



Engineering +
Environmental

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.

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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.

- 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



Heidi W. Yantz

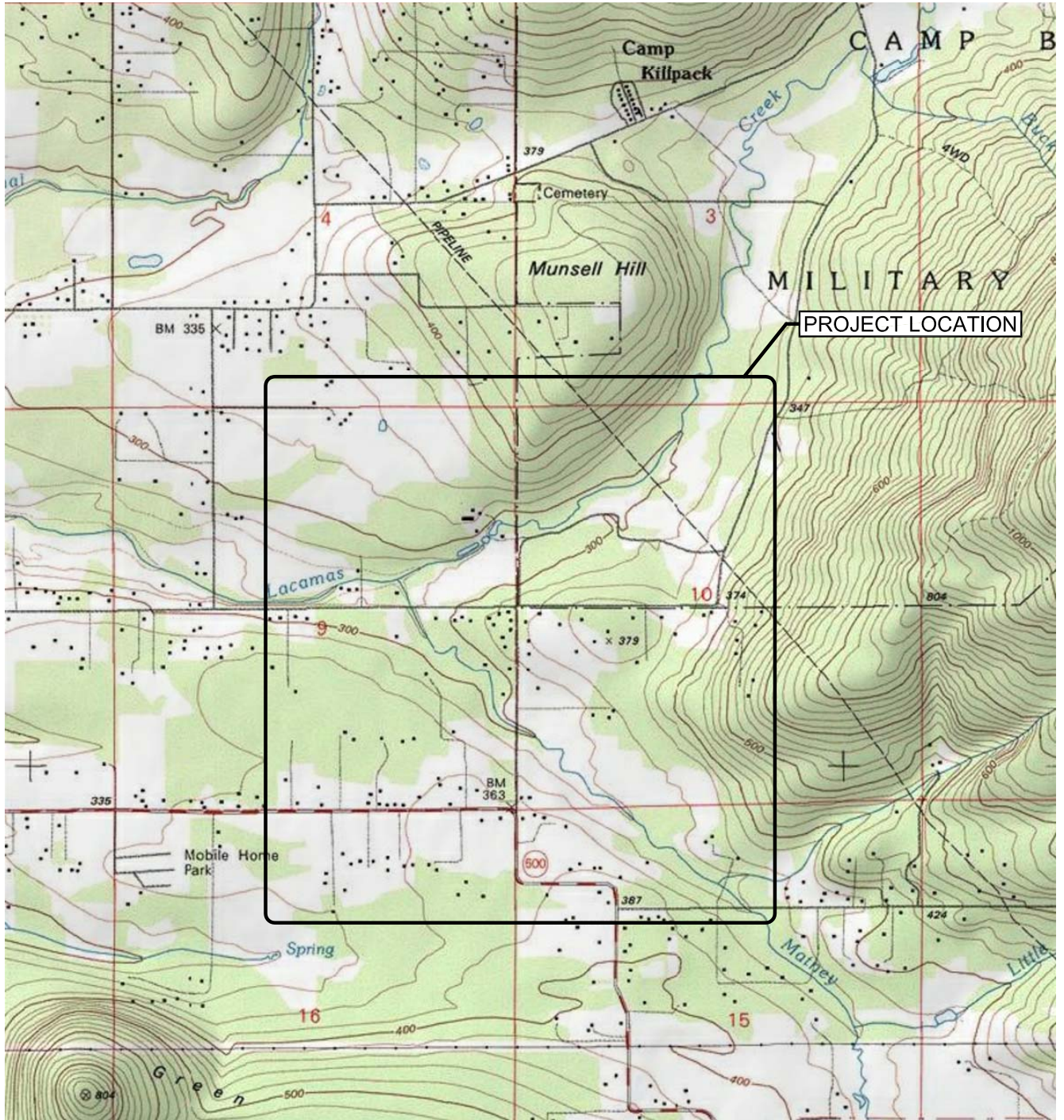
Attachments: Figure 1 – Vicinity Map
Figure 2 – Domestic Well Ten-Year Assessment Participating Properties
Table 1 – Properties Included in 2015 Monitoring Project
Table 2 – Field Parameters for Domestic Well Samples
Table 3 – Constituents Detected in Domestic Wells
Laboratory Reports and Sample Chain-of-Custody Forms (Electronic files provided on enclosed CD)

