ARCADIS

Infrastructure, buildings, environment, communications

ARCADIS G&M, Inc.
1400 No. Harbor Boulevard
Suite 700
Fullerton
California 92835-4127
Tel 714.278.0992
Fax 714.278.0051
www.arcadis-us.com

ENVIRONMENTAL

ATTN: Information Technology Unit
California Regional Water Quality Control Board
Los Angeles Region (RWQCB)
320 West 4th Street, Suite 200
Los Angeles, California 90013

Subject:
Second Quarter 2004 Discharge Monitoring Report
Waste Discharge Requirements Order Number R4-2002-0030 (Series 007)
Compliance File Number CI-95-036, SLIC 0410
Project Site: Former Boeing C-6 Facility (Building 2 Area), Los Angeles, California

Date:
July 22, 2004

Contact:
Alistaire Callender, Ph.D.

Phone:
3015

Email:
acallender@arcadis-us.com

Project Number:
CA000594.0003.00005

Dear Information Technology Unit:

On behalf of Boeing Realty Corporation (BRC), ARCADIS is submitting this quarterly monitoring report per the Waste Discharge Requirements (WDR) Order Number R4-2002-0030 (Series 007). The purpose of this report and future WDR reports is to provide the Los Angeles Regional Water Quality Control Board (RWQCB) with a summary of amendment and monitoring activities performed at the referenced project site. The site is located at 19503 Normandie Avenue. Figures 1 and 2 illustrate the site location and the site layout, respectively.

This monitoring report summarizes groundwater amendment and monitoring activities performed during the second quarter of 2004. Amendment activities performed to test the amendment system are summarized in Section 1.0. Groundwater monitoring activities performed to evaluate the initial distribution of amendment solution are summarized in Section 2.0. A certification statement is provided in Section 3.0.

1.0 Amendment Activities

Amendment solution was not injected at the site during the second quarter. However, a water test was conducted at each amendment point to evaluate the hydraulic performance of the bioremediation system. The water tests were performed according to the *Water Test Plan* (Plan) and the *Water Test Plan Addendum* (Addendum) issued by ARCADIS on May 18 and June 28, 2004, respectively. The Plan and the Addendum were approved by the RWQCB on May 21 and June 29, 2004. RWQCB correspondence regarding approval of the Plan and the Addendum is provided in Appendix A.

The water tests were conducted between June 21 and July 12, 2004. As requested by the RWQCB, ARCADIS will submit a report documenting the results of the water tests by December 31, 2004.

2.0 Monitoring Activities

During the second quarter of 2004, groundwater monitoring was conducted according to the *Supplemental Groundwater Monitoring* letter issued by ARCADIS on April 22, 2004. The monitoring was performed to evaluate the initial distribution of amendment solution after the incomplete first injection of carbohydrate solution in February 2004. These monitoring activities are performed in addition to the scheduled monitoring that will be performed after the first amendment event is completed. ARCADIS correspondence concerning the supplemental groundwater monitoring event is provided in Appendix A.

Groundwater monitoring was conducted on May 21, 2004 at monitoring wells IRZBMW001A/B, IRZBMW002A/B, IRZMW005, and CMW026 (Figure 2). The groundwater samples were analyzed for total organic carbon (TOC) using EPA Method 9060 Modified. Field parameters of purged groundwater were also collected (i.e. pH, dissolved oxygen, oxidation-reduction potential, specific conductance, and temperature).

Prior to collecting groundwater samples, depth to groundwater was measured in each monitoring well by using a water level meter accurate to 0.01 feet. Groundwater samples were collected using low flow sampling techniques, so that the purge rate was generally less than 600 milliliters per minute (mL/min) and drawdown while purging was less than 1 foot. Since recharge of monitoring well IRZMW0002A does not support use of low flow sampling techniques, the monitoring well was purged dry prior to sampling.

The sampling methodology also involved use of a flow-through cell that houses field instrumentation used to measure groundwater stabilization parameters (i.e., temperature, pH, specific conductance, oxygen reduction potential, etc.). For each monitoring well, the flow-through cell was connected to a submersible pump with dedicated polyethylene tubing. Once the field parameters stabilized, groundwater samples were collected in laboratory-prepared containers. Field parameters and other relevant sampling data were documented on sample collection logs. The groundwater samples were transported in a chilled ice chest with chain-of-custody documentation and to an analytical laboratory certified by the State of California (Severn Trent Laboratories, Inc.).

Field parameter data and analytical results from the supplemental groundwater sampling event are summarized in Table 1. Laboratory analytical data with associated chain-of-custody documentation are presented in Appendix B. Sample

collection logs with field parameter and monitoring well sampling data are maintained in the project files.

3.0 Certification Statement

I declare under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system or those directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions or comments regarding this discharge monitoring report, please contact Alistaire Callender or David Poley at (714) 278-0992.

Sincerely,

ARCADIS G&M, Inc.

David G. Poley
Project Scientist

James Nguyen, P.E.
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
JAMES K. NGUYEN
NO. C055942
EXP. 12/31/04
CIVIL
STATE OF CALIFORNIA

Alistaire Callender, Ph.D.
Project Manager

Copies:
Robert Scott, Boeing Realty Corporation
Scott Zachary, Haley & Aldrich
Project File

Enclosures:
Table 1 - Baseline and Supplemental Groundwater Monitoring Results

Figure 1 - Site Location
Figure 2 - Amendment Point and Monitoring Well Locations

Appendix A – Amendment and Monitoring Activity Correspondence
Appendix B - Laboratory Analyses and Chain-of-Custody

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Tables

Table 1. Baseline and Supplemental Groundwater Monitoring Results
Former Building 2 Area, Former Boeing C-6 Facility

Well Number	Screened Zone	Well Group	Sample Date	Top of Casing (feet msl)	Depth to Water (feet)	Groundwater Elevation (feet msl)	pH	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Temperature (°C)	Specific Conductance (mS/cm)	Total Organic Carbon (mg/L)
IRZMW001A	Zone B	A	10/30/2003	54.18	68.05	-13.87	6.7	4.8	245.9	21.85	2,354	5.0
			5/21/2004		68.61	-14.43	7.1	2.7	47.4	25.27	2,595	5.5
IRZMW001B		A	10/30/2003	54.10	67.98	-13.88	6.8	6.2	159.6	21.83	1,254	3.8
			5/21/2004		68.11	-14.01	7.3	6.8	78.3	23.69	1,278	3.6
IRZMW002A		A	10/30/2003	54.07	67.98	-13.91	6.8	3.1	-140.7	22.06	1,852	21.8
			5/21/2004		68.39	-14.32	7.2	0.9	-52.5	22.12	2,038	13.3
IRZMW002B		A	10/30/2003	54.17	68.07	-13.90	6.8	4.1	110.3	21.73	1,125	4.1
			5/21/2004		68.97	-14.80	7.2	4.2	45.5	24.04	1,204	5.2
IRZMW005		A	10/9/2003	50.19	64.44	-14.25	7.1	5.3	40.8	21.64	1,591	3.9
			5/21/2004		64.52	-14.33	7.3	5.8	89.6	21.73	1,546	5.6
CMW026	Zone C	A	10/7/2003	48.94	63.38	-14.44	7.2	4.5	34.0	22.31	965	2.0
			5/21/2004		63.59	-14.65	7.2	0.3	-26.4	21.62	1,016	6.5
EPA Analytical Method					N/A	N/A	N/A	N/A	N/A	N/A	N/A	9060

Notes:
Group A: wells located within the estimated injection area
feet msl - feet above mean sea level
mg/L - milligrams per liter
mV - millivolts
°C - degrees Celsius
mS/cm - millisiemens per centimeter
NA - Not applicable

