

August 31, 2015

Clark County, Washington Attn: Mr. Jerry Barnett 23201 NE Pluss Road Vancouver, Washington 98682

Re: Ten-Year Domestic Well Assessment for Perchlorate and Explosive Compounds

Camp Bonneville, Clark County, Washington

PBS Project No. 76151.005

Dear Mr. Barnett:

This letter report presents the results of a ten-year domestic well assessment conducted by PBS Engineering and Environmental Inc. (PBS) for properties located along the southwest boundary of Camp Bonneville (Figure 1). This report was conducted in accordance with the draft work plan for domestic well sampling.¹

BACKGROUND

Historically, upgradient areas of Camp Bonneville included firing ranges, a landfill, open burning locations, open detonation locations, and general maintenance facilities. The historical operations caused three contaminants of concern (COCs) to leach into the underlying aquifer at an upgradient landfill/demolition area (Landfill 4/Demolition Area 1 or L4/D1); these COCs were perchlorate and the explosives octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) and 1,3,5-trinitroperhydro-1,3,5-triazine (RDX).

The L4/D1 area, along with the downgradient Camp Bonneville Base Boundary at Lacamas Creek, is currently monitored for these COCs. Wells have been installed in these areas to monitor shallow and deeper groundwater to maximum depths of approximately 75 feet below ground surface (bgs).

Groundwater at the L4/D1 area flows west toward the North Fork Lacamas Creek, and site-wide groundwater flow direction is toward the southwest boundary of Camp Bonneville. The Base Boundary wells consist of eight groundwater monitoring wells located near the southwest boundary of Camp Bonneville. They were installed to serve as sentinel wells for potential contamination that may have been released from the L4/D1 area. These wells are directly south of Lacamas Creek. Groundwater in these two areas is monitored quarterly.

¹ PBS Engineering and Environmental Inc. (Draft, December 2014). Work Plan, Domestic Well Sampling, Locations near Camp Bonneville, Clark County, Washington.

Mr. Jerry Barnett, Clark County
Re: Ten-Year Domestic Well Assessment for Perchlorate and Explosive Compounds
Camp Bonneville, Washington
August 31, 2015
Page 2 of 4

A select number of domestic wells downgradient from Camp Bonneville were sampled for HMX, RDX, and perchlorate in 2004 as part of a baseline assessment. The current assessment serves as a 10-year update to the baseline. This report details sampling activities of the domestic wells.

RESIDENT PARTICIPATION IN STUDY

Clark County (County) supplied a list of properties along the southwest boundary for inclusion in the ten-year assessment. Each listed property owner was mailed an introductory letter and survey asking if they would like to participate in the assessment. A copy of the letter and survey is included in the attachments. The list of tax lot identifications (IDs), property addresses, and survey responses can be found in Table 1. A total of nine residents indicated an interest in participating. Figure 2 shows the entire study area and individual tax lots of the participants.

SAMPLING ACTIVITIES

This section summarizes the sampling activities that have occurred during the ten-year assessment.

Well Sampling Activities

PBS contacted the well owners who expressed interest in participating in the assessment in June 2015. The nine wells were sampled on June 29 and 30, 2015.

Upon arrival at each property, PBS met with the resident or owner's representative to determine the sample location. Samples were collected from an exterior spigot as close to the well as possible, preferably before any on-site treatment system. Sampling was conducted as detailed in the draft work plan as follows:

- The resident identified an exterior spigot for sample collection, and where the purge water should be directed. PBS personnel wore new disposable nitrile gloves to minimize the potential for cross-contamination from another property.
- The samples were collected from a spigot as close to the well and before filters or pressure tanks as possible.
- A hose was connected to the spigot, and it was turned on and allowed to run for 30 minutes at a
 medium flow rate. Once purging was complete, the spigot was shut off, the hose removed, and
 the spigot/sample point cleaned with a detergent wash and deionized water rinse.
- A 5-gallon bucket was placed under the spigot, and it was turned back on and water allowed to flow for an additional one to two minutes rinsing the spigot of any residual detergent.
- The water temperature, pH, and specific conductivity was measured from the bucket, and the water poured out as directed by the resident.
- Laboratory-provided sample containers were then filled directly from the spigot. For the perchlorate sample, a new 250-milliliter (mL) poly container was filled from the spigot, and then poured into a syringe to field filter for perchlorate analysis.
- Each sample was labeled with a unique sample identification number consisting of the house address number followed by the date of sample collection (e.g., 22116-062915). The label also included sampling date and time.
- Sample containers were immediately placed on ice in a cooler for the duration of sampling and transport to the laboratory.

Mr. Jerry Barnett, Clark County
Re: Ten-Year Domestic Well Assessment for Perchlorate and Explosive Compounds
Camp Bonneville, Washington
August 31, 2015
Page 3 of 4

A single field duplicate sample was collected during the first day of sampling.

The samples were delivered to TestAmerica Laboratory for analysis of the following:

- Perchlorate by Environmental Protection Agency (EPA) Method 331.0
- HMX and RDX by EPA Method 8330A

Investigation-Derived Waste

Gloves and other disposable field supplies were disposed of as solid waste.

GROUNDWATER MONITORING RESULTS

Groundwater field parameters (i.e., pH, temperature, and conductivity) recorded at the time of sampling are presented in Table 2. Analytical results for all groundwater samples are presented in the attached Table 3. The analytical reports are provided on the enclosed compact disc (CD).

There were no detections of perchlorate, RDX, or HMX in any of the samples collected during this assessment above the laboratory MRL. PBS confirmed that the MRLs were below the State of Washington Model Toxics Control Act (MTCA) Method B cleanup levels. MTCA Method B cleanup levels and applicable, relevant, and appropriate state and federal groundwater screening values were obtained from the Ecology Cleanup Levels and Risk Calculations (CLARC)² database.

DATA QUALITY REVIEW AND VALIDATION

For this ten-year assessment, each sample had a separate laboratory data package generated, with results reported to the MRL. The separate reports provide easy transmittal of results to each property owner. Laboratory analytical data were evaluated with respect to quality assurance objectives for precision, accuracy, representativeness, comparability, and completeness parameters.

The project specifications were met for all analytes, indicating that the sampling and analysis procedures were reproducible. The TestAmerica laboratory report narratives, presented in the attachments, state that all quality control parameters that affect sample analysis were met.

All analytical data were validated at a Level II review standard. Level II validation and reporting include a brief narrative of the laboratory data along with presentation of the sample results and related quality assurance/quality control (QA/QC) analyses.

One duplicate sample was collected. The duplicate sample was analyzed for the same constituents as the source sample. The relative percent difference (RPD) was calculated as the difference between the values divided by the average of the values. The field duplicate analysis for sample 23517-062915 met all quality control requirements.

CONCLUSION AND RECOMMENDATIONS

For the domestic well sampling, there were no detections of perchlorate, RDX, or HMX above the MRL. Additional investigation is not warranted at this time.

² https://fortress.wa.gov/ecy/clarc/Reporting/CLARCReporting.aspx

Mr. Jerry Barnett, Clark County

Re: Ten-Year Domestic Well Assessment for Perchlorate and Explosive Compounds

Camp Bonneville, Washington

August 31, 2015 Page 4 of 4

Please feel free to contact us at 360.690.4331 if you have any questions.

Sincerely,

PBS Engineering and Environmental Inc.

Scott Braunsten, LG, CES

Project Geologist

Heidi Yantz, LHG

Principal Hydrogeologist

SB/HY/in

Attachments: Figure 1 - Vicinity Map

Figure 2 - Domestic Well Ten-Year Assessment Participating Properties

Table 1 - Properties Included in 2015 Monitoring Project

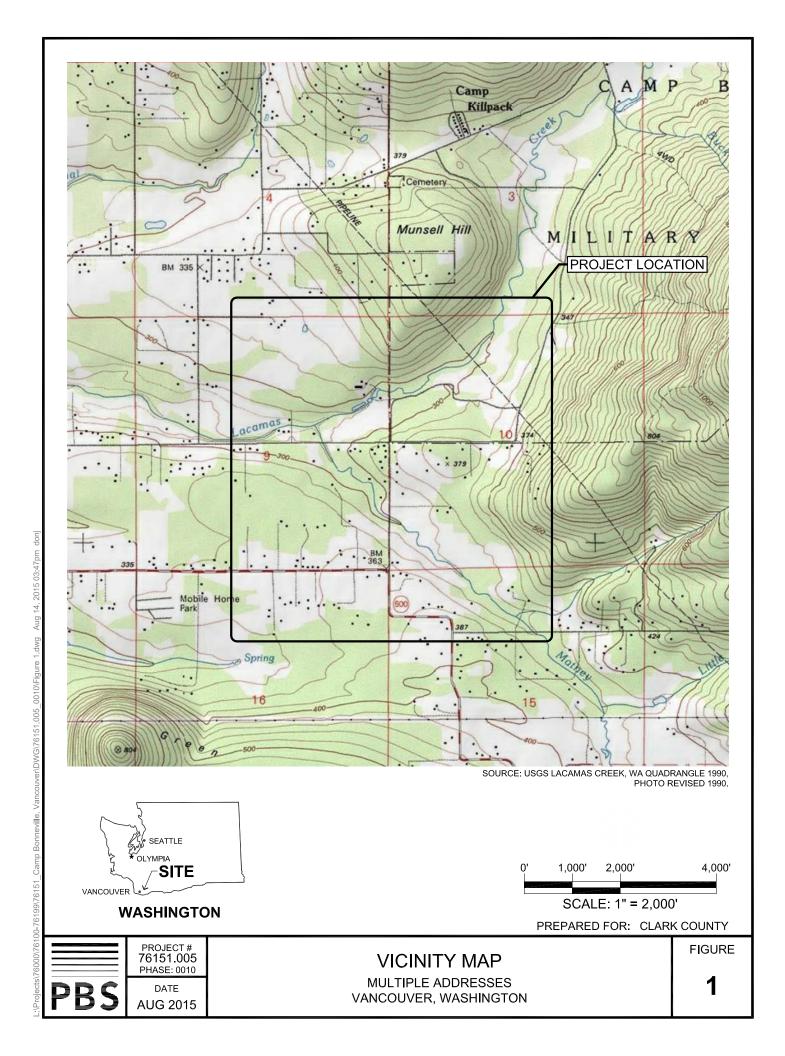
Table 2 - Field Parameters for Domestic Well Samples

Table 3 - Constituents Detected in Domestic Wells

Laboratory Reports and Sample Chain-of-Custody Forms (Electronic files provided

on enclosed CD)

Figure 2 – Updated Domestic Well Baseline Assessment Participating Properties



Tax Lot #	Tax Lot Address
115687010	6709 NE 232 nd Ave, Vancouver, 98682
169972000	22211 NE 78 th St, Vancouver, 98682
169973000	22920 NE 68 th St, Vancouver, 98682
169994000	23109 NE 68 th St, Vancouver, 98682
168149000	23119 NE 83 rd St, Vancouver, 98682
170208000	23517 NE 68 th St, Vancouver, 98682
170195000	23711 NE 68 th St, Vancouver, 98682
170192000	24105 NE 68 th St, Vancouver, 98682
170181000	24109 NE 68 th St, Vancouver, 98682

0' 500' 1,000' 2,000' SCALE: 1" = 1,000'

PREPARED FOR: CLARK COUNTY

	PROJECT # 76151.005 PHASE: 0010
PBS	DATE AUG 2015

DOMESTIC WELL TEN-YEAR ASSESSMENT PARTICIPATING PROPERTIES

MULTIPLE ADDRESSES VANCOUVER, WASHINGTON

FIGURE

Tables

Table 1 – Properties Included in 2015 Monitoring Project
Table 2 – Field Parameters for Domestic Well Samples
Table 3 – Constituents Detected in Domestic Wells

Table 1 - Properties Included in 2015 Monitoring Project

Near Camp Bonneville SW Boundary Clark County, Washington

Tax Lot #	Owner Name	Tax Lot Address	Survey Response
115687010	Hopfer Randy P & Hopfer Patti J	6709 NE 232 nd Ave, Vancouver, 98682	Participated
115687012	Gilligan Steven E	23307 NE 68 th St, Vancouver, 98682	No response received
115687014	Piche Paul E	23501 NE 68 th St, Vancouver, 98682	No response received
168149000	Hammer Alan Lee & Hammer Kathleen L	23119 NE 83 rd St, Vancouver, 98682	Participated
169972000	Uhacz Family Farm Partnership	22211 NE 78 th St, Vancouver, 98682	Participated
169973000	Diamond B Ranch Inc	22920 NE 68 th St, Vancouver, 98682	Participated
169994000	Freeman Bruce D	23109 NE 68 th St, Vancouver, 98682	Participated
170177000	Clark County Public Works	No address on file	No response received
170180000	Overman Charles A & Overman Timothy	6505 NE 238 th Ave, Vancouver, 98682	No response received
170181000	Morton Rod & Morton Laurie	24109 NE 68 th St, Vancouver, 98682	Participated
170183000	State Forest Board	No address on file	Property owner stated no well is present
170184000	Moen Nellie M (C/S)	23903 NE 68 th St, Vancouver, 98682	No response received
170188000	State Forest Board	No address on file	Property owner stated no well is present
170190000	Deckard Thomas & Deckard Lois	23607 NE 68 th St, Vancouver, 98682	No response received
170191000	Toedtli Tracy J	No address on file	No response received
170192000	Wolff Daniel R & Wolff Jonathan	24105 NE 68 th St, Vancouver, 98682	Participated
170194000	Gibbon William E	6717 NE 243 rd Ave, Vancouver, 98682	Declined to participate
170195000	Greenwood James F	23711 NE 68 th St, Vancouver, 98682	Participated
170208000	Bustamante Edward Jr & Bustamante Jean	23517 NE 68 th St, Vancouver, 98682	Participated
170210000	Deckard Thomas & Deckard Lois	23607 NE 68 th St, Vancouver, 98682	No response received
170215000	Lane David & Lane Valerie	24003 NE 68 th St, Vancouver, 98682	No response received
170395000	School Land	No address on file	No response received



