	
cis-1,2-Dichloroethene	0.291	0.258		11.2	
Chloroform	0.668	0.565		15.4	20
1,1,1-Trichloroethane	0.629	0.470		25.4	
Carbon tetrachloride	0.690	0.511		25.9	
1,2-Dichloroethane-d4	0.217	0.195		10.0	
Benzene	0.649	0.634		2.3	
1,2-Dichloroethane	0.202	0.155		23.2	
Trichloroethene	0.400	0.327		18.4	
1,2-Dichloropropane	0.217	0.198		8.8	20
cis-1,3-Dichloropropene	0.252	0.209		17.1	
Toluene-d8	1.084	1.093		-0.8	
Toluene	0.613	0.604		1.4	20
trans-1,3-Dichloropropene	0.247	0.187		24.3	
1,1,2-Trichloroethane	0.173	0.161		6.9	
Tetrachloroethene	0.762	0.670		12.0	
Dibromofluoromethane	0.951	0.849		10.8	
Chlorobenzene	0.844	0.765	0.300	9.3	
1,1,1,2-Tetrachloroethane	0.521	0.404		22.3	
Ethylbenzene	1.158	1.121		3.2	20
m,p-Xylene	0.447	0.425		4.9	
o-Xylene	0.422	0.393		6.9	
Styrene	0.605	0.555		8.2	
4-Bromofluorobenzene	1.317	1.341		-1.8	
1,1,2,2-Tetrachloroethane	0.453	0.428	0.300	5.7	
1,4-Dichlorobenzene	1.251	1.068		14.6	
1,2-Dichlorobenzene	0.950	0.832		12.4	

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: C4801

Instrument ID: ORCA Calibration Date: 09/29/99 Time: 11:12

Lab File ID: O0929005.D Init. Calib. Date(s): 06/22/99 06/22/99

Heated Purge: (Y/N) N Init. Calib. Times: 10:29 14:56

GC Column: DB-624 ID: 0.45 (mm)

COMPOUND	$\overline{RRF}$	RRF10	MIN RRF	% D	MAX % D
Average %D				12.3	

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLKO1

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: B092899MVOWO1

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928006.D

Level: (low/med) LOW

Date Received:

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLKO2

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: B092999MVOWO1

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0929007.D

Level: (low/med) LOW

Date Received:

% Moisture: not dec.

Date Analyzed: 09/29/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

FORM I VOA

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLKSPKO1

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: S092899MVOWO1

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928007.D

Level: (low/med) LOW

Date Received:

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	9.1	
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	9.5	
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	8.6	
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	9.2	
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	8.4	
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLKSPKO2

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: S092999MVOWO1

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0929008.D

Level: (low/med) LOW

Date Received:

% Moisture: not dec.

Date Analyzed: 09/29/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	10	
75-09-2	Methylene chloride	1.0~~0.5~~	U~~J~~
156-60-5	trans-1,2-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
71-43-2	Benzene	11	
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	9.5	
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-88-3	Toluene	10	
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
108-90-7	Chlorobenzene	9.0	
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
95-47-6	Xylene (total)	1.0	U

MH 10-26-99

FORM I VOA

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S6A3A99MS

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909597-06MS

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928015.D

Level: (low/med) LOW

Date Received: 09/23/99

% Moisture: not dec.

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	12	
75-01-4	Vinyl chloride	11	
74-83-9	Bromomethane	9.8	
75-00-3	Chloroethane	9.9	
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	9.6	
75-09-2	Methylene chloride	7.2	
156-60-5	trans-1,2-Dichloroethene	9.0	
75-34-3	1,1-Dichloroethane	10	
156-59-2	cis-1,2-Dichloroethene	8.9	
67-66-3	Chloroform	8.5	
71-55-6	1,1,1-Trichloroethane	7.1	
56-23-5	Carbon tetrachloride	7.5	
71-43-2	Benzene	10	
107-06-2	1,2-Dichloroethane	9.0	
79-01-6	Trichloroethene	9.1	
78-87-5	1,2-Dichloropropane	11	
10061-01-5	cis-1,3-Dichloropropene	8.6	
108-88-3	Toluene	10	
10061-02-6	trans-1,3-Dichloropropene	8.2	
79-00-5	1,1,2-Trichloroethane	10	
127-18-4	Tetrachloroethene	8.2	
108-90-7	Chlorobenzene	8.8	
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	9.8	
100-42-5	Styrene	5.5	
79-34-5	1,1,2,2-Tetrachloroethane	10	
106-46-7	1,4-Dichlorobenzene	8.6	
95-50-1	1,2-Dichlorobenzene	9.2	
95-47-6	Xylene (total)	26	

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

S6A3A99MSD

Lab Name: Laucks Testing Labs

SDG No.: C4801

Matrix: (soil/water) WATER

Lab Sample ID: 9909597-06MSD

Sample wt/vol: 25.0 (g/ml) ML

Lab File ID: O0928016.D

Level: (low/med) LOW

Date Received: 09/23/99

% Moisture: not dec. _____

Date Analyzed: 09/28/99

GC Column: DB-624 ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	12	
75-01-4	Vinyl chloride	11	
74-83-9	Bromomethane	9.8	
75-00-3	Chloroethane	10	
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	9.8	
75-09-2	Methylene chloride	7.4	
156-60-5	trans-1,2-Dichloroethene	9.2	
75-34-3	1,1-Dichloroethane	11	
156-59-2	cis-1,2-Dichloroethene	9.1	
67-66-3	Chloroform	8.9	
71-55-6	1,1,1-Trichloroethane	7.4	
56-23-5	Carbon tetrachloride	7.8	
71-43-2	Benzene	11	
107-06-2	1,2-Dichloroethane	8.8	
79-01-6	Trichloroethene	9.2	
78-87-5	1,2-Dichloropropane	11	
10061-01-5	cis-1,3-Dichloropropene	8.4	
108-88-3	Toluene	9.4	
10061-02-6	trans-1,3-Dichloropropene	8.0	
79-00-5	1,1,2-Trichloroethane	9.5	
127-18-4	Tetrachloroethene	8.0	
108-90-7	Chlorobenzene	8.9	
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U
100-41-4	Ethylbenzene	9.6	
100-42-5	Styrene	5.6	
79-34-5	1,1,2,2-Tetrachloroethane	11	
106-46-7	1,4-Dichlorobenzene	8.8	
95-50-1	1,2-Dichlorobenzene	9.3	
95-47-6	Xylene (total)	26	

FORMS SUMMARY

SDG C4801

METALS

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: AS7A3A

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09597-02

Level (low/med): LOW Date Received: 09/23/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	51400.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	111.	U		P
7439-92-1	Lead				
7439-95-4	Magnesium	22800.			P
7439-96-5	Manganese	16.7	U		P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	1110.	U		P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	20000.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	22.2	U		P
7439-93-2	Lithium	23.1			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S7A3A99

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.:

BS1B3B

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09597-03

Level (low/med): LOW Date Received: 09/23/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	234000.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	111.	U		P
7439-92-1	Lead				
7439-95-4	Magnesium	111000.			P
7439-96-5	Manganese	16.7	U		P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	2960.			P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	101000.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	22.2	U		P
7439-93-2	Lithium	53.1			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S1B3B99

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: CS1469

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09597-04

Level (low/med): LOW Date Received: 09/23/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	77500.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	270.			P
7439-92-1	Lead				
7439-95-4	Magnesium	47500.			P
7439-96-5	Manganese	811.			P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	2250.			P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	35500.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	62.1			P
7439-93-2	Lithium	54.6			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S146933A99

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: DS1429

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09597-05

Level (low/med): LOW Date Received: 09/23/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	458000.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	111.	U		P
7439-92-1	Lead				
7439-95-4	Magnesium	292000.			P
7439-96-5	Manganese	3690.			P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	5170.			P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	71900.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	30.1			P
7439-93-2	Lithium	161.			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S142933A99

FORM I - IN

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.:

ES6A3A

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09597-06

Level (low/med): LOW Date Received: 09/23/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	12100.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	111.	U		P
7439-92-1	Lead				
7439-95-4	Magnesium	4750.			P
7439-96-5	Manganese	182.			P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	1110.	U		P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	15300.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	27.1			P
7439-93-2	Lithium	11.1	U		M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S6A3A99

FORM I - IN

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.:

FS5A3A

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09597-07

Level (low/med): LOW Date Received: 09/23/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	74200.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	7110.			P
7439-92-1	Lead				
7439-95-4	Magnesium	25800.			P
7439-96-5	Manganese	2920.			P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	2060.			P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	40800.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	28.3			P
7439-93-2	Lithium	303.			M

Color Before: YELLOW Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S5A3A99

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.:

GFD092

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09597-08

Level (low/med): LOW Date Received: 09/23/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	12400.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	111.	U		P
7439-92-1	Lead				
7439-95-4	Magnesium	4800.			P
7439-96-5	Manganese	184.			P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	1110.	U		P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	15000.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	27.4			P
7439-93-2	Lithium	11.1	U		M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: FD09219901

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.:

HS6B3A

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09597-09

Level (low/med): LOW Date Received: 09/23/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	59900.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	9500.			P
7439-92-1	Lead				
7439-95-4	Magnesium	21600.			P
7439-96-5	Manganese	1700.			P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	1340.			P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	18100.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	23.2			P
7439-93-2	Lithium	11.1	U		M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S6B3A99

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: IS5B3A

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09597-10

Level (low/med): LOW Date Received: 09/23/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	56500.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	5730.			P
7439-92-1	Lead				
7439-95-4	Magnesium	12700.			P
7439-96-5	Manganese	479.			P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	1110.	U		P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	44800.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	22.2	U		P
7439-93-2	Lithium	48.6			M

Color Before: YELLOW Clarity Before: CLEAR Texture: ___

Color After: YELLOW Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S5B3A99

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.:

JS1419

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09619-02

Level (low/med): LOW Date Received: 09/25/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	148000.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	210.			P
7439-92-1	Lead				
7439-95-4	Magnesium	74900.			P
7439-96-5	Manganese	16.7	U		P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	3810.			P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	57600.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	22.2	U		P
7439-93-2	Lithium	40.8			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S141933A99