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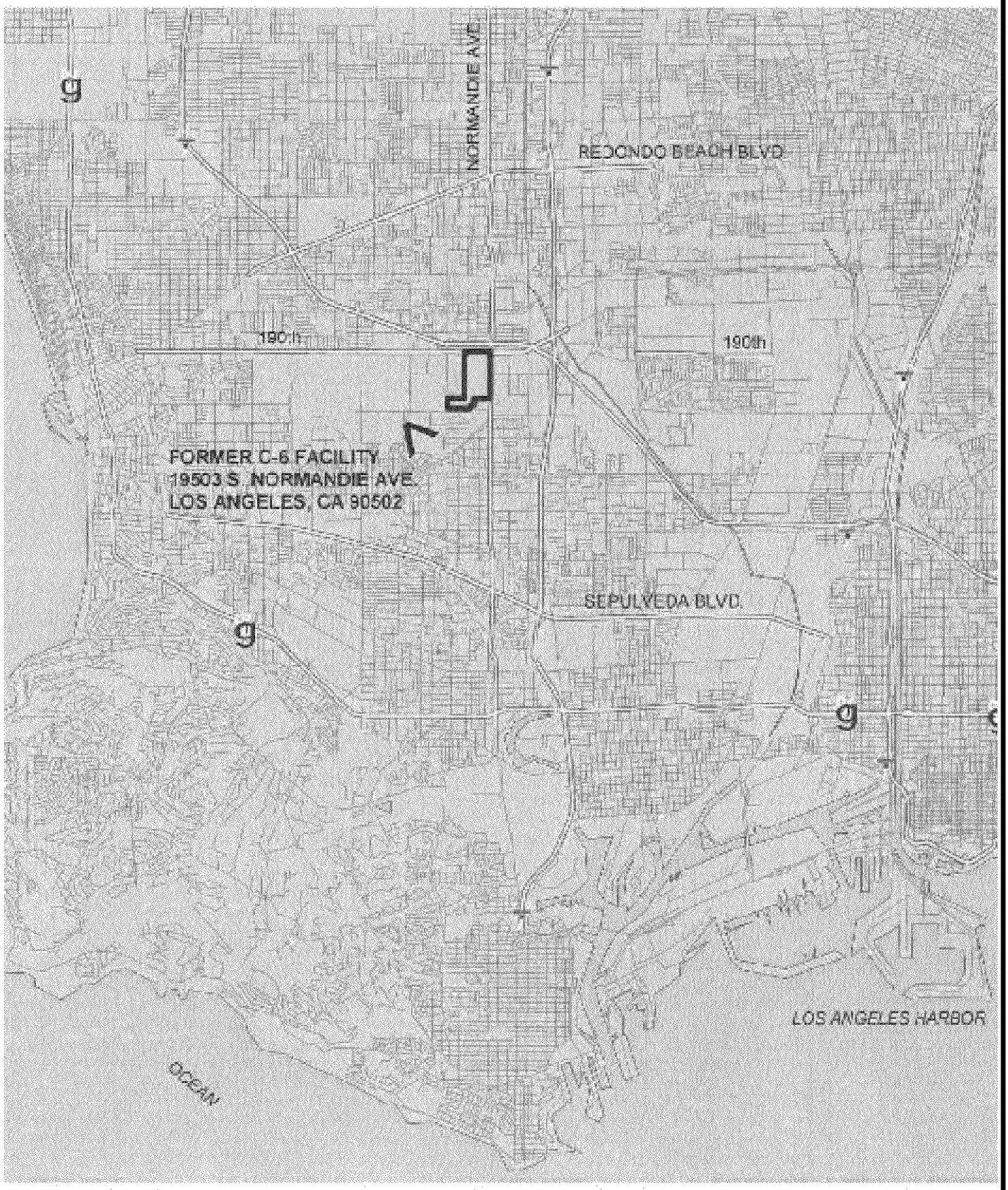
Figures



Base map download from "Tiger File" data website hosted by ESRI.

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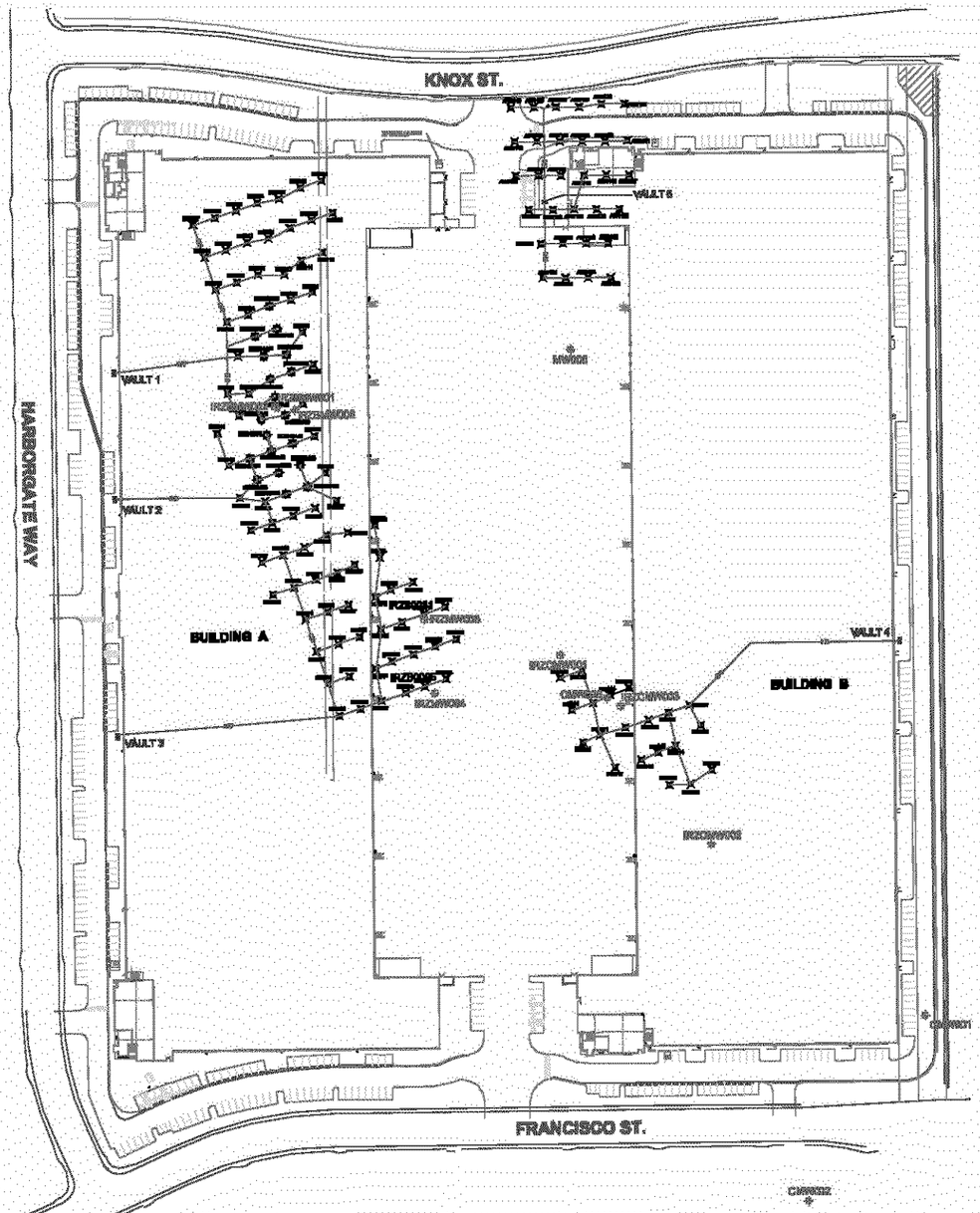
SITE LOCATION

BOEING REALTY CORPORATION
FORMER C-6 FACILITY
LOS ANGELES, CALIFORNIA

FIGURE 1

DATE: 11/5/03 | 13:36 | PRJ#: CA 594.03.01 | DWG: G:\drawings\aproject\boeing\2003\sl-1 | FILE: | CHK: LOTHMAN | PM: NGUYEN | ART: QUINONES