Table 2 - Field Parameters for Domestic Well Samples

Near Camp Bonneville SW Boundary Clark County, Washington

Sample ID	Date	рН	Specific Conductivity	Temperature
		pH units	μS/cm	°C
22211-062915	06/29/2015	7.61	134.4	16.3
22920-062915	06/29/2015	7.18	187.8	14.5
23109-063015	06/30/2015	7.88	196.5	18.7
23119-063015	06/30/2015	6.59	72.4	13.3
23517-062915	06/29/2015	7.05	105.4	15.4
23711-063015	06/30/2015	7.14	132.0	13.0
24105-063015	06/30/2015	7.13	217	12.4
24109-063015	06/30/2015	7.03	169.7	14.1
6709-062915	06/29/2015	6.68	102.9	16.4

Notes:

Field parameters were measured using an Oakton PCSTestr 35 Meter μ S/cm = micro-siemens per centimeter

[°]C = degrees Celsius

Table 3 - Constituents Detected in Domestic Wells

Near Camp Bonneville SW Boundary

Clark County, Washington

	MTCA Method B Std. Cleanup	22211-062915	22920-062915	23109-063015	23119-063015	23517-062915	23517-062915 Duplicate		23711-063015	24105-063015	24109-063015	6709-062915
Analyte	Values	06/29/2015	06/29/2015	06/30/2015	06/30/2015	06/29/2015	6/29/2015	RPD (<20%)	06/30/2015	06/30/2015	06/30/2015	06/29/2015
Perchlorate (µg/L)												
Perchlorate	11.2	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	Acceptable	< 0.50	< 0.50	< 0.50	< 0.50
Explosives (µg/L)												
HMX	800	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	Acceptable	< 0.10	< 0.10	< 0.10	< 0.10
RDX	0.795	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	Acceptable	< 0.10	< 0.10	< 0.10	< 0.10

Notes:

μg/L = micrograms per liter

< = not detected above the indicated method reporting limit

Acceptable = No detection in original or duplicate

RPD = relative percent different







THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

TestAmerica Job ID: 580-51305-1

TestAmerica Sample Delivery Group: 76151.005 Phase 0010 Client Project/Site: Camp Bonneville- Domestic Well Sampling

For:

PBS Engineering and Environmental 4412 SW Corbett Ave Portland, Oregon 97239

Attn: Scott Braunsten

Sand Muyohy

Authorized for release by: 7/17/2015 2:01:48 PM

Sarah Murphy, Project Manager I (253)922-2310

sarah.murphy@testamericainc.com

.....LINKS

Review your project results through

Total Access

Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	4
Client Sample Results	5
QC Sample Results	6
Chronicle	7
Certification Summary	8
Sample Summary	9
Chain of Custody	10
Receipt Checklists	11

5

4

5

7

ŏ

3

Case Narrative

Client: PBS Engineering and Environmental

TestAmerica Job ID: 580-51305-1 Project/Site: Camp Bonneville- Domestic Well Sampling SDG: 76151.005 Phase 0010

Job ID: 580-51305-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-51305-1

Receipt

The sample was received on 7/1/2015 1:00 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

HPLC/IC

Method(s) 8330-Prep: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-78854

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: PBS Engineering and Environmental

Relative error ratio

Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51305-1 SDG: 76151.005 Phase 0010

Glossary

RER

RPD

TEF

TEQ

RL

Abbreviation	These commonly used abbreviations may or may not be present in this report.
a	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control

Client Sample Results

Client: PBS Engineering and Environmental

Client Sample ID: 24109-063015

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51305-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51305-1

Matrix: Water

			_	
Date	Colle	ected	: 06/30/1	5 13:19
Date	Rece	eived	: 07/01/15	5 13:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND		0.10		ug/L		07/02/15 10:46	07/10/15 08:55	1
RDX	ND		0.10		ug/L		07/02/15 10:46	07/10/15 08:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	99		79 - 111				07/02/15 10:46	07/10/15 08:55	1
=	lorato (LC/MS/MS)								
Method: 331.0 - Perch	iorate (Lonviorivio)								
Method: 331.0 - Perchi Analyte	,	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

TestAmerica Job ID: 580-51305-1

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well Sampling

SDG: 76151.005 Phase 0010

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78854/1-A **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Analysis Batch: 79077** Prep Batch: 78854 MB MB

Analyte	Result	Qualifier	RL	MDL	Unit	L	נ	Prepared	Analyzed	DII Fac
HMX	ND		0.10		ug/L		- (07/02/15 10:46	07/10/15 04:33	1
RDX	ND		0.10		ug/L		(07/02/15 10:46	07/10/15 04:33	1
	MB I	МВ								

%Recovery Qualifier Surrogate Limits Prepared Analyzed Dil Fac 3,4-Dinitrotoluene 94 79 - 111 07/02/15 10:46 07/10/15 04:33

Lab Sample ID: LCS 320-78854/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 79077** Prep Batch: 78854 LCS LCS Spike %Rec. Analyte Added Result Qualifier Limits Unit D %Rec HMX 1.00 1.11 ug/L 111 67 - 115 RDX 1.00 1.15 ug/L 115 68 - 122 LCS LCS

Surrogate %Recovery Qualifier Limits 3,4-Dinitrotoluene 96 79 - 111

Method: 331.0 - Perchlorate (LC/MS/MS)

Lab Sample ID: MB 320-78892/1-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 79252** Prep Batch: 78892

мв мв Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Perchlorate ND 0.50 ug/L 07/06/15 13:56 07/08/15 18:52

Lab Sample ID: LCS 320-78892/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 79252** Prep Batch: 78892 Spike LCS LCS %Rec. Analyte Added Result Qualifier Limits Unit %Rec Perchlorate 2 00 1.94 97 80 - 120 ug/L

7/17/2015

Lab Chronicle

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51305-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51305-1

Matrix: Water

Client Sample ID: 24109-063015 Date Collected: 06/30/15 13:19

Date Received: 07/01/15 13:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	8330-Prep			78854	07/02/15 10:46	HJA	TAL SAC
Total/NA	Analysis	8330A		1	79077	07/10/15 08:55	YPH	TAL SAC
Total/NA	Prep	Filtration			78892	07/06/15 13:56	HJA	TAL SAC
Total/NA	Analysis	331.0		1	79252	07/08/15 22:12	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51305-1 SDG: 76151.005 Phase 0010

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-17
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-15
US Fish & Wildlife	Federal		LE192332-0	02-28-16
USDA	Federal		P330-11-00222	04-08-17
Washington	State Program	10	C553	02-17-16

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date 01-31-16		
A2LA	DoD ELAP		2928-01			
Alaska (UST)	State Program	10	UST-055	12-18-15		
Arizona	State Program	9	AZ0708	08-11-15		
Arkansas DEQ	State Program	6	88-0691	06-17-16		
California	State Program	9	2897	01-31-16		
Colorado	State Program	8	N/A	08-31-15		
Connecticut	State Program	1	PH-0691	06-30-15 *		
Florida	NELAP	4	E87570	06-30-16		
Hawaii	State Program	9	N/A	01-29-16		
Illinois	NELAP	5	200060	03-17-16		
Kansas	NELAP	7	E-10375	10-31-15		
Louisiana	NELAP	6	30612	06-30-16		
Michigan	State Program	5	9947	01-31-16		
Nevada	State Program	9	CA44	07-31-15		
New Jersey	NELAP	2	CA005	09-30-15		
New York	NELAP	2	11666	04-01-16		
Oregon	NELAP	10	CA200005	01-29-16		
Pennsylvania	NELAP	3	9947	03-31-16		
Texas	NELAP	6	T104704399-08-TX	05-31-16		
US Fish & Wildlife	Federal		LE148388-0	02-28-16		
USDA	Federal		P330-11-00436	12-30-17		
USEPA UCMR	Federal	1	CA00044	11-06-16		
Utah	NELAP	8	QUAN1	02-28-16		
Virginia	NELAP Secondary AB	3	460278	03-14-16		
Washington	State Program	10	C581	05-04-16		
West Virginia (DW)	State Program	3	9930C	12-31-15		
Wyoming	State Program	8	8TMS-Q	01-29-16		

4

S

8

9

10

1

TestAmerica Seattle

7/17/2015

^{*} Certification renewal pending - certification considered valid.

Sample Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51305-1 SDG: 76151.005 Phase 0010

 Lab Sample ID
 Client Sample ID
 Matrix
 Collected
 Received

 580-51305-1
 24109-063015
 Water
 06/30/15 13:19
 07/01/15 13:00

2

E

6

8

9

10

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

X NCA WO DATE: 711 S TIME OSC Д 7 PAGE OF DATE: 7// TURNAROUND REQUEST in Business Days * Turnaround Requests less than standard may incur Rush Charges. (503) 906-9200 FAX 906-9210 2000 West International Airport Road, Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210 East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290 7 Petroleum Hydrocarbon Analyses COMMENTS/SAMPLER'S INITIAL Organic & Inorganic Analyses m 7 Specify: 4 (5) CONT. S #OF 3 OTHER ĸ STD. Work Order #: (W, S, O) MATRIX 3 10 STD. RECEIVED BY: RECEIVED BY: PRINT NAME: PRINT NAME: REQUESTED ANALYSES **CHAIN OF CUSTODY REPORT** PBS 5 P.O. NUMBER: 200 DATE: 4/35/15 INVOICE TO: DATE: 7 TIME: TIME: Testing corporation Perchlorate by Perchlorate by FAX: 888.371.7891 FIRM: PBS RDX and HMX by RDX and HMX by REPORT TO: heidi.yantz@pbsenv.com, scott.braunsten@pbsenv.com PROJECT NAME: Camp Bonneville Domestic Well Sampling 30 ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon DATE/TIME SAMPLING SAMPLED BY: Scat Brannstong ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC 1/80/15 PROJECT NUMBER: 76151.005 Phase 0010 Barra 24109-063015 INDENTIFICATION CLIENT SAMPLE PHONE: 503.248.1939 RELINQUISHED BY: RELINQUISHED BY: CLIENT: PBS PRINT NAME PRINT NAME: 10

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51305-1 SDG Number: 76151.005 Phase 0010

List Source: TestAmerica Seattle

Login Number: 51305 List Number: 1

Creator: Lehman, Clarissa A

Creator: Lehman, Clarissa A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

3

4

6

Q

9

10

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51305-1 SDG Number: 76151.005 Phase 0010

...

Login Number: 51305
List Source: TestAmerica Sacramento
List Number: 2
List Creation: 07/02/15 01:42 PM

Creator: Sadler, Jeremy

oronion: Gaussi, Goroniy		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Headspace required for 331
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

5

0

10



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

TestAmerica Job ID: 580-51304-1

TestAmerica Sample Delivery Group: 76151.005 Phase 0010 Client Project/Site: Camp Bonneville- Domestic Well Sampling

For:

PBS Engineering and Environmental 4412 SW Corbett Ave Portland, Oregon 97239

Attn: Scott Braunsten

Authorized for release by:

7/17/2015 2:00:34 PM

Sarah Murphy, Project Manager I (253)922-2310

sarah.murphy@testamericainc.com

.....LINKS

Review your project results through

Total Access

Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	4
Client Sample Results	5
QC Sample Results	6
Chronicle	7
Certification Summary	8
Sample Summary	9
Chain of Custody	10
Receipt Checklists	11

4

5

7

_

10

Case Narrative

Client: PBS Engineering and Environmental

TestAmerica Job ID: 580-51304-1 Project/Site: Camp Bonneville- Domestic Well Sampling SDG: 76151.005 Phase 0010

Job ID: 580-51304-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-51304-1

Receipt

The sample was received on 7/1/2015 1:00 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

HPLC/IC

Method(s) 8330-Prep: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-78854

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Relative Percent Difference, a measure of the relative difference between two points

TestAmerica Job ID: 580-51304-1 SDG: 76151.005 Phase 0010

Glossary

RL

RPD

TEF

TEQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio

7/17/2015

Client Sample Results

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51304-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51304-1

Client Sample ID: 23119-063015 Date Collected: 06/30/15 12:19 **Matrix: Water**

Date Received: 07/01/15 13:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND		0.10		ug/L		07/02/15 10:46	07/10/15 08:12	1
RDX	ND		0.10		ug/L		07/02/15 10:46	07/10/15 08:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	100		79 - 111				07/02/15 10:46	07/10/15 08:12	1
Method: 331.0 - Perch	lorate (LC/MS/MS)								
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte									

Client: PBS Engineering and Environmental

TestAmerica Job ID: 580-51304-1

SDG: 76151.005 Phase 0010

Method: 8330A - Nitroaromatics and Nitramines

Project/Site: Camp Bonneville- Domestic Well Sampling

Lab Sample ID: MB 320-78854/1-A Client Sample ID: Method Blank **Matrix: Water Prep Type: Total/NA Analysis Batch: 79077** Prep Batch: 78854 MB MB

