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STL

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

Tel: 314 298 8566 Fax: 314 298 8757
www.stl-inc.com

ANALYTICAL REPORT

F07-028

Lot #: F7H160258
SDG #: W05220

Steve Trent

Fluor Hanford Inc
1200 Jadwin Ave.
Richland, WA 99352

RECEIVED
MAY 2 1 2008
EDMC

TESTAMERICA LABORATORIES, INC.

SEP 2007
RECEIVED

Michael C. Franks
Project Manager

September 13, 2007

Leaders in Environmental Testing

Case Narrative
LOT NUMBER: **F7H160258**
SDG: **W05220**

This report contains the analytical results for the three samples received under chain of custody by STL St. Louis on August 16, 2007. These samples are associated with your F07-028 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by STL St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Observations/Nonconformances
Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Total Petroleum Hydrocarbons by SW846 8015

The Method Blank surrogate recovery in batch 7229186 is outside acceptance limits. Samples associated with this method blank demonstrated acceptable surrogate recoveries indicating the surrogate excursion is isolated to the method blank and not indicative of the batch.
The LCS surrogate recovery is outside acceptance limits. LCS spike recoveries are within QC limits demonstrating acceptable sample extraction and instrument performance.
Affected Samples:
F7H160258 (2): B1P3X2

ICP Metals by SW846 6010B

The samples in batch 7233293 were analyzed at a dilution for all elements due to high concentrations of the target analytes Calcium and Sodium. The reporting limit has been adjusted only for those targets reported from the dilution run.
Affected Samples:
F7H160258 (1): B1P3X1
F7H160258 (2): B1P3X2

Ion Chromatography by EPA 300.0

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recovery for Chloride in batch 7229061, Fluoride in batch 7229062, Sulfate in batch 7229063, Nitrite in batch 7229064, and Ortho Phosphate in batch 7229065 is attributed to matrix interference.
Affected Samples:
F7H160258 (1): B1P3X1
F7H160258 (2): B1P3X2
F7H160258 (3): B1P3X9

There were no Observations/Noncomformances for the following analysis:

Alkalinity by EPA 310.1
Total Organic Carbon by EPA 415.1

METHODS SUMMARY

F7H160258

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Bromide	MCAWW 300.0A	MCAWW 300.0A
Chloride	MCAWW 300.0A	MCAWW 300.0A
Extractable Petroleum Hydrocarbons	SW846 8015 MOD	SW846 3510
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	
Nitrate as NO3	MCAWW 300.0A	
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Total Organic Carbon	MCAWW 415.1	MCAWW 415.1

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

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

SAMPLE SUMMARY

F7H160258

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
J410C	001	B1P3X1	08/08/07	10:50
J411A	002	B1P3X2	08/08/07	12:05
J411T	003	B1P3X9	08/14/07	09:20

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.

LOT# F7H160258

W05220

Fluor Hanford Inc. W05220

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-028-223

TestAmerica St. Louis

COLLECTOR Pfister, Pope, Hughes Connolly, Webb	**COMPANY CONTACT** Trent, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ
SAMPLING LOCATION Array - 13A	**PROJECT DESIGNATION** AQUIFER TUBE SAMPLING ALONG THE 100-N AREA SHORELINE		**SAF NO.** F07-028
ICE CHEST NO. N/A	**FIELD LOGBOOK NO.** HNF-N-451-1	**COA** 122543ES10	**METHOD OF SHIPMENT** FEDERAL EXPRESS
SHIPPED TO Severn Trent St. Louis	**OFFSITE PROPERTY NO.** See PTR		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE 7N

AIR QUALITY ☐

DATA TURNAROUND 45 Days / 45 Days

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	Cool~4C	Cool~4C
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	500mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Alkalinity - 310.1;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B1P3X1	WATER	8-8-7	1050	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
D Connolly	8-8-7 1515	MO 745 Ref 1	8-8-7 1515
MO-745 REF #1	8-15-07 1176	SS-MPE	8-15-07 1130
SS-MPE	8-15-07 1230	LWANE	81507 1250
LWANE TAE	8-15-07 1400		08.16.07 0930

SPECIAL INSTRUCTIONS

(1)ICP Metals - 6010B (TAL) {Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc} ICP Metals - 6010B (Add-On) {Arsenic, Beryllium, Strontium}
(2)IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}

LABORATORY SECTION	**RECEIVED BY**	**TITLE**	**DATE/TIME**
FINAL SAMPLE DISPOSITION	**DISPOSAL METHOD**	**DISPOSED BY**	**DATE/TIME**

A-6003-618(01/06)

LOT# F7H160258

TestAmerica St. Louis

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F07-028-216	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pfister, Pope, Hughes / CONNOLLY	Trent, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	45 Days / 45 Days
Array - 3A	AQUIFER TUBE SAMPLING ALONG THE 100-N AREA SHORELINE		F07-028		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
N/A	HNF-N-451-1	122543ES10	FEDERAL EXPRESS		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Severn Trent St. Louis	See PTR		N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	Cool~4C	Cool~4C	HCl to pH <2/Cool~4C	HCl or H2SO4 to pH <2/Cool~4C				
TYPE OF CONTAINER	G/P	P	G/P	aG	G				
NO. OF CONTAINER(S)	1	1	1	3	1				
VOLUME	500mL	500mL	500mL	1000mL	500mL				
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Alkalinity - 310.1;	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	TOC - 415.1 (Total organic carbon)				