LEGEND

- BIOGROUNDWATER MONITORING WELL
- DUAL BIOINJECTION POINT
- SINGLE BIOINJECTION POINT
- VAULT 1 — FLUSH MOUNTED VAULT FOR SUBSURFACE REMEDIATION PIPING
- —BIO— BIOREMEDIATION SYSTEM PIPING

N

0 100 200
SCALE IN FEET

ALL DIMENSIONS AND LOCATIONS APPROXIMATE

BASE MAP PROVIDED BY HILL PINKERT ARCHITECTS, INC. IN FEBRUARY 2003

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AMENDMENT POINT AND MONITORING WELL LOCATIONS

BOEING REALTY CORPORATION
FORMER C-6 FACILITY
LOS ANGELES, CALIFORNIA

FIGURE
2

DATE: 1/8/04 | 11:30 | PRJ#: CA 594.03.D1 | DWG: G:\drawings\project\boeing\2003\Site Map-survey-coords | FILE: | CHK: LOTHMAN | PM: NGUYEN | ART: QUINONES

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Appendix A

Amendment and Monitoring Activity Correspondence

California Regional Water Quality Control Board

Los Angeles Region

Over 51 Years Serving Coastal Los Angeles and Ventura Counties

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

Terry Tamminen
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.swrcb.ca.gov/rwqcb4

RECEIVED
JUN 30 2004
ARCADIS Geraghty & Miller

June 29, 2004

Brian Mossman
Boeing Realty Corporation
4900 E. Conant St. Building #1
Long Beach, CA 90808

WATER TEST PLAN ADDENDUM, GROUNDWATER REMEDIATION, BOEING REALTY CORPORATION, FORMER C-6 FACILITY, 19503 NORMANDIE AVENUE, LOS ANGELES (FILE NO. 95-036)

Dear Mr. Mossman:

We have reviewed the "Water Test Plan (Addendum)" dated June 28, 2004, prepared by Arcadis G&M, Incorporated. Boeing has applied for and received General Waste Discharge Requirements for the injection of a carbohydrate solution into the groundwater beneath the C-6 facility to remediate volatile organic compounds. Boeing constructed a network of injection wells and associated piping beneath the Building 1/36 and Building 2 areas and Boeing injected water to test the hydraulic performance of the Building 2 injection network pursuant to the Water Test Plan dated May 18, 2004, which was approved by the Regional Board on May 21, 2004.

The Water Test Plan (Addendum) Boeing proposes to conduct a subsequent test of the Building 1/36 injection system following the same procedures as previously approved. The existing site-wide groundwater-monitoring program is adequate to monitor groundwater quality and flow conditions across the site and no additional monitoring requirements are necessary for the additional wells to be tested.

We have completed our review of the Water Test Plan (Addendum) and approve its implementation. Please submit report containing the results of the water testing by **December 31, 2004**. Please call me at (213) 576-6737 if you have any questions.

Sincerely,

John Geroch
Associate Engineering Geologist
Site Cleanup Unit

cc: Scott Zachary, Haley & Aldrich
James Nguyen, Arcadis

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ENVIRONMENTAL

ATTN: Mr. John Geroch
California Regional Water Quality Control Board
Los Angeles Region (RWQCB)
320 West 4th Street, Suite 200
Los Angeles, California 90013

Subject:
Supplemental Groundwater Monitoring
Waste Discharge Requirements Order Number R4-2002-0030 (Series 007)
Compliance File Number CI-95-036, SLIC 0410
Project Site: Former Boeing C-6 Facility (Building 2 Area), Los Angeles, California

Date:
22 April 2004

Contact:
James K. Nguyen, P.E.

Phone:
Ext. 3026

Project Number:
CA000594.0003.00005

Dear Mr. Geroch:

The purpose of this letter is to propose performing supplemental groundwater monitoring prior to completion of the first amendment addition at the former Boeing C6 Site, Los Angeles, California (Figure 1). An initial schedule was outlined in the above-referenced WDR permit dated February 4, 2003. As outlined in the permit, the baseline sampling event was to be conducted in October 2003. The baseline sampling event was completed in October 2003 as scheduled and reported to the RWQCB in a letter dated November 24, 2003. Subsequent monitoring events hinge on the completion of the first amendment. However, due to delays with building construction activities and the release of carbohydrate solution that occurred on February 23 and 24, 2004 (*Notification of Leakage of Molasses Solution* letter submitted to the RWQCB dated February 27, 2004) during the first amendment addition, we are proposing to perform supplemental monitoring during this interim period to evaluate amendment distribution prior to completion of the first amendment.

Due to the release of the carbohydrate solution, amendment activities were immediately terminated and the RWQCB notified. The condition of the amendment points and lateral lines is being evaluated using potable water for testing. Amendment activities are currently suspended and will resume after the water test is completed, the potential causes of the release are assessed, and the delivery method is modified to prevent future release. Currently, the water test is scheduled for either April or May 2004.

Per the WDR permit, the first monitoring event will be conducted 2 weeks after completing the first amendment event. The monitoring frequency as set forth in the permit is to conduct monitoring after 2, 6, 12, 16, 21, and 36 weeks after the first

amendment event and quarterly thereafter. As outlined in the permit, monitoring events were scheduled for November and December 2003, January, February, March, and July 2004. However, due to the delays mentioned above, we propose to perform supplemental monitoring to monitor the distribution of placed amendment during this interim period. Monitoring will still be conducted 2, 6, 12, 16, 21, and 36 weeks after the completion of the first injection event, and quarterly thereafter in accordance with the permit. Since the first amendment event was postponed until June 2004, the first monitoring event will likely be conducted in late June or early July 2004.

During the interim period while the injection system is being evaluated, the supplemental groundwater monitoring program will consist of collecting additional groundwater samples to evaluate the amendment distribution. It is proposed that monitoring be conducted in May 2004 from the following monitoring wells: IRZBMW001A/B, IRZBMW002A/B, IRZMW005, and CMW026 (Figure 2). Samples will be collected and analyzed for total organic carbon using EPA Method 9060 Modified. In addition, field parameters will also be collected (i.e. pH, dissolved oxygen, oxidation-reduction potential, specific conductance, and temperature). Sampling protocol will be conducted as described in the IRZ pilot test workplan. Samples will be collected from these during the week of May 17th.

If you have any questions or comments regarding this letter, please contact Jim Nguyen at (714) 278-0992.

Sincerely,

ARCADIS G&M, Inc.

James K. Nguyen, P. E.
Project Manager

Enclosures:
Figures: 1 – Site Location Map
2 – Amendment Point and Monitoring Well Locations