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND	0.10	ug/L		07/02/15 10:46	07/10/15 04:33	1
RDX	ND	0.10	ug/L		07/02/15 10:46	07/10/15 04:33	1

MB MB Surrogate Qualifier Limits %Recovery Prepared Analyzed Dil Fac 3,4-Dinitrotoluene 94 79 - 111 07/02/15 10:46 07/10/15 04:33

Lab Sample ID: LCS 320-78854/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 79077** Prep Batch: 78854 LCS LCS Spike %Rec. Result Qualifier Limits Analyte Added Unit D %Rec HMX 1.00 1.11 ug/L 111 67 - 115 RDX 1.00 1.15 ug/L 115 68 - 122 LCS LCS

Surrogate %Recovery Qualifier Limits 3,4-Dinitrotoluene 96 79 - 111

Method: 331.0 - Perchlorate (LC/MS/MS)

Client Sample ID: Method Blank Lab Sample ID: MB 320-78892/1-A **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 79252** Prep Batch: 78892

мв мв Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Perchlorate ND 0.50 ug/L 07/06/15 13:56 07/08/15 18:52

Lab Sample ID: LCS 320-78892/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 79252** Prep Batch: 78892 LCS LCS Spike %Rec. Analyte Added Result Qualifier Limits Unit %Rec Perchlorate 2.00 1.94 97 80 - 120 ug/L

Lab Chronicle

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51304-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51304-1

Matrix: Water

Client Sample ID: 23119-063015 Date Collected: 06/30/15 12:19

Date Received: 07/01/15 13:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	8330-Prep			78854	07/02/15 10:46	HJA	TAL SAC
Total/NA	Analysis	8330A		1	79077	07/10/15 08:12	YPH	TAL SAC
Total/NA	Prep	Filtration			78892	07/06/15 13:56	HJA	TAL SAC
Total/NA	Analysis	331.0		1	79252	07/08/15 21:59	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

7/17/2015

Certification Summary

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51304-1 SDG: 76151.005 Phase 0010

3

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-17
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-15
US Fish & Wildlife	Federal		LE192332-0	02-28-16
USDA	Federal		P330-11-00222	04-08-17
Washington	State Program	10	C553	02-17-16

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date		
A2LA	DoD ELAP		2928-01	01-31-16		
Alaska (UST)	State Program	10	UST-055	12-18-15		
Arizona	State Program	9	AZ0708	08-11-15		
Arkansas DEQ	State Program	6	88-0691	06-17-16		
California	State Program	9	2897	01-31-16		
Colorado	State Program	8	N/A	08-31-15		
Connecticut	State Program	1	PH-0691	06-30-15 *		
Florida	NELAP	4	E87570	06-30-16		
Hawaii	State Program	9	N/A	01-29-16		
Illinois	NELAP	5	200060	03-17-16		
Kansas	NELAP	7	E-10375	10-31-15		
Louisiana	NELAP	6	30612	06-30-16		
Michigan	State Program	5	9947	01-31-16		
Nevada	State Program	9	CA44	07-31-15		
New Jersey	NELAP	2	CA005	09-30-15		
New York	NELAP	2	11666	04-01-16		
Oregon	NELAP	10	CA200005	01-29-16		
Pennsylvania	NELAP	3	9947	03-31-16		
Texas	NELAP	6	T104704399-08-TX	05-31-16		
US Fish & Wildlife	Federal		LE148388-0	02-28-16		
USDA	Federal		P330-11-00436	12-30-17		
USEPA UCMR	Federal	1	CA00044	11-06-16		
Utah	NELAP	8	QUAN1	02-28-16		
Virginia	NELAP Secondary AB	3	460278	03-14-16		
Washington	State Program	10	C581	05-04-16		
West Virginia (DW)	State Program	3	9930C	12-31-15		
Wyoming	State Program	8	8TMS-Q	01-29-16		

TestAmerica Seattle

^{*} Certification renewal pending - certification considered valid.

Sample Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51304-1 SDG: 76151.005 Phase 0010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-51304-1	23119-063015	Water	06/30/15 12:19	07/01/15 13:00

2

А

6

8

9

9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210 18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210 East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290

X

2000 West International Airport Road, Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210 Work Order #: CHAIN OF CUSTODY REPORT 580-51304 Chain of Custody Test/Incremental Analytical Testing Corporation

TURNAROUND REQUEST in Business Days *		5 4 3 2 1 <	STD.	OTHER Specify:	* Turnaround Requests less than standard may incur Rush Charges.	# OF	(W, S, O) CONT. COMMENTS:SAMFLERS INITIAL ID	√							1/20 Mm DATE 7/11/5	STAIN FIRM: ME, TIME: 1036	FIRM: AY DATE: WILL	TEMP: //S PAGE \ OF	IRPL
INVOICE TO: PBS		P.O. NUMBER:	REQUESTED ANALYSES						•						DATE: 4/35/15 RECEIVED BY: / //	TIME: 1500, PRINT NAME: 1/25	DATE: 7/11/5 RECEIVED BY: SEE TIME: 13OD PRINT NAME:).	
	om	71.7891				Method Achod		X								PBS	Ė		
	scott.braunsten@pbsenv.c	.e, r oludild, Olegoli FAX: 888.371.7891	omestic Well Sampling	hase 0010	يزمز	AMPLING	LIME	0/30/12 1/3/	:						Jan	S FIRM: N	AN FIRM: N	for ALL QA/QC	
CLIENT: PBS	REPORT TO: heidi.yantz@pbsenv.com, scott.braunsten@pbsenv.com	PHONE: 503.248,1939	PROJECT NAME: Camp Bonneville Domestic Well Sampling	PROJECT NUMBER: 76151,005 Phase 0010	SAMPLED BY: SCAT Braunsten &	CLENT SAMPLE	+	23119-003015						0	ELINQUISHED BY: Ber Arm	RINT NAME:	ELINQUISHED BY: // COSSITOL.	DDITIONAL REMARKS: Use PBS sample for ALL QA/QC	

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Is the Field Sampler's name present on COC?

Samples are received within Holding Time.

Sample collection date/times are provided. Appropriate sample containers are used.

Sample containers have legible labels.

Containers are not broken or leaking.

Sample bottles are completely filled.

Multiphasic samples are not present.

Samples do not require splitting or compositing.

Sample Preservation Verified.

Residual Chlorine Checked.

MS/MSDs

<6mm (1/4").

There are no discrepancies between the containers received and the COC.

There is sufficient vol. for all requested analyses, incl. any requested

Containers requiring zero headspace have no headspace or bubble is

Job Number: 580-51304-1 SDG Number: 76151.005 Phase 0010

List Source: TestAmerica Seattle

Login Number: 51304 List Number: 1

Creator: Lehman, Clarissa A

Answer	Comment
N/A	
N/A	
N/A	
True	
	N/A N/A N/A True True True True True True True True

True

True

True

True

True True

True

True

N/A

True

N/A

N/A

N/A

N/A

10

10

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51304-1 SDG Number: 76151.005 Phase 0010

ODG Number: 70101:0001 flase 0010

Login Number: 51304 List Source: TestAmerica Sacramento
List Number: 2 List Creation: 07/02/15 01:42 PM

Creator: Sadler, Jeremy

,,		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Headspace required for 331
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

2

Δ

5

10



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

TestAmerica Job ID: 580-51303-1

TestAmerica Sample Delivery Group: 76151.005 Phase 0010 Client Project/Site: Camp Bonneville- Domestic Well Sampling

For:

PBS Engineering and Environmental 4412 SW Corbett Ave Portland, Oregon 97239

Attn: Scott Braunsten

Authorized for release by:

7/17/2015 1:59:21 PM

Sarah Murphy, Project Manager I (253)922-2310

sarah.murphy@testamericainc.com

.....LINKS

Review your project results through

Total Access

Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	4
Client Sample Results	5
QC Sample Results	6
Chronicle	7
Certification Summary	8
Sample Summary	9
Chain of Custody	10
Racaint Chacklists	11

6

A

6

<u>۾</u>

9

Case Narrative

Client: PBS Engineering and Environmental

TestAmerica Job ID: 580-51303-1 Project/Site: Camp Bonneville- Domestic Well Sampling SDG: 76151.005 Phase 0010

Job ID: 580-51303-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-51303-1

Receipt

The sample was received on 7/1/2015 1:00 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

HPLC/IC

Method(s) 8330-Prep: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-78854

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Relative Percent Difference, a measure of the relative difference between two points

TestAmerica Job ID: 580-51303-1 SDG: 76151.005 Phase 0010

Glossary

RL

RPD

TEF

TEQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.
a	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio

Ė

J

7

10

10

4 -

Client Sample Results

Client: PBS Engineering and Environmental

Client Sample ID: 23109-063015

Project/Site: Camp Bonneville- Domestic Well Sampling

ND

TestAmerica Job ID: 580-51303-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51303-1

07/06/15 13:56 07/08/15 21:46

Metrice Meter

Matrix: Water

Date Collected: 06/30/15 11:24 Date Received: 07/01/15 13:00

Perchlorate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND		0.10		ug/L		07/02/15 10:46	07/10/15 07:28	1
RDX	ND		0.10		ug/L		07/02/15 10:46	07/10/15 07:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
3.4-Dinitrotoluene	90		79 - 111				07/02/15 10:46	07/10/15 07:28	

0.50

ug/L

5

_

TestAmerica Job ID: 580-51303-1

Analyzed

Prepared

Dil Fac

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well Sampling

Analyte

SDG: 76151.005 Phase 0010

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78854/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 79077	Prep Batch: 78854
MB MB	

Result Qualifier

-						•	•	
HMX	ND		0.10		ug/L	07/02/15 10:46	07/10/15 04:33	1
RDX	ND		0.10	ι	ug/L	07/02/15 10:46	07/10/15 04:33	1
	МВ	МВ						
	2							
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	94		79 - 111			07/02/15 10:46	07/10/15 04:33	1

RL

MDL Unit

Lab Sample ID: LCS 320-78854/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 79077** Prep Batch: 78854 LCS LCS Spike %Rec. Result Qualifier Limits Analyte Added Unit D %Rec HMX 1.00 1.11 ug/L 111 67 - 115 RDX ug/L 1.00 115 68 - 122 1.15

LCS LCS Surrogate %Recovery Qualifier Limits 3,4-Dinitrotoluene 96 79 - 111

Method: 331.0 - Perchlorate (LC/MS/MS)

Lab Sample ID: MB 320-78892/1-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 79252** Prep Batch: 78892 мв мв

Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Perchlorate ND 0.50 ug/L 07/06/15 13:56 07/08/15 18:52

Lab Sample ID: LCS 320-78892/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 79252** Prep Batch: 78892 LCS LCS Spike %Rec. Analyte Added Result Qualifier Limits Unit %Rec Perchlorate 2.00 1.94 97 80 - 120 ug/L

7/17/2015

Lab Chronicle

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51303-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51303-1

Matrix: Water

Client Sample ID: 23109-063015 Date Collected: 06/30/15 11:24

Date Received: 07/01/15 13:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	8330-Prep			78854	07/02/15 10:46	HJA	TAL SAC
Total/NA	Analysis	8330A		1	79077	07/10/15 07:28	YPH	TAL SAC
Total/NA	Prep	Filtration			78892	07/06/15 13:56	HJA	TAL SAC
Total/NA	Analysis	331.0		1	79252	07/08/15 21:46	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

7/17/2015

Certification Summary

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51303-1 SDG: 76151.005 Phase 0010

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-17
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-15
US Fish & Wildlife	Federal		LE192332-0	02-28-16
USDA	Federal		P330-11-00222	04-08-17
Washington	State Program	10	C553	02-17-16

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-15
Arizona	State Program	9	AZ0708	08-11-15
Arkansas DEQ	State Program	6	88-0691	06-17-16
California	State Program	9	2897	01-31-16
Colorado	State Program	8	N/A	08-31-15
Connecticut	State Program	1	PH-0691	06-30-15 *
Florida	NELAP	4	E87570	06-30-16
Hawaii	State Program	9	N/A	01-29-16
Illinois	NELAP	5	200060	03-17-16
Kansas	NELAP	7	E-10375	10-31-15
Louisiana	NELAP	6	30612	06-30-16
Michigan	State Program	5	9947	01-31-16
Nevada	State Program	9	CA44	07-31-15
New Jersey	NELAP	2	CA005	09-30-15
New York	NELAP	2	11666	04-01-16
Oregon	NELAP	10	CA200005	01-29-16
Pennsylvania	NELAP	3	9947	03-31-16
Texas	NELAP	6	T104704399-08-TX	05-31-16
US Fish & Wildlife	Federal		LE148388-0	02-28-16
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-16
Virginia	NELAP Secondary AB	3	460278	03-14-16
Washington	State Program	10	C581	05-04-16
West Virginia (DW)	State Program	3	9930C	12-31-15
Wyoming	State Program	8	8TMS-Q	01-29-16

TestAmerica Seattle

7/17/2015

2

5

7

1 በ

^{*} Certification renewal pending - certification considered valid.