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: KS1449

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09619-03

Level (low/med): LOW Date Received: 09/25/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	139000.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	111.	U		P
7439-92-1	Lead				
7439-95-4	Magnesium	97800.			P
7439-96-5	Manganese	52.6			P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	2480.			P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	165000.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	22.2	U		P
7439-93-2	Lithium	43.7			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S144933A99

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: LS1459

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09619-04

Level (low/med): LOW Date Received: 09/25/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	20700.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	13000.			P
7439-92-1	Lead				
7439-95-4	Magnesium	16200.			P
7439-96-5	Manganese	3720.			P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	4380.			P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	22400.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	434.			P
7439-93-2	Lithium	109.			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S145933A99

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: MS2A3A

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09619-05

Level (low/med): LOW Date Received: 09/25/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	57100.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	111.	U		P
7439-92-1	Lead				
7439-95-4	Magnesium	32500.			P
7439-96-5	Manganese	2420.			P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	2690.			P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	49500.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	318.			P
7439-93-2	Lithium	110.			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S2A3A99

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: NS4B3A

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09619-06

Level (low/med): LOW Date Received: 09/25/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	125000.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	111.	U		P
7439-92-1	Lead				
7439-95-4	Magnesium	71500.			P
7439-96-5	Manganese	16.7	U		P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	3240.			P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	34000.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	22.2	U		P
7439-93-2	Lithium	52.7			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S4B3A99

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: OS4A3A

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09619-07

Level (low/med): LOW Date Received: 09/25/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	10000.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	111.	U		P
7439-92-1	Lead				
7439-95-4	Magnesium	5010.			P
7439-96-5	Manganese	16.7	U		P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	1110.	U		P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	9230.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	22.2	U		P
7439-93-2	Lithium	11.1	U		M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S4A3A99

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: PS3A3A

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09619-08

Level (low/med): LOW Date Received: 09/25/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	66100.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	9370.			P
7439-92-1	Lead				
7439-95-4	Magnesium	34400.			P
7439-96-5	Manganese	1450.			P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	2360.			P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	63300.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	43.3			P
7439-93-2	Lithium	115.			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S3A3A99

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.:

QS3B3A

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09639-02

Level (low/med): LOW Date Received: 09/28/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	120000.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	111.	U		P
7439-92-1	Lead				
7439-95-4	Magnesium	56500.			P
7439-96-5	Manganese	16.7	U		P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	1130.			P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	67700.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	22.2	U		P
7439-93-2	Lithium	87.1			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: S3B3A99

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: RS1479

Lab Name: LAUCKS TESTING LABS, INC. Contract: ____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09639-03

Level (low/med): LOW Date Received: 09/28/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	95100.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	111.	U		P
7439-92-1	Lead				
7439-95-4	Magnesium	51200.			P
7439-96-5	Manganese	16.7	U		P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	1110.	U		P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	30200.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	22.2	U		P
7439-93-2	Lithium	23.3			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: __

Comments:

CLIENT ID: S147933A99

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.:

SFD092

Lab Name: LAUCKS TESTING LABS, INC. Contract: ____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix (soil/water): WATER Lab Sample ID: 09639-04

Level (low/med): LOW Date Received: 09/28/99

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.6	U		P
7440-70-2	Calcium	92700.			P
7440-47-3	Chromium	55.6	U		P
7440-48-4	Cobalt				
7440-50-8	Copper	27.8	U		P
7439-89-6	Iron	111.	U		P
7439-92-1	Lead				
7439-95-4	Magnesium	50800.			P
7439-96-5	Manganese	16.7	U		P
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium	1110.	U		P
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium	30400.			P
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc	22.2	U		P
7439-93-2	Lithium	23.4			M

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

CLIENT ID: FD09259901

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801_

Initial Calibration Source: EPA-LV/SPEX

Continuing Calibration Source: SPEX/VWR

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium	300.0	295.30	98.4	250.0	251.20	100.5	261.70	104.7	P
Calcium	30000.0	30100.41	100.3	25000.0	25064.60	100.3	26047.80	104.2	P
Chromium	600.0	553.50	92.2	500.0	500.50	100.1	512.30	102.5	P
Cobalt									
Copper	1500.0	1506.90	100.5	1250.0	1261.80	100.9	1260.80	100.9	P
Iron	6000.0	5801.90	96.7	5000.0	5037.20	100.7	5158.10	103.2	P
Lead									
Magnesium	30000.0	31069.87	103.6	25000.0	25375.90	101.5	25499.00	102.0	P
Manganese	900.0	873.90	97.1	750.0	751.20	100.2	770.80	102.8	P
Mercury									
Nickel									
Potassium	30000.0	30643.68	102.1	25000.0	25447.30	101.8	25071.40	100.3	P
Selenium									
Silver									
Sodium	30000.0	30825.51	102.8	25000.0	25664.70	102.7	25096.20	100.4	P
Thallium									
Vanadium									
Zinc	1200.0	1218.00	101.5	1000.0	1008.10	100.8	1028.60	102.9	P
Lithium	100.0	104.10	104.1	100.0	96.70	96.7	95.00	95.0	M

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Initial Calibration Source: _____

Continuing Calibration Source: _____

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium				250.0	255.90	102.4	252.60	101.0	P
Calcium				25000.0	25505.30	102.0	25207.00	100.8	P
Chromium				500.0	504.70	100.9	497.90	99.6	P
Cobalt									
Copper				1250.0	1269.10	101.5	1265.80	101.3	P
Iron				5000.0	5091.80	101.8	5047.30	100.9	P
Lead									
Magnesium				25000.0	25457.10	101.8	25460.50	101.8	P
Manganese				750.0	760.50	101.4	753.60	100.5	P
Mercury									
Nickel									
Potassium				25000.0	25261.00	101.0	25493.10	102.0	P
Selenium									
Silver									
Sodium				25000.0	25499.80	102.0	25716.60	102.9	P
Thallium									
Vanadium									
Zinc				1000.0	1019.40	101.9	1018.90	101.9	P
Lithium				100.0	91.60	91.6	103.40	103.4	M

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801_

Initial Calibration Source: _____

Continuing Calibration Source: _____

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium				250.0	261.30	104.5			P
Calcium				25000.0	26006.20	104.0			P
Chromium				500.0	516.60	103.3			P
Cobalt									
Copper				1250.0	1267.30	101.4			P
Iron				5000.0	5148.70	103.0			P
Lead									
Magnesium				25000.0	25623.70	102.5			P
Manganese				750.0	769.20	102.6			P
Mercury									
Nickel									
Potassium				25000.0	25139.10	100.6			P
Selenium									
Silver									
Sodium				25000.0	25355.00	101.4			P
Thallium									
Vanadium									
Zinc				1000.0	1039.00	103.9			P
Lithium				100.0	96.30	96.3			M

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2B

CRDL STANDARD FOR AA AND ICP

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801_

AA CRDL Standard Source: IV_____

ICP CRDL Standard Source: SPEX____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium				10.0	8.80	88.0	11.80	118.0
Calcium					84.10		70.10	
Chromium				20.0	20.20	101.0	19.50	97.5
Cobalt								
Copper				50.0	50.90	101.8	51.90	103.8
Iron					28.90		-2.80	
Lead								
Magnesium					58.70		11.60	
Manganese				30.0	30.10	100.3	30.10	100.3
Mercury								
Nickel								
Potassium					46.80		-51.20	
Selenium								
Silver								
Sodium					94.60		34.40	
Thallium								
Vanadium								
Zinc				40.0	44.40	111.0	43.60	109.0
Lithium				200.0	169.80	84.9	189.80	94.9

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BLANKS

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	5.600	U	P
Calcium	1000.0	U	1000.0	U	1000.0	U	1000.0	U	1111.100	U	P
Chromium	50.0	U	50.0	U	50.0	U	50.0	U	55.600	U	P
Cobalt											
Copper	25.0	U	25.0	U	25.0	U	25.0	U	27.800	U	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	111.100	U	P
Lead											
Magnesium	1000.0	U	1000.0	U	1000.0	U	1000.0	U	1111.100	U	P
Manganese	15.0	U	15.0	U	15.0	U	15.0	U	16.700	U	P
Mercury											
Nickel											
Potassium	1000.0	U	1000.0	U	1000.0	U	1000.0	U	1111.100	U	P
Selenium											
Silver											
Sodium	1000.0	U	1000.0	U	1000.0	U	1000.0	U	1111.100	U	P
Thallium											
Vanadium											
Zinc	20.0	U	20.0	U	20.0	U	20.0	U	22.200	U	P
Lithium	10.0	U	10.0	U	10.0	U	10.0	U	11.100	U	M

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BLANKS

Lab Name: LAUCKS TESTING LABS, INC. Contract: ____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium			5.0	U	5.0	U					P
Calcium			1000.0	U	1000.0	U					P
Chromium			50.0	U	50.0	U					P
Cobalt											
Copper			25.0	U	25.0	U					P
Iron			100.0	U	100.0	U					P
Lead											
Magnesium			1000.0	U	1000.0	U					P
Manganese			15.0	U	15.0	U					P
Mercury											
Nickel											
Potassium			1000.0	U	1000.0	U					P
Selenium											
Silver											
Sodium			1000.0	U	1000.0	U					P
Thallium											
Vanadium											
Zinc			20.0	U	20.0	U					P
Lithium			10.0	U	10.0	U					M

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801_

ICP ID Number: ENVIRO36 ICS Source: SPEX

Concentration Units: ug/L

Analyte	True		Initial Found			Final Found		
	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium		1000	-2	917.0	91.7	-4	912.2	91.2
Calcium	500000	500000	500444	509193.5	101.8	499588	506988.3	101.4
Chromium		500	-9	476.4	95.3	-8	477.8	95.6
Cobalt								
Copper		500	0	506.2	101.2	2	513.1	102.6
Iron	200000	200000	186609	188555.3	94.3	186760	188233.4	94.1
Lead								
Magnesium	500000	500000	524334	526532.8	105.3	521994	527249.0	105.4
Manganese		500	-4	483.3	96.7	-3	483.1	96.6
Mercury								
Nickel								
Potassium			-69	12.6		-72	20.2	
Selenium								
Silver								
Sodium			64	91.1		67	248.6	
Thallium								
Vanadium								
Zinc		1000	7	1001.2	100.1	6	1014.0	101.4
Lithium								