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1P3X2	WATER	8-8-07	1205	X	X	X	X	X				

M05220

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
D Connolly	8-8-07 1515	M-745 RCF 1	8-8-07 1515
M-745 / RCF#1	8-15-07 1130	S.S. Pope /	8-15-07 1130
S.S. Pope /	8-15-07 1230	K.R. Lane	8-15-07 1230
K.R. Lane TAL	8-15-07 1400		08-16-07 0930

SPECIAL INSTRUCTIONS

(1)ICP Metals - 6010B (TAL) {Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc} ICP Metals - 6010B (Add-On) {Arsenic, Beryllium, Strontium}
(2)IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}
(3)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

LOT# F7H160258

TestAmerica St. Louis

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F07-028-225	PAGE 1 OF 1
COLLECTOR: Pfister, Pope, Webb	COMPANY CONTACT: Trent, SJ	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N / AIR QUALITY: ☐ / DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: Array - 3A	PROJECT DESIGNATION: AQUIFER TUBE SAMPLING ALONG THE 100-N AREA SHORELINE		SAF NO.: F07-028	
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-451-1	COA: 122543ES10	METHOD OF SHIPMENT: FEDERAL EXPRESS	
SHIPPED TO: Severn Trent St. Louis	OFFSITE PROPERTY NO.: See PTR		BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	P
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1P3X9	WATER	8-14-7	0920	✓
	Lot #			024518

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J Webb/Rinkwell	8-14-07/1135	MO 745 FEDE	8-14-07/1135
MO-745/REFH1	8-15-07 1130	J-5 MR2	8-15-07 1130
J5-MR2	8-15-07 1230	KJR LWLANE	8-15-07 1230
KJR LWLANE TAC	8-15-07 1400		08.16.07 0930

SPECIAL INSTRUCTIONS

(1)IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

W05220

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TestAmerica St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F7H160258

- 1 -

Condition Upon Receipt Form

Client: Hanford | COC/RFA No: F07-028-216, 223, 225 | Date: 08.16.07

Quote No: 74530 | Initiated By: [illegible] | Time: 0930

Shipping Information

Shipper Name: FedX

Multiple Packages Y (N)

Shipping # (s):*

1. 7996 9423 0823
2.
3.
4.
5.
6.
7.
8.
9.
10.

Sample Temperature (s):**

1. 6°
2.
3.
4.
5.
6.
7.
8.
9.
10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	(Y) N	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y (N) N/A	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N	If N/A- Was pH taken by original TestAmerica lab?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes: TOC bottle is preserved with HCL

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [illegible] Date: 08-20-07

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004, REVISED 08/06/07\\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin004 rev11.doc

EXTRACTABLE PETROLEUM HYDROCARBONS

Fluor Hanford Inc

Client Sample ID: B1P3X2

GC Semivolatiles

Lot-Sample #...: F7H160258-002 **Work Order #...:** J411A1CC **Matrix.....:** WATER
Date Sampled...: 08/08/07 12:05 **Date Received..:** 08/16/07
Prep Date.....: 08/17/07 **Analysis Date..:** 08/22/07
Prep Batch #...: 7229186 **Analysis Time..:** 14:13
Dilution Factor: 1

Method.....: SW846 8015 MOD

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Kerosene	ND	0.50	mg/L	0.50
TPH - Diesel Range - WTPH-D	ND	0.50	mg/L	0.050

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	56	(16 - 150)

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: F7H160258 **Work Order #...:** J43P51AA **Matrix.....:** WATER
MB Lot-Sample #: F7H170000-186
Prep Date.....: 08/17/07 **Analysis Time..:** 13:02
Analysis Date..: 08/22/07 **Prep Batch #...:** 7229186
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Kerosene	ND	0.50	mg/L	SW846 8015 MOD
TPH - Diesel Range - WTPH	ND	0.50	mg/L	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	53 *	(73 - 150)

NOTE(S):

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

* Surrogate recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: F7H160258 **Work Order #...:** J43P51AC **Matrix.....:** WATER
LCS Lot-Sample#: F7H170000-186
Prep Date.....: 08/17/07 **Analysis Date..:** 08/22/07
Prep Batch #...: 7229186 **Analysis Time..:** 13:37
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
TPH - Diesel Range - WTPH	**39**	**(35 - 129)**	**SW846 8015 MOD**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	68 *	(73 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: F7H160258 **Work Order #...:** J411A1CD-MS **Matrix.....:** WATER
MS Lot-Sample #: F7H160258-002 J411A1CE-MSD
Date Sampled...: 08/08/07 12:05 **Date Received..:** 08/16/07
Prep Date.....: 08/17/07 **Analysis Date..:** 08/22/07
Prep Batch #...: 7229186 **Analysis Time..:** 14:48
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH - Diesel Range - WTPH	**46**	**(30 - 170)**			**SW846 8015 MOD**
	45	**(30 - 170)**	**2.5**	**(0-25)**	**SW846 8015 MOD**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	96	(16 - 150)
	88	(16 - 150)

NOTE(S):