Sample Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51303-1 SDG: 76151.005 Phase 0010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-51303-1	23109-063015	Water	06/30/15 11:24	07/01/15 13:00

2

Л

5

6

8

9

10

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210 East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290

9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210 Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210

×

		18939 120th Avenue N.E., Suite 101, Bothell, WA 9801
580-51303 Chain of Custody	580-51303 Chain of Custody	East 11115 Montgomery, Suite B, Spokane, WA 9920
		9405 S.W. Nimbus Avenue, Beaverton, OR 9700
ANALYTICAL TESTING CORPORATION		2000 West International Airport Road, Suite A10, Anchorage, AK 995
CHAIL	CHAIN OF CUSTODY REPORT	EPORT Work Order #:

CLIENT: PBS				INVOICE TO: PBS	SS			TIR	TAROTIND	TIRNAROIIND BEOILEST in Business Days *	s Dave *
REPORT TO: heidi.yantz@pbsenv.com, scott.braunsten@pbsenv.com	m, scott.braunsten@pbs	env.com						9	Organic	Organic & Inorganic Analyses	
ADDRESS: 4412 SW Corbett Avenue. Portland. Oregon	enue. Portland. Oregor			 				STD		Petroleum Hydrocarbon Analyses	1 < 1
PHONE: 503.248.1939	FAX: 8	FAX: 888.371.7891	7891	P.O. NUMBER:				w		3 2 1	\\\\\\\\\
PROJECT NAME: Camp Bonneville Domestic Well Sampling	le Domestic Well Samplin	6		REQUESTE	REQUESTED ANALYSES			STD			1
PROJECT NUMBER: 76151.005 Phase 0010	5 Phase 0010			 				ОТ	OTHER	Specify:	
SAMPLED BY: Scott Brannsten	tens Domeniation	yd XN A0€68 I						* Turnar	ound Requests l	* Turnaround Requests less than standard may incur Rush Charges.	h Charges.
CLIENT SAMPLE	SAMPLING	and HN Methoc	hlorat					MATRIX	# OF		NCA WO
INDENTIFICATION	DATE/TIME	XOR Aq3	neq					(W, S, O)	CONT.	COMMENTS/SAMPLER'S INITIAL	d D
1 23109-063015	4/30/15 1124	\times	X					3	δ		
2							,				
3											
4											
5											-
9											
7			<u> </u>								
8)
6											
10							· · ·				\(\frac{1}{2}\)
RELINQUISHED BY: POSTA	Spring	1		DATE: 6/33/15	RECEIVED BY:	1	7	4			DATE:7/1/15
PRINT NAME:	V FIRM:	400	0	TIME: (SOC)	PRINT NAME:	128S17	3	30	FIRM: S. F.		TIME!OX
RELINQUISHED BY: OUR CA	and FIRMS	2.6	Ü	DATE: 7/1/5	RECEIVED BY: PRINT NAME:	W	W.R.		FIRM: TX P	1	DATE: 7'1'S TIME: 7'30'0
ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC coctoms 3000	ole for ALL QA/QC									TEMP:	GE OF
											<u> </u>

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51303-1

SDG Number: 76151.005 Phase 0010 List Source: TestAmerica Seattle

Login Number: 51303

List Number: 1

Creator: Lehman, Clarissa A

Creator. Lemman, Clarissa A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

TestAmerica Seattle

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51303-1

SDG Number: 76151.005 Phase 0010

List Source: TestAmerica Sacramento
List Number: 2
List Creation: 07/02/15 01:42 PM

Creator: Sadler, Jeremy

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Headspace required for 331
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

2

Λ

5

6

8



THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

TestAmerica Job ID: 580-51302-1

TestAmerica Sample Delivery Group: 76151.005 Phase 0010 Client Project/Site: Camp Bonneville- Domestic Well Sampling

For:

PBS Engineering and Environmental 4412 SW Corbett Ave Portland, Oregon 97239

Attn: Scott Braunsten

Saral Nurphy

Authorized for release by: 7/17/2015 1:58:04 PM

Sarah Murphy, Project Manager I (253)922-2310

sarah.murphy@testamericainc.com

----- LINKS ------

Review your project results through Total Access

Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	
Client Sample Results	5
QC Sample Results	6
Chronicle	7
Certification Summary	8
Sample Summary	9
Chain of Custody	10
Receipt Checklists	11

-6

4

6

8

9

Case Narrative

Client: PBS Engineering and Environmental

TestAmerica Job ID: 580-51302-1 Project/Site: Camp Bonneville- Domestic Well Sampling SDG: 76151.005 Phase 0010

Job ID: 580-51302-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-51302-1

Receipt

The sample was received on 7/1/2015 1:00 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

HPLC/IC

Method(s) 8330-Prep: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-78854

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: PBS Engineering and Environmental

Relative error ratio

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51302-1 SDG: 76151.005 Phase 0010

Glossary

RER

RPD

TEF

TEQ

RL

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control

7/17/2015

Client Sample Results

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51302-1

SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51302-1

07/06/15 13:56 07/08/15 21:32

Matrix: Water

Client Sample ID: 23711-063015 Date Collected: 06/30/15 10:31

Date Received: 07/01/15 13:00

Perchlorate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND		0.10		ug/L		07/02/15 10:46	07/10/15 06:44	1
RDX	ND		0.10		ug/L		07/02/15 10:46	07/10/15 06:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
3.4-Dinitrotoluene	95		79 - 111				07/02/15 10:46	07/10/15 06:44	

0.50

ND

ug/L

6

g

10

TestAmerica Job ID: 580-51302-1

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well Sampling

SDG: 76151.005 Phase 0010

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78854/1-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 79077** Prep Batch: 78854 MB MB

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND	0.10	ug/L		07/02/15 10:46	07/10/15 04:33	1
RDX	ND	0.10	ug/L		07/02/15 10:46	07/10/15 04:33	1
	440 440						

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 3,4-Dinitrotoluene 94 79 - 111 07/02/15 10:46 07/10/15 04:33

Lab Sample ID: LCS 320-78854/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 79077** Prep Batch: 78854 LCS LCS Spike %Rec. Result Qualifier Limits Analyte Added Unit D %Rec HMX 1.00 1.11 ug/L 111 67 - 115

RDX 1.00 1.15 ug/L 115 68 - 122 LCS LCS Surrogate %Recovery Qualifier Limits

79 - 111

Method: 331.0 - Perchlorate (LC/MS/MS)

96

3,4-Dinitrotoluene

Perchlorate

Client Sample ID: Method Blank Lab Sample ID: MB 320-78892/1-A **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 79252 Prep Batch: 78892 мв мв

Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Perchlorate ND 0.50 ug/L 07/06/15 13:56 07/08/15 18:52

Lab Sample ID: LCS 320-78892/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 79252** Prep Batch: 78892 LCS LCS Spike %Rec. Analyte Added Result Qualifier Limits Unit %Rec

1.94

ug/L

2.00

97

80 - 120

Lab Chronicle

Client: PBS Engineering and Environmental

Client Sample ID: 23711-063015

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51302-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51302-1

Matrix: Water

Date Collected: 06/30/15 10:31 Date Received: 07/01/15 13:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	8330-Prep			78854	07/02/15 10:46	HJA	TAL SAC
Total/NA	Analysis	8330A		1	79077	07/10/15 06:44	YPH	TAL SAC
Total/NA	Prep	Filtration			78892	07/06/15 13:56	HJA	TAL SAC
Total/NA	Analysis	331.0		1	79252	07/08/15 21:32	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51302-1 SDG: 76151.005 Phase 0010

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-17
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-15
US Fish & Wildlife	Federal		LE192332-0	02-28-16
USDA	Federal		P330-11-00222	04-08-17
Washington	State Program	10	C553	02-17-16

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-15
Arizona	State Program	9	AZ0708	08-11-15
Arkansas DEQ	State Program	6	88-0691	06-17-16
California	State Program	9	2897	01-31-16
Colorado	State Program	8	N/A	08-31-15
Connecticut	State Program	1	PH-0691	06-30-15 *
Florida	NELAP	4	E87570	06-30-16
Hawaii	State Program	9	N/A	01-29-16
Illinois	NELAP	5	200060	03-17-16
Kansas	NELAP	7	E-10375	10-31-15
Louisiana	NELAP	6	30612	06-30-16
Michigan	State Program	5	9947	01-31-16
Nevada	State Program	9	CA44	07-31-15
New Jersey	NELAP	2	CA005	09-30-15
New York	NELAP	2	11666	04-01-16
Oregon	NELAP	10	CA200005	01-29-16
Pennsylvania	NELAP	3	9947	03-31-16
Texas	NELAP	6	T104704399-08-TX	05-31-16
US Fish & Wildlife	Federal		LE148388-0	02-28-16
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-16
Virginia	NELAP Secondary AB	3	460278	03-14-16
Washington	State Program	10	C581	05-04-16
West Virginia (DW)	State Program	3	9930C	12-31-15
Wyoming	State Program	8	8TMS-Q	01-29-16

7/17/2015

TestAmerica Seattle

Page 8 of 12

2

3

4

6

8

9

10

^{*} Certification renewal pending - certification considered valid.

Sample Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51302-1 SDG: 76151.005 Phase 0010

Callacted Pagained

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-51302-1	23711-063015	Water	06/30/15 10:31	07/01/15 13:00

3

4

5

9

580-51302 Chain of Custody

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210 East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290

9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210 2000 West International Airport Road, Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210

Work Order #: CHAIN OF CUSTODY REPORT Test/Imerical Testing Corporation

CLIENT: PBS	INVOICE TO: PBS	S	TURNAROUND REQUEST in Business Days *	in Business Days *
REPORT TO: heidi yantz@pbsenv.com, scott.braunsten@pbsenv.com			Organic & Inorganic Analyses	Analyses
ADDDESS: 4412 SIN Carbott Avenue Dottland Oregon			CTD 7 5 4 3	2 1 <1
ADDITION: 4412 3VV COLDER AVEILLE, FOLGARIN, CLEGGGI	P O NIMBER		Lamme	Dour Analyses
Bonneville Domestic Well		REOUESTED ANALYSES		1
PRO IECT NI IMBER: 76151 005 Phase 0010			OTHER Specify	
	331		duests le	may incur Rush Charges.
Dana Gemeniania	l este bod:		H	
CLIENT SAMPLE SAMPLING	ohloret A Met		MATRIX # OF	NCA WO
INDENTIFICATION DATE/TIME & & C. C.	44∃ √4∃		(W, S, O) CONT. COMMENTS/SA	COMMENTS/SAMPLER'S INITIAL ID
1 23711-063015 6/30/15 1031 X	X		3	
710.6			•	1
510				
4				
5				
9				
7				
6				
10			*	enne Pane
REINQUISHED BY: Para Portugal	DATE: 6/20/1S	RECEIVED BY: / JAM as /	3	DATE: 711 15
PRINT NAME: OF FIRME PERS		PRINT NAME: (1655) CA A.	FIRM: M.E.	TIME 030
RELINQUISHED BY: ALL WAS MY FIRM: M	.6. TIME 1300	RECEIVED BY: PRINT NAME:	FIRM: The P.	DATE: 7/1/15
ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC			TEMP:	
			×	- 20- X

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51302-1

SDG Number: 76151.005 Phase 0010

List Source: TestAmerica Seattle

Login Number: 51302

List Number: 1

Creator: Lehman, Clarissa A

Creator: Lenman, Clarissa A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

TestAmerica Seattle

5

_

8

3

10

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51302-1

SDG Number: 76151.005 Phase 0010

List Source: TestAmerica Sacramento
List Number: 2
List Source: TestAmerica Sacramento
List Creation: 07/02/15 01:42 PM

Creator: Sadler, Jeremy

ordator. Sautor, Soromy		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Headspace required for 331
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

3

4

6

8

9

10





THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

TestAmerica Job ID: 580-51301-1

TestAmerica Sample Delivery Group: 76151.005 Phase 0010 Client Project/Site: Camp Bonneville- Domestic Well Sampling

For:

PBS Engineering and Environmental 4412 SW Corbett Ave Portland, Oregon 97239

Attn: Scott Braunsten

Authorized for release by:

7/17/2015 1:50:51 PM

Sarah Murphy, Project Manager I (253)922-2310

sarah.murphy@testamericainc.com

.....LINKS

Review your project results through
Total Access

Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	4
Client Sample Results	5
QC Sample Results	6
Chronicle	7
Certification Summary	8
Sample Summary	9
Chain of Custody	10
Receipt Checklists	11

L

0

8

9

10

TestAmerica Seattle 7/17/2015

Case Narrative

Client: PBS Engineering and Environmental

TestAmerica Job ID: 580-51301-1 Project/Site: Camp Bonneville- Domestic Well Sampling SDG: 76151.005 Phase 0010

Job ID: 580-51301-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-51301-1

Receipt

The sample was received on 7/1/2015 1:00 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

HPLC/IC

Method(s) 8330-Prep: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-78854

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

TestAmerica Job ID: 580-51301-1 SDG: 76151.005 Phase 0010

Glossary

RPD

TEF

TEQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

7/17/2015

Client Sample Results

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51301-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51301-1

07/06/15 13:56 07/08/15 20:52

Matrix: Water

Client Sample ID: 24105-063015
Date Collected: 06/30/15 09:40
Date Received: 07/01/15 13:00

Perchlorate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND		0.10		ug/L		07/02/15 10:46	07/10/15 06:01	1
RDX	ND		0.10		ug/L		07/02/15 10:46	07/10/15 06:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
3.4-Dinitrotoluene	97	-	79 - 111				07/02/15 10:46	07/10/15 06:01	