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ICP INTERFERENCE CHECK SAMPLE

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801_

ICP ID Number: ELAN5000 ICS Source: SPEX

Concentration Units: ug/L

Analyte	True		Initial Found			Final Found		
	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Lithium			0	0.0		0	-0.1	

FORM IV - IN

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5A

SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ES6A3AS

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix: WATER Level: LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight: UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium	75-125	46.2222		5.5556	U	55.56	83.2		P
Calcium		14616.4440		12075.6660		2222.22	114.3		P
Chromium	75-125	431.3333		55.5556	U	555.56	77.6		P
Cobalt									NR
Copper	75-125	424.8889		27.7778	U	555.56	76.5		P
Iron	75-125	4311.0000		111.1111	U	5555.56	77.6		P
Lead									NR
Magnesium	75-125	6924.1111		4751.6667		2222.22	97.8		P
Manganese	75-125	619.7778		182.3333		555.56	78.7		P
Mercury									NR
Nickel									NR
Potassium	75-125	2910.5556		763.1111		2222.22	96.6		P
Selenium									NR
Silver									NR
Sodium		17406.5550		15320.6660		2222.22	93.9		P
Thallium									NR
Vanadium									NR
Zinc	75-125	864.1111		27.1111		1111.11	75.3		P
Lithium	75-125	574.5556		11.1111	U	555.56	103.4		M

Comments:

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5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ES6A3AA

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801_

Matrix: WATER Level: LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Lithium		944.80		10.00	U	1000.0	94.5		M

Comments:

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6

DUPLICATES

EPA SAMPLE NO.

ES6A3AD

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Matrix: WATER Level: LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight: UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium	5.6	5.5556	U	5.5556	U			P
Calcium		12075.6660		12351.8880		2.3		P
Chromium	55.6	55.5556	U	55.5556	U			P
Cobalt								
Copper	27.8	27.7778	U	27.7778	U			P
Iron		111.1111	U	111.1111	U			P
Lead								
Magnesium	1111.1	4751.6667		4810.4444		1.2		P
Manganese		182.3333		185.3333		1.6		P
Mercury								
Nickel								
Potassium		1111.1111	U	1111.1111	U			P
Selenium								
Silver								
Sodium		15320.6660		15353.0000		0.2		P
Thallium								
Vanadium								
Zinc	22.2	27.1111		27.6667		2.0		P
Lithium		11.1111	U	11.1111	U			M

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LABORATORY CONTROL SAMPLE

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801_

Solid LCS Source: IV_____

Aqueous LCS Source: IV_____

Analyte	Aqueous (ug/L)			Solid (mg/kg)					
	True	Found	%R	True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium	55.6	48.44	87.1						
Calcium	2222.2	2241.67	100.9						
Chromium	555.6	456.11	82.1						
Cobalt									
Copper	555.6	456.56	82.2						
Iron	5555.6	4550.56	81.9						
Lead									
Magnesium	2222.2	2223.89	100.1						
Manganese	555.6	458.89	82.6						
Mercury									
Nickel									
Potassium	2222.2	2299.44	103.5						
Selenium									
Silver									
Sodium	2222.2	2333.56	105.0						
Thallium									
Vanadium									
Zinc	1111.1	885.33	79.7						
Lithium	555.6	589.00	106.0						

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9
ICP SERIAL DILUTIONS

EPA SAMPLE NO.
ES6A3AL

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801_

Matrix (soil/water) : WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ-ence	Q	M
Aluminum							
Antimony							
Arsenic							
Barium							
Beryllium							
Cadmium	5.00	U	25.00	U			P
Calcium	10868.10		12057.50		10.9		P
Chromium	50.00	U	250.00	U			P
Cobalt							
Copper	25.00	U	125.00	U			P
Iron	100.00	U	500.00	U			P
Lead							
Magnesium	4276.50		5000.00	U	100.0		P
Manganese	164.10		173.50		5.7		P
Mercury							
Nickel							
Potassium	1000.00	U	5000.00	U			P
Selenium							
Silver							
Sodium	13788.60		14123.50		2.4		P
Thallium							
Vanadium							
Zinc	24.40		100.00	U	100.0		P
Lithium	10.00	U	50.00	U			M

FORM IX - IN

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PREPARATION LOG

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL) Final
AS7A3A	10/15/99	45	50
BS1B3B	10/15/99	45	50
CS1469	10/15/99	45	50
DS1429	10/15/99	45	50
ES6A3A	10/15/99	45	50
ES6A3AD	10/15/99	45	50
ES6A3AS	10/15/99	45	50
FS5A3A	10/15/99	45	50
GFD092	10/15/99	45	50
HS6B3A	10/15/99	45	50
IS5B3A	10/15/99	45	50
JS1419	10/15/99	45	50
KS1449	10/15/99	45	50
LCSW1	10/15/99	45	50
LS1459	10/15/99	45	50
MS2A3A	10/15/99	45	50
NS4B3A	10/15/99	45	50
OS4A3A	10/15/99	45	50
PBW1	10/15/99	45	50
PS3A3A	10/15/99	45	50
QS3B3A	10/15/99	45	50
RS1479	10/15/99	45	50
SFD092	10/15/99	45	50

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PREPARATION LOG

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Method: M

EPA Sample No.	Preparation Date	Volume (mL) Initial	Volume (mL) Final
AS7A3A	10/15/99	45	50
BS1B3B	10/15/99	45	50
CS1469	10/15/99	45	50
DS1429	10/15/99	45	50
ES6A3A	10/15/99	45	50
ES6A3AD	10/15/99	45	50
ES6A3AS	10/15/99	45	50
FS5A3A	10/15/99	45	50
GFD092	10/15/99	45	50
HS6B3A	10/15/99	45	50
IS5B3A	10/15/99	45	50
JS1419	10/15/99	45	50
KS1449	10/15/99	45	50
LCSW1	10/15/99	45	50
LS1459	10/15/99	45	50
MS2A3A	10/15/99	45	50
NS4B3A	10/15/99	45	50
OS4A3A	10/15/99	45	50
PBW1	10/15/99	45	50
PS3A3A	10/15/99	45	50
QS3B3A	10/15/99	45	50
RS1479	10/15/99	45	50
SFD092	10/15/99	45	50

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ANALYSIS RUN LOG

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801_

Instrument ID Number: ENVIRO36__ Method: P_

Start Date: 10/21/99 End Date: 10/21/99

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	LI
S0	1.00	1404							X	X	X		X	X		X	X			X			X			X	
S	1.00	1407							X	X	X		X	X		X	X			X			X			X	
ICV1	1.00	1410							X	X	X		X	X		X	X			X			X			X	
ICB1	1.00	1413							X	X	X		X	X		X	X			X			X			X	
CCV1	1.00	1416							X	X	X		X	X		X	X			X			X			X	
CCB1	1.00	1419							X	X	X		X	X		X	X			X			X			X	
CRII1	1.00	1422							X	X	X		X	X		X	X			X			X			X	
ICSAI1	1.00	1426							X	X	X		X	X		X	X			X			X			X	
ICSABI1	1.00	1429							X	X	X		X	X		X	X			X			X			X	
CCV2	1.00	1432							X	X	X		X	X		X	X			X			X			X	
CCB2	1.00	1435							X	X	X		X	X		X	X			X			X			X	
PBW1	1.00	1440							X	X	X		X	X		X	X			X			X			X	
LCSW1	1.00	1444							X	X	X		X	X		X	X			X			X			X	
ES6A3A	1.00	1447							X	X	X		X	X		X	X			X			X			X	
ES6A3AD	1.00	1450							X	X	X		X	X		X	X			X			X			X	
ES6A3AS	1.00	1453							X	X	X		X	X		X	X			X			X			X	
ES6A3AL	5.00	1456							X	X	X		X	X		X	X			X			X			X	
AS7A3A	1.00	1459							X	X	X		X	X		X	X			X			X			X	
BS1B3B	1.00	1502							X	X	X		X	X		X	X			X			X			X	
CS1469	1.00	1505							X	X	X		X	X		X	X			X			X			X	
DS1429	1.00	1509							X	X	X		X	X		X	X			X			X			X	
CCV3	1.00	1512							X	X	X		X	X		X	X			X			X			X	
CCB3	1.00	1515							X	X	X		X	X		X	X			X			X			X	
FS5A3A	1.00	1518							X	X	X		X	X		X	X			X			X			X	
GFD092	1.00	1521							X	X	X		X	X		X	X			X			X			X	
HS6B3A	1.00	1524							X	X	X		X	X		X	X			X			X			X	
IS5B3A	1.00	1527							X	X	X		X	X		X	X			X			X			X	
JS1419	1.00	1531							X	X	X		X	X		X	X			X			X			X	
KS1449	1.00	1534							X	X	X		X	X		X	X			X			X			X	
LS1459	1.00	1537							X	X	X		X	X		X	X			X			X			X	
MS2A3A	1.00	1540							X	X	X		X	X		X	X			X			X			X	
NS4B3A	1.00	1543							X	X	X		X	X		X	X			X			X			X	

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ANALYSIS RUN LOG

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Instrument ID Number: ENVIRO36 Method: P

Start Date: 10/21/99 End Date: 10/21/99

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	LI
OS4A3A	1.00	1546							X	X	X		X	X		X	X			X			X			X	
CCV4	1.00	1549							X	X	X		X	X		X	X			X			X			X	
CCB4	1.00	1552							X	X	X		X	X		X	X			X			X			X	
PS3A3A	1.00	1556							X	X	X		X	X		X	X			X			X			X	
QS3B3A	1.00	1559							X	X	X		X	X		X	X			X			X			X	
RS1479	1.00	1607							X	X	X		X	X		X	X			X			X			X	
SFD092	1.00	1610							X	X	X		X	X		X	X			X			X			X	
CRIF1	1.00	1613							X	X	X		X	X		X	X			X			X			X	
ICSAF1	1.00	1616							X	X	X		X	X		X	X			X			X			X	
ICSABF1	1.00	1619							X	X	X		X	X		X	X			X			X			X	
CCV5	1.00	1622							X	X	X		X	X		X	X			X			X			X	
CCB5	1.00	1625							X	X	X		X	X		X	X			X			X			X	