Copies:
Robert Scott, Boeing
Scott Zachary, Haley & Aldrich
Project File

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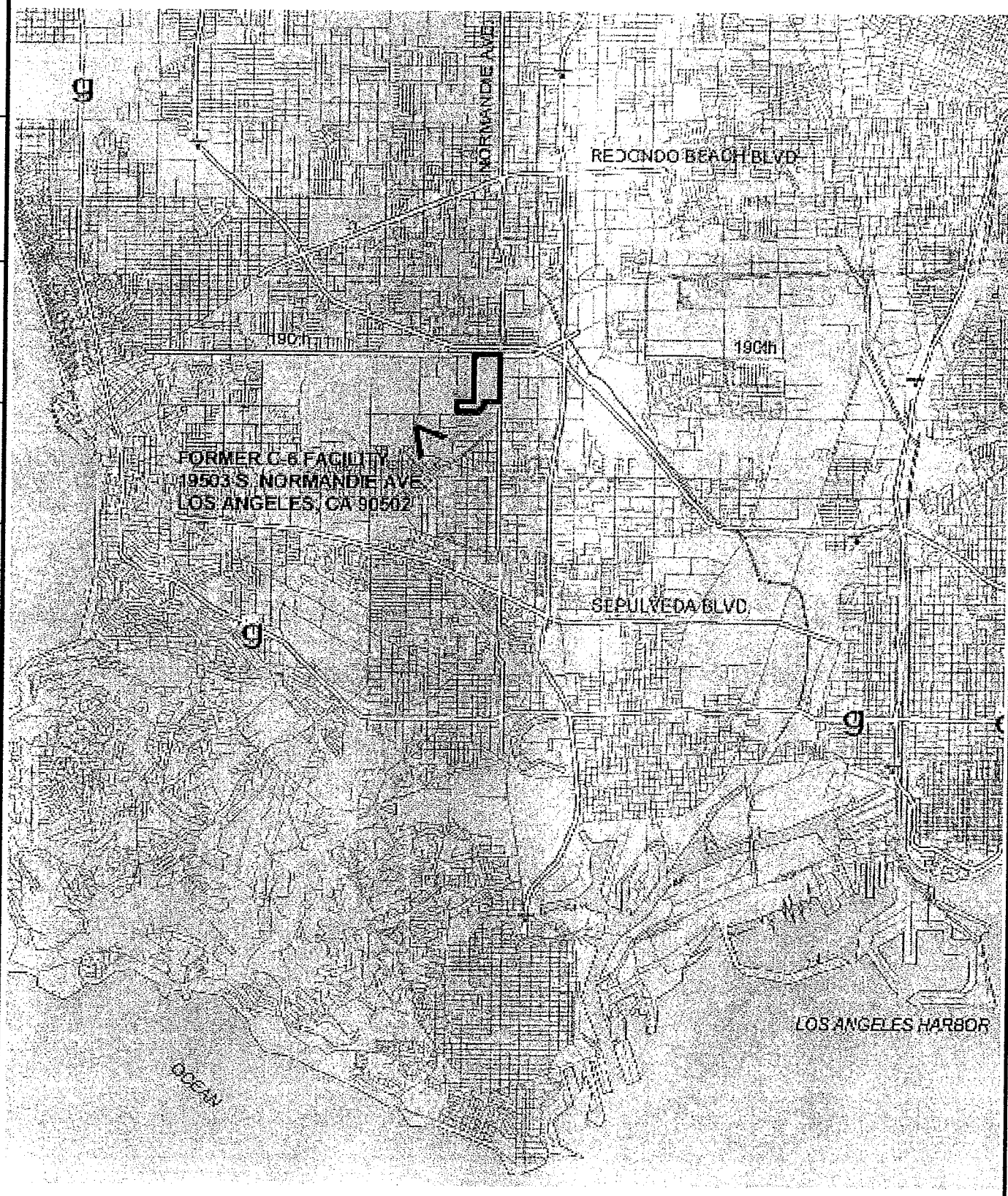
Figures



Base map download from "Tiger File" data website hosted by ESRI.

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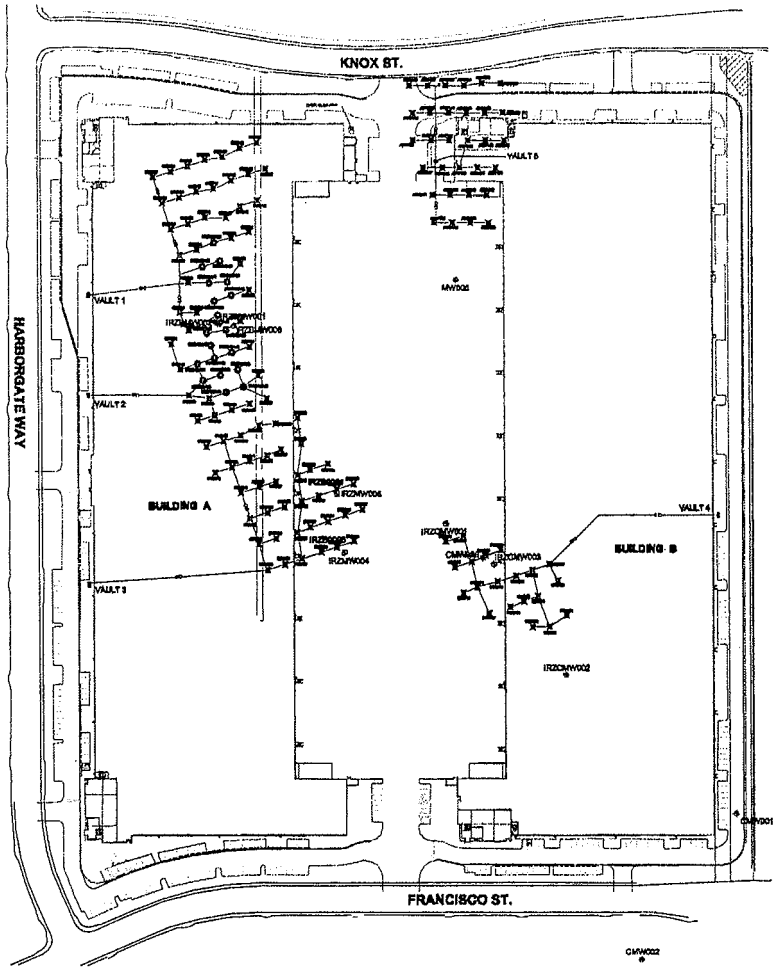
SITE LOCATION

BOEING REALTY CORPORATION
FORMER C-6 FACILITY
LOS ANGELES, CALIFORNIA

FIGURE

1

DATE: 11/5/03 | 13:36 | PRJ#: CA 594.03.01 | DWG: G:\drawings\caproject\boeing\2003\sl-1 | FILE: | CHK: LOTHIAN | PM: NGUYEN | ART: QUINONES



LEGEND

- BIOGROUNDWATER MONITORING WELL
- DUAL BIOINJECTION POINT
- SINGLE BIOINJECTION POINT
- VAULT 1 — FLUSH MOUNTED VAULT FOR SUBSURFACE REMEDIATION PIPING
- —BIO— BIOREMEDIATION SYSTEM PIPING

N

0 100 200
SCALE IN FEET

ALL DIMENSIONS AND LOCATIONS APPROXIMATE

BASE MAP PROVIDED BY HILL PINKERT ARCHITECTS, INC. IN FEBRUARY 2003

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AMENDMENT POINT AND MONITORING WELL LOCATIONS

BOEING REALTY CORPORATION
FORMER C-6 FACILITY
LOS ANGELES, CALIFORNIA

FIGURE 2

DATE: 1/8/04 11:30 | PRJ#: CA 594.03.01 | DWG: G:\drawings\oproject\boeing\2003\Site Map-survey-coords | FILE: | CHK: LOTHMAN | PM: NGUYEN | ART: QUINONES

BOE-C6-0009924

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ENVIRONMENTAL

ATTN: Mr. John Geroch
California Regional Water Quality Control Board
Los Angeles Region (RWQCB)
320 West 4th Street, Suite 200
Los Angeles, California 90013

Subject:
Notification of Supplemental Groundwater Monitoring
Waste Discharge Requirements Order Number R4-2002-0030 (Series 007)
Compliance File Number CI-95-036, SLIC 0410
Project Site: Former Boeing C-6 Facility (Building 2 Area), Los Angeles, California

Date:
20 May 2004

Contact:
James K. Nguyen, P.E.

Phone:
Ext. 3026

Project Number:
CA000594.0003.00005

Dear Mr. Geroch:

The purpose of this letter is to notify the Regional Water Quality Control Board (RWQCB) that groundwater monitoring will be conducted at the subject project site on May 21, 2004. Monitoring will be conducted per the *Supplemental Groundwater Monitoring* letter submitted to the RWQCB on April 22, 2004.

Please contact me at (714) 278-0992 if you have any questions regarding this letter.

Sincerely,

ARCADIS G&M, Inc.

James K. Nguyen

James K. Nguyen, P. E.
Project Manager

Copies:
Robert Scott, Boeing
Scott Zachary, Haley & Aldrich
Project File

Part of a bigger picture

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Appendix B
Laboratory Analyses and Chain-of-Custody

SEVERN TRENT STL

STL Los Angeles
1721 South Grand Avenue
Santa Ana, CA 92705

Tel: 714 258 8610 Fax: 714 258 0921
www.stl-inc.com

June 2, 2004

STL LOT NUMBER: E4E220134
NELAP Certification Number: 01118CA/E87652

Jim Nguyen
ARCADIS Geraghty & Miller, Inc
1400 N. Harbor Blvd.
Suite 700
Fullerton, CA 92835-4127

Dear Mr. Nguyen,

This report contains the analytical results for the eight samples received under chain of custody by STL Los Angeles on May 21, 2004. These samples are associated with your Boeing former C6 Torrance, California project.