0.50

ug/L

ND

TestAmerica Job ID: 580-51301-1

Analyzed

07/02/15 10:46 07/10/15 04:33

Dil Fac

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well Sampling

Analyte

3,4-Dinitrotoluene

3,4-Dinitrotoluene

SDG: 76151.005 Phase 0010

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78854/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 79077	Prep Batch: 78854
MB MB	

Result Qualifier

94

96

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
	MB	MB					
RDX	ND		0.10	ug/L	07/02/15 10:46	07/10/15 04:33	1
HMX	ND		0.10	ug/L	07/02/15 10:46	07/10/15 04:33	1

79 - 111

RL

MDL Unit

D

Prepared

Lab Sample ID: LCS 320-78854/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 79077** Prep Batch: 78854 LCS LCS Spike %Rec. Added Result Qualifier Limits Analyte Unit D %Rec HMX 1.00 1.11 ug/L 111 67 - 115 RDX 1.00 1.15 ug/L 115 68 - 122

LCS LCS Surrogate %Recovery Qualifier Limits

79 - 111

Method: 331.0 - Perchlorate (LC/MS/MS)

Lab Sample ID: MB 320-78892/1-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 79252** Prep Batch: 78892

мв мв Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Perchlorate ND 0.50 ug/L 07/06/15 13:56 07/08/15 18:52

Lab Sample ID: LCS 320-78892/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 79252** Prep Batch: 78892 LCS LCS Spike %Rec. Analyte Added Result Qualifier Limits Unit %Rec Perchlorate 2.00 1.94 97 80 - 120 ug/L

7/17/2015

Lab Chronicle

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51301-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51301-1

Matrix: Water

Client Sample ID: 24105-063015 Date Collected: 06/30/15 09:40

Date Received: 07/01/15 13:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	8330-Prep			78854	07/02/15 10:46	HJA	TAL SAC
Total/NA	Analysis	8330A		1	79077	07/10/15 06:01	YPH	TAL SAC
Total/NA	Prep	Filtration			78892	07/06/15 13:56	HJA	TAL SAC
Total/NA	Analysis	331.0		1	79252	07/08/15 20:52	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: PBS Engineering and Environmental

Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51301-1 SDG: 76151.005 Phase 0010

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-17
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-15
US Fish & Wildlife	Federal		LE192332-0	02-28-16
USDA	Federal		P330-11-00222	04-08-17
Washington	State Program	10	C553	02-17-16

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-15
Arizona	State Program	9	AZ0708	08-11-15
Arkansas DEQ	State Program	6	88-0691	06-17-16
California	State Program	9	2897	01-31-16
Colorado	State Program	8	N/A	08-31-15
Connecticut	State Program	1	PH-0691	06-30-15 *
Florida	NELAP	4	E87570	06-30-16
Hawaii	State Program	9	N/A	01-29-16
Illinois	NELAP	5	200060	03-17-16
Kansas	NELAP	7	E-10375	10-31-15
Louisiana	NELAP	6	30612	06-30-16
Michigan	State Program	5	9947	01-31-16
Nevada	State Program	9	CA44	07-31-15
New Jersey	NELAP	2	CA005	09-30-15
New York	NELAP	2	11666	04-01-16
Oregon	NELAP	10	CA200005	01-29-16
Pennsylvania	NELAP	3	9947	03-31-16
Texas	NELAP	6	T104704399-08-TX	05-31-16
US Fish & Wildlife	Federal		LE148388-0	02-28-16
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-16
Virginia	NELAP Secondary AB	3	460278	03-14-16
Washington	State Program	10	C581	05-04-16
West Virginia (DW)	State Program	3	9930C	12-31-15
Wyoming	State Program	8	8TMS-Q	01-29-16

7/17/2015

TestAmerica Seattle

2

5

7

ŏ

9

10

^{*} Certification renewal pending - certification considered valid.

Sample Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well Sampling

TestAmerica Job ID: 580-51301-1 SDG: 76151.005 Phase 0010

 Lab Sample ID
 Client Sample ID
 Matrix
 Collected
 Received

 580-51301-1
 24105-063015
 Water
 06/30/15 09:40
 07/01/15 13:00

5

4

8

9

10

×

Test/Imerical Analytical Testing Corporation

9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210 national Airport Road, Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210 39 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210 iast 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290

Work Order #: CHAIN OF CUSTODY REPORT

CLIENT: PBS REPORT TO: heidi.yantz@pbsenv.com, scott.braunsten@pbsenv.com	om, scott.braunster	n@pbsenv.	mos			INVOICE TO: PI	PBS					TURNA	AROUND Organic	TURNAROUND REQUEST in Business Days * Organic & Inorganic Analyses	ness Days	*
ADDRESS: 4412 SW Corbett Avenue. Portland. Oregon	enue, Portland, ()regon										10 7 STD.	Petrole	5 4 3 2 1 Petroleum Hydrocarbon Analyses	1 Ivses	<u> </u>
PHONE: 503.248.1939	E.	FAX: 888.371.7891	371.78	391	1	P.O. NUMBER:		:				5	4	3 2 1	<u> </u>	
PROJECT NAME: Camp Bonneville Domestic Well Sampling	le Domestic Well S	ampling _	•			REQUESTE	REQUESTED ANALYSES	ES				STD.				
PROJECT NUMBER: 76151.005 Phase 0010	5 Phase 0010						·.					OTHER	ER	Specify:		
SAMPLED BY: Scott Braunster	nster of Domenia		γd Xi 8330Α	9 334 1 pk								* Turnaro	nd Requests l	* Turnaround Requests less than standard may incur Rush Charges.	r Rush Charges	%
E	SAMPLING		MH bns borheM	hlorate Metho								MATRIX	# OF		Ŋ.	NCA WO
INDENTIFICATION	DATE/TIME		XOR A93	рач ДЧ∃		-						(W, S, O)	CONT.	COMMENTS/SAMPLER'S INITIAL	INITIAL	А
8 1 24105-003015	8/30/15	04d0	X	×								3	3			
,																
3																
4																
5																
9																
7																
8								····			,					
6								*************			, ,					
10		,						-rannous-u								z wa
RELINQUISHED BY: Gara	Bonson	1				DATE: 6/35/15	RECEIVED BY;	DBY;	N. C.	3	7	3	20		DATE 7	2
PRINT NAME:	7	FIRM: 🎅	PBS			TIME: 1500	PRINT NAME:	ME:	18821	1 3	2	FIRM:	一元	٥٠	TIME:	3
RELINQUISHED BY: // WWW.	2/1/2/2	FIRM: /	7.6		Д .	DATE: 71115 TIME: 1300	RECEIVED BY: PRINT NAME:	D BY:		S.		· FTRM:	X	j	DATE: 7/1/1/5 TIME: 130%	Ê
ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC coctant 3599	ple for ALL QA/Q	()												TEMP:	PAGE OF	OF.
-												,				

Page 10 of 12

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51301-1 SDG Number: 76151.005 Phase 0010

List Source: TestAmerica Seattle

Login Number: 51301 List Number: 1

Creator: Lehman, Clarissa A

Creator: Lenman, Ciarissa A		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

3

6

10

1.

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51301-1 SDG Number: 76151.005 Phase 0010

List Source: TestAmerica Sacramento

List Creation: 07/02/15 01:42 PM

List Number: 2 Creator: Sadler, Jeremy

Login Number: 51301

ment
space required for 331

TestAmerica Seattle

9

10

1'



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

TestAmerica Job ID: 580-51255-1

TestAmerica Sample Delivery Group: 76151.005 Phase 0010 Client Project/Site: Camp Bonneville- Domestic Well

For:

PBS Engineering and Environmental 4412 SW Corbett Ave Portland, Oregon 97239

Attn: Scott Braunsten

Sand Murphy

Authorized for release by: 7/17/2015 1:49:34 PM

Sarah Murphy, Project Manager I (253)922-2310

sarah.murphy@testamericainc.com

.....LINKS

Review your project results through
Total Access

Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

TestAmerica Job ID: 580-51255-1 SDG: 76151.005 Phase 0010

Table of Contents

1
2
3
4
5
6
7
3
9
10
11

6

9

Case Narrative

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51255-1 SDG: 76151.005 Phase 0010

Job ID: 580-51255-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-51255-1

Receipt

The sample was received on 6/30/2015 1:15 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

HPLC/IC

Method(s) 8330-Prep: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-78705

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

3

O

Q

0

10

Definitions/Glossary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Relative Percent Difference, a measure of the relative difference between two points

TestAmerica Job ID: 580-51255-1 SDG: 76151.005 Phase 0010

Glossary

RL

RPD

TEF

TEQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio

2

-

6

_

9

10

TU

4 -

Client Sample Results

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well TestAmerica Job ID: 580-51255-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51255-1

Matrix: Water

Client Comple ID: 22020 06204E
Client Sample ID: 22920-062915
Data Callagtad, 00/00/45 44:40

Date Collected: 06/29/15 11:10 Date Received: 06/30/15 13:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 23:28	1
RDX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 23:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	100		79 - 111				07/02/15 10:46	07/09/15 23:28	1
- Mothod: 221 0 Porch	lorate (LC/MS/MS)								
Method. 331.0 - Perch									
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

TestAmerica Job ID: 580-51255-1

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

SDG: 76151.005 Phase 0010

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78705/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 79077	Prep Batch: 78705
мв мв	

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 18:23	1
RDX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 18:23	1
	МВ	МВ							
0	0/5	O 1161	4 * *4					A I	D# E

%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
98	79 - 111	07/02/15 10:46	07/09/15 18:23	1
78705/2-A		•		•
•		98 79 - 111	79 - 111 07/02/15 10:46 -78705/2-A Client Sample ID: I	98 79 - 111 07/02/15 10:46 07/09/15 18:23

Matrix: Water Analysis Batch: 79733			Spike	LCS	LCS				Prep Type: T Prep Batch %Rec.	
Analyte			Added	_	Qualifier	Unit	D	%Rec	Limits	
HMX			1.00	1.15		ug/L		115	67 - 115	
RDX			1.00	1.19		ug/L		119	68 - 122	
	LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits							

Method: 331.0 - Perchlorate (LC/MS/MS)

3,4-Dinitrotoluene

Lab Sample ID: MB 320-78892/1 Matrix: Water	- A							ole ID: Method Prep Type: To	
Analysis Batch: 79252	МВ	МВ						Prep Batch:	78892
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		0.50		ug/L		07/06/15 13:56	07/08/15 18:52	1

Lab Sample ID: LCS 320-78892/2-A				Clie	nt Sar	mple ID	: Lab Cor	ntrol Sample
Matrix: Water							Prep Ty	pe: Total/NA
Analysis Batch: 79252							Prep E	Batch: 78892
•	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perchlorate	 2.00	1.94		ug/L		97	80 - 120	

Lab Chronicle

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well TestAmerica Job ID: 580-51255-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51255-1

Matrix: Water

Client Sample ID: 22920-062915 Date Collected: 06/29/15 11:10

Date Received: 06/30/15 13:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	8330-Prep			78705	07/02/15 10:46	HJA	TAL SAC
Total/NA	Analysis	8330A		1	79077	07/09/15 23:28	YPH	TAL SAC
Total/NA	Prep	Filtration			78892	07/06/15 13:56	HJA	TAL SAC
Total/NA	Analysis	331.0		1	79252	07/08/15 20:39	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51255-1 SDG: 76151.005 Phase 0010

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-17
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-15
US Fish & Wildlife	Federal		LE192332-0	02-28-16
USDA	Federal		P330-11-00222	04-08-17
Washington	State Program	10	C553	02-17-16

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-15
Arizona	State Program	9	AZ0708	08-11-15
Arkansas DEQ	State Program	6	88-0691	06-17-16
California	State Program	9	2897	01-31-16
Colorado	State Program	8	N/A	08-31-15
Connecticut	State Program	1	PH-0691	06-30-15 *
Florida	NELAP	4	E87570	06-30-16
Hawaii	State Program	9	N/A	01-29-16
Illinois	NELAP	5	200060	03-17-16
Kansas	NELAP	7	E-10375	10-31-15
Louisiana	NELAP	6	30612	06-30-16
Michigan	State Program	5	9947	01-31-16
Nevada	State Program	9	CA44	07-31-15
New Jersey	NELAP	2	CA005	09-30-15
New York	NELAP	2	11666	04-01-16
Oregon	NELAP	10	CA200005	01-29-16
Pennsylvania	NELAP	3	9947	03-31-16
Texas	NELAP	6	T104704399-08-TX	05-31-16
US Fish & Wildlife	Federal		LE148388-0	02-28-16
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-16
Virginia	NELAP Secondary AB	3	460278	03-14-16
Washington	State Program	10	C581	05-04-16
West Virginia (DW)	State Program	3	9930C	12-31-15
Wyoming	State Program	8	8TMS-Q	01-29-16

А

5

6

Q

10

4 .

^{*} Certification renewal pending - certification considered valid.