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ANALYSIS RUN LOG

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

Instrument ID Number: ELAN5000 Method: M

Start Date: 10/23/99 End Date: 10/23/99

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	LI
S0	1.00	0814																									X
S1	1.00	0817																									X
S2	1.00	0819																									X
S3	1.00	0821																									X
ICV1	1.00	0824																									X
ICB1	1.00	0826																									X
CCV1	1.00	0829																									X
CCB1	1.00	0831																									X
CRII1	1.00	0834																									X
ICSAI2	1.00	0836																									X
ICSABI2	1.00	0839																									X
CCV2	1.00	0841																									X
CCB2	1.00	0844																									X
PBW1	1.00	0846																									X
LCSW1	1.00	0849																									X
ES6A3A	1.00	0851																									X
ES6A3AD	1.00	0853																									X
ES6A3AS	1.00	0856																									X
ES6A3AA	1.00	0858																									X
ES6A3AL	5.00	0901																									X
AS7A3A	1.00	0903																									X
BS1B3B	1.00	0906																									X
ZZZZZZ	1.00	0910																									
CCV3	1.00	0912																									X
CCB3	1.00	0915																									X
CS1469	1.00	0917																									X
DS1429	1.00	0920																									X
FS5A3A	1.00	0922																									X
GFD092	1.00	0925																									X
HS6B3A	1.00	0927																									X
IS5B3A	1.00	0930																									X
JS1419	1.00	0932																									X

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ANALYSIS RUN LOG

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: __ SAS No.: ___ SDG No.: C4801_

Instrument ID Number: ELAN5000 Method: M

Start Date: 10/23/99 End Date: 10/23/99

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	LI
KS1449	1.00	0935																									X
LS1459	1.00	0937																									X
CCV4	1.00	0941																									X
CCB4	1.00	0944																									X
MS2A3A	1.00	0946																									X
NS4B3A	1.00	0949																									X
OS4A3A	1.00	0951																									X
PS3A3A	1.00	0954																									X
QS3B3A	1.00	0956																									X
RS1479	1.00	0959																									X
SFD092	1.00	1001																									X
CRIF1	1.00	1003																									X
ICSAF2	1.00	1006																									X
ICSABF2	1.00	1008																									X
CCV5	1.00	1011																									X
CCB5	1.00	1013																									X

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Instrument Detection Limits (Quarterly)

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

ICP ID Number: Enviro36 Date: 07/06/99

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wavelength (nm)	Background	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.20				
Antimony	206.80				
Arsenic	193.60				
Barium	493.40				
Beryllium	313.00				
Cadmium	226.50		5	5.0	P
Calcium	315.80		1000	1000.0	P
Chromium	267.70		50	50.0	P
Cobalt	228.60				
Copper	324.70		25	25.0	P
Iron	259.90		100	100.0	P
Lead	220.30				
Magnesium	279.00		1000	1000.0	P
Manganese	257.60		15	15.0	P
Mercury					
Nickel	231.60				
Potassium	766.40		1000	1000.0	P
Selenium	196.00				
Silver	328.00				
Sodium	588.90		1000	1000.0	P
Thallium	190.80				
Vanadium	292.40				
Zinc	213.80		20	20.0	P
Molybdenum	202.00			20.0	P

Comments:

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Instrument Detection Limits (Quarterly)

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: __ SAS No.: ___ SDG No.: C4801_

ICP ID Number: _____ Date: 07/23/99

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Mass (amu)	Background	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Cadmium			5		
Calcium			1000		
Chromium			50		
Cobalt					
Copper			25		
Iron			100		
Lead					
Magnesium			1000		
Manganese			15		
Mercury					
Nickel					
Potassium			1000		
Selenium					
Silver					
Sodium			1000		
Thallium					
Vanadium					
Zinc			20		
Lithium	7.00		10	10.0	M

Comments:

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ICP Interelement Correction Factors (Annually)

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801

ICP ID Number: Enviro36 Date: 01/12/99

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	V
Aluminum	308.22		0.0000000	0.0000000	0.0000000	0.0174880
Antimony	206.84	0.0000000	0.0000000	0.0001650	0.0000000	-0.0047170
Arsenic	193.70	0.0035990	0.0000000	0.0002510	0.0000000	0.0110960
Barium	493.41	0.0000000	0.0000000	0.0000130	0.0000000	0.0000020
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0007800
Cadmium	226.50	-0.0000710	0.0000000	-0.0000990	0.0000000	0.0000000
Calcium	315.89	0.0000000		0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	-0.0000650	0.0001550	0.0000000	0.0010770
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	-0.0001100	0.0000000	0.0000000
Iron	259.94	0.0001890	0.0000000		0.0000000	0.0000000
Lead	220.35	0.0007920	0.0000000	0.0000020	0.0000000	-0.0000280
Magnesium	279.08	0.0000000	0.0000000	0.0000000		0.0000000
Manganese	257.61	0.0000100	0.0000000	0.0000400	0.0000000	-0.0001070
Mercury	253.65	0.0000000	0.0000000	0.0088400	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	-0.0001070	0.0000000	-0.0000170
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	-0.0011840
Selenium	196.03	0.0000000	0.0000000	0.0003830	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000190	0.0000000	-0.0033250
Sodium	589.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	-0.0000900	0.0000000	0.0013400	0.0000780	0.0042240
Vanadium	292.40	-0.0000020	0.0000000	-0.0000100	0.0000000	
Zinc	213.86	0.0000500	0.0000000	0.0000350	0.0000000	0.0001530

Comments:

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11B

ICP Interelement Correction Factors (Annually)

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801_

ICP ID Number: ENVIRO36 Date: 01/12/99

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Cu	Cr	Mn	Ni	Zn
Aluminum	308.22	0.0003010	0.0000000	0.0005210	0.0000000	0.0000000
Antimony	206.84	-0.0000150	0.0074260	0.0000000	-0.0022810	-0.0002520
Arsenic	193.70	0.0000000	0.0011540	0.0002970	0.0006380	0.0000000
Barium	493.41	0.0000000	0.0000000	0.0000070	0.0000190	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.50	0.0000000	-0.0000040	0.0000000	-0.0064580	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000		0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75		0.0000000	-0.0001490	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0003290	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000		0.0000000	0.0000340
Mercury	253.65	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000170		0.0001370
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0001670	0.0000000	0.0000000
Sodium	559.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	-0.0001400	0.0008210	-0.0067500	0.0022330	0.0000000
Vanadium	292.40	0.0000000	-0.0035460	-0.0001360	0.0000000	0.0000000
Zinc	213.86	0.0021280	0.0001100	0.0000000	0.0034510	

Comments:

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ICP Linear Ranges (Quarterly)

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: C4801_

ICP ID Number: Enviro36 Date: 08/27/99

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	3.00	600000.0	P
Antimony	3.00	200000.0	P
Arsenic	3.00	300000.0	P
Barium	3.00	100000.0	P
Beryllium	3.00	10000.0	P
Cadmium	3.00	100000.0	P
Calcium	3.00	600000.0	P
Chromium	3.00	200000.0	P
Cobalt	3.00	200000.0	P
Copper	3.00	200000.0	P
Iron	3.00	600000.0	P
Lead	3.00	200000.0	P
Magnesium	3.00	600000.0	P
Manganese	3.00	100000.0	P
Mercury	3.00	10000.0	P
Nickel	3.00	200000.0	P
Potassium	3.00	1000000.0	P
Selenium	3.00	200000.0	P
Silver	3.00	200000.0	P
Sodium	3.00	600000.0	P
Thallium	3.00	10000.0	P
Vanadium	3.00	200000.0	P
Zinc	3.00	200000.0	P

Comments:

FORMS SUMMARY

SDG C4801

MISCELLANEOUS INORGANICS

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S7A3A99
Lab Sample ID: 9909597-02
Date Received: 09/23/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	29.		mg/L		10/15/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.01	U	mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	200.		mg/L	10/04/99	10/04/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/04/99	10/04/99	2.	SM 2320B
Alkalinity, Total as CaCO3	200.		mg/L	10/04/99	10/04/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	20.		mg/L		10/15/99	1.	EPA 9056
Total Dissolved Solids	310.		mg/L	10/30/99	10/30/99	2.	EPA 160.1
Total Solids	330.		mg/L	10/06/99	10/06/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S1B3B99
Lab Sample ID: 9909597-03
Date Received: 09/23/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	160.		mg/L		10/18/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.01	U	mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	390.		mg/L	10/04/99	10/04/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/04/99	10/04/99	2.	SM 2320B
Alkalinity, Total as CaCO3	390.		mg/L	10/04/99	10/04/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	560.		mg/L		10/18/99	1.	EPA 9056
Total Dissolved Solids	1400.		mg/L	10/30/99	10/30/99	2.	EPA 160.1
Total Solids	1500.		mg/L	10/06/99	10/06/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S146933A99
Lab Sample ID: 9909597-04
Date Received: 09/23/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	36.		mg/L		10/15/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.01	U	mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	56.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/05/99	10/05/99	2.	SM 2320B
Alkalinity, Total as CaCO3	56.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	350.		mg/L		10/18/99	1.	EPA 9056
Total Dissolved Solids	640.		mg/L	10/30/99	10/30/99	2.	EPA 160.1
Total Solids	690.		mg/L	10/06/99	10/06/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S142933A99
Lab Sample ID: 9909597-05
Date Received: 09/23/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	43.		mg/L		10/15/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.08		mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	690.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/05/99	10/05/99	2.	SM 2320B
Alkalinity, Total as CaCO3	690.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	1700.		mg/L		10/19/99	1.	EPA 9056
Total Dissolved Solids	3100.		mg/L	10/30/99	10/30/99	2.	EPA 160.1
Total Solids	3400.		mg/L	10/06/99	10/06/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S6A3A99
Lab Sample ID: 9909597-06
Date Received: 09/23/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	41.		mg/L		10/15/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.01	U	mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	25.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/05/99	10/05/99	2.	SM 2320B
Alkalinity, Total as CaCO3	25.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	1.		mg/L		10/15/99	1.	EPA 9056
Total Dissolved Solids	170.		mg/L	10/30/99	10/30/99	2.	EPA 160.1
Total Solids	160.		mg/L	10/06/99	10/06/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S5A3A99
Lab Sample ID: 9909597-07
Date Received: 09/23/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	22.		mg/L		10/15/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.25		mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	200.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/05/99	10/05/99	2.	SM 2320B
Alkalinity, Total as CaCO3	200.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	180.		mg/L		10/15/99	1.	EPA 9056
Total Dissolved Solids	500.		mg/L	10/30/99	10/30/99	2.	EPA 160.1
Total Solids	500.		mg/L	10/06/99	10/06/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : FD09219901
Lab Sample ID: 9909597-08
Date Received: 09/23/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	43.		mg/L		10/15/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.01	U	mg/L	10/22/99	10/22/99	0.01	EPA 350.1
Bicarb. Alkalinity, HCO3	24.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/05/99	10/05/99	2.	SM 2320B
Alkalinity, Total as CaCO3	24.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	2.		mg/L		10/15/99	1.	EPA 9056
Total Dissolved Solids	170.		mg/L	10/30/99	10/30/99	2.	EPA 160.1
Total Solids	170.		mg/L	10/06/99	10/06/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S6B3A99
Lab Sample ID: 9909597-09
Date Received: 09/23/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	26.		mg/L		10/15/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.15		mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	210.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/05/99	10/05/99	2.	SM 2320B
Alkalinity, Total as CaCO3	210.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	42.		mg/L		10/15/99	1.	EPA 9056
Total Dissolved Solids	320.		mg/L	10/30/99	10/30/99	2.	EPA 160.1
Total Solids	370.		mg/L	10/06/99	10/06/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S5B3A99
Lab Sample ID: 9909597-10
Date Received: 09/23/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	8.		mg/L		10/15/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.64		mg/L	10/22/99	10/22/99	0.01	EPA 350.1
Bicarb. Alkalinity, HCO3	180.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/05/99	10/05/99	2.	SM 2320B
Alkalinity, Total as CaCO3	180.		mg/L	10/05/99	10/05/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	110.		mg/L		10/15/99	1.	EPA 9056
Total Dissolved Solids	410.		mg/L	10/30/99	10/30/99	2.	EPA 160.1
Total Solids	420.		mg/L	10/06/99	10/06/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S141933A99
Lab Sample ID: 9909619-02
Date Received: 09/25/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	140.		mg/L		10/19/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.01	U	mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	440.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/06/99	10/06/99	2.	SM 2320B
Alkalinity, Total as CaCO3	440.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	150.		mg/L		10/18/99	1.	EPA 9056
Total Dissolved Solids	880.		mg/L	09/28/99	09/28/99	2.	EPA 160.1
Total Solids	930.		mg/L	09/28/99	09/28/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S144933A99
Lab Sample ID: 9909619-03
Date Received: 09/25/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	85.		mg/L		10/18/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.01	U	mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	270.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/06/99	10/06/99	2.	SM 2320B
Alkalinity, Total as CaCO3	270.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	710.		mg/L		10/19/99	1.	EPA 9056
Total Dissolved Solids	1300.		mg/L	09/28/99	09/28/99	2.	EPA 160.1
Total Solids	1500.		mg/L	09/28/99	09/28/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs Sample ID : S145933A99
SDG No. : C4801 Lab Sample ID: 9909619-04
Matrix : WATER Date Received: 09/25/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	22.		mg/L		10/18/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.17		mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	2.	U	mg/L	10/06/99	10/06/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/06/99	10/06/99	2.	SM 2320B
Alkalinity, Total as CaCO3	2.	U	mg/L	10/06/99	10/06/99	2.	SM 2320B.
Sulfate (SO4) EPA 9056	190.		mg/L		10/18/99	1.	EPA 9056
Total Dissolved Solids	380.		mg/L	09/28/99	09/28/99	2.	EPA 160.1
Total Solids	370.		mg/L	09/28/99	09/28/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S2A3A99
Lab Sample ID: 9909619-05
Date Received: 09/25/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	35.		mg/L		10/18/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.01	U	mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	36.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/06/99	10/06/99	2.	SM 2320B
Alkalinity, Total as CaCO3	36.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	300.		mg/L		10/19/99	1.	EPA 9056
Total Dissolved Solids	570.		mg/L	09/28/99	09/28/99	2.	EPA 160.1
Total Solids	620.		mg/L	09/28/99	09/28/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S4B3A99
Lab Sample ID: 9909619-06
Date Received: 09/25/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	17.		mg/L		10/18/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.01	U	mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	240.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/06/99	10/06/99	2.	SM 2320B
Alkalinity, Total as CaCO3	240.		mg/L	10/06/99	10/06/99	2.	SM 2320B.
Sulfate (SO4) EPA 9056	410.		mg/L		10/19/99	1.	EPA 9056
Total Dissolved Solids	870.		mg/L	09/28/99	09/28/99	2.	EPA 160.1
Total Solids	880.		mg/L	09/28/99	09/28/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S4A3A99
Lab Sample ID: 9909619-07
Date Received: 09/25/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	1.	U	mg/L		10/18/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.04		mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	37.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/06/99	10/06/99	2.	SM 2320B
Alkalinity, Total as CaCO3	37.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	34.		mg/L		10/18/99	1.	EPA 9056
Total Dissolved Solids	110.		mg/L	09/28/99	09/28/99	2.	EPA 160.1
Total Solids	120.		mg/L	09/28/99	09/28/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S3A3A99
Lab Sample ID: 9909619-08
Date Received: 09/25/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	31.		mg/L		10/18/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.08		mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	83.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/06/99	10/06/99	2.	SM 2320B
Alkalinity, Total as CaCO3	83.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	330.		mg/L		10/19/99	1.	EPA 9056
Total Dissolved Solids	630.		mg/L	09/28/99	09/28/99	2.	EPA 160.1
Total Solids	690.		mg/L	09/28/99	09/28/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S3B3A99
Lab Sample ID: 9909639-02
Date Received: 09/28/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	20.		mg/L		10/15/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.01	U	mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	320.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/06/99	10/06/99	2.	SM 2320B
Alkalinity, Total as CaCO3	320.		mg/L	10/06/99	10/06/99	2.	SM 2320B.
Sulfate (SO4) EPA 9056	280.		mg/L		10/18/99	1.	EPA 9056
Total Dissolved Solids	760.		mg/L	10/04/99	10/04/99	2.	EPA 160.1
Total Solids	780.		mg/L	10/06/99	10/06/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : S147933A99
Lab Sample ID: 9909639-03
Date Received: 09/28/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	37.		mg/L		10/15/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.01	U	mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	370.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/06/99	10/06/99	2.	SM 2320B
Alkalinity, Total as CaCO3	370.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	79.		mg/L		10/15/99	1.	EPA 9056
Total Dissolved Solids	570.		mg/L	10/04/99	10/04/99	2.	EPA 160.1
Total Solids	540.		mg/L	10/06/99	10/06/99	2.	EPA 160.3

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : C4801
Matrix : WATER

Sample ID : FD09259901
Lab Sample ID: 9909639-04
Date Received: 09/28/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
Chloride (Cl) EPA 9056	37.		mg/L		10/15/99	1.	EPA 9056
Ammonia as N (EPA 350.1)	0.01	U	mg/L	10/22/99	10/22/99	0.01	EPA 350 1
Bicarb. Alkalinity, HCO3	370.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Carb. Alkalinity, CO3	2.	U	mg/L	10/06/99	10/06/99	2.	SM 2320B
Alkalinity, Total as CaCO3	370.		mg/L	10/06/99	10/06/99	2.	SM 2320B
Sulfate (SO4) EPA 9056	70.		mg/L		10/15/99	1.	EPA 9056
Total Dissolved Solids	540.		mg/L	10/04/99	10/04/99	2.	EPA 160.1
Total Solids	400.		mg/L	10/06/99	10/06/99	2.	EPA 160.3

FORM 2-A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LAUCKS TESTING LABORATORIES, INC.

SDG No: C4801 Concentration Units: MG/L

ANALYTE	INITIAL CALIBRATION			CONTINUING CALIBRATION					
	TRUE	FOUND	%R	TRUE	FOUND	%R	TRUE	FOUND	%R
10/22/1999									
Ammonia	15.7	16.3	104	0.500	0.489	98	0.500	0.479	96
				0.500	0.478	96			
10/15/1999									
Cl	30.1	29.9	99	5.0	5.02	100	5.0	5.16	103
				5.0	5.06	101	5.0	5.02	100
SO4	150.	155.	103	10.	10.45	104	10.	10.48	105
				10.	10.23	102	10.	10.11	101
10/18/1999									
Cl	30.1	30.3	101	5.0	5.03	101	5.0	4.82	96
				5.0	4.90	98			
SO4	150.	156.	104	10.	10.31	103	10.	9.79	98
				10.	9.75	97			
10/19/1999									
Cl	30.1	29.8	99	5.0	4.76	95	5.0	4.84	97
				5.0	4.87	97			
SO4	150.	152.	101	10.	9.83	98	10.	9.86	99
				10.	9.78	98			

FORM 3-A

BLANKS

Lab Name: LAUCKS TESTING LABORATORIES, INC.