All applicable quality control procedures met method-specified acceptance criteria except as noted on the following page. Historical control limits for the LCS are used to define the estimate of uncertainty for a method. See Project Receipt Checklist for container temperature and conditions. Temperature reading between 2 to 6 degrees Celsius is considered within acceptable criteria. Any matrix related anomaly is footnoted within the report.

STL Los Angeles certifies that the tests performed at our facility meet all NELAP requirements for parameters for which accreditation is required or available. The case narrative is an integral part of the report. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions, please feel free to call me at (714) 258-8610 extension 313.

Sincerely,

Diane Suzuki
Customer Service Manager

CC: Project File

LOT NUMBER E4E220134

Nonconformance 05-08862

Affected Samples:
E4E220134 (8): TRIP BLANK

Affected Methods:
8260B, 9060

Case Narrative:
Two VOA vials from sample E4E220134 (8): TRIP BLANK contain bubbles >5mm diameter. Analysis is performed on a VOA vial without headspace when available.

ACCREDITED IN ACCORDANCE WITH nelac

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client: ARCADIS	Project Manager: Dave Poley	Date: 5/21/04	Chain of Custody Number: 164824
Address: 1400 N. Harbor Blvd	Telephone Number (Area Code)/Fax Number: (714) 278-0992 / (714) 278-0051	Lab Number: ~~T4C~~ 220134	Page 1 of 1
City: Fullerton; State: CA; Zip Code: 92835	Site Contact: H. Hernandez	Lab Contact:	
Project Name and Location (State): Boeing C-6	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Analysis (Attach list if more space is needed): TOC	VOCs	Special Instructions/ Conditions of Receipt
CMW026_WG_052104_01	5/21/04	0902		X					X						X		
IRZMW005_WG_052104_01	5/21/04	1012		X					X						X		
IRZMW002A_WG_052104_01	5/21/04	1258		X					X						X		
IRZMW002B_WG_052104_01	5/21/04	1332		X					X						X		
IRZMW001A_WG_052104_01	5/21/04	1407		X					X						X		
IRZMW001B_WG_052104_01	5/21/04	1439		X					X						X		
Wastewater Drum # 401	5/21/04	1600		X							X					X	
Trip Blank	5/21/04	—		X							X					X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other_____

QC Requirements (Specify):

1. Relinquished By	Date: 5/21/04	Time: 1735	1. Received By: Terry Swart	Date: 5-21-04	Time: 1735
2. Relinquished By	Date:	Time:	2. Received By	Date:	Time:
3. Relinquished By	Date:	Time:	3. Received By	Date:	Time:

Comments: 3.6°C + 0.6°F = 4.2°C RS 5/21/04

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

BOE-C6-0009929

STL LOS ANGELES - PROJECT RECEIPT CHECKLIST Date: 05/22/04

LIMS Lot #: E4E 220134 Quote #:

Client Name: Arcadis Project:

Received by: 828 Date/Time Received: 5-21-04 1735

Delivered by : ☒ Client ☐ STL ☐ Airborne ☐ Fed Ex ☐ UPS ☐ Other

****

	Initial / Date
Custody Seal Status Cooler: ☐Intact ☐Broken ☒None	828 5/21/04
Custody Seal Status Samples: ☐Intact ☐Broken ☒None	
Custody Seal #(s): ☒No Seal #	
Sampler Signature on COC ☐ Yes ☐No ☒N/A	
IR Gun # B Correction Factor +0.6 °C IR passed daily verification ☒ Yes ☐No	
Temperature - BLANK 3.6 °C @ 0.6 CF = 4.2 °C	
Temperature – COOLER (___ °C ___ °C ___ °C ___ °C) = ___ avg °C + 0.6 (CF) = ___ °C	AB 05/22/04
Samples outside temperature criteria but received within 6 hours of final sampling ☐ Yes ☒N/A	
Sample Container(s): ☒STL-LA ☐ Client	
One COC/Multiple coolers: ☐ Yes- # coolers ___ All within temp criteria ☐ Yes ☐No ☒N/A	
One or more coolers with an anomaly: ☐ Yes – (fill out PRC for each) ☒N/A	
Samples: ☒Intact ☐Broken ☐Other	
pH measured: ☒Yes ☐ Anomaly (if checked, notify lab and file NCM) ☐ N/A	
Anomalies: ☒No ☒Yes – complete CUR and Create NCM NCM #	
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times. ☒ Yes ☒N/A	
Labeled by: AB Labeling checked AB	

****

Turn Around Time: ☐RUSH–24HR ☐RUSH–48HR ☐RUSH–72HR ☒NORMAL	
Short-Hold Notification: ☐ pH ☐Wet Chem ☐Metals (Filter/Pres) ☐Encore ☐ >1/2 HT expired	✓

Outside Analysis(es) (Test/Lab/Date Sent Out) :

********** LEAVE NO BLANK SPACES : USE N/A **********

Headspace Anomaly ☒N/A AB 05/22/04

Lab ID	Container(s) #	Headspace	Lab ID	Container(s) #	Headspace
005	1, 2	☒ > 5mm ☐ < 5mm			☐ > 5mm ☐ < 5mm
		☐ > 5mm ☐ < 5mm			☐ > 5mm ☐ < 5mm
		☐ > 5mm ☐ < 5mm			☐ > 5mm ☐ < 5mm
		☐ > 5mm ☐ < 5mm			☐ > 5mm ☐ < 5mm
		☐ > 5mm ☐ < 5mm			☐ > 5mm ☐ < 5mm
		☐ > 5mm ☐ < 5mm			☐ > 5mm ☐ < 5mm
		☐ > 5mm ☐ < 5mm			☐ > 5mm ☐ < 5mm

Fraction	1-76	7,8												
VOAH/ *		3												
250AGBS	1													

* VOA with headspace/bubbles
H: HCL, S: H2SO4, N: HNO3, V: VOA, SL: Sleeve, E: Encore, PB: Poly Bottle, CGB: Clear Glass Bottle, AGJ: Amber Glass Jar, T: Terracore
AGB: Amber Glass Bottle, n/f/l:HNO3-Lab filtered, n/f:HNO3-Field filtered, znna: Zinc Acetate/Sodium Hydroxide, Na2s2o3: sodium thiosulfate

Condition Upon Receipt Anomaly Form

☒ N/A AB 05/22/04

- **COOLERS**
  - _ Not Received (received COC only)
  - _ Leaking
  - _ Other:
- **CUSTODY SEALS (COOLER(S)** / **CONTAINER(S)**
  - _ None / _ None
  - _ Not Intact / _ Not Intact
  - _ Other / _ Other
- **TEMPERATURE (SPECS 4 ± 2°C)**
  - _ Cooler Temp(s)
  - _ Temperature Blank(s)
- **CHAIN OF CUSTODY (COC)**
  - _ Not relinquished by Client; No date/time relinquished
  - _ Incomplete information provided
  - _ Other _ COC not received – notify PM
- **CONTAINERS**
  - _ Leaking
  - _ Broken
  - _ Extra
  - _ Without Labels
  - _ Other:
- **LABELS**
  - _ Not the same ID/info as in COC
  - _ Incomplete Information
  - _ Markings/Info illegible
  - _ Torn
- **SAMPLES**
  - _ Samples NOT RECEIVED but listed on COC
  - _ Samples received but NOT LISTED on COC
  - _ Logged based on Label Information
  - _ Logged based on info from other samples on COC
  - _ Logged according to Work Plan
  - _ Logged on HOLD UNTIL FURTHER NOTICE
  - _ Will be noted on COC–Client to send samples with new COC
  - _ Mislabeled as to tests, preservatives, etc.
  - _ Holding time expired – list sample ID and test
  - _ Improper container used
  - _ Not preserved/Improper preservative used
  - _ Improper pH _____ Lab to preserve sample and document
  - _ Insufficient quantities for analysis _ Other

Comments:

_ Corrective Action Implemented:
_ Client Informed: verbally on _____ By: _____ _ In writing on _____ By: _____
_ Sample(s) on hold until: _____ _ Sample(s) processed "as is."