Sample Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51255-1 SDG: 76151.005 Phase 0010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-51255-1	22920-062915	Water	06/29/15 11:10	06/30/15 13:15

3

0

Q

×

NCA WO DATE: GALL DATE: 4 3 d/ 1 TIME: OF! <1 А PAGE OF TURNAROUND REQUEST in Business Days * Turnaround Requests less than standard may incur Rush Charges. 39 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210 national Airport Road, Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210 ast 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290 TIME: Petroleum Hydrocarbon Analyses COMMENTS/SAMPLER'S INTITAL Organic & Inorganic Analyses Specify: 4 CONT. 3 #OF 10 OTHER Work Order #: FIRM: (w, s, o) MATRIX 3 10 RECEIVED BY: RECEIVED BY: PRINT NAME: PRINT NAME: REQUESTED ANALYSES CHAIN OF CUSTODY REPORT PBS P.O. NUMBER: DATE: 5/30/15 DATE: \$\sqrt{29|15} INVOICE TO: TIME: /// S 580-51255 Chain of Custody EPA Method 331 FAX: 888.371.7891 Perchlorate by 235 RDX and HMX by EPA Method 8330A REPORT TO: heidi.yantz@pbsenv.com, scott.braunsten@pbsenv.com 0 PROJECT NAME: Camp Bonneville Domestic Well Sampling ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon FIRM: Test/Imerical Analytical Testing Corporation DATE/TIME SAMPLING ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC SAMPLED BY: Dana Donanighini and South Branston PROJECT NUMBER: 76151.005 Phase 0010 1/29/15 É RELINQUISHED BY: Oar INDENTIFICATION 12920-05921 CLIENT SAMPLE 503.248.1939 RELINQUISHED BY: PBS PRINT NAME: PRINT NAME: PHONE: CLIENT: COC Rev 9, 3/99 10

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Samples are received within Holding Time.

Sample collection date/times are provided.

Appropriate sample containers are used. Sample bottles are completely filled.

Sample containers have legible labels.

Containers are not broken or leaking.

Multiphasic samples are not present.

Samples do not require splitting or compositing.

Sample Preservation Verified.

Residual Chlorine Checked.

MS/MSDs

<6mm (1/4").

There are no discrepancies between the containers received and the COC.

There is sufficient vol. for all requested analyses, incl. any requested

Containers requiring zero headspace have no headspace or bubble is

Job Number: 580-51255-1 SDG Number: 76151.005 Phase 0010

List Source: TestAmerica Seattle

Login Number: 51255

List Number: 1 Creator: Gonzales, Steve

Comment **Answer** Question Radioactivity wasn't checked or is </= background as measured by a survey N/A meter. The cooler's custody seal, if present, is intact. N/A N/A Sample custody seals, if present, are intact. The cooler or samples do not appear to have been compromised or True tampered with. Samples were received on ice. True Cooler Temperature is acceptable. True Cooler Temperature is recorded. True COC is present. True COC is filled out in ink and legible. True COC is filled out with all pertinent information. True True Is the Field Sampler's name present on COC?

True

True

True

True

True True

True

N/A

True

N/A

N/A

N/A

N/A

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51255-1

SDG Number: 76151.005 Phase 0010

Login Number: 51255
List Source: TestAmerica Sacramento
List Number: 2
List Creation: 07/01/15 02:57 PM

Creator: Nelson, Kym D

Answer	Comment
True	
True	
N/A	
True	
True	
True	
True	4.0
True	
True	
True	
N/A	
True	
False	Headspace required for 331
N/A	
True	
True	
True	
True	
N/A	
	True True N/A True True True True True True True True

А

5

_

0

10



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

TestAmerica Job ID: 580-51254-1

TestAmerica Sample Delivery Group: 76151.005 Phase 0010 Client Project/Site: Camp Bonneville- Domestic Well

For:

PBS Engineering and Environmental 4412 SW Corbett Ave Portland, Oregon 97239

Attn: Scott Braunsten

Authorized for release by:

7/17/2015 1:48:18 PM

Sarah Murphy, Project Manager I (253)922-2310

sarah.murphy@testamericainc.com

·····LINKS ·······

Review your project results through

Total Access

Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	4
Client Sample Results	5
QC Sample Results	6
Chronicle	7
Certification Summary	8
Sample Summary	9
Chain of Custody	10
Receipt Checklists	11

4

5

6

8

9

Case Narrative

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51254-1 SDG: 76151.005 Phase 0010

Job ID: 580-51254-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-51254-1

Receipt

The sample was received on 6/30/2015 11:15 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

HPLC/IC

Method(s) 8330-Prep: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-78705

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

3

4

6

0

10

Definitions/Glossary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

Quality Control

Relative error ratio

Toxicity Equivalent Factor (Dioxin)
Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

TestAmerica Job ID: 580-51254-1 SDG: 76151.005 Phase 0010

Glossary

QC

RER

RPD

TEF

TEQ

RL

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit

Client Sample Results

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well TestAmerica Job ID: 580-51254-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51254-1

Matrix: Water

Client Sample ID: 22211-062915 Date Collected: 06/29/15 10:00

Date Received: 06/30/15 13:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 22:44	1
RDX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 22:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
3.4-Dinitrotoluene	93		79 - 111				07/02/15 10:46	07/09/15 22:44	

Method: 331.0 - Perchlorate (Lo	C/MS/MS)						
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND	0.50	ug/L		07/06/15 13:56	07/08/15 20:26	1

TestAmerica Job ID: 580-51254-1 SDG: 76151.005 Phase 0010

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78705/1-A

Matrix: Water

Analysis Batch: 79077

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 78705

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND	0.10	ug/L		07/02/15 10:46	07/09/15 18:23	1
RDX	ND	0.10	ug/L		07/02/15 10:46	07/09/15 18:23	1

MB MB

MD MD

Surrogate Qualifier Limits %Recovery Prepared Analyzed Dil Fac 3,4-Dinitrotoluene 98 79 - 111 07/02/15 10:46 07/09/15 18:23

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 320-78705/2-A **Matrix: Water**

Analysis Batch: 79733

Prep Type: Total/NA

Prep Batch: 78705

-	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
HMX	1.00	1.15		ug/L		115	67 - 115	
RDX	1.00	1.19		ug/L		119	68 - 122	

LCS LCS

Surrogate %Recovery Qualifier Limits 3,4-Dinitrotoluene 97 79 - 111

Method: 331.0 - Perchlorate (LC/MS/MS)

Lab Sample ID: MB 320-78892/1-A

Matrix: Water

Analysis Batch: 79252

Client Sample ID: Method Blank **Prep Type: Total/NA**

Prep Batch: 78892

мв мв Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Perchlorate ND 0.50 ug/L 07/06/15 13:56 07/08/15 18:52

Lab Sample ID: LCS 320-78892/2-A

Matrix: Water

Analysis Batch: 79252

Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 78892

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit Limits %Rec Perchlorate 2.00 1.94 97 80 - 120 ug/L

Lab Chronicle

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51254-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51254-1

Matrix: Water

Client Sample ID: 22211-062915

Date Collected: 06/29/15 10:00 Date Received: 06/30/15 13:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	8330-Prep			78705	07/02/15 10:46	HJA	TAL SAC
Total/NA	Analysis	8330A		1	79077	07/09/15 22:44	YPH	TAL SAC
Total/NA	Prep	Filtration			78892	07/06/15 13:56	HJA	TAL SAC
Total/NA	Analysis	331.0		1	79252	07/08/15 20:26	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

2

3

5

Ė

0

10

Certification Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51254-1 SDG: 76151.005 Phase 0010

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-17
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-15
US Fish & Wildlife	Federal		LE192332-0	02-28-16
USDA	Federal		P330-11-00222	04-08-17
Washington	State Program	10	C553	02-17-16

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-15
Arizona	State Program	9	AZ0708	08-11-15
Arkansas DEQ	State Program	6	88-0691	06-17-16
California	State Program	9	2897	01-31-16
Colorado	State Program	8	N/A	08-31-15
Connecticut	State Program	1	PH-0691	06-30-15 *
Florida	NELAP	4	E87570	06-30-16
Hawaii	State Program	9	N/A	01-29-16
Illinois	NELAP	5	200060	03-17-16
Kansas	NELAP	7	E-10375	10-31-15
Louisiana	NELAP	6	30612	06-30-16
Michigan	State Program	5	9947	01-31-16
Nevada	State Program	9	CA44	07-31-15
New Jersey	NELAP	2	CA005	09-30-15
New York	NELAP	2	11666	04-01-16
Oregon	NELAP	10	CA200005	01-29-16
Pennsylvania	NELAP	3	9947	03-31-16
Texas	NELAP	6	T104704399-08-TX	05-31-16
US Fish & Wildlife	Federal		LE148388-0	02-28-16
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-16
Virginia	NELAP Secondary AB	3	460278	03-14-16
Washington	State Program	10	C581	05-04-16
West Virginia (DW)	State Program	3	9930C	12-31-15
Wyoming	State Program	8	8TMS-Q	01-29-16

^{*} Certification renewal pending - certification considered valid.

Sample Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51254-1

SDG: 76151.005 Phase 0010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-51254-1	22211-062915	Water	06/29/15 10:00	06/30/15 13:15

×

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210 East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290

9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210 2000 West International Airport Road, Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210

580-51254 Chain of Custody

CHAIN OF CU	NOF	CUS	STODY REPORT	ORT	Work Order #:	der #:		
CLIENT: PBS			INVOICE TO: PBS	S		TURNAROUN	TURNAROUND REQUEST in Business Days *	ss Days *
! —	senv.com		ı .			Organ	Organic & Inorganic Analyses	1 <1
ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon	<u></u>					STD. Petr	Petroleum Hydrocarbon Analyses	yses
PHONE: 503.248.1939 FAX: 8	FAX: 888.371.7891	891	P.O. NUMBER:			5 4	3 2 1	<u>~</u>
PROJECT NAME: Camp Bonneville Domestic Well Sampling	Bu	 	REQUESTED	REQUESTED ANALYSES	-	STD.		
PROJECT NUMBER: 76151.005 Phase 0010						OTHER	Specify:	!
SAMPLED BY: DEMONSILIA SON SETT BELUSTEN	√d XN 8330A	pd 331				* Tumaround Reques	* Turnaround Requests less than standard may incur Rush Charges	ush Charges.
CLIENT SAMPLE SAMPLING		hlorate Metho				MATRIX # OF		NCA WO
INDENTIFICATION DATE/TIME	RDX EPA	neq Aq∃				(W, S, O) CONT.	COMMENTS/SAMPLER'S INITIAL	TAL ID
122211-062915 1629115 1000	X	X				2 2		
3								
4						-		
S								
9								
7						-		
	l minimus					-		
6						-		
10								
RELINQUISHED BY: Bana Bonenghi	.,		DATE: 4/29/15	RECEIVED BY:			,	DATES/3-/05
PRINT NAME: FIRM:	r PBS	de contraction de	TIME: (SDC)	PRINT NAME		FIRM: M.		TIME: DAIS
RELINQUISHED BY: PRINT NAME: FIRM:	T. Mic	,	DATE: 6/30 1/5	RECEIVED BY:	BODD	FIRM:	9.	DATE: (6/34/5) TIME: ///(
ADDITIONAL REMARKS. Use PBS sample for ALL QA/QC CCLEOR 3 379				!		-	TEMP:	PAGE OF
							Tatal	

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51254-1 SDG Number: 76151.005 Phase 0010

List Source: TestAmerica Seattle

Login Number: 51254

List Number: 1

Creator: Gonzales, Steve

Creator. Gorizales, Steve		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	

N/A

2

4

5

_

10

1.

Residual Chlorine Checked.

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51254-1

7/17/2015

SDG Number: 76151.005 Phase 0010

Login Number: 51254 List Number: 2 List Source: TestAmerica Sacramento List Creation: 07/01/15 02:57 PM

Creator: Nelson, Kym D

Creator: Neison, Kym D		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Headspace required for 331
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

True

True

N/A

TestAmerica Seattle

Multiphasic samples are not present.

Residual Chlorine Checked.

Samples do not require splitting or compositing.