SDG No. C4801 Preparation Blank Concentration Units: MG/L

ANALYTE	INITIAL CALIB. (MG/L)		CONTINUING CALIBRATION (MG/L)						PREPARATION BLANK	
	Value	C		C		C		C	Value	C
10/22/1999										
Ammonia	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
10/15/1999										
Cl	1.	U	1.	U	1.	U	1.	U	1.	U
			1.	U						
SO4	1.	U	1.	U	1.	U	1.	U	1.	U
10/18/1999			1.	U						
Cl	1.	U	1.	U	1.	U	1.	U	1.	U
SO4	1.	U	1.	U	1.	U	1.	U	1.	U
10/19/1999			1.	U						
Cl	1.	U	1.	U	1.	U	1.	U	1.	U
SO4	1.	U	1.	U	1.	U	1.	U	1.	U

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B092799_TDS_W01 Preparation Date : 09/27/99

Analyte	Reported		Units	Limit
TDS	2.0	U	mg/L	4.0

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B092899_TDS_W01 Preparation Date : 09/28/99

Analyte	Reported	Units	Limit
TDS	2.0	mg/L	4.0

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B092899_TS_W02 Preparation Date : 09/28/99

Analyte	Reported		Units	Limit
TS	2.0	U	mg/L	4.0

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B100499_ALK_W02 Preparation Date : 10/04/99

Analyte	Reported	Units	Limit
ALK	2.0	mg/L	4.0

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B100499_TDS_W01 Preparation Date : 10/04/99

Analyte	Reported		Units	Limit
TDS	2.0	U	mg/L	4.0

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B100599_ALK_W01 Preparation Date : 10/05/99

Analyte	Reported	Units	Limit
ALK	2.0	mg/L	4.0

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B100699_ALK_W01 Preparation Date : 10/06/99

Analyte	Reported	Units	Limit
ALK	2.0	mg/L	4.0

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B100699_TS_W01 Preparation Date : 10/06/99

Analyte	Reported		Units	Limit
TS	2.0	U	mg/L	4.0

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B100699_TS_W02 Preparation Date : 10/06/99

Analyte	Reported		Units	Limit
TS	2.0	U	mg/L	4.0

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B101599_IAI_W01 Preparation Date : 10/15/99

Analyte	Reported		Units	Limit
F_IC	0.20	U	mg/L	0.40
CL_IC	1.0	U	mg/L	2.0
SO4_IC	1.0	U	mg/L	2.0

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B101899_IAI_W01 Preparation Date : 10/18/99

Analyte	Reported		Units	Limit
F_IC	0.20	U	mg/L	0.40
CL_IC	1.0	U	mg/L	2.0
NO3_IC	0.20	U	mg/L	0.40
SO4_IC	1.0	U	mg/L	2.0

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B101999_IAI_W01 Preparation Date : 10/19/99

Analyte	Reported		Units	Limit
F_IC	0.20	U	mg/L	0.40
CL_IC	1.0	U	mg/L	2.0
NO3_IC	0.20	U	mg/L	0.40
SO4_IC	1.0	U	mg/L	2.0

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B102299_NH3_W01 Preparation Date : 10/22/99

Analyte	Reported	Units	Limit
NH3_SPEC	0.010 U	mg/L	0.020

Form BLANK-1

Preparation Blanks Database Report

Lab Name : LAUCKS TESTING LABS

Lab Sample ID : B103099_TDS_W01 Preparation Date : 10/30/99

Analyte	Reported		Units	Limit
TDS	2.0	U	mg/L	4.0

Comments about this blank:

Work orders validated by this blank

9909597 2-10
9909639 3-4

Form BLANK-1

800A

MS/Duplicate Database

Laucks Testing Labs

Record name: M101599_IAIW01

Spike Frac : DIONEX
Description: Anions by Ion Chromatography
QC Fraction: IAI
Date Prep'd: 10/15/99 Spk Sample: 9909597-06
Matrix : WATER Client ID : S6A3A99
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD	Limit
Fluoride	0.400	0.400	0 L	1.0
Chloride	41.08	43.00	4.57 P	11
Sulfate	1.410	1.420	0.010 L	5.0

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 value could not be calculated.

Form MS/DUPE-1

MS/Duplicate Database

Laucks Testing Labs

Record name: M101599_IAIW01

Spike Frac : DIONEX
Description: Anions by Ion Chromatography
QC Fraction: IAI
Date Prep'd: 10/15/99 Spk Sample: 9909597-06
Matrix : WATER Client ID : S6A3A99
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Spike Added	Spike Found	% Recov	LCL	UCL
Fluoride	0.4000	2.000	1.930	76	66	121
Chloride	41.08	20.00	65.40	122*	73	121
Sulfate	1.410	8.000	9.080	96	81	115

* = Value is outside control limit

If RECOV = -1 value could not be calculated.
If RECOV = 999 value exeeded 999%.

Form MS/Dupe-2

MS/Duplicate Database

Laucks Testing Labs

Record name: M101899_IAIW01

Spike Frac : DIONEX
Description: Anions by Ion Chromatography
QC Fraction: IAI
Date Prep'd: 10/18/99 Spk Sample: 9909619-02
Matrix : WATER Client ID : S141933A99
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD	Limit
Fluoride	1.560	1.530	1.94 P	11
Chloride	150.2	149.2	0.668 P	11
Nitrate	13.91	13.96	0.359 P	10
Sulfate	145.6	143.0	1.80 P	10

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 value could not be calculated.

Form MS/DUPE-1

MS/Duplicate Database

Laucks Testing Labs

Record name: M101899_IAIW01

Spike Frac : DIONEX
Description: Anions by Ion Chromatography
QC Fraction: IAI
Date Prep'd: 10/18/99 Spk Sample: 9909619-02
Matrix : WATER Client ID : S141933A99
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Spike Added	Spike Found	% Recov	LCL	UCL
Fluoride	1.560	2.000	3.500	97	66	121
Chloride	150.2	20.00	162.5	62*	73	121
Nitrate	13.91	10.00	22.94	90	79	117
Sulfate	145.6	40.00	184.4	97	81	115

* = Value is outside control limit

If RECOV = -1 value could not be calculated.
If RECOV = 999 value exeeded 999%.

Form MS/Dupe-2

MS/Duplicate Database

Laucks Testing Labs

Record name: M101999_IAIW01

Spike Frac : DIONEX
Description: Anions by Ion Chromatography
QC Fraction: IAI
Date Prep'd: 10/19/99 Spk Sample: 9910454-01
Matrix : WATER Client ID : KAFB100701
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD	Limit
Fluoride	0.690	0.680	0.010 L	1.0
Chloride	11.66	11.31	3.05 P	11
Nitrate	7.600	7.500	1.32 P	10
Sulfate	41.66	40.95	1.72 P	10

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 value could not be calculated.

Form MS/DUPE-1

MS/Duplicate Database

Laucks Testing Labs

Record name: M101999_IAIW01

Spike Frac : DIONEX
Description: Anions by Ion Chromatography
QC Fraction: IAI
Date Prep'd: 10/19/99 Spk Sample: 9910454-01
Matrix : WATER Client ID : KAFB100701
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Spike Added	Spike Found	% Recov	LCL	UCL
Fluoride	0.6900	2.000	2.400	86	66	121
Chloride	11.66	20.00	29.51	89	73	121
Nitrate	7.600	10.00	16.45	88	79	117
Sulfate	41.66	40.00	78.19	91	81	115

* = Value is outside control limit

If RECOV = -1 value could not be calculated.
If RECOV = 999 value exeeded 999%.

Form MS/Dupe-2

MS/Duplicate Database

Laucks Testing Labs

Record name: M102299_NH3W01

Spike Frac : NH3
Description: Ammonia, Lachat phenate method
QC Fraction: NH3
Date Prep'd: 10/22/99 Spk Sample: 9909597-06
Matrix : WATER Client ID : S6A3A99
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD	Limit
Ammonia as N (EPA 350.1)	0.000	0	0.001 L	0.050

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 value could not be calculated.

Form MS/DUPE-1

MS/Duplicate Database

Laucks Testing Labs

Record name: M102299_NH3W01

Spike Frac : NH3
Description: Ammonia, Lachat phenate method
QC Fraction: NH3
Date Prep'd: 10/22/99 Spk Sample: 9909597-06
Matrix : WATER Client ID : S6A3A99
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Spike Added	Spike Found	% Recov	LCL	UCL
Ammonia as N (EPA 350.1)	0.0009	0.5000	0.415	83	53	120

* = Value is outside control limit

If RECOV = -1 value could not be calculated.
If RECOV = 999 value exeeded 999%.

Form MS/Dupe-2

Duplicates Database

Laucks Testing Labs

Record name: D092799_TDSW01

Spike Frac : TDS
Description: Total Dissolved Solids, 160.1
QC Fraction: TDS
Date Prep'd: 09/27/99 Spk Sample: 9909597-02
Matrix : WATER Client ID : S7A3A99
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD		Limit
Total Dissolved Solids	461	458	0.65	P	30

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

Duplicates Database

Laucks Testing Labs

Record name: D092899_TDSW01

Spike Frac : TDS
Description: Total Dissolved Solids, 160.1
QC Fraction: TDS
Date Prep'd: 09/28/99 Spk Sample: 9909623-01
Matrix : WATER Client ID : AH053
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD		Limit
Total Dissolved Solids	125	123	1.6	P	30

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

Duplicates Database

Laucks Testing Labs

Record name: D092899_TDSW02

Spike Frac : TDS
Description: Total Dissolved Solids, 160.1
QC Fraction: TDS
Date Prep'd: 09/28/99 Spk Sample: 9909619-04
Matrix : WATER Client ID : S145933A99
Sequence No: 02 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD		Limit
Total Dissolved Solids	376	356	5.5	P	30

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

811

Duplicates Database

Laucks Testing Labs

Record name: D092899_TSW05

Spike Frac : TS
Description: Total Solids
QC Fraction: TS
Date Prep'd: 09/28/99 Spk Sample: 9909619-02
Matrix : WATER Client ID : S141933A99
Sequence No: 05 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD		Limit
Total Solids	929	932	0.32	P	30

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

Duplicates Database

Laucks Testing Labs

Record name: D100199_TSW02

Spike Frac : TS
Description: Total Solids
QC Fraction: TS
Date Prep'd: 10/01/99 Spk Sample: 9909597-02
Matrix : WATER Client ID : S7A3A99
Sequence No: 02 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD	Limit
Total Solids	288	303	5.1 P	30

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

812A

Duplicates Database

Laucks Testing Labs

Record name: D100499_ALKW03

Spike Frac : ALKALINITY
Description: Alkalinity
QC Fraction: ALK
Date Prep'd: 10/04/99 Spk Sample: 9909626-01
Matrix : WATER Client ID : 43380
Sequence No: 03 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD		Limit
Alkalinity	22.0	21.0	4.7	P	10