Logged by/Date:	Log Review/Date:	PM Review/Date:
AB 05/21/04	5/24/04	06/01/04

Page 2 of 2

E4E220134

5

BOE-C6-0009931

SEVERN TRENT STL

Analytical Report

EXECUTIVE SUMMARY - Detection Highlights

E4E220134

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
CMW026_WG_052104_01 05/21/04 09:02 001				
Total Organic Carbon (TOC)	6.5	1.0	mg/L	SW846 9060
IRZMW005_WG_052104_01 05/21/04 10:12 002				
Total Organic Carbon (TOC)	5.6	1.0	mg/L	SW846 9060
IRZMW002A_WG_052104_01 05/21/04 12:58 003				
Total Organic Carbon (TOC)	13.3	1.0	mg/L	SW846 9060
IRZMW002B_WG_052104_01 05/21/04 13:32 004				
Total Organic Carbon (TOC)	5.2	1.0	mg/L	SW846 9060
IRZMW001A_WG_052104_01 05/21/04 14:07 005				
Total Organic Carbon (TOC)	5.5	1.0	mg/L	SW846 9060
IRZMW001B_WG_052104_01 05/21/04 14:39 006				
Total Organic Carbon (TOC)	3.6	1.0	mg/L	SW846 9060
WASTEWATER DRUM #401 05/21/04 16:00 007				
Chloroform	3.8 J	10	ug/L	SW846 8260B
1,1-Dichloroethene	8.4 J	10	ug/L	SW846 8260B
cis-1,2-Dichloroethene	15	10	ug/L	SW846 8260B
Trichloroethene	970	10	ug/L	SW846 8260B

METHODS SUMMARY

E4E220134

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Total Organic Carbon	SW846 9060	SW846 9060
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

E4E220134

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
GGVT5	001	CMW026_WG_052104_01	05/21/04	09:02
GGVT6	002	IRZMW005_WG_052104_01	05/21/04	10:12
GGVT7	003	IRZMW002A_WG_052104_01	05/21/04	12:58
GGVVA	004	IRZMW002B_WG_052104_01	05/21/04	13:32
GGVVD	005	IRZMW001A_WG_052104_01	05/21/04	14:07
GGVVF	006	IRZMW001B_WG_052104_01	05/21/04	14:39
GGVVH	007	WASTEWATER DRUM #401	05/21/04	16:00
GGVVT	008	TRIP BLANK	05/21/04	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

BOE-C6-0009935

ARCADIS GERAGHTY & MILLER, INC

Client Sample ID: CMW026_WG_052104_01

General Chemistry

Lot-Sample #...: E4E220134-001 **Work Order #...:** GGVT5 **Matrix.....:** WATER
Date Sampled...: 05/21/04 09:02 **Date Received..:** 05/21/04 17:35

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon (TOC)	**6.5**	**1.0**	**mg/L**	**SW846 9060**	**05/24/04**	**4145601**

Dilution Factor: 1 Analysis Time..: 15:04 Analyst ID.....: 999995
Instrument ID..: W08 MS Run #.....: 4145330 MDL.....: 0.40

ARCADIS GERAGHTY & MILLER, INC

Client Sample ID: IRZMW005_WG_052104_01

General Chemistry

Lot-Sample #...: E4E220134-002 **Work Order #...:** GGVT6 **Matrix.....:** WATER
Date Sampled...: 05/21/04 10:12 **Date Received..:** 05/21/04 17:35

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon (TOC)	**5.6**	**1.0**	**mg/L**	**SW846 9060**	**05/24/04**	**4145601**

Dilution Factor: 1 Analysis Time..: 15:04 Analyst ID.....: 9999950
Instrument ID..: W08 MS Run #.....: 4145330 MDL.....: 0.40

ARCADIS GERAGHTY & MILLER, INC

Client Sample ID: IRZMW002A_WG_052104_01

General Chemistry

Lot-Sample #...: E4E220134-003 **Work Order #...:** GGVT7 **Matrix.....:** WATER
Date Sampled...: 05/21/04 12:58 **Date Received..:** 05/21/04 17:35

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon (TOC)	13.3	1.0	mg/L	SW846 9060	05/24/04	4145601

Dilution Factor: 1 Analysis Time..: 15:04 Analyst ID.....: 9999950
Instrument ID..: W08 MS Run #.....: 4145330 MDL.....: 0.40

ARCADIS GERAGHTY & MILLER, INC

Client Sample ID: IRZMW002B_WG_052104_01

General Chemistry

Lot-Sample #...: E4E220134-004 **Work Order #...:** GGVVA **Matrix.....:** WATER
Date Sampled...: 05/21/04 13:32 **Date Received..:** 05/21/04 17:35

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon (TOC)	**5.2**	**1.0**	**mg/L**	**SW846 9060**	**05/24/04**	**4145601**

Dilution Factor: 1 Analysis Time..: 15:04 Analyst ID.....: 9999950
Instrument ID..: W08 MS Run #.....: 4145330 MDL.....: 0.40

ARCADIS GERAGHTY & MILLER, INC

Client Sample ID: IRZMW001A_WG_052104_01

General Chemistry

Lot-Sample #...: E4E220134-005 **Work Order #...:** GGVVD **Matrix.....:** WATER
Date Sampled...: 05/21/04 14:07 **Date Received..:** 05/21/04 17:35

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon (TOC)	**5.5**	**1.0**	**mg/L**	**SW846 9060**	**05/24/04**	**4145601**

Dilution Factor: 1 Analysis Time..: 15:04 Analyst ID.....: 9999950
Instrument ID..: W08 MS Run #.....: 4145330 MDL.....: 0.40

ARCADIS GERAGHTY & MILLER, INC

Client Sample ID: IRZMW001B_WG_052104_01

General Chemistry

Lot-Sample #...: E4E220134-006 **Work Order #...:** GGVVF **Matrix.....:** WATER
Date Sampled...: 05/21/04 14:39 **Date Received..:** 05/21/04 17:35

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon (TOC)	**3.6**	**1.0**	**mg/L**	**SW846 9060**	**05/24/04**	**4145601**

Dilution Factor: 1 Analysis Time..: 15:04 Analyst ID.....: 9999950
Instrument ID..: W08 MS Run #.....: 4145330 MDL.....: 0.40