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

Bold print denotes control parameters

METALS

Fluor Hanford Inc

Client Sample ID: B1P3X1

TOTAL Metals

Lot-Sample #...: F7H160258-001 **Matrix.....:** WATER
Date Sampled...: 08/08/07 10:50 **Date Received..:** 08/16/07

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 7233293						
Arsenic	ND D	400	ug/L	SW846 6010B	08/21-09/08/07	J410C1AC
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 3.8	
Antimony	ND D	120	ug/L	SW846 6010B	08/21-09/08/07	J410C1AD
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 89.7	
Barium	**40.1 B,D**	**400**	**ug/L**	**SW846 6010B**	**08/21-09/08/07**	**J410C1AE**
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 10.0	
Beryllium	ND D	10.0	ug/L	SW846 6010B	08/21-09/08/07	J410C1AF
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 2.1	
Cadmium	ND D	10.0	ug/L	SW846 6010B	08/21-09/08/07	J410C1AG
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 7.1	
Calcium	**19900 D**	**10000**	**ug/L**	**SW846 6010B**	**08/21-09/08/07**	**J410C1AH**
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 200	
Chromium	ND D	20.0	ug/L	SW846 6010B	08/21-09/08/07	J410C1AJ
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 4.9	
Cobalt	ND D	100	ug/L	SW846 6010B	08/21-09/08/07	J410C1AK
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 4.0	
Iron	**245 D**	**200**	**ug/L**	**SW846 6010B**	**08/21-09/05/07**	**J410C1AL**
		Dilution Factor: 2		Analysis Time..: 14:48	MDL.....: 37.2	
Magnesium	**5230 B,D**	**10000**	**ug/L**	**SW846 6010B**	**08/21-09/08/07**	**J410C1AM**
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 256	
Manganese	**21.6 B,C,D**	**30.0**	**ug/L**	**SW846 6010B**	**08/21-09/08/07**	**J410C1AN**
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 2.1	
Nickel	ND D	80.0	ug/L	SW846 6010B	08/21-09/08/07	J410C1AP
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 9.1	
Potassium	ND D	10000	ug/L	SW846 6010B	08/21-09/05/07	J410C1AQ
		Dilution Factor: 2		Analysis Time..: 14:48	MDL.....: 3270	

(Continued on next page)

Fluor Hanford Inc

Client Sample ID: B1P3X1

TOTAL Metals

Lot-Sample #...: F7H160258-001 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	**3.6 B,D**	**20.0**	**ug/L**	**SW846 6010B**	**08/21-09/08/07**	**J410C1AR**
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 3.4	
Sodium	**2180 B,D**	**10000**	**ug/L**	**SW846 6010B**	**08/21-09/05/07**	**J410C1AT**
		Dilution Factor: 2		Analysis Time..: 14:48	MDL.....: 157	
Strontium	**103 C,D**	**100**	**ug/L**	**SW846 6010B**	**08/21-09/08/07**	**J410C1AU**
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 1.1	
Vanadium	ND D	100	ug/L	SW846 6010B	08/21-09/08/07	J410C1AV
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 12.1	
Zinc	ND D	40.0	ug/L	SW846 6010B	08/21-09/08/07	J410C1AW
		Dilution Factor: 2		Analysis Time..: 00:49	MDL.....: 19.3	

NOTE(S):

D Result was obtained from the analysis of a dilution.

B Estimated result. Result is less than RL.

C Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Fluor Hanford Inc

Client Sample ID: B1P3X2

TOTAL Metals

Lot-Sample #...: F7H160258-002 **Matrix.....:** WATER
Date Sampled...: 08/08/07 12:05 **Date Received..:** 08/16/07

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 7233293						
Arsenic	ND D	400	ug/L	SW846 6010B	08/21-09/08/07	J411A1AD
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 3.8	
Antimony	ND D	120	ug/L	SW846 6010B	08/21-09/08/07	J411A1AE
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 89.7	
Barium	**28.3 B,D**	**400**	**ug/L**	**SW846 6010B**	**08/21-09/08/07**	**J411A1AF**
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 10.0	
Beryllium	ND D	10.0	ug/L	SW846 6010B	08/21-09/08/07	J411A1AG
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 2.1	
Cadmium	ND D	10.0	ug/L	SW846 6010B	08/21-09/08/07	J411A1AH
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 7.1	
Calcium	**32700 D**	**10000**	**ug/L**	**SW846 6010B**	**08/21-09/08/07**	**J411A1AJ**
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 200	
Chromium	ND D	20.0	ug/L	SW846 6010B	08/21-09/08/07	J411A1AK
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 4.9	
Cobalt	ND D	100	ug/L	SW846 6010B	08/21-09/08/07	J411A1AL
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 4.0	
Iron	**651 D**	**200**	**ug/L**	**SW846 6010B**	**08/21-09/05/07**	**J411A1AM**
		Dilution Factor: 2		Analysis Time..: 15:03	MDL.....: 37.2	
Magnesium	**5330 B,D**	**10000**	**ug/L**	**SW846 6010B**	**08/21-09/08/07**	**J411A1AN**
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 256	
Manganese	**27.2 B,C,D**	**30.0**	**ug/L**	**SW846 6010B**	**08/21-09/08/07**	**J411A1AP**
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 2.1	
Nickel	ND D	80.0	ug/L	SW846 6010B	08/21-09/08/07	J411A1AQ
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 9.1	
Potassium	ND D	10000	ug/L	SW846 6010B	08/21-09/05/07	J411A1AR
		Dilution Factor: 2		Analysis Time..: 15:03	MDL.....: 3270	