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

Duplicates Database

Laucks Testing Labs

Record name: D100499_TDSW01

Spike Frac : TDS
Description: Total Dissolved Solids, 160.1
QC Fraction: TDS
Date Prep'd: 10/04/99 Spk Sample: 9909639-02
Matrix : WATER Client ID : S3B3A99
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD	Limit
Total Dissolved Solids	760	750	1.3 P	30

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

814

Duplicates Database

Laucks Testing Labs

Record name: D100599_ALKW01

Spike Frac : ALKALINITY
Description: Alkalinity
QC Fraction: ALK
Date Prep'd: 10/05/99 Spk Sample: 9909597-06
Matrix : WATER Client ID : S6A3A99
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD	Limit
Alkalinity	25.0	25.0	0 P	10

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

Duplicates Database

Laucks Testing Labs

Record name: D100699_ALKW01

Spike Frac : ALKALINITY
Description: Alkalinity
QC Fraction: ALK
Date Prep'd: 10/06/99 Spk Sample: 9909619-02
Matrix : WATER Client ID : S141933A99
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD		Limit
Alkalinity	438	433	1.1	P	10

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

Duplicates Database

Laucks Testing Labs

Record name: D100699_TSW04

Spike Frac : TS
Description: Total Solids
QC Fraction: TS
Date Prep'd: 10/06/99 Spk Sample: 9909597-02
Matrix : WATER Client ID : S7A3A99
Sequence No: 04 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD		Limit
Total Solids	326	284	14	P	30

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

Duplicates Database

Laucks Testing Labs

Record name: D100699_TSW05

Spike Frac : TS
Description: Total Solids
QC Fraction: TS
Date Prep'd: 10/06/99 Spk Sample: 9909639-02
Matrix : WATER Client ID : S3B3A99
Sequence No: 05 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD		Limit
Total Solids	771	752	2.5	P	30

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

Duplicates Database

Laucks Testing Labs

Record name: D100699_TSW06

Spike Frac : TS
Description: Total Solids
QC Fraction: TS
Date Prep'd: 10/06/99 Spk Sample: 9909597-10
Matrix : WATER Client ID : S5B3A99
Sequence No: 06 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD	Limit
Total Solids	424	422	0.47 P	30

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

Duplicates Database

Laucks Testing Labs

Record name: D103099_TDSW01

Spike Frac : TDS
Description: Total Dissolved Solids, 160.1
QC Fraction: TDS
Date Prep'd: 10/30/99 Spk Sample: 9909597-02
Matrix : WATER Client ID : S7A3A99
Sequence No: 01 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD	Limit
Total Dissolved Solids	306	305	0.33 P	30

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

819A

Duplicates Database

Laucks Testing Labs

Record name: D103099_TDSW02

Spike Frac : TDS
Description: Total Dissolved Solids, 160.1
QC Fraction: TDS
Date Prep'd: 10/30/99 Spk Sample: 9909639-04
Matrix : WATER Client ID : FD09259901
Sequence No: 02 Units : MG/L

Analyte	Conc(1)	Conc(2)	RPD	Limit
Total Dissolved Solids	525	535	1.9 P	30

* = Value is outside control limit
L = Control limit is 5x limit of detection; RPD value is difference of 2 sample values
P = Control limit is RPD; RPD value is calculated

If RPD = -1 or 99999 a value could not be calculated.

Form DUPE-1

819B

SRM Report

Lab Name : Laucks Testing Laboratories

Description: TDS on APG MIN 24244-24245
Rep. Units : MG/L

(Database reference: R092799_RESW01)

Analyte Name	Result	True Value	LCL	UCL
Total Dissolved Solids	570	504	384	618

* = Value is outside control limit
LCL = Lower Control Limit
UCL = Upper Control Limit

Form SRM-1

SRM Report

Lab Name : Laucks Testing Laboratories

Description: TDS on APG MIN 24244-24245
Rep. Units : MG/L

(Database reference: R092899_RESW01)

Analyte Name	Result	True Value	LCL	UCL
Total Dissolved Solids	494	504	384	618

* = Value is outside control limit
LCL = Lower Control Limit
UCL = Upper Control Limit

Form SRM-1

SRM Report

Lab Name : Laucks Testing Laboratories

Description: Alk by tit. on APG 24244-24245
Rep. Units : MG/L

(Database reference: R100499_ALKW01)

Analyte Name	Result	True Value	LCL	UCL
Alkalinity	111	113	103	122

* = Value is outside control limit
LCL = Lower Control Limit
UCL = Upper Control Limit

Form SRM-1

SRM Report

Lab Name : Laucks Testing Laboratories

Description: TDS on APG MIN 24244-24245
Rep. Units : MG/L

(Database reference: R100499_RESW01)

Analyte Name	Result	True Value	LCL	UCL
Total Dissolved Solids	467	504	384	618

* = Value is outside control limit
LCL = Lower Control Limit
UCL = Upper Control Limit

Form SRM-1

SRM Report

Lab Name : Laucks Testing Laboratories

Description: Alk by tit. on APG 24244-24245
Rep. Units : MG/L

(Database reference: R100599_ALKW01)

Analyte Name	Result	True Value	LCL	UCL
Alkalinity	112	113	103	122

* = Value is outside control limit
LCL = Lower Control Limit
UCL = Upper Control Limit

Form SRM-1

SRM Report

Lab Name : Laucks Testing Laboratories

Description: Alk by tit. on APG 24244-24245
Rep. Units : MG/L

(Database reference: R100699_ALKW01)

Analyte Name	Result	True Value	LCL	UCL
Alkalinity	110	113	103	122

* = Value is outside control limit
LCL = Lower Control Limit
UCL = Upper Control Limit

Form SRM-1

SRM Report

Lab Name : Laucks Testing Laboratories

Description: F,CL,NO3,SO4,PO4 by IC,#990514
Rep. Units : MG/L

(Database reference: R101599_IAIW01)

Analyte Name	Result	True Value	LCL	UCL
Fluoride	19.1	19.9	17.9	21.9
Chloride	29.9	30.1	27.1	33.1
Sulfate	155	150	135	165

* = Value is outside control limit
LCL = Lower Control Limit
UCL = Upper Control Limit

Form SRM-1

SRM Report

Lab Name : Laucks Testing Laboratories

Description: F,CL,NO3,SO4,PO4 by IC,#990514
Rep. Units : MG/L

(Database reference: R101899_IAIW01)

Analyte Name	Result	True Value	LCL	UCL
Fluoride	19.5	19.9	17.9	21.9
Chloride	30.3	30.1	27.1	33.1
Nitrate	22.4	22.4	20.2	24.7
Sulfate	156	150	135	165

* = Value is outside control limit
LCL = Lower Control Limit
UCL = Upper Control Limit

Form SRM-1

SRM Report

Lab Name : Laucks Testing Laboratories

Description: F,CL,NO3,SO4,PO4 by IC,#990514
Rep. Units : MG/L

(Database reference: R101999_IAIW01)

Analyte Name	Result	True Value	LCL	UCL
Fluoride	20.0	19.9	17.9	21.9
Chloride	29.8	30.1	27.1	33.1
Nitrate	22.0	22.4	20.2	24.7
Sulfate	152	150	135	165

* = Value is outside control limit
LCL = Lower Control Limit
UCL = Upper Control Limit

Form SRM-1

SRM Report

Lab Name : Laucks Testing Laboratories

Description: Ammonia as N in H2O, APG 22464
Rep. Units : MG/L

(Database reference: R102299_NH3W01)

Analyte Name	Result	True Value	LCL	UCL
Ammonia	16.3	15.7	13.3	18.2

* = Value is outside control limit
LCL = Lower Control Limit
UCL = Upper Control Limit

Form SRM-1

SRM Report

Lab Name : Laucks Testing Laboratories

Description: TDS on APG MIN 24244-24245
Rep. Units : MG/L

(Database reference: R103099_RESW01)

Analyte Name	Result	True Value	LCL	UCL
Total Dissolved Solids	493	504	384	618

* = Value is outside control limit
LCL = Lower Control Limit
UCL = Upper Control Limit

Form SRM-1

829 A

SAMPLING AND ANALYSIS REPORT
APPENDIX 2

ELECTRONIC DATA FILES
(DISKETTES INCLUDED IN ONLY ONE OF THE COPIES OF THE SAMPLING AND ANALYSIS REPORT PROVIDED TO NSWC CRANE)

DETECTION MONITORING EVENT NO. 2
SEPTEMBER 20 - 27, 1999
SANITARY WASTE LANDFILL

SAMPLING AND ANALYSIS REPORT
APPENDIX 3

DATABASE SUMMARY

DETECTION MONITORING EVENT NO. 2
SEPTEMBER 20 - 27, 1999
SANITARY WASTE LANDFILL

DATABASE SUMMARY
DETECTION MONITORING EVENT NO. 2
SANITARY WASTE LANDFILL
NSWC CRANE, INDIANA

nsample	S141933A99	S142933A99	S143933A99	S144933A99	S145933A99	S146933A99	S147933A99	S147933A99-D	S1A3B99	S1B3B99	S2013B99	S2033A99	S2A3A99
sample	S141933A99	S142933A99	S143933A99	S144933A99	S145933A99	S146933A99	S147933A99	FD09259901	S1A3B99	S1B3B99	S2013B99	S2033A99	S2A3A99
qc_type	NM	NM		NM	NM	NM	NM	NM		NM			NM
sacode	NORMAL	NORMAL	DRY	NORMAL	NORMAL	NORMAL	DUP	DUP	DRY	NORMAL	DRY	DRY	NORMAL
lab_id	9909619-02	9909597-05		9909619-03	9909619-04	9909597-04	9909639-03	9909639-04		9909597-03			9909619-05
samp_date	09/22/99	09/21/99		09/22/99	09/23/99	09/21/99	09/25/99	09/25/99		09/20/99			09/23/99
Volatile Organics (ug/L)													
1,1,1,2-TETRACHLOROETHANE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
1,1,1-TRICHLOROETHANE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
1,1,2,2-TETRACHLOROETHANE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
1,1,2-TRICHLOROETHANE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
1,1-DICHLOROETHANE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
1,1-DICHLOROETHENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
1,2-DICHLOROBENZENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
1,2-DICHLOROETHANE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
1,2-DICHLOROPROPANE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
1,4-DICHLOROBENZENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
BENZENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
BROMOMETHANE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
CARBON TETRACHLORIDE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
CHLOROBENZENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
CHLOROETHANE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
CHLOROFORM	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
CHLOROMETHANE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
CIS-1,2-DICHLOROETHENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
CIS-1,3-DICHLOROPROPENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
ETHYLBENZENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
METHYLENE CHLORIDE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
STYRENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
TETRACHLOROETHENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
TOLUENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
TRANS-1,3-DICHLOROPROPENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
TRICHLOROETHENE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
TRICHLOROFLUOROMETHANE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
VINYL CHLORIDE	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
XYLENES, TOTAL	1 U	1 U		1 U	1 U	1 U	1 U	1 U		1 U			1 U
Dissolved Metals (ug/L)													
CADMIUM	5.6 U	5.6 U		5.6 U	5.6 U	5.6 U	5.6 U	5.6 U		5.6 U			5.6 U