ARCADIS GERAGHTY & MILLER, INC

Client Sample ID: WASTEWATER DRUM #401

GC/MS Volatiles

Lot-Sample #...: E4E220134-007 **Work Order #...:** GGVVH1AA **Matrix.....:** WATER
Date Sampled...: 05/21/04 16:00 **Date Received..:** 05/21/04 17:35 **MS Run #.....:** 4147291
Prep Date.....: 05/25/04 **Analysis Date..:** 05/25/04
Prep Batch #...: 4147474 **Analysis Time..:** 22:30
Dilution Factor: 10
Analyst ID.....: 015590 **Instrument ID..:** MSR
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	100	ug/L	30
Benzene	ND	10	ug/L	3.0
Bromobenzene	ND	10	ug/L	3.0
Bromochloromethane	ND	10	ug/L	3.0
Bromoform	ND	10	ug/L	3.0
Bromomethane	ND	20	ug/L	10
2-Butanone	ND	50	ug/L	30
n-Butylbenzene	ND	10	ug/L	3.0
sec-Butylbenzene	ND	10	ug/L	3.0
tert-Butylbenzene	ND	10	ug/L	2.0
Carbon disulfide	ND	10	ug/L	3.0
Carbon tetrachloride	ND	10	ug/L	3.0
Chlorobenzene	ND	10	ug/L	3.0
Dibromochloromethane	ND	10	ug/L	4.0
Bromodichloromethane	ND	10	ug/L	3.0
Chloroethane	ND	20	ug/L	3.0
Chloroform	**3.8 J**	**10**	**ug/L**	**3.0**
Chloromethane	ND	20	ug/L	3.0
2-Chlorotoluene	ND	10	ug/L	3.0
4-Chlorotoluene	ND	10	ug/L	3.0
1,2-Dibromo-3-chloro-propane	ND	20	ug/L	7.0
1,2-Dibromoethane (EDB)	ND	10	ug/L	3.0
Dibromomethane	ND	10	ug/L	4.0
1,2-Dichlorobenzene	ND	10	ug/L	3.0
1,3-Dichlorobenzene	ND	10	ug/L	3.0
1,4-Dichlorobenzene	ND	10	ug/L	3.0
Dichlorodifluoromethane	ND	20	ug/L	4.0
1,1-Dichloroethane	ND	10	ug/L	2.0
1,2-Dichloroethane	ND	10	ug/L	4.0
1,1-Dichloroethene	**8.4 J**	**10**	**ug/L**	**3.0**
cis-1,2-Dichloroethene	**15**	**10**	**ug/L**	**3.0**
trans-1,2-Dichloroethene	ND	10	ug/L	3.0
1,2-Dichloropropane	ND	10	ug/L	3.0
1,3-Dichloropropane	ND	10	ug/L	4.0
2,2-Dichloropropane	ND	10	ug/L	3.0
1,1-Dichloropropene	ND	10	ug/L	3.0

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ARCADIS GERAGHTY & MILLER, INC

Client Sample ID: WASTEWATER DRUM #401

GC/MS Volatiles

Lot-Sample #...: E4E220134-007 **Work Order #...:** GGVVH1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
cis-1,3-Dichloropropene	ND	10	ug/L	3.0
trans-1,3-Dichloropropene	ND	10	ug/L	5.0
Ethylbenzene	ND	10	ug/L	2.0
Hexachlorobutadiene	ND	10	ug/L	3.0
2-Hexanone	ND	50	ug/L	30
Isopropylbenzene	ND	10	ug/L	3.0
p-Isopropyltoluene	ND	10	ug/L	3.0
Methylene chloride	ND	10	ug/L	3.0
4-Methyl-2-pentanone	ND	50	ug/L	30
Methyl tert-butyl ether	ND	10	ug/L	5.0
Naphthalene	ND	10	ug/L	5.0
n-Propylbenzene	ND	10	ug/L	4.0
Styrene	ND	10	ug/L	3.0
1,1,1,2-Tetrachloroethane	ND	10	ug/L	3.0
1,1,2,2-Tetrachloroethane	ND	10	ug/L	4.0
Tetrachloroethene	ND	10	ug/L	3.0
Toluene	ND	10	ug/L	3.0
1,2,3-Trichlorobenzene	ND	10	ug/L	4.0
1,2,4-Trichloro-benzene	ND	10	ug/L	3.0
1,1,1-Trichloroethane	ND	10	ug/L	2.0
1,1,2-Trichloroethane	ND	10	ug/L	3.0
Trichloroethene	**970**	**10**	**ug/L**	**3.0**
Trichlorofluoromethane	ND	20	ug/L	3.0
1,2,3-Trichloropropane	ND	10	ug/L	4.0
1,1,2-Trichlorotrifluoro-ethane	ND	10	ug/L	4.0
1,2,4-Trimethylbenzene	ND	10	ug/L	3.0
1,3,5-Trimethylbenzene	ND	10	ug/L	2.0
Vinyl chloride	ND	10	ug/L	3.0
m-Xylene & p-Xylene	ND	10	ug/L	5.0
o-Xylene	ND	10	ug/L	2.0
Xylenes (total)	ND	10	ug/L	8.0

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	86	(75 - 130)
1,2-Dichloroethane-d4	107	(65 - 135)
Toluene-d8	107	(80 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

BOE-C6-0009943

ARCADIS GERAGHTY & MILLER, INC

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: E4E220134-008 **Work Order #...:** GGVVT1AA **Matrix.....:** WQ
Date Sampled...: 05/21/04 **Date Received..:** 05/21/04 17:35 **MS Run #.....:** 4147291
Prep Date.....: 05/25/04 **Analysis Date..:** 05/25/04
Prep Batch #...: 4147474 **Analysis Time..:** 18:00
Dilution Factor: 1
Analyst ID.....: 015590 **Instrument ID..:** MSR
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	3.0
Benzene	ND	1.0	ug/L	0.30
Bromobenzene	ND	1.0	ug/L	0.30
Bromochloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
2-Butanone	ND	5.0	ug/L	3.0
n-Butylbenzene	ND	1.0	ug/L	0.30
sec-Butylbenzene	ND	1.0	ug/L	0.30
tert-Butylbenzene	ND	1.0	ug/L	0.20
Carbon disulfide	ND	1.0	ug/L	0.30
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Bromodichloromethane	ND	1.0	ug/L	0.30
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
2-Chlorotoluene	ND	1.0	ug/L	0.30
4-Chlorotoluene	ND	1.0	ug/L	0.30
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L	0.70
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.40
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
Dichlorodifluoromethane	ND	2.0	ug/L	0.40
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	ND	1.0	ug/L	0.40
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
1,3-Dichloropropane	ND	1.0	ug/L	0.40
2,2-Dichloropropane	ND	1.0	ug/L	0.30
1,1-Dichloropropene	ND	1.0	ug/L	0.30

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ARCADIS GERAGHTY & MILLER, INC

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: E4E220134-008 **Work Order #...:** GGVVT1AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Hexachlorobutadiene	ND	1.0	ug/L	0.30
2-Hexanone	ND	5.0	ug/L	3.0
Isopropylbenzene	ND	1.0	ug/L	0.30
p-Isopropyltoluene	ND	1.0	ug/L	0.30
Methylene chloride	ND	1.0	ug/L	0.30
4-Methyl-2-pentanone	ND	5.0	ug/L	3.0
Methyl tert-butyl ether	ND	1.0	ug/L	0.50
Naphthalene	ND	1.0	ug/L	0.50
n-Propylbenzene	ND	1.0	ug/L	0.40
Styrene	ND	1.0	ug/L	0.30
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	ND	1.0	ug/L	0.30
Toluene	ND	1.0	ug/L	0.30
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.40
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	ND	1.0	ug/L	0.30
Trichlorofluoromethane	ND	2.0	ug/L	0.30
1,2,3-Trichloropropane	ND	1.0	ug/L	0.40
1,1,2-Trichlorotrifluoro-ethane	ND	1.0	ug/L	0.40
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.30
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.20
Vinyl chloride	ND	1.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20
Xylenes (total)	ND	1.0	ug/L	0.80

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	89	(75 - 130)
1,2-Dichloroethane-d4	103	(65 - 135)
Toluene-d8	108	(80 - 130)

BOE-C6-0009945

SEVERN TRENT STL

QA/QC

QC DATA ASSOCIATION SUMMARY

E4E220134

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 9060		4145601	4145330
002	WATER	SW846 9060		4145601	4145330
003	WATER	SW846 9060		4145601	4145330
004	WATER	SW846 9060		4145601	4145330
005	WATER	SW846 9060		4145601	4145330
006	WATER	SW846 9060		4145601	4145330
007	WATER	SW846 8260B		4147474	4147291
008	WQ	SW846 8260B		4147474	4147291

BOE-C6-0009947

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E4E220134
MB Lot-Sample #: E4E260000-474

Analysis Date..: 05/25/04
Dilution Factor: 1

Work Order #...: GG5VR1AA

Prep Date.....: 05/25/04
Prep Batch #...: 4147474

Analyst ID.....: 015590

Matrix.....: WATER

Analysis Time..: 17:30
Instrument ID..: MSR

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromobenzene	ND	1.0	ug/L	SW846 8260B
Bromochloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L	SW846 8260B
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B
Dibromomethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
1,3-Dichloropropane	ND	1.0	ug/L	SW846 8260B
2,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B