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Fluor Hanford Inc

Client Sample ID: B1P3X2

TOTAL Metals

Lot-Sample #...: F7H160258-002 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	ND D	20.0	ug/L	SW846 6010B	08/21-09/08/07	J411A1AT
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 3.4	
Sodium	**2770 B,D**	**10000**	**ug/L**	**SW846 6010B**	**08/21-09/05/07**	**J411A1AU**
		Dilution Factor: 2		Analysis Time..: 15:03	MDL.....: 157	
Strontium	**121 C,D**	**100**	**ug/L**	**SW846 6010B**	**08/21-09/08/07**	**J411A1AV**
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 1.1	
Vanadium	ND D	100	ug/L	SW846 6010B	08/21-09/08/07	J411A1AW
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 12.1	
Zinc	ND D	40.0	ug/L	SW846 6010B	08/21-09/08/07	J411A1AX
		Dilution Factor: 2		Analysis Time..: 01:06	MDL.....: 19.3	

NOTE(S):

D Result was obtained from the analysis of a dilution.

B Estimated result. Result is less than RL.

C Method blank contamination. The associated method blank contains the target analyte at a reportable level.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F7H160258 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F7H210000-293 **Prep Batch #...:** 7233293						
Antimony	ND	60.0	ug/L	SW846 6010B	08/21-09/07/07	J490E1AA
		Dilution Factor: 1				
		Analysis Time..: 23:33				
Barium	ND	200	ug/L	SW846 6010B	08/21-09/07/07	J490E1AC
		Dilution Factor: 1				
		Analysis Time..: 23:33				
Beryllium	**2.3 B**	**5.0**	**ug/L**	**SW846 6010B**	**08/21-09/07/07**	**J490E1AD**
		Dilution Factor: 1				
		Analysis Time..: 23:33				
Cadmium	ND	5.0	ug/L	SW846 6010B	08/21-09/07/07	J490E1AE
		Dilution Factor: 1				
		Analysis Time..: 23:33				
Calcium	ND	5000	ug/L	SW846 6010B	08/21-09/07/07	J490E1AF
		Dilution Factor: 1				
		Analysis Time..: 23:33				
Chromium	ND	10.0	ug/L	SW846 6010B	08/21-09/07/07	J490E1AG
		Dilution Factor: 1				
		Analysis Time..: 23:33				
Cobalt	**2.6 B**	**50.0**	**ug/L**	**SW846 6010B**	**08/21-09/07/07**	**J490E1AH**
		Dilution Factor: 1				
		Analysis Time..: 23:33				
Iron	ND	100	ug/L	SW846 6010B	08/21-09/05/07	J490E1AK
		Dilution Factor: 1				
		Analysis Time..: 13:32				
Magnesium	ND	5000	ug/L	SW846 6010B	08/21-09/07/07	J490E1AL
		Dilution Factor: 1				
		Analysis Time..: 23:33				
Manganese	**2.3 B**	**15.0**	**ug/L**	**SW846 6010B**	**08/21-09/07/07**	**J490E1AM**
		Dilution Factor: 1				
		Analysis Time..: 23:33				
Nickel	ND	40.0	ug/L	SW846 6010B	08/21-09/07/07	J490E1AN
		Dilution Factor: 1				
		Analysis Time..: 23:33				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F7H160258 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Potassium	ND	5000	ug/L	SW846 6010B	08/21-09/05/07	J490E1AP
		Dilution Factor: 1				
		Analysis Time..: 13:32				
Silver	ND	10.0	ug/L	SW846 6010B	08/21-09/07/07	J490E1AQ
		Dilution Factor: 1				
		Analysis Time..: 23:33				
Sodium	ND	5000	ug/L	SW846 6010B	08/21-09/05/07	J490E1AR
		Dilution Factor: 1				
		Analysis Time..: 13:32				
Strontium	**2.5 B**	**50.0**	**ug/L**	**SW846 6010B**	**08/21-09/07/07**	**J490E1AT**
		Dilution Factor: 1				
		Analysis Time..: 23:33				
Vanadium	ND	50.0	ug/L	SW846 6010B	08/21-09/07/07	J490E1AU
		Dilution Factor: 1				
		Analysis Time..: 23:33				
Zinc	ND	20.0	ug/L	SW846 6010B	08/21-09/07/07	J490E1AV
		Dilution Factor: 1				
		Analysis Time..: 23:33				