DATABASE SUMMARY
DETECTION MONITORING EVENT NO. 2
SANITARY WASTE LANDFILL
NSWC CRANE, INDIANA

nsample	S141933A99	S142933A99	S143933A99	S144933A99	S145933A99	S146933A99	S147933A99	S147933A99-D	S1A3B99	S1B3B99	S2013B99	S2033A99	S2A3A99
sample	S141933A99	S142933A99	S143933A99	S144933A99	S145933A99	S146933A99	S147933A99	FD09259901	S1A3B99	S1B3B99	S2013B99	S2033A99	S2A3A99
qc_type	NM	NM		NM	NM	NM	NM	NM		NM			NM
sacode	NORMAL	NORMAL	DRY	NORMAL	NORMAL	NORMAL	DUP	DUP	DRY	NORMAL	DRY	DRY	NORMAL
lab_id	9909619-02	9909597-05		9909619-03	9909619-04	9909597-04	9909639-03	9909639-04		9909597-03			9909619-05
samp_date	09/22/99	09/21/99		09/22/99	09/23/99	09/21/99	09/25/99	09/25/99		09/20/99			09/23/99
CALCIUM	148000	458000		139000	20700	77500	95100	92700		234000			57100
CHROMIUM	55.6 U	55.6 U		55.6 U	55.6 U	55.6 U	55.6 U	55.6 U		55.6 U			55.6 U
COPPER	27.8 U	27.8 U		27.8 U	27.8 U	27.8 U	27.8 U	27.8 U		27.8 U			27.8 U
IRON	210	111 U		111 U	13000	270	111 U	111 U		111 U			111 U
LITHIUM	40.8	161		43.7	109	54.6	23.3	23.4		53.1			110
MAGNESIUM	74900	292000		97800	16200	47500	51200	50800		111000			32500
MANGANESE	16.7 U	3690		52.6	3720	811	16.7 U	16.7 U		16.7 U			2420
POTASSIUM	3810	5170		2480	4380	2250	1110 U	1110 U		2960			2690
SODIUM	57600	71900		165000	22400	35500	30200	30400		101000			49500
ZINC	22.2 U	30.1		22.2 U	434	62.1	22.2 U	22.2 U		22.2 U			318
Miscellaneous Parameters (mg/L)													
ALKALINITY	440	690		270	2 U	56	370	370		390			36
AMMONIA	0.01 UJ	0.08 J		0.01 UJ	0.17 J	0.01 UJ	0.01 U	0.01 U		0.01 UJ			0.01 UJ
BICARBONATE ALKALINITY	440	690		270	2 U	56	370	370		390			36
CARBONATE ALKALINITY	2 U	2 U		2 U	2 U	2 U	2 U	2 U		2 U			2 U
CHLORIDE	140 J	43 J		85 J	22 J	36 J	37 J	37 J		160 J			35 J
DISSOLVED OXYGEN-METER-FIELD	5.78	5.08		7.21	6.41	2.28	4.96			5.03			3.8
OXIDATION REDUCTION POTENTIAL-FIELD MV	134.4	145		151	254	165	135.6			144.5			241.8
PH-FIELD	6.76	6.41		6.4	4.47	5.67	5.79			6.8			5.47
SPECIFIC CONDUCTIVITY-FIELD MS/CM	1.410	2.028		1.111	0.439	0.842	0.872			1.902			0.742
SULFATE	150 J	1700 J		710 J	190 J	350 J	79 J	70 J		560 J			300 J
TEMPERATURE-FIELD C	18.88	14.5		21.0	19.3	14.89	15.6			18.09			14.65
TOTAL DISSOLVED SOLIDS	880	3100 J		1300	380	640 J	570 J	540 J		1400 J			570
TOTAL SOLIDS	930	3400 J		1500	370	690 J	540 J	400 J		1500 J			620
TURBIDITY-FIELD NTU	1.2	2		6	4	0.3	1.5			0			0.3

DATABASE SUMMARY
DETECTION MONITORING EVENT NO. 2
SANITARY WASTE LANDFILL
NSWC CRANE, INDIANA

nsample	S3A3A99	S3B3A99	S4A3A99	S4B3A99	S5A3A99	S5B3A99	S6A3A99	S6A3A99-D	S6B3A99	S7A3A99	TB09209901	TB09239901	TB09259901
sample	S3A3A99	S3B3A99	S4A3A99	S4B3A99	S5A3A99	S5B3A99	S6A3A99	FD09219901	S6B3A99	S7A3A99	TB09209901	TB09239901	TB09259901
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	TB	TB	TB
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
lab_id	9909619-08	9909639-02	9909619-07	9909619-06	9909597-07	9909597-10	9909597-06	9909597-08	9909597-09	9909597-02	9909597-01	9909619-01	9909639-01
samp_date	09/24/99	09/25/99	09/24/99	09/23/99	09/21/99	09/22/99	09/21/99	09/21/99	09/22/99	09/20/99	09/20/99	09/23/99	09/25/99
Volatile Organics (ug/L)													
1,1,1,2-TETRACHLOROETHANE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BENZENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOMETHANE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROETHANE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ETHYLBENZENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHYLENE CHLORIDE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
STYRENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VINYL CHLORIDE	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
XYLENES, TOTAL	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dissolved Metals (ug/L)													
CADMIUM	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U			

DATABASE SUMMARY
DETECTION MONITORING EVENT NO. 2
SANITARY WASTE LANDFILL
NSWC CRANE, INDIANA

nsample	S3A3A99	S3B3A99	S4A3A99	S4B3A99	S5A3A99	S5B3A99	S6A3A99	S6A3A99-D	S6B3A99	S7A3A99	TB09209901	TB09239901	TB09259901
sample	S3A3A99	S3B3A99	S4A3A99	S4B3A99	S5A3A99	S5B3A99	S6A3A99	FD09219901	S6B3A99	S7A3A99	TB09209901	TB09239901	TB09259901
qc_type	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	TB	TB	TB
sacode	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
lab_id	9909619-08	9909639-02	9909619-07	9909619-06	9909597-07	9909597-10	9909597-06	9909597-08	9909597-09	9909597-02	9909597-01	9909619-01	9909639-01
samp_date	09/24/99	09/25/99	09/24/99	09/23/99	09/21/99	09/22/99	09/21/99	09/21/99	09/22/99	09/20/99	09/20/99	09/23/99	09/25/99
CALCIUM	66100	120000	10000	125000	74200	56500	12100	12400	59900	51400			
CHROMIUM	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U			
COPPER	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U			
IRON	9370	111 U	111 U	111 U	7110	5730	111 U	111 U	9500	111 U			
LITHIUM	115	87.1	11.1 U	52.7	303	48.6	11.1 U	11.1 U	11.1 U	23.1			
MAGNESIUM	34400	56500	5010	71500	25800	12700	4750	4800	21600	22800			
MANGANESE	1450	16.7 U	16.7 U	16.7 U	2920	479	182	184	1700	16.7 U			
POTASSIUM	2360	1130	1110 U	3240	2060	1110 U	1110 U	1110 U	1340	1110 U			
SODIUM	63300	67700	9230	34000	40800	44800	15300	15000	18100	20000			
ZINC	43.3	22.2 U	22.2 U	22.2 U	28.3	22.2 U	27.1	27.4	23.2	22.2 U			
Miscellaneous Parameters (mg/L)													
ALKALINITY	83	320	37	240	200	180	25	24	210	200			
AMMONIA	0.08	0.01 U	0.04	0.01 UJ	0.25 J	0.64 J	0.01 UJ	0.01 UJ	0.15 J	0.01 UJ			
BICARBONATE ALKALINITY	83	320	37	240	200	180	25	24	210	200			
CARBONATE ALKALINITY	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U			
CHLORIDE	31 J	20 J	1 U	17 J	22 J	8 J	41 J	43 J	26 J	29 J			
DISSOLVED OXYGEN-METER-FIELD	6.81	10.28	5.08	5.17	5.28	2.19	3.36		2.24	8.18			
OXIDATION REDUCTION POTENTIAL-FIELD MV	79.6	207.3	106.0	108	-46	56	244.1		-2.3	127			
PH-FIELD	6.00	6.84	5.88	6.64	6.11	6.08	5.34		6.42	6.49			
SPECIFIC CONDUCTIVITY-FIELD MS/CM	0.851	1.126	0.137	1.121	0.448	0.340	0.190		0.531	0.307			
SULFATE	330 J	280 J	34 J	410 J	180 J	110 J	1 J	2 J	42 J	20 J			
TEMPERATURE-FIELD C	20.95	21.42	16.7	19.0	16.1	19.2	17.23		19.54	17.0			
TOTAL DISSOLVED SOLIDS	630	760 J	110	870	500 J	410 J	170 J	170 J	320 J	310 J			
TOTAL SOLIDS	690	780 J	120	880	500 J	420 J	160 J	170 J	370 J	330 J			
TURBIDITY-FIELD NTU	4.3	1.2	6.7	3	6	2	1.0		3.6	7			