Figures

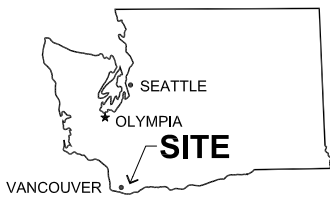
Figure 1 – Vicinity Map

Figure 2 – Updated Domestic Well Baseline Assessment Participating Properties

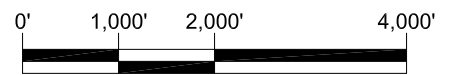
L:\Projects\76000\76100-76199\76151_Camp Bonneville_Vancouver\DWG\76151.005_0010\Figure 1.dwg Aug 14, 2015 03:47pm donj



SOURCE: USGS LACAMAS CREEK, WA QUADRANGLE 1990, PHOTO REVISED 1990.



WASHINGTON



SCALE: 1" = 2,000'

PREPARED FOR: CLARK COUNTY



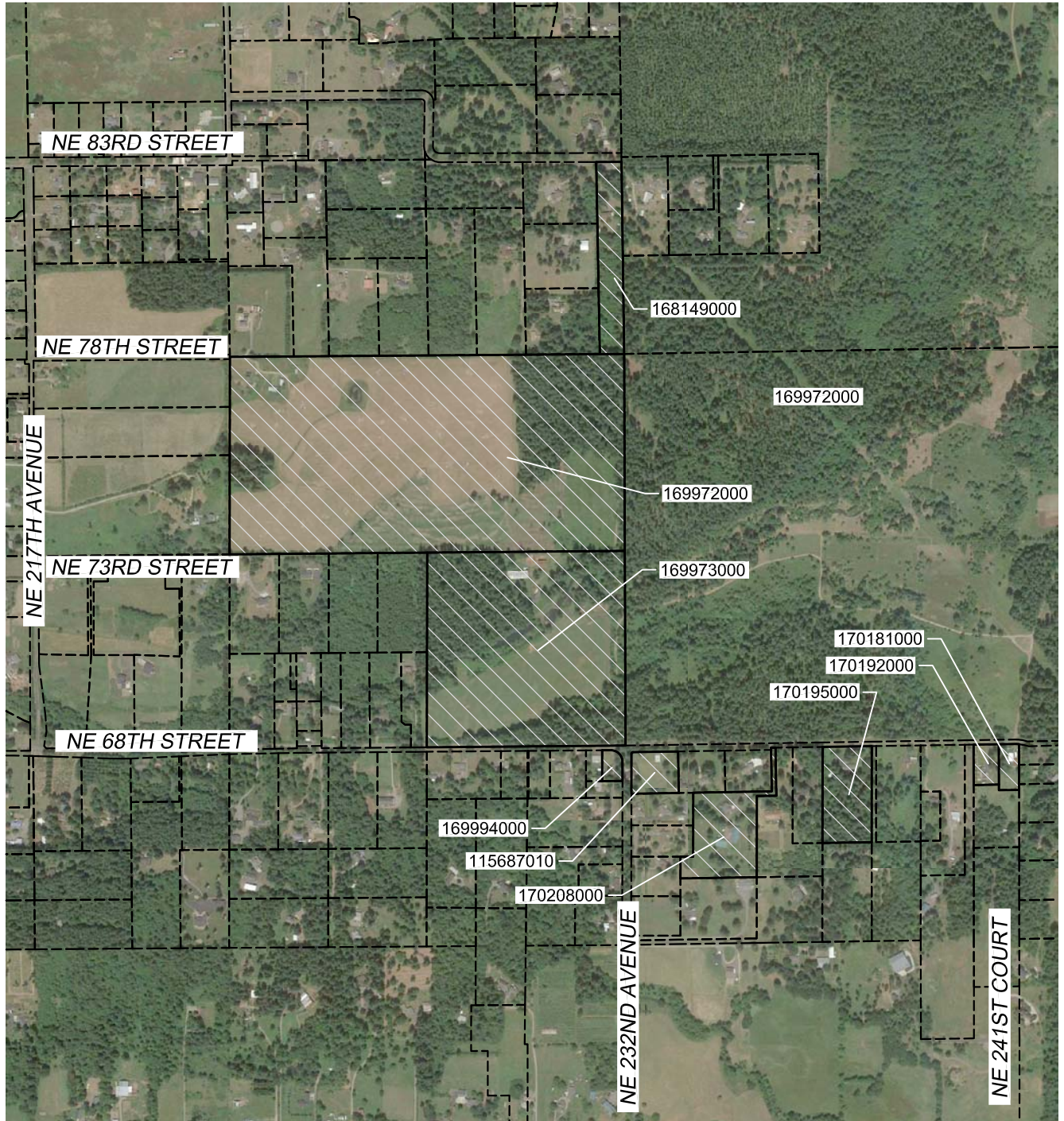
PROJECT #
76151.005
PHASE: 0010

DATE
AUG 2015

VICINITY MAP
MULTIPLE ADDRESSES
VANCOUVER, WASHINGTON

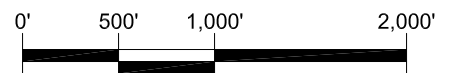
FIGURE
1

L:\Projects\76000\76100-76199\76151_Camp Bonneville_Vancouver\DWG\76151.005_0010\Figure 2.dwg Aug 24, 2015 02:05pm justind



SOURCE: © 2011 GOOGLE EARTH PRO, © 2012 GOOGLE

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



SCALE: 1" = 1,000'

PREPARED FOR: CLARK COUNTY



PROJECT #
76151.005
PHASE: 0010

DATE
AUG 2015

**DOMESTIC WELL TEN-YEAR
ASSESSMENT PARTICIPATING PROPERTIES**
MULTIPLE ADDRESSES
VANCOUVER, WASHINGTON

FIGURE
2

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	pH	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:

°C = degrees Celsius

Field parameters were measured using an Oakton PCSTestr 35 Meter

µS/cm = micro-siemens per centimeter

Table 3 - Constituents Detected in Domestic Wells

Near Camp Bonneville SW Boundary
Clark County, Washington

Analyte	MTCB Method B Std. Cleanup Values	22211-062915	22920-062915	23109-063015	23119-063015	23517-062915	23517-062915 Duplicate	RPD (<20%)	23711-063015	24105-063015	24109-063015	6709-062915
		06/29/2015	06/29/2015	06/30/2015	06/30/2015	06/29/2015	6/29/2015		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

Laboratory Reports and Sample Chain-Of-Custody Forms

Level II Data Packages

(Electronic files provided on enclosed CD)

TestAmerica

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



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

Sarah Murphy, Project Manager I
(253)922-2310
sarah.murphy@testamericainc.com

LINKS

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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.

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Case Narrative