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F7H160258 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F7H210000-293 **Prep Batch #...:** 7233293					
Antimony	104	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1CH
		Dilution Factor: 1	Analysis Time..: 23:39		
Barium	106	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1CJ
		Dilution Factor: 1	Analysis Time..: 23:39		
Beryllium	111	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1CK
		Dilution Factor: 1	Analysis Time..: 23:39		
Cadmium	106	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1CL
		Dilution Factor: 1	Analysis Time..: 23:39		
Calcium	103	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1CM
		Dilution Factor: 1	Analysis Time..: 23:39		
Chromium	105	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1CN
		Dilution Factor: 1	Analysis Time..: 23:39		
Cobalt	103	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1CP
		Dilution Factor: 1	Analysis Time..: 23:39		
Iron	98	(80 - 120)	SW846 6010B	08/21-09/05/07	J490E1CR
		Dilution Factor: 1	Analysis Time..: 13:47		
Magnesium	104	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1CT
		Dilution Factor: 1	Analysis Time..: 23:39		
Manganese	106	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1CU
		Dilution Factor: 1	Analysis Time..: 23:39		
Nickel	103	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1CV
		Dilution Factor: 1	Analysis Time..: 23:39		
Potassium	102	(80 - 120)	SW846 6010B	08/21-09/05/07	J490E1CW
		Dilution Factor: 1	Analysis Time..: 13:47		
Silver	101	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1CX
		Dilution Factor: 1	Analysis Time..: 23:39		
Sodium	101	(80 - 120)	SW846 6010B	08/21-09/05/07	J490E1C0
		Dilution Factor: 1	Analysis Time..: 13:47		

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F7H160258 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Strontium	109	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1C1
		Dilution Factor: 1	Analysis Time..: 23:39		
Vanadium	105	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1C2
		Dilution Factor: 1	Analysis Time..: 23:39		
Zinc	116	(80 - 120)	SW846 6010B	08/21-09/07/07	J490E1C3
		Dilution Factor: 1	Analysis Time..: 23:39		

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F7H160258 **Matrix.....:** WATER
Date Sampled...: 08/08/07 10:50 **Date Received..:** 08/16/07

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F7H160258-001 **Prep Batch #...:** 7233293							
Arsenic	105 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1A8
	106 D	(75 - 125)	1.5	(0-20)	SW846 6010B	08/21-09/08/07	J410C1A9
		Dilution Factor: 2					
		Analysis Time..: 00:55					
Antimony	100 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1CA
	103 D	(75 - 125)	2.4	(0-20)	SW846 6010B	08/21-09/08/07	J410C1CC
		Dilution Factor: 2					
		Analysis Time..: 00:55					
Barium	103 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1CD
	104 D	(75 - 125)	1.3	(0-20)	SW846 6010B	08/21-09/08/07	J410C1CE
		Dilution Factor: 2					
		Analysis Time..: 00:55					
Beryllium	107 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1CF
	108 D	(75 - 125)	1.2	(0-20)	SW846 6010B	08/21-09/08/07	J410C1CG
		Dilution Factor: 2					
		Analysis Time..: 00:55					
Cadmium	102 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1CH
	103 D	(75 - 125)	1.5	(0-20)	SW846 6010B	08/21-09/08/07	J410C1CJ
		Dilution Factor: 2					
		Analysis Time..: 00:55					
Calcium	98 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1CK
	100 D	(75 - 125)	0.98	(0-20)	SW846 6010B	08/21-09/08/07	J410C1CL
		Dilution Factor: 2					
		Analysis Time..: 00:55					
Chromium	102 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1CM
	103 D	(75 - 125)	1.2	(0-20)	SW846 6010B	08/21-09/08/07	J410C1CN
		Dilution Factor: 2					
		Analysis Time..: 00:55					
Cobalt	98 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1CP
	100 D	(75 - 125)	1.5	(0-20)	SW846 6010B	08/21-09/08/07	J410C1CQ
		Dilution Factor: 2					
		Analysis Time..: 00:55					

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F7H160258 **Matrix.....:** WATER
Date Sampled...: 08/08/07 10:50 **Date Received..:** 08/16/07

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	102 D	(75 - 125)			SW846 6010B	08/21-09/05/07	J410C1CR
	96 D	(75 - 125)	4.1	(0-20)	SW846 6010B	08/21-09/05/07	J410C1CT
		Dilution Factor: 2					
		Analysis Time..: 14:53					
Magnesium	101 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1CU
	102 D	(75 - 125)	1.4	(0-20)	SW846 6010B	08/21-09/08/07	J410C1CV
		Dilution Factor: 2					
		Analysis Time..: 00:55					
Manganese	102 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1CW
	103 D	(75 - 125)	1.2	(0-20)	SW846 6010B	08/21-09/08/07	J410C1CX
		Dilution Factor: 2					
		Analysis Time..: 00:55					
Nickel	98 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1C0
	100 D	(75 - 125)	2.1	(0-20)	SW846 6010B	08/21-09/08/07	J410C1C1
		Dilution Factor: 2					
		Analysis Time..: 00:55					
Potassium	94 D	(75 - 125)			SW846 6010B	08/21-09/05/07	J410C1C2
	89 D	(75 - 125)	4.8	(0-20)	SW846 6010B	08/21-09/05/07	J410C1C3
		Dilution Factor: 2					
		Analysis Time..: 14:53					
Silver	78 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1C4
	89 D	(75 - 125)	12	(0-20)	SW846 6010B	08/21-09/08/07	J410C1C5
		Dilution Factor: 2					
		Analysis Time..: 00:55					
Sodium	106 D	(75 - 125)			SW846 6010B	08/21-09/05/07	J410C1C6
	103 D	(75 - 125)	2.7	(0-20)	SW846 6010B	08/21-09/05/07	J410C1C7
		Dilution Factor: 2					
		Analysis Time..: 14:53					
Strontium	104 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1C8
	106 D	(75 - 125)	1.1	(0-20)	SW846 6010B	08/21-09/08/07	J410C1C9
		Dilution Factor: 2					
		Analysis Time..: 00:55					
Vanadium	100 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1DA
	102 D	(75 - 125)	2.1	(0-20)	SW846 6010B	08/21-09/08/07	J410C1DC
		Dilution Factor: 2					
		Analysis Time..: 00:55					