(Continued on next page)

BOE-C6-0009948

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E4E220134 **Work Order #...:** GG5VR1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B
p-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	1.0	ug/L	SW846 8260B
Naphthalene	ND	1.0	ug/L	SW846 8260B
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichlorotrifluoro-ethane	ND	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	86	(75 - 130)
1,2-Dichloroethane-d4	98	(65 - 135)
Toluene-d8	109	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: E4E220134 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon (TOC)		Work Order #: GG0JA1AA		MB Lot-Sample #:	E4E240000-601	
	ND	1.0	mg/L	SW846 9060	05/24/04	4145601

Dilution Factor: 1

Analysis Time..: 15:04 Analyst ID.....: 999995 Instrument ID..: W08

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E4E220134 **Work Order #...:** GG5VR1AC **Matrix.....:** WATER
LCS Lot-Sample#: E4E260000-474
Prep Date.....: 05/25/04 **Analysis Date..:** 05/25/04
Prep Batch #...: 4147474 **Analysis Time..:** 16:49
Dilution Factor: 1 **Instrument ID..:** MSR
Analyst ID.....: 015590

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**101**	**(75 - 125)**	**SW846 8260B**
Chlorobenzene	**96**	**(75 - 125)**	**SW846 8260B**
1,1-Dichloroethene	**104**	**(65 - 135)**	**SW846 8260B**
Toluene	**102**	**(75 - 125)**	**SW846 8260B**
Trichloroethene	**96**	**(75 - 135)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	95	(75 - 130)
1,2-Dichloroethane-d4	96	(65 - 135)
Toluene-d8	108	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

BOE-C6-0009951

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E4E220134 **Work Order #...:** GG5VR1AC **Matrix.....:** WATER
LCS Lot-Sample#: E4E260000-474
Prep Date.....: 05/25/04 **Analysis Date..:** 05/25/04
Prep Batch #...: 4147474 **Analysis Time..:** 16:49
Dilution Factor: 1 **Instrument ID..:** MSR
Analyst ID.....: 015590

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**10.1**	**ug/L**	**101**	**SW846 8260B**
Chlorobenzene	**10.0**	**9.65**	**ug/L**	**96**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**10.4**	**ug/L**	**104**	**SW846 8260B**
Toluene	**10.0**	**10.2**	**ug/L**	**102**	**SW846 8260B**
Trichloroethene	**10.0**	**9.59**	**ug/L**	**96**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	95	(75 - 130)
1,2-Dichloroethane-d4	96	(65 - 135)
Toluene-d8	108	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: E4E220134 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon (TOC)		Work Order #: GG0JA1AC	LCS Lot-Sample#: E4E240000-601		
	106	(85 - 115)	SW846 9060	05/24/04	4145601

Dilution Factor: 1 Analysis Time..: 15:04 Analyst ID.....: 999995
Instrument ID..: W08

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

BOE-C6-0009953

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: E4E220134 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon (TOC)			Work Order #: GG0JA1AC		LCS Lot-Sample#: E4E240000-601		
	25.0	26.6	mg/L	106	SW846 9060	05/24/04	4145601
			Dilution Factor: 1		Analysis Time..: 15:04	Analyst ID.....: 999995	
			Instrument ID..: W08				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...:	E4E220134	**Work Order #...:**	GGVXW1AM-MS	**Matrix.....:**	WATER
MS Lot-Sample #:	E4E220140-009		GGVXW1AN-MSD		
Date Sampled...:	05/20/04 15:26	**Date Received..:**	05/21/04 16:15	**MS Run #.....:**	4147291
Prep Date.....:	05/25/04	**Analysis Date..:**	05/26/04		
Prep Batch #...:	4147474	**Analysis Time..:**	01:21		
Dilution Factor:	1	**Analyst ID.....:**	015590	**Instrument ID..:**	MSR

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**97**	**(75 - 125)**			**SW846 8260B**
	89	**(75 - 125)**	**8.8**	**(0-25)**	**SW846 8260B**
Chlorobenzene	**94**	**(75 - 125)**			**SW846 8260B**
	93	**(75 - 125)**	**0.85**	**(0-25)**	**SW846 8260B**
1,1-Dichloroethene	**100**	**(65 - 135)**			**SW846 8260B**
	101	**(65 - 135)**	**0.99**	**(0-25)**	**SW846 8260B**
Toluene	**102**	**(75 - 125)**			**SW846 8260B**
	99	**(75 - 125)**	**3.5**	**(0-25)**	**SW846 8260B**
Trichloroethene	**89**	**(75 - 135)**			**SW846 8260B**
	87	**(75 - 135)**	**2.7**	**(0-25)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	97	(75 - 130)
	97	(75 - 130)
1,2-Dichloroethane-d4	100	(65 - 135)
	99	(65 - 135)
Toluene-d8	107	(80 - 130)
	106	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E4E220134 **Work Order #...:** GGVXW1AM-MS **Matrix.....:** WATER
MS Lot-Sample #: E4E220140-009 GGVXW1AN-MSD
Date Sampled...: 05/20/04 15:26 **Date Received..:** 05/21/04 16:15 **MS Run #.....:** 4147291
Prep Date.....: 05/25/04 **Analysis Date..:** 05/26/04
Prep Batch #...: 4147474 **Analysis Time..:** 01:21
Dilution Factor: 1 **Analyst ID.....:** 015590 **Instrument ID..:** MSR

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10.0**	**9.70**	**ug/L**	**97**		**SW846 8260B**
	ND	**10.0**	**8.88**	**ug/L**	**89**	**8.8**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**9.42**	**ug/L**	**94**		**SW846 8260B**
	ND	**10.0**	**9.34**	**ug/L**	**93**	**0.85**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10.0**	**9.96**	**ug/L**	**100**		**SW846 8260B**
	ND	**10.0**	**10.1**	**ug/L**	**101**	**0.99**	**SW846 8260B**
Toluene	**ND**	**10.0**	**10.2**	**ug/L**	**102**		**SW846 8260B**
	ND	**10.0**	**9.90**	**ug/L**	**99**	**3.5**	**SW846 8260B**
Trichloroethene	**ND**	**10.0**	**8.93**	**ug/L**	**89**		**SW846 8260B**
	ND	**10.0**	**8.69**	**ug/L**	**87**	**2.7**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	97	(75 - 130)
	97	(75 - 130)
1,2-Dichloroethane-d4	100	(65 - 135)
	99	(65 - 135)
Toluene-d8	107	(80 - 130)
	106	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

BOE-C6-0009956

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: E4E220134 **Matrix.....:** WATER
Date Sampled...: 05/21/04 09:02 **Date Received..:** 05/21/04 17:35

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon (TOC)	WO#: GGVT51AC-MS/GGVT51AD-MSD MS Lot-Sample #: E4E220134-001						
	89	(85 - 115)			SW846 9060	05/24/04	4145601
	91	(85 - 115)	1.4	(0-20)	SW846 9060	05/24/04	4145601

Dilution Factor: 1
Analysis Time..: 15:04 Instrument ID..: W08 Analyst ID.....: 999995
MS Run #.....: 4145330

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

BOE-C6-0009957

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: E4E220134 **Matrix.....:** WATER
Date Sampled...: 05/21/04 09:02 **Date Received..:** 05/21/04 17:35

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon (TOC)			WO#: GGVT51AC-MS/GGVT51AD-MSD				MS Lot-Sample #: E4E220134-001		
	6.5	25.0	28.8	mg/L	89		SW846 9060	05/24/04	4145601
	6.5	25.0	29.2	mg/L	91	1.4	SW846 9060	05/24/04	4145601

Dilution Factor: 1
Analysis Time..: 15:04 Instrument ID..: W08 Analyst ID.....: 999995
MS Run #.....: 4145330

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

BOE-C6-0009958