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

TestAmerica Job ID: 580-51252-1

TestAmerica Sample Delivery Group: 76151.005 Phase 0010 Client Project/Site: Camp Bonneville- Domestic Well

For:

PBS Engineering and Environmental 4412 SW Corbett Ave Portland, Oregon 97239

Attn: Scott Braunsten

Sand Murphy

Authorized for release by: 7/17/2015 1:47:09 PM

Sarah Murphy, Project Manager I (253)922-2310

sarah.murphy@testamericainc.com

.....LINKS

Review your project results through

Total Access

Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

TestAmerica Job ID: 580-51252-1 SDG: 76151.005 Phase 0010

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	4
Client Sample Results	5
QC Sample Results	6
Chronicle	7
Certification Summary	8
Sample Summary	9
Chain of Custody	10
Receipt Checklists	11

4

L

6

8

9

10

Case Narrative

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51252-1 SDG: 76151.005 Phase 0010

Job ID: 580-51252-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-51252-1

Receipt

The sample was received on 6/30/2015 11:15 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

HPLC/IC

Method(s) 8330-Prep: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-78705

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

3

4

5

6

8

9

Definitions/Glossary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

Relative error ratio

Toxicity Equivalent Factor (Dioxin)
Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

TestAmerica Job ID: 580-51252-1 SDG: 76151.005 Phase 0010

Glossary

RER

RPD

TEF

TEQ

RL

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control

2

4

5

6

0

9

10

10

1-

Client Sample Results

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well TestAmerica Job ID: 580-51252-1 SDG: 76151.005 Phase 0010

Client Sample ID: 23517-062915 Lab Sample ID: 580-51252-1

Date Collected: 06/29/15 12:05 Matrix: Water

Date Received: 06/30/15 13:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 22:01	1
RDX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 22:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	94		79 - 111				07/02/15 10:46	07/09/15 22:01	1
- Method: 331 0 - Perch	lorate (LC/MS/MS)								
Mictilioa. Oo i.o - i ci cii									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

2

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51252-1 SDG: 76151.005 Phase 0010

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78705/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 79077	Prep Batch: 78705
MR MR	

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND ND	0.10	ug/L		07/02/15 10:46	07/09/15 18:23	1
RDX	ND	0.10	ug/L		07/02/15 10:46	07/09/15 18:23	1
	MB MB						

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	98		79 - 111	07/02/15 10:46	07/09/15 18:23	1

Lab Sample ID: LCS 320-78705/2-A **Client Sample ID: Lab Control Sample** Prep Type: Total/NA **Matrix: Water** Prep Batch: 78705 **Analysis Batch: 79733** Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit Limits D %Rec $\overline{\mathsf{HMX}}$ 1.00 1.15 ug/L 115 67 - 115 RDX 1.00 1.19 ug/L 119 68 - 122 LCS LCS

Surrogate %Recovery Qualifier Limits
3,4-Dinitrotoluene 97 79-111

Method: 331.0 - Perchlorate (LC/MS/MS)

Lab Sample ID: MB 320-78892/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 79252	Prep Batch: 78892
MB MB	

	IVID	IVID									
Analyte	Result	Qualifier	RL	MDL	Unit	D)	Prepared	Analyzed	Dil Fac	
Perchlorate	ND		0.50		ug/L		_	07/06/15 13:56	07/08/15 18:52	1	

Lab Sample ID: LCS 320-78892/2-A				Clie	ent Sar	nple ID): Lab Con	trol Sample
Matrix: Water							Prep Typ	e: Total/NA
Analysis Batch: 79252							Prep B	atch: 78892
-	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perchlorate	2.00	1.94		ug/L		97	80 - 120	

Lab Chronicle

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51252-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51252-1

Matrix: Water

Client Sample ID: 23517-062915 Date Collected: 06/29/15 12:05

Date Received: 06/30/15 13:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	8330-Prep			78705	07/02/15 10:46	HJA	TAL SAC
Total/NA	Analysis	8330A		1	79077	07/09/15 22:01	YPH	TAL SAC
Total/NA	Prep	Filtration			78892	07/06/15 13:56	HJA	TAL SAC
Total/NA	Analysis	331.0		1	79252	07/08/15 20:12	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

2

5

9

Certification Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well TestAmerica Job ID: 580-51252-1 SDG: 76151.005 Phase 0010

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-17
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-15
US Fish & Wildlife	Federal		LE192332-0	02-28-16
USDA	Federal		P330-11-00222	04-08-17
Washington	State Program	10	C553	02-17-16

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-15
Arizona	State Program	9	AZ0708	08-11-15
Arkansas DEQ	State Program	6	88-0691	06-17-16
California	State Program	9	2897	01-31-16
Colorado	State Program	8	N/A	08-31-15
Connecticut	State Program	1	PH-0691	06-30-15 *
Florida	NELAP	4	E87570	06-30-16
Hawaii	State Program	9	N/A	01-29-16
Illinois	NELAP	5	200060	03-17-16
Kansas	NELAP	7	E-10375	10-31-15
Louisiana	NELAP	6	30612	06-30-16
Michigan	State Program	5	9947	01-31-16
Nevada	State Program	9	CA44	07-31-15
New Jersey	NELAP	2	CA005	09-30-15
New York	NELAP	2	11666	04-01-16
Oregon	NELAP	10	CA200005	01-29-16
Pennsylvania	NELAP	3	9947	03-31-16
Texas	NELAP	6	T104704399-08-TX	05-31-16
US Fish & Wildlife	Federal		LE148388-0	02-28-16
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-16
Virginia	NELAP Secondary AB	3	460278	03-14-16
Washington	State Program	10	C581	05-04-16
West Virginia (DW)	State Program	3	9930C	12-31-15
Wyoming	State Program	8	8TMS-Q	01-29-16

TestAmerica Seattle

^{*} Certification renewal pending - certification considered valid.

Sample Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51252-1 SDG: 76151.005 Phase 0010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-51252-1	23517-062915	Water	06/29/15 12:05	06/30/15 13:15

6

8

9

10

339 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210

SUSTEING CORPORATION ANALYTICAL TESTING CORPORATION	jast zoov vost mechalio	3ast 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210 covorwess mecnational Airport Road, Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210	ane, WA 99206-4779 (509 tron, OR 97008-7132 (503 rage, AK 99502-1119 (907)) 924-9200 FAX 924-929()) 906-9200 FAX 906-921()) 563-9200 FAX 563-921(X
CHAIN OF CUS	STODY REPORT	Work Order #:	der #:		
CLIENT: PBS	INVOICE TO: PBS		TURNAROUND R	TURNAROUND REQUEST in Business Days *	* s/
REPORT TO: heidi.yantz@pbsenv.com, scott.braunsten@pbsenv.com			Organic & 10 7 5	Organic & Inorganic Analyses 5 4 3 2 1	<u>^</u>
ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon				Petroleum Hydrocarbon Analyses]
PHONE: 503.248.1939 FAX: 888.371.7891	P.O. NUMBER:		5 4	3 2 1 <1	
PROJECT NAME: Camp Bonneville Domestic Well Sampling	REQUESTED ANALYSES	S	STD.		
			OTHER	Specify:	
SAMPLED BY: J. Coot Brannston & Dave Domentoning 28 B B B			* Turnaround Requests less	* Turnaround Requests less than standard may incur Rush Charges	rges.
hlorat			MATRIX # OF		NCA WO
Perc			(W, S, O) CONT.	COMMENTS/SAMPLER'S INITIAL	А
1 23577-002915 W29/15 1205 XX			× 3		
				,	,
3					
4					
5					
9					
8			-		
6					
10					
DBY. Bana Bonswigh	5/167/0	BY:	· ·	DATE	DATES/30(15
PRINT NAME: FIRM: PBS	TIME: SPO PRINT NAME:		FIRM: M.L.	TIME:	TIME: Gø()
RELINQUISHED BY: PRINT NAME: FIRM: 12 (C	DATE: $\mathcal{L}/\mathcal{Z}_{\partial}$ // S RECEIVED BY: TIME: /// S PRINT NAME:	BE CARDE	FIRM:	DATE: (TIME:	32 32
ADDITIONAL REMARKS. Use PBS sample for ALL QA/QC			-	TEMP: 3.4 PAGE OF	OF "
				ICHP 1	

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51252-1

SDG Number: 76151.005 Phase 0010

List Source: TestAmerica Seattle

Login Number: 51252

List Number: 1

Creator: Gonzales, Steve

Answer	Comment
N/A	
N/A	
N/A	
True	
N/A	
True	
N/A	
N/A	
N/A	
N/A	
	N/A N/A N/A True True True True True True True True

3

4

O

7

9

10

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51252-1

SDG Number: 76151.005 Phase 0010

Login Number: 51252 List Source: TestAmerica Sacramento
List Number: 2 List Creation: 07/01/15 02:57 PM

Creator: Nelson, Kym D

Creator: Neison, Kym D		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Headspace required for 331
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

4

6

Ω

9

10

1-



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

TestAmerica Job ID: 580-51251-1

TestAmerica Sample Delivery Group: 76151.005 Phase 0010 Client Project/Site: Camp Bonneville- Domestic Well

For:

PBS Engineering and Environmental 4412 SW Corbett Ave Portland, Oregon 97239

Attn: Scott Braunsten

Sand Murphy

Authorized for release by: 7/17/2015 1:11:07 PM

Sarah Murphy, Project Manager I (253)922-2310

sarah.murphy@testamericainc.com

·····LINKS ······

Review your project results through
Total Access

Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

TestAmerica Job ID: 580-51251-1 SDG: 76151.005 Phase 0010

Table of Contents

1
2
3
4
5
6
7
3
9
10
11

4

5

6

8

9

10

Case Narrative

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well TestAmerica Job ID: 580-51251-1 SDG: 76151.005 Phase 0010

Job ID: 580-51251-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-51251-1

Receipt

The sample was received on 6/30/2015 11:15 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

HPLC/IC

Method(s) 8330-Prep: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-78705

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

Relative error ratio

Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

TestAmerica Job ID: 580-51251-1 SDG: 76151.005 Phase 0010

Glossary

RER

RPD

TEF

TEQ

RL

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
OC	Quality Control

Client Sample Results

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well TestAmerica Job ID: 580-51251-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51251-1

Matrix: Water

Client Sample ID: 6709-062915 Date Collected: 06/29/15 13:06

Date Received: 06/30/15 11:15

Analyte	Result Quali	fier RL	MDL Unit	D Prepared	Analyzed	Dil Fac
HMX	ND ND	0.10	ug/L	07/02/15 10:46	07/09/15 21:17	1
RDX	ND	0.10	ug/L	07/02/15 10:46	07/09/15 21:17	1
Surrogate	%Recovery Quali	fier Limits		Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	98	79 - 111		07/02/15 10:46	07/09/15 21:17	1

Method: 331.0 - Perchlorate (I	LC/MS/MS)								
Analyte	Result	Qualifier	RL	MDL	Unit)	Prepared	Analyzed	Dil Fac
Perchlorate	ND		0.50		ug/L	_	07/06/15 13:56	07/08/15 19:59	1

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

Surrogate

3,4-Dinitrotoluene

TestAmerica Job ID: 580-51251-1 SDG: 76151.005 Phase 0010

Method: 8330A - Nitroaromatics and Nitramines

%Recovery Qualifier

97

Lab Sample ID: MB 320-78705/1-A Matrix: Water Analysis Batch: 79077	1				(ple ID: Metho Prep Type: T Prep Batch	otal/NA
	MB	MB						
Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac

•					•	•	
HMX	ND		0.10	 ug/L	07/02/15 10:46	07/09/15 18:23	1
RDX	ND		0.10	ug/L	07/02/15 10:46	07/09/15 18:23	1
	МВ	МВ					
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	98		79 - 111		07/02/15 10:46	07/09/15 18:23	1

Lab Sample ID: LCS 320-78705/2-A Matrix: Water				Clie	nt Sai	mple ID	: Lab Contro Prep Type:	•
Analysis Batch: 79733							Prep Bato	ch: 78705
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
HMX	1.00	1.15		ug/L		115	67 - 115	
RDX	1.00	1.19		ug/L		119	68 - 122	
LCS	LCS							

Limits

79 - 111

Method: 331.0 - Perchlorate (LC/MS/MS)

Lab Sample ID: MB 320-78892/1 Matrix: Water Analysis Batch: 79252	- A							ole ID: Method Prep Type: To Prep Batch:	otal/NA
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		0.50		ua/l		07/06/15 13:56	07/08/15 18:52	

Lab Sample ID: LCS 320-78892/2-A				Clie	nt Sar	nple ID	: Lab Cor	trol Sample
Matrix: Water							Prep Ty	oe: Total/NA
Analysis Batch: 79252							Prep E	Batch: 78892
	Spike	LCS I	LCS				%Rec.	
Analyte	Added	Result (Qualifier	Unit	D	%Rec	Limits	
Perchlorate	2.00	1.94		ua/L		97	80 - 120	

Lab Chronicle

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51251-1 SDG: 76151.005 Phase 0010

Lab Sample ID: 580-51251-1

Matrix: Water

Client Sample ID: 6709-062915

Date Collected: 06/29/15 13:06 Date Received: 06/30/15 11:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	8330-Prep			78705	07/02/15 10:46	HJA	TAL SAC
Total/NA	Analysis	8330A		1	79077	07/09/15 21:17	YPH	TAL SAC
Total/NA	Prep	Filtration			78892	07/06/15 13:56	HJA	TAL SAC
Total/NA	Analysis	331.0		1	79252	07/08/15 19:59	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

2

3

5

Certification Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51251-1 SDG: 76151.005 Phase 0010

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-17
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-15
US Fish & Wildlife	Federal		LE192332-0	02-28-16
USDA	Federal		P330-11-00222	04-08-17
Washington	State Program	10	C553	02-17-16

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-15
Arizona	State Program	9	AZ0708	08-11-15
Arkansas DEQ	State Program	6	88-0691	06-17-16
California	State Program	9	2897	01-31-16
Colorado	State Program	8	N/A	08-31-15
Connecticut	State Program	1	PH-0691	06-30-15 *
Florida	NELAP	4	E87570	06-30-16
Hawaii	State Program	9	N/A	01-29-16
Illinois	NELAP	5	200060	03-17-16
Kansas	NELAP	7	E-10375	10-31-15
Louisiana	NELAP	6	30612	06-30-16
Michigan	State Program	5	9947	01-31-16
Nevada	State Program	9	CA44	07-31-15
New Jersey	NELAP	2	CA005	09-30-15
New York	NELAP	2	11666	04-01-16
Oregon	NELAP	10	CA200005	01-29-16
Pennsylvania	NELAP	3	9947	03-31-16
Texas	NELAP	6	T104704399-08-TX	05-31-16
US Fish & Wildlife	Federal		LE148388-0	02-28-16
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-16
Virginia	NELAP Secondary AB	3	460278	03-14-16
Washington	State Program	10	C581	05-04-16
West Virginia (DW)	State Program	3	9930C	12-31-15
Wyoming	State Program	8	8TMS-Q	01-29-16

8

9

10

^{*} Certification renewal pending - certification considered valid.