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F7H160258 **Matrix.....:** WATER
Date Sampled...: 08/08/07 10:50 **Date Received..:** 08/16/07

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	114 D	(75 - 125)			SW846 6010B	08/21-09/08/07	J410C1DD
	116 D	(75 - 125)	1.7	(0-20)	SW846 6010B	08/21-09/08/07	J410C1DE

Dilution Factor: 2
Analysis Time..: 00:55

NOTE(S):

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

D Result was obtained from the analysis of a dilution.

WET CHEMISTRY

Fluor Hanford Inc

Client Sample ID: B1P3X1

General Chemistry

Lot-Sample #...: F7H160258-001 **Work Order #...:** J410C **Matrix.....:** WATER
Date Sampled...: 08/08/07 10:50 **Date Received..:** 08/16/07

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.25	mg/L	MCAWW 300.0A	08/16/07	7229121
		Dilution Factor: 1		Analysis Time..: 11:14	MDL.....: 0.062	
Chloride	**1.1 N**	**0.20**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229061**
		Dilution Factor: 1		Analysis Time..: 11:14	MDL.....: 0.020	
Fluoride	**0.057 B,N**	**0.10**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229062**
		Dilution Factor: 1		Analysis Time..: 11:14	MDL.....: 0.025	
Nitrate	**0.64**	**0.020**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229120**
		Dilution Factor: 1		Analysis Time..: 11:14	MDL.....: 0.0040	
Nitrite	ND N	0.020	mg/L	MCAWW 300.0A	08/16/07	7229064
		Dilution Factor: 1		Analysis Time..: 11:14	MDL.....: 0.0050	
Phosphate as P, Ortho	ND N	0.50	mg/L	MCAWW 300.0A	08/16/07	7229065
		Dilution Factor: 1		Analysis Time..: 11:14	MDL.....: 0.16	
Sulfate	**9.2 N**	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229063**
		Dilution Factor: 1		Analysis Time..: 11:14	MDL.....: 0.050	
Total Alkalinity	**61.0**	**5.0**	**mg/L**	**MCAWW 310.1**	**08/22/07**	**7234048**
		Dilution Factor: 1		Analysis Time..: 00:00	MDL.....: 0.85	

NOTE(S):

RL Reporting Limit

N Spiked analyte recovery is outside stated control limits.

B Estimated result. Result is less than RL.

Fluor Hanford Inc

Client Sample ID: B1P3X2

General Chemistry

Lot-Sample #...: F7H160258-002 **Work Order #...:** J411A **Matrix.....:** WATER
Date Sampled...: 08/08/07 12:05 **Date Received..:** 08/16/07

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	**0.20 B**	**0.25**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229121**
		Dilution Factor: 1		Analysis Time..: 10:39	MDL.....: 0.062	
Chloride	**5.1 DN**	**2.0**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229061**
		Dilution Factor: 10		Analysis Time..: 04:27	MDL.....: 0.20	
Fluoride	**0.073 B,N**	**0.10**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229062**
		Dilution Factor: 1		Analysis Time..: 10:39	MDL.....: 0.025	
Nitrate	**0.19**	**0.020**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229120**
		Dilution Factor: 1		Analysis Time..: 10:39	MDL.....: 0.0040	
Nitrite	ND N	0.020	mg/L	MCAWW 300.0A	08/16/07	7229064
		Dilution Factor: 1		Analysis Time..: 10:39	MDL.....: 0.0050	
Phosphate as P, Ortho	**0.52 C,N**	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229065**
		Dilution Factor: 1		Analysis Time..: 10:39	MDL.....: 0.16	
Sulfate	**10.2 N**	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229063**
		Dilution Factor: 1		Analysis Time..: 10:39	MDL.....: 0.050	
Total Alkalinity	**87.0**	**5.0**	**mg/L**	**MCAWW 310.1**	**08/22/07**	**7234048**
		Dilution Factor: 1		Analysis Time..: 00:00	MDL.....: 0.85	
Total Organic Carbon	ND	1.0	mg/L	MCAWW 415.1	08/27/07	7239444
		Dilution Factor: 1		Analysis Time..: 00:00	MDL.....: 0.76	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

DN Result obtained from dilution; spike sample recovery outside control limits.

N Spiked analyte recovery is outside stated control limits.

C Analyte detected in method blank above the MDL/IDL.