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

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

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

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

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

Client Sample ID: 24109-063015

Lab Sample ID: 580-51305-1

Date Collected: 06/30/15 13:19

Matrix: Water

Date Received: 07/01/15 13:00

Method: 8330A - Nitroaromatics and Nitramines

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

Method: 331.0 - Perchlorate (LC/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 22:12	1



QC Sample Results

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

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

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78854/1-A
Matrix: Water
Analysis Batch: 79077

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 78854

Analyte	MB Result	MB 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
Surrogate	MB %Recovery	MB Qualifier	Limits						
3,4-Dinitrotoluene	94		79 - 111				07/02/15 10:46	07/10/15 04:33	1

Lab Sample ID: LCS 320-78854/2-A
Matrix: Water
Analysis Batch: 79077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 78854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HMX	1.00	1.11		ug/L		111	67 - 115
RDX	1.00	1.15		ug/L		115	68 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
3,4-Dinitrotoluene	96		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

Analyte	MB Result	MB 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
Matrix: Water
Analysis Batch: 79252

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 Sampling

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

Client Sample ID: 24109-063015

Lab Sample ID: 580-51305-1

Date Collected: 06/30/15 13:19

Matrix: Water

Date Received: 07/01/15 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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
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 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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11



TestAmerica

ANALYTICAL TESTING CORPORATION

580-51305 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

CHAIN OF CUSTODY REPORT Work Order #:

CLIENT: PBS	INVOICE TO: PBS	TURNAROUND REQUEST in Business Days *	
REPORT TO: heidi.yaniz@pbsenv.com, scott.braunsten@pbsenv.com	P.O. NUMBER:	Organic & Inorganic Analyses <input type="checkbox"/> 10 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1	Petroleum Hydrocarbon Analyses <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1
ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon	FAX: 888.371.7891	STD. <input type="checkbox"/> OTHER <input type="checkbox"/> Specify: _____ <small>* Turnaround Requests less than standard may incur Rush Charges.</small>	
PROJECT NAME: Camp Bonneville Domestic Well Sampling	REQUESTED ANALYSES		
PROJECT NUMBER: 76151.005 Phase 0010			
SAMPLED BY: Scott Braunsten & Dawn Domerighini			
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	EPA Method 8330A RDX and HMX by	EPA Method 331 Perchlorate by
1 24109-063015	6/30/15 1319	X	X
2			
3			
4			
5			
6			
7			
8			
9			
10			
RELINQUISHED BY: Dawn Domerighini	DATE: 6/30/15	RECEIVED BY: Jessica M.	DATE: 7/1/15
PRINT NAME:	TIME: 1500	PRINT NAME: Jessica M.	TIME: 030
RELINQUISHED BY: Jessica M.	DATE: 7/1/15	RECEIVED BY: AP	DATE: 7/1/15
PRINT NAME:	TIME: 1300	PRINT NAME:	TIME: 1300
FIRM: PBS		FIRM: M.E.	
FIRM: M.E.		FIRM: AP	
ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC			
COC Rev 9.2009		TEMP: 1.3	PAGE 1 OF 1

12/1/15



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

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

Login Number: 51305
List Number: 1
Creator: Lehman, Clarissa A

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (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	



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

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

Login Number: 51305
List Number: 2
Creator: Sadler, Jeremy

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

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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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

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TotalAccess

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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.

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Case Narrative

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

TestAmerica Job ID: 580-51304-1
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

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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

Client Sample ID: 23119-063015

Lab Sample ID: 580-51304-1

Date Collected: 06/30/15 12:19

Matrix: Water

Date Received: 07/01/15 13:00

Method: 8330A - Nitroaromatics and Nitramines

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 - Perchlorate (LC/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 21:59	1



QC 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

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78854/1-A
 Matrix: Water
 Analysis Batch: 79077

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 78854

Analyte	MB Result	MB 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
Surrogate	MB %Recovery	MB Qualifier	Limits						
3,4-Dinitrotoluene	94		79 - 111				07/02/15 10:46	07/10/15 04:33	1

Lab Sample ID: LCS 320-78854/2-A
 Matrix: Water
 Analysis Batch: 79077

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 78854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HMX	1.00	1.11		ug/L		111	67 - 115
RDX	1.00	1.15		ug/L		115	68 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
3,4-Dinitrotoluene	96		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

Analyte	MB Result	MB 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
 Matrix: Water
 Analysis Batch: 79252

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 Sampling

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

Client Sample ID: 23119-063015

Lab Sample ID: 580-51304-1

Date Collected: 06/30/15 12:19

Matrix: Water

Date Received: 07/01/15 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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

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

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 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

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TestAmerica

ANALYTICAL TESTING CORPORATION

580-51304 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

CHAIN OF CUSTODY REPORT Work Order #:

CLIENT: PBS		INVOICE TO: PBS	TURNAROUND REQUEST in Business Days *									
REPORT TO: heidi.yaniz@pbsenv.com, scott.braunsten@pbsenv.com		P.O. NUMBER:	<input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 Organic & Inorganic Analyses <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 Petroleum Hydrocarbon Analyses STD.									
ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon		FAX: 888.371.7891	<input type="checkbox"/> OTHER Specify: _____ * Turnaround Requests less than standard may incur Rush Charges.									
PROJECT NAME: Camp Bonneville Domestic Well Sampling		REQUESTED ANALYSES										
PROJECT NUMBER: 76151.005 Phase 0010		<table border="1"> <tr> <td>EPA Method 8330A</td> <td>RDX and HMX by EPA Method 8330A</td> <td>EPA Method 831</td> <td>NCA WO</td> </tr> <tr> <td></td> <td></td> <td></td> <td>ID</td> </tr> </table>			EPA Method 8330A	RDX and HMX by EPA Method 8330A	EPA Method 831	NCA WO				ID
EPA Method 8330A	RDX and HMX by EPA Method 8330A	EPA Method 831	NCA WO									
			ID									
SAMPLED BY: Scott Braunsten & Dana Dornenighini												
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME											
1 23119-003015	6/30/15 12:19	X	X	3								
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7												
8												
9												
10												
RELINQUISHED BY: Dana Amunghini	DATE: 6/30/15	RECEIVED BY: Jessica M.	DATE: 7/1/15									
PRINT NAME:	TIME: 1500	PRINT NAME:	TIME: 1030									
RELINQUISHED BY: Jessica M.	DATE: 7/1/15	RECEIVED BY: AP	DATE: 7/1/15									
PRINT NAME:	TIME: 1300	PRINT NAME:	TIME: 1300									
ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC		TEMP: 1.3	PAGE 1	OF 1								