Sample Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51251-1 SDG: 76151.005 Phase 0010

Collected Received

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-51251-1	6709-062915	Water	06/29/15 13:06	06/30/15 11:15

3

4

5

7

Test Amelytical Testing Corporation	Amalytical testing corporation		580-51251 Chain	hain of	n of Custody	8939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210 East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210 2000 West International Airport Road, Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210	8939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 mational Airport Road, Suite A10, Anchorage, AK 99502-1119	01, Bothell, WA B, Spokane, WA c, Beaverton, OR 0, Anchorage, Ak	120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210 11115 Mortgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210 nal Airport Road, Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210	(425) 420-9200 FAX 420-9210 (509) 924-9200 FAX 924-9290 (503) 906-9200 FAX 906-9210 (907) 563-9200 FAX 563-9210	(420-9210 (924-9290 (906-9210 (563-9210	×
	CHAIL	0	FC	USI	CHAIN OF CUSTODY REPORT	ORT	Work	Work Order #:	#:			
CLIENT: PBS					INVOICE TO: PBS	S			TURNAROUND REQUEST in Business Days *	EQUEST in Bus	iness Days *	
REPORT TO: heidi.yantz@pbsenv.com,	n, scott.braunsten@pbsenv.com	senv.col	E					. 5	Organic &	Organic & Inorganic Analyses		
ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon	nue, Portland, Orego	=								Hvdrocarbo	nalvses	
PHONE: 503.248.1939	FAX: 8	888.371.7891	1.7891		P.O. NUMBER:				5 4 3	2 1	\\\\\\\	
PROJECT NAME: Camp Bonneville Domestic Well Sampling	Domestic Well Samplir	Đ.			REQUESTEI	REQUESTED ANALYSES			STD.			
PROJECT NUMBER: 76151.005 Phase 0010	Phase 0010								OTHER	Specify:		
SAMPLED BY: Scott Braunsien	en t ma Domenishin	γd XI	yd é					*	*Turnaround Requests less than standard may incur Rush Charges.	han standard may inci	ur Rush Charges.	1
CLIENT SAMPLE	SAMPLING	MH bns	hethod hlorate hlorate				, p. 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	MATRIX	RIX # OF		NCA	NCA WO
INDENTIFICATION	DATE/TIME	XOR	Perc					(W, S, O)	CONT.	COMMENTS/SAMPLER'S INITIAL		П
7109-1062915	W27/115 1306	$\hat{}$	X					3	60			
2		,					,					
3		····			,			-				
4								-				
5												
9												
7												
8						,						
6												
10												
RELINQUISHED BY: Hand By.	nenghi.	U V	V		DATE: 4/24/15	RECEIVED BY:			EIDM:	1	DATE (2) 1/2 m 1/2 S	20
RELINQUISHED BY: PRINT NAME:	FIRM:	4	3 2 2		DATE: \$135/15	RECEIVED BY:	S S S S S S S S S S S S S S S S S S S		FIRM:		DATE: 6 50/5	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
ADDITIONAL REMARKS: LISE PBS sample for ALL QA/QC	le for ALL QA/QC					,		-		TEMP:	} {	-

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51251-1 SDG Number: 76151.005 Phase 0010

List Source: TestAmerica Seattle

7/17/2015

Login Number: 51251 List Number: 1

Creator: Gonzales, Steve

Creator. Gorizales, Steve		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

TestAmerica Seattle

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51251-1 SDG Number: 76151.005 Phase 0010

int Courses Took America Courses with

List Source: TestAmerica Sacramento
List Number: 2
List Source: TestAmerica Sacramento
List Creation: 07/01/15 02:57 PM

Creator: Nelson, Kym D

TestAmerica Seattle

Creator. Neison, Kylii D		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Headspace required for 331
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Page 12 of 12 7/17/2015

4

5

6

10



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

TestAmerica Job ID: 580-51243-1

Client Project/Site: Camp Bonneville- Domestic Well

For:

PBS Engineering and Environmental 4412 SW Corbett Ave Portland, Oregon 97239

Attn: Scott Braunsten

dans / luyoh

Authorized for release by: 7/17/2015 11:16:57 AM

Sarah Murphy, Project Manager I (253)922-2310

sarah.murphy@testamericainc.com

----- LINKS -----

Review your project results through

Total Access

Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	4
Client Sample Results	5
QC Sample Results	6
Chronicle	7
Certification Summary	8
Sample Summary	9
Chain of Custody	10
Racaint Chacklists	11

-5

4

5

7

0

10

Case Narrative

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51243-1

Job ID: 580-51243-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-51243-1

Receipt

The sample was received on 6/30/2015 11:15 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

HPLC/IC

Method(s) 8330-Prep: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-78705

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

3

.

6

_

10

10

Definitions/Glossary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

TestAmerica Job ID: 580-51243-1

Glossary

RPD

TEF

TEQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radjochemistry)

Relative Percent Difference, a measure of the relative difference between two points

4

7

Ö

40

Client Sample Results

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well TestAmerica Job ID: 580-51243-1

Client Sample ID: 0000-062915 Lab Sample ID: 580-51243-1 Date Collected: 06/29/15 11:30

ND

Matrix: Water

07/06/15 13:56 07/08/15 19:19

Date Received: 06/30/15 11:15

Perchlorate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 20:34	1
RDX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 20:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
3.4-Dinitrotoluene	90	-	79 - 111				07/02/15 10:46	07/09/15 20:34	

0.50

ug/L

TestAmerica Job ID: 580-51243-1

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78705/ Matrix: Water Analysis Batch: 79077								le ID: Method Prep Type: To Prep Batch:	otal/NA
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HMX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 18:23	1
RDX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 18:23	1
	MB	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
3,4-Dinitrotoluene	98		79 - 111				07/02/15 10:46	07/09/15 18:23	1

Matrix: Water Analysis Batch: 79733	87U3/2-A					Cile	ent Sai	пріе ір	Prep Typ Prep B	troi Sample be: Total/NA atch: 78705
			Spike	LCS	LCS				%Rec.	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
HMX			1.00	1.15		ug/L		115	67 - 115	
RDX			1.00	1.19		ug/L		119	68 - 122	
	LCS L	.cs								
Surrogate	%Recovery (Qualifier	Limits							
3,4-Dinitrotoluene	97		79 - 111							

Method: 331.0 - Perchlorate (LC/MS/MS)

Lab Sample ID: MB 320-78892/1-A									Cli	ent Sam	ple ID: Method	Blank
Matrix: Water											Prep Type: To	otal/NA
Analysis Batch: 79252											Prep Batch	
•	MB	MB									•	
Analyte	Result	Qualifier		RL	ı	MDL	Unit) P	repared	Analyzed	Dil Fac
Perchlorate	ND			0.50			ug/L		07/0	06/15 13:56	07/08/15 18:52	
- Lab Sample ID: LCS 320-78892/2-A								Clie	nt Sa	mple ID:	Lab Control S	Sample
Matrix: Water										•	Prep Type: To	
Analysis Batch: 79252											Prep Batch	78892
•			Spike		LCS	LCS	;				%Rec.	
Analyte			Added		Result	Qua	lifier	Unit	D	%Rec	Limits	
Perchlorate			2.00		1.94			ug/L		97	80 - 120	

Lab Sample ID: 580-51243 Matrix: Water Analysis Batch: 80087	-1 MS						CI	ient Sa	Prep Ty	0000-062915 pe: Total/NA Batch: 78892
	•	Sample	Spike		MS				%Rec.	7010111 1 000 2
Analyte Perchlorate	Result ND	Qualifier	5.00	Result 4.81	Qualifier	Unit ug/L	D	%Rec 96	80 - 120	

Lab Sample ID: 580-51243	-1 MSD						CI	ient Sa	imple ID: (0000-00	32915
Matrix: Water									Prep Typ	pe: Tot	al/NA
Analysis Batch: 79252									Prep E	Batch:	78892
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perchlorate	ND		5.00	4.93		ug/L		99	80 - 120	3	20

TestAmerica Seattle

Page 6 of 12

Lab Chronicle

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

Client Sample ID: 0000-062915

Date Collected: 06/29/15 11:30

Date Received: 06/30/15 11:15

TestAmerica Job ID: 580-51243-1

Lab Sample ID: 580-51243-1

Matrix: Water

Batch Batch Dilution Batch Prepared **Prep Type** Method Run **Factor** or Analyzed Type Number Analyst Lab Total/NA Prep 8330-Prep 78705 07/02/15 10:46 HJA TAL SAC Total/NA Analysis 8330A 1 79077 07/09/15 20:34 YPH TAL SAC Total/NA Prep Filtration 78892 07/06/15 13:56 HJA TAL SAC Total/NA 79252 07/08/15 19:19 CBW TAL SAC Analysis 331.0 1

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51243-1

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-17
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-15
US Fish & Wildlife	Federal		LE192332-0	02-28-16
USDA	Federal		P330-11-00222	04-08-17
Washington	State Program	10	C553	02-17-16

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-15
Arizona	State Program	9	AZ0708	08-11-15
Arkansas DEQ	State Program	6	88-0691	06-17-16
California	State Program	9	2897	01-31-16
Colorado	State Program	8	N/A	08-31-15
Connecticut	State Program	1	PH-0691	06-30-15 *
Florida	NELAP	4	E87570	06-30-16
Hawaii	State Program	9	N/A	01-29-16
Illinois	NELAP	5	200060	03-17-16
Kansas	NELAP	7	E-10375	10-31-15
Louisiana	NELAP	6	30612	06-30-16
Michigan	State Program	5	9947	01-31-16
Nevada	State Program	9	CA44	07-31-15
New Jersey	NELAP	2	CA005	09-30-15
New York	NELAP	2	11666	04-01-16
Oregon	NELAP	10	CA200005	01-29-16
Pennsylvania	NELAP	3	9947	03-31-16
Texas	NELAP	6	T104704399-08-TX	05-31-16
US Fish & Wildlife	Federal		LE148388-0	02-28-16
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-16
Virginia	NELAP Secondary AB	3	460278	03-14-16
Washington	State Program	10	C581	05-04-16
West Virginia (DW)	State Program	3	9930C	12-31-15
Wyoming	State Program	8	8TMS-Q	01-29-16

4

5

_

10

4

TestAmerica Seattle

^{*} Certification renewal pending - certification considered valid.

Sample Summary

Client: PBS Engineering and Environmental Project/Site: Camp Bonneville- Domestic Well

TestAmerica Job ID: 580-51243-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-51243-1	0000-062915	Water	06/29/15 11:30	06/30/15 11:15

А

6

0

a

4.0

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210 East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210

×

2000 West International Airport Road, Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210 Work Order #: CHAIN OF CUSTODY REPORT Test Metain of Custody analytical testing corporation

CHENT: PRS					INVOICE TO:	CE TO: PBS	S				TIR	NAROTTA	TTRNAROTIND REOTIEST in Business Days *	siness Dave *	*
I	im, scott.brauns	ten@pbsem	/.com				ı	,			10 7	Organ	Organic & Inorganic Analyses	'Ses'	
ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon	enue, Portland	i, Oregon								,	STD.	∏ Bet	oleum Hydrocarbo	Analyses]
PHONE: 503.248.1939		FAX: 888.371.7891	371.7	7891	P.O. N	P.O. NUMBER:					w	4	3 2 1	\ \ \	
PROJECT NAME: Camp Bonneville Domestic Well Sampling	le Domestic Wel	l Sampling				REQUESTED ANALYSES	ANALYSI	SE			STD	D.			
PROJECT NUMBER: 76151.005 Phase 0010	5 Phase 0010				·				-		[<u>S</u>	OTHER	Specify:		
SAMPLED BY: Scott Braunston & Dananighing	ten & Dem	2 mighin	γd XI Α0εε8	b by							* Turna.	rround Reque	* Turnaround Requests less than standard may incur Rush Charges.	ncur Rush Charges	.5.
CLIENT SAMPLE	SAMPLING	NIG	Method borbeM	hlorate Metho				· · · · · · · · · · · · · · · · · · ·			MATRIX	# OF	ſr.	N	NCA WO
INDENTIFICATION	DATE/TIME	TIME	XO9 Aq3	one9 Aq∃							(W, S, O)	CONT.	T. COMMENTS/SAMPLER'S INITIAL	e's initial	А
1 0000-062715	6/29/15	1130	×	×					-		3	7		**	
2	,				1										
3															
4															
8			<u> </u> 												
. 9															
Į.															
8															
6															
10		1.14													
RELINQUISHED BY: Bure 16	Bruen	4	.,		DATE: (DATE: 6/29/15	RECEIVED BY:	OBY:		7,1		•	}	DATE: 6/30 /	1905
PRINT NAME:		FIRM:	PBS		TIME:	1500	PRINT NAME	ME		J	FIRM	FIRM: M . ("		TIME: 05	5.00
RELINQUISHED BY: PRINT NAME:		FIRM: /	えん), ,	DATE: TIME:	6150115 1115	RECEIVED BY	D BY	25	R	FIRME	ان. ان	AD	DATE: 6/30/15 TDME: 7/1/5	/30/rs //5
ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC cocess, 359	ple for ALL QA	/oc				.		∵				'	TEMP.	PAGE OF	OF "
													MID	ر ت ا	.

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental Job Number: 580-51243-1

Login Number: 51243 List Source: TestAmerica Seattle

List Number: 1

Creator: Gonzales, Steve

Creator. Gorizales, Steve		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

3

5

6

8

10

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental Job Number: 580-51243-1

Login Number: 51243
List Source: TestAmerica Sacramento
List Number: 2
List Creation: 07/01/15 02:57 PM

Creator: Nelson, Kym D

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	headspace in bottles
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

4

6

10