Fluor Hanford Inc

Client Sample ID: B1P3X9

General Chemistry

Lot-Sample #...: F7H160258-003 **Work Order #...:** J411T **Matrix.....:** WATER
Date Sampled...: 08/14/07 09:20 **Date Received..:** 08/16/07

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	**0.23 B**	**0.25**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229121**
		Dilution Factor: 1		Analysis Time..: 10:56	MDL.....: 0.062	
Chloride	**5.8 DN**	**2.0**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229061**
		Dilution Factor: 10		Analysis Time..: 04:45	MDL.....: 0.20	
Fluoride	**0.054 B,N**	**0.10**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229062**
		Dilution Factor: 1		Analysis Time..: 10:56	MDL.....: 0.025	
Nitrate	**0.19**	**0.020**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229120**
		Dilution Factor: 1		Analysis Time..: 10:56	MDL.....: 0.0040	
Nitrite	ND N	0.020	mg/L	MCAWW 300.0A	08/16/07	7229064
		Dilution Factor: 1		Analysis Time..: 10:56	MDL.....: 0.0050	
Phosphate as P, Ortho	**0.46 B,C,N**	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229065**
		Dilution Factor: 1		Analysis Time..: 10:56	MDL.....: 0.16	
Sulfate	**10.6 N**	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/16/07**	**7229063**
		Dilution Factor: 1		Analysis Time..: 10:56	MDL.....: 0.050	

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

DN Result obtained from dilution; spike sample recovery outside control limits.

N Spiked analyte recovery is outside stated control limits.

C Analyte detected in method blank above the MDL/IDL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F7H160258 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #: J498F1AA		MB Lot-Sample #:	F7H170000-121	
	ND	0.25	mg/L	MCAWW 300.0A	08/16/07	7229121
		Dilution Factor: 1				
		Analysis Time..: 08:46				
Chloride		Work Order #: J49511AA		MB Lot-Sample #:	F7H170000-061	
	ND	0.20	mg/L	MCAWW 300.0A	08/16/07	7229061
		Dilution Factor: 1				
		Analysis Time..: 08:46				
Fluoride		Work Order #: J496A1AA		MB Lot-Sample #:	F7H170000-062	
	ND	0.10	mg/L	MCAWW 300.0A	08/16/07	7229062
		Dilution Factor: 1				
		Analysis Time..: 08:46				
Nitrate		Work Order #: J498D1AA		MB Lot-Sample #:	F7H170000-120	
	ND	0.020	mg/L	MCAWW 300.0A	08/16/07	7229120
		Dilution Factor: 1				
		Analysis Time..: 08:46				
Nitrite		Work Order #: J496E1AA		MB Lot-Sample #:	F7H170000-064	
	ND	0.020	mg/L	MCAWW 300.0A	08/16/07	7229064
		Dilution Factor: 1				
		Analysis Time..: 08:46				
Phosphate as P, Ortho		Work Order #: J496P1AA		MB Lot-Sample #:	F7H170000-065	
	0.24 B	0.50	mg/L	MCAWW 300.0A	08/16/07	7229065
		Dilution Factor: 1				
		Analysis Time..: 08:46				
Sulfate		Work Order #: J496D1AA		MB Lot-Sample #:	F7H170000-063	
	ND	0.50	mg/L	MCAWW 300.0A	08/16/07	7229063
		Dilution Factor: 1				
		Analysis Time..: 08:46				
Total Alkalinity		Work Order #: J5C991AA		MB Lot-Sample #:	F7H220000-048	
	ND	5.0	mg/L	MCAWW 310.1	08/22/07	7234048
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Organic Carbon		Work Order #: J5QJH1AA		MB Lot-Sample #:	F7H270000-444	
	ND	1.0	mg/L	MCAWW 415.1	08/27/07	7239444
		Dilution Factor: 1				
		Analysis Time..: 00:00				

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METHOD BLANK REPORT

General Chemistry

Client Lot #...: F7H160258 **Matrix.....:** WATER

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: F7H160258 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity		WO#:J5C991AC-LCS/J5C991AD-LCSD				LCS Lot-Sample#: F7H220000-048	
	100	(90 - 110)			MCAWW 310.1	08/22/07	7234048
	100	(90 - 110)	1.0	(0-15)	MCAWW 310.1	08/22/07	7234048
		Dilution Factor: 1			Analysis Time..: 00:00		
Total Organic Carbon		WO#:J5QJH1AC-LCS/J5QJH1AD-LCSD				LCS Lot-Sample#: F7H270000-444	
	100	(87 - 113)			MCAWW 415.1	08/27/07	7239444
	100	(87 - 113)	0.46	(0-20)	MCAWW 415.1	08/27/07	7239444
		Dilution Factor: 1			Analysis Time..: 00:00		

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F7H160258 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #: J498F1AC	LCS Lot-Sample#: F7H170000-121		
	99	(90 - 110)	MCAWW 300.0A	08/16/07	7229121
		Dilution Factor: 1	Analysis Time..: 08:28		
Chloride		Work Order #: J49511AC	LCS Lot-Sample#: F7H170000-061		
	95	(90 - 110)	MCAWW 300.0A	08/16/07	7229061
		Dilution Factor: 1	Analysis Time..: 08:28		
Fluoride		Work Order #: J496A1AC	LCS Lot-Sample#: F7H170000-062		
	99	(90 - 110)	MCAWW 300.0A	08/16/07	7229062
		Dilution Factor: 1	Analysis Time..: 08:28		
Nitrate		Work Order #: J498D1AC	LCS Lot-Sample#: F7H170000-120		
	98	(90 - 110)	MCAWW 300.0A	08/16/07	7229120
		Dilution Factor: 1	Analysis Time..: 08:28		
Nitrite		Work Order #: J496E1AC	LCS Lot-Sample#: F7H170000-064		
	92	(90 - 110)	MCAWW 300.0A	08/16/07	7229064
		Dilution Factor: 1	Analysis Time..: 08:28		
Phosphate as P, Ortho		Work Order #: J496P1AC	LCS Lot-Sample#: F7H170000-065		
	96	(90 - 110)	MCAWW 300.0A	08/16/07	7229065
		Dilution Factor: 1	Analysis Time..: 08:28		
Sulfate		Work Order #: J496D1AC	LCS Lot-Sample#: F7H170000-063		
	94	(90 - 110)	MCAWW 300.0A	08/16/07	7229063
		Dilution Factor: 1	Analysis Time..: 08:28		