COC Rev 9.5.99

11 10 9 8 7 6 5 4 3 2 1

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

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

Login Number: 51304
List Number: 1
Creator: Lehman, Clarissa A

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (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	



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

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

Login Number: 51304
List Number: 2
Creator: Sadler, Jeremy

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

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	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	



TestAmerica

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

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

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Case Narrative

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

TestAmerica Job ID: 580-51303-1
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

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

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

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

Client Sample ID: 23109-063015

Lab Sample ID: 580-51303-1

Date Collected: 06/30/15 11:24

Matrix: Water

Date Received: 07/01/15 13:00

Method: 8330A - Nitroaromatics and Nitramines

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	1

Method: 331.0 - Perchlorate (LC/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 21:46	1

QC Sample Results

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

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

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78854/1-A
Matrix: Water
Analysis Batch: 79077

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 78854

Analyte	MB Result	MB 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
Surrogate	MB %Recovery	MB Qualifier	Limits						
3,4-Dinitrotoluene	94		79 - 111				07/02/15 10:46	07/10/15 04:33	1

Lab Sample ID: LCS 320-78854/2-A
Matrix: Water
Analysis Batch: 79077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 78854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HMX	1.00	1.11		ug/L		111	67 - 115
RDX	1.00	1.15		ug/L		115	68 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
3,4-Dinitrotoluene	96		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

Analyte	MB Result	MB 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
Matrix: Water
Analysis Batch: 79252

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 Sampling

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

Client Sample ID: 23109-063015

Date Collected: 06/30/15 11:24

Date Received: 07/01/15 13:00

Lab Sample ID: 580-51303-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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

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

* Certification renewal pending - certification considered valid.

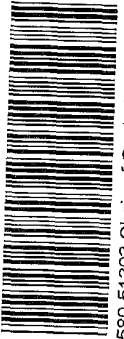
Sample Summary

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

- 1
- 2
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TestAmerica

ANALYTICAL TESTING CORPORATION

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

CHAIN OF CUSTODY REPORT

Work Order #:

CLIENT: PBS		INVOICE TO: PBS	
REPORT TO: heidi.yantz@pbsenv.com, scott.braunsten@pbsenv.com		P.O. NUMBER:	
ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon		REQUESTED ANALYSES	
PHONE: 503.248.1939		EPA Method 8330A	
PROJECT NAME: Camp Bonneville Domestic Well Sampling		EPA Method 831	
PROJECT NUMBER: 76151.005 Phase 0010		RDX and HMX by	
SAMPLED BY: Scott Braunsten Debra Dornenighini		Perchlorate by	
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME		
1 23109-063015	6/30/15 1124	X	X
2			
3			
4			
5			
6			
7			
8			
9			
10			

TURNAROUND REQUEST in Business Days *
 Organic & Inorganic Analyses
 7 5 4 3 2 1 <1
 Petroleum Hydrocarbon Analyses
 STD: 5 4 3 2 1 <1
 Specify: OTHER

* Turnaround Requests less than standard may incur Rush Charges.

RELINQUISHED BY: *Pana Bonenighini* DATE: 6/30/15 RECEIVED BY: *Jessica M. E.* DATE: 7/1/15
 PRINT NAME: PBS FIRM: PBS TIME: 1500 PRINT NAME: M.E. FIRM: M.E. TIME: 1030
 RELINQUISHED BY: *Jessica M. E.* DATE: 7/1/15 RECEIVED BY: *TAP* DATE: 7/1/15
 PRINT NAME: M.E. FIRM: M.E. TIME: 1300 PRINT NAME: TAP FIRM: TAP TIME: 1300

ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC
 TEMP: 1.3 PAGE 1 OF 1
 12/PL



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51303-1
SDG Number: 76151.005 Phase 0010

Login Number: 51303
List Number: 1
Creator: Lehman, Clarissa A

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (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	



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51303-1
SDG Number: 76151.005 Phase 0010

Login Number: 51303
List Number: 2
Creator: Sadler, Jeremy

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

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	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	



TestAmerica

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: 580-51302-1

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



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

Sarah Murphy, Project Manager I
(253)922-2310
sarah.murphy@testamericainc.com

LINKS

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Have a Question?



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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.

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Client Sample Results	5
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Case Narrative

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

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

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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

Client Sample ID: 23711-063015

Lab Sample ID: 580-51302-1

Date Collected: 06/30/15 10:31

Matrix: Water

Date Received: 07/01/15 13:00

Method: 8330A - Nitroaromatics and Nitramines

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	1

Method: 331.0 - Perchlorate (LC/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 21:32	1



QC 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

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78854/1-A
Matrix: Water
Analysis Batch: 79077

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 78854

Analyte	MB Result	MB 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
Surrogate	MB %Recovery	MB Qualifier	Limits						
3,4-Dinitrotoluene	94		79 - 111				07/02/15 10:46	07/10/15 04:33	1

Lab Sample ID: LCS 320-78854/2-A
Matrix: Water
Analysis Batch: 79077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 78854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HMX	1.00	1.11		ug/L		111	67 - 115
RDX	1.00	1.15		ug/L		115	68 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
3,4-Dinitrotoluene	96		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

Analyte	MB Result	MB 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
Matrix: Water
Analysis Batch: 79252

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 Sampling

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

Client Sample ID: 23711-063015

Lab Sample ID: 580-51302-1

Date Collected: 06/30/15 10:31

Matrix: Water

Date Received: 07/01/15 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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.

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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 Sampling

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

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

- 1
- 2
- 3
- 4
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- 10
- 11

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51302-1
SDG Number: 76151.005 Phase 0010

Login Number: 51302
List Number: 1
Creator: Lehman, Clarissa A

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (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	



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51302-1
SDG Number: 76151.005 Phase 0010

Login Number: 51302
List Number: 2
Creator: Sadler, Jeremy

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

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	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	

TestAmerica

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

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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.

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Case Narrative

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

TestAmerica Job ID: 580-51301-1
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

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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

Client Sample ID: 24105-063015

Lab Sample ID: 580-51301-1

Date Collected: 06/30/15 09:40

Matrix: Water

Date Received: 07/01/15 13:00

Method: 8330A - Nitroaromatics and Nitramines

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	1

Method: 331.0 - Perchlorate (LC/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 20:52	1



QC 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

Method: 8330A - Nitroaromatics and Nitramines

Lab Sample ID: MB 320-78854/1-A
Matrix: Water
Analysis Batch: 79077

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 78854

Analyte	MB Result	MB 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
Surrogate	MB %Recovery	MB Qualifier	Limits						
3,4-Dinitrotoluene	94		79 - 111				07/02/15 10:46	07/10/15 04:33	1

Lab Sample ID: LCS 320-78854/2-A
Matrix: Water
Analysis Batch: 79077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 78854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HMX	1.00	1.11		ug/L		111	67 - 115
RDX	1.00	1.15		ug/L		115	68 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
3,4-Dinitrotoluene	96		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

Analyte	MB Result	MB 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
Matrix: Water
Analysis Batch: 79252

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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 Sampling

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

Client Sample ID: 24105-063015

Lab Sample ID: 580-51301-1

Date Collected: 06/30/15 09:40

Matrix: Water

Date Received: 07/01/15 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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

* 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

- 1
- 2
- 3
- 4
- 5
- 6
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- 9
- 10
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580-51301 Chain of Custody

TestAmerica

ANALYTICAL TESTING CORPORATION

39 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210
1st 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
national Airport Road, Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT Work Order #:

CLIENT: PBS		INVOICE TO: PBS	
REPORT TO: heidi.yantz@pbsenv.com, scott.braunsten@pbsenv.com		P.O. NUMBER:	
ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon		REQUESTED ANALYSES	
PHONE: 503.248.1939	FAX: 888.371.7891		
PROJECT NAME: Camp Bonneville Domestic Well Sampling			
PROJECT NUMBER: 76151.005 Phase 0010			
SAMPLED BY: Scott Braunsten & Dana Domeneighini			
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	RD and HMX by EPA Method 8330A	Perchlorate by EPA Method 831
1 24105-003015	6/30/15 0940	X	X
2			
3			
4			
5			
6			
7			
8			
9			
10			
RELINQUISHED BY: Dana Domeneighini		DATE: 6/30/15	RECEIVED BY: Jessica M. M-E
PRINT NAME:		TIME: 1500	PRINT NAME: Jessica M. M-E
RELINQUISHED BY: Jessica M. M-E		DATE: 7/1/15	RECEIVED BY: Dana Domeneighini
PRINT NAME:		TIME: 1300	PRINT NAME: Dana Domeneighini
ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC		FIRM: PBS	FIRM: M-E
COC Rev 9, 3/99		FIRM: M-E	FIRM: M-E
TEMP: 13		DATE: 7/1/15	DATE: 7/1/15
PAGE 1 OF 1		TIME: 1030	TIME: 1300



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

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

Login Number: 51301
List Number: 1
Creator: Lehman, Clarissa A

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (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	



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

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

Login Number: 51301
List Number: 2
Creator: Sadler, Jeremy

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

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



TestAmerica

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



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

Sarah Murphy, Project Manager I
(253)922-2310
sarah.murphy@testamericainc.com

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

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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.

Definitions/Glossary

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

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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

Client Sample ID: 22920-062915

Lab Sample ID: 580-51255-1

Date Collected: 06/29/15 11:10

Matrix: Water

Date Received: 06/30/15 13:15

Method: 8330A - Nitroaromatics and Nitramines

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

Method: 331.0 - Perchlorate (LC/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 20:39	1

QC Sample Results

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

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

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	MB Result	MB 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
Surrogate	MB %Recovery	MB Qualifier	Limits						
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
Analysis Batch: 79733

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 78705

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

Analyte	MB Result	MB 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
Matrix: Water
Analysis Batch: 79252

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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

Client Sample ID: 22920-062915

Date Collected: 06/29/15 11:10

Date Received: 06/30/15 13:15

Lab Sample ID: 580-51255-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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.

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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: 580-51255-1
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

- 1
- 2
- 3
- 4
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- 10
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580-51255 Chain of Custody

TestAmerica

ANALYTICAL TESTING CORPORATION

139 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
national Airport Road, Suite A10, Anchorage, AK 99502-1119 (907) 563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT Work Order #:

INVOICE TO: PBS

CLIENT: PBS

REPORT TO: heidi.yantz@pbsenv.com, scott.braunsten@pbsenv.com

ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon

PHONE: 503.248.1939 FAX: 888.371.7891

PROJECT NAME: Camp Bonneville Domestic Well Sampling

PROJECT NUMBER: 76151.005 Phase 0010

SAMPLED BY: Dana Domenighini and Scott Braunsten

P.O. NUMBER:

REQUESTED ANALYSES

RDX and HMX by EPA Method 8330A
Perchlorate by EPA Method 331

CLIENT SAMPLE IDENTIFICATION: 22920-062915
SAMPLING DATE/TIME: 6/29/15 1110

1 22920-062915 6/29/15 1110

2

3

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10

RELINQUISHED BY: Dana Domenighini
PRINT NAME: FIRM: PBS

DATE: 6/29/15
TIME: 1500

RELINQUISHED BY: [Signature]
PRINT NAME: FIRM: MIE

DATE: 6/30/15
TIME: 1115

ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC

COC Rev 9.5/99

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses

10 7 5 4 3 2 1 <1

Petroleum Hydrocarbon Analyses

5 4 3 2 1 <1

STD.

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

MATRIX # OF NCA WO
(W, S, O) CONT. COMMENTS/SAMPLER'S INITIAL ID
W 3

RECEIVED BY: [Signature]
PRINT NAME: FIRM: MIE

DATE: 6/30/15
TIME: 0915

RECEIVED BY: [Signature]
PRINT NAME: FIRM: TAP

DATE: 6/30/15
TIME: 1115

TEMP: 34

PAGE 1 OF 1

WRPL



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

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

Login Number: 51255
List Number: 1
Creator: Gonzales, Steve

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 $<6\text{mm}$ (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	



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

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

Login Number: 51255
List Number: 2
Creator: Nelson, Kym D

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

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



TestAmerica

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

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

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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.



Definitions/Glossary

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

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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

Client Sample ID: 22211-062915

Lab Sample ID: 580-51254-1

Date Collected: 06/29/15 10:00

Matrix: Water

Date Received: 06/30/15 13:15

Method: 8330A - Nitroaromatics and Nitramines

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	1

Method: 331.0 - Perchlorate (LC/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

QC Sample Results

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

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

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	MB Result	MB 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
Surrogate	MB %Recovery	MB 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
Analysis Batch: 79733

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 78705

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

Analyte	MB Result	MB 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
Matrix: Water
Analysis Batch: 79252

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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: 580-51254-1
SDG: 76151.005 Phase 0010

Client Sample ID: 22211-062915

Lab Sample ID: 580-51254-1

Date Collected: 06/29/15 10:00

Matrix: Water

Date Received: 06/30/15 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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

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

- 1
- 2
- 3
- 4
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Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

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

Login Number: 51254
List Number: 1
Creator: Gonzales, Steve

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	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	



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

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

Login Number: 51254
List Number: 2
Creator: Nelson, Kym D

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

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	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	



TestAmerica

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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



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

Sarah Murphy, Project Manager I
(253)922-2310
sarah.murphy@testamericainc.com

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

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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.

Definitions/Glossary

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

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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

Method: 8330A - Nitroaromatics and Nitramines

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 - Perchlorate (LC/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 20:12	1

QC Sample Results

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
Matrix: Water
Analysis Batch: 79077

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 78705

Analyte	MB Result	MB 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
Surrogate	MB %Recovery	MB Qualifier	Limits						
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
Analysis Batch: 79733

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 78705

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

Analyte	MB Result	MB 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
Matrix: Water
Analysis Batch: 79252

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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

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

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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



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

* 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

- 1
- 2
- 3
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- 10
- 11

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51252-1
SDG Number: 76151.005 Phase 0010

Login Number: 51252
List Number: 1
Creator: Gonzales, Steve

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 $<6\text{mm}$ (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	

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51252-1
SDG Number: 76151.005 Phase 0010

Login Number: 51252
List Number: 2
Creator: Nelson, Kym D

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

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	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	



TestAmerica

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



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

Sarah Murphy, Project Manager I
(253)922-2310
sarah.murphy@testamericainc.com

LINKS

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results through
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Have a Question?



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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.

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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.

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

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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

Client Sample ID: 6709-062915

Lab Sample ID: 580-51251-1

Date Collected: 06/29/15 13:06

Matrix: Water

Date Received: 06/30/15 11:15

Method: 8330A - Nitroaromatics and Nitramines

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 21:17	1
RDX	ND		0.10		ug/L		07/02/15 10:46	07/09/15 21:17	1
Surrogate	%Recovery	Qualifier	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 (LC/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 19:59	1

QC Sample Results

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

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

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	MB Result	MB 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
Surrogate	MB %Recovery	MB Qualifier	Limits						
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
Analysis Batch: 79733

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 78705

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

Analyte	MB Result	MB 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
Matrix: Water
Analysis Batch: 79252

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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: 580-51251-1
SDG: 76151.005 Phase 0010

Client Sample ID: 6709-062915

Date Collected: 06/29/15 13:06

Date Received: 06/30/15 11:15

Lab Sample ID: 580-51251-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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

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

* 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

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11



580-51251 Chain of Custody

TestAmerica

ANALYTICAL TESTING CORPORATION

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

CHAIN OF CUSTODY REPORT Work Order #:

CLIENT: PBS
REPORT TO: heidi.yantz@pbsenv.com, scott.braunsten@pbsenv.com
INVOICE TO: PBS

ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon
PHONE: 503.248.1939 FAX: 888.371.7891
PROJECT NAME: Camp Bonneville Domestic Well Sampling
PROJECT NUMBER: 76151.005 Phase 0010

P.O. NUMBER:

REQUESTED ANALYSES

SAMPLED BY: Scott Braunsten & Dana Dommenigiani

RDX and HMX by EPA Method 8330A
Tetrahydro by EPA Method 331

CLIENT SAMPLE IDENTIFICATION
DATE/TIME

1 0709-062915 6/29/15 1306

2

3

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RELINQUISHED BY: Dana Dommenigiani
PRINT NAME: DATE: 6/29/15 TIME: 1500
FIRM: PBS

RELINQUISHED BY: [Signature]
PRINT NAME: DATE: 6/30/15 TIME: 1115
FIRM: MIE

ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