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F7H160258 **Matrix.....:** WATER
Date Sampled...: 08/08/07 10:50 **Date Received..:** 08/16/07

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	99	Work Order #...: J410C1DU (90 - 110)	MCAWW 300.0A	MS Lot-Sample #: 08/16/07	F7H160258-001 7229121
		Dilution Factor: 1	Analysis Time..: 11:14		
Chloride	114 N	Work Order #...: J410C1DF (90 - 110)	MCAWW 300.0A	MS Lot-Sample #: 08/16/07	F7H160258-001 7229061
		Dilution Factor: 1	Analysis Time..: 11:14		
Fluoride	121 N	Work Order #...: J410C1DH (90 - 110)	MCAWW 300.0A	MS Lot-Sample #: 08/16/07	F7H160258-001 7229062
		Dilution Factor: 1	Analysis Time..: 11:14		
Nitrate	106	Work Order #...: J410C1DR (90 - 110)	MCAWW 300.0A	MS Lot-Sample #: 08/16/07	F7H160258-001 7229120
		Dilution Factor: 1	Analysis Time..: 11:14		
Nitrite	78 N	Work Order #...: J410C1DM (90 - 110)	MCAWW 300.0A	MS Lot-Sample #: 08/16/07	F7H160258-001 7229064
		Dilution Factor: 1	Analysis Time..: 11:14		
Phosphate as P, Ortho	111 N	Work Order #...: J410C1DP (90 - 110)	MCAWW 300.0A	MS Lot-Sample #: 08/16/07	F7H160258-001 7229065
		Dilution Factor: 1	Analysis Time..: 11:14		
Sulfate	112 N	Work Order #...: J410C1DK (90 - 110)	MCAWW 300.0A	MS Lot-Sample #: 08/16/07	F7H160258-001 7229063
		Dilution Factor: 1	Analysis Time..: 11:14		
Total Alkalinity	97	Work Order #...: J410C1DW (80 - 120)	MCAWW 310.1	MS Lot-Sample #: 08/22/07	F7H160258-001 7234048
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Organic Carbon	119	Work Order #...: J411A1CG (78 - 135)	MCAWW 415.1	MS Lot-Sample #: 08/27/07	F7H160258-002 7239444
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F7H160258 **Work Order #...:** J410C-SMP J410C-DUP **Matrix.....:** WATER

Date Sampled...: 08/08/07 10:50 **Date Received..:** 08/16/07

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F7H160258-001	
	61.0	60.0	mg/L	1.7	(0-20)	MCAWW 310.1	08/22/07	7234048
			Dilution Factor: 1			Analysis Time..: 00:00		
Chloride						SD Lot-Sample #:	F7H160258-001	
	1.1 N	1.1 N	mg/L	0.42	(0-20)	MCAWW 300.0A	08/16/07	7229061
			Dilution Factor: 1			Analysis Time..: 11:14		
Fluoride						SD Lot-Sample #:	F7H160258-001	
	0.057 B,N	ND N	mg/L	200	(0-20)	MCAWW 300.0A	08/16/07	7229062
			Dilution Factor: 1			Analysis Time..: 11:14		
Sulfate						SD Lot-Sample #:	F7H160258-001	
	9.2 N	9.3 N	mg/L	0.66	(0-20)	MCAWW 300.0A	08/16/07	7229063
			Dilution Factor: 1			Analysis Time..: 11:14		
Nitrite						SD Lot-Sample #:	F7H160258-001	
	ND	ND N	mg/L	0	(0-20)	MCAWW 300.0A	08/16/07	7229064
			Dilution Factor: 1			Analysis Time..: 11:14		
Nitrate						SD Lot-Sample #:	F7H160258-001	
	0.64	0.63	mg/L	1.2	(0-20)	MCAWW 300.0A	08/16/07	7229120
			Dilution Factor: 1			Analysis Time..: 11:14		
Bromide						SD Lot-Sample #:	F7H160258-001	
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/16/07	7229121
			Dilution Factor: 1			Analysis Time..: 11:14		
Phosphate as P, Ortho						SD Lot-Sample #:	F7H160258-001	
	ND	0.23 B,N	mg/L	200	(0-20)	MCAWW 300.0A	08/16/07	7229065
			Dilution Factor: 1			Analysis Time..: 11:14		

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F7H160258 **Work Order #...:** J411A-SMP J411A-DUP **Matrix.....:** WATER

Date Sampled...: 08/08/07 12:05 **Date Received..:** 08/16/07

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon						SD Lot-Sample #:	F7H160258-002	
	ND	ND	mg/L	0	(0-20)	MCAWW 415.1	08/27/07	7239444

Dilution Factor: 1 Analysis Time..: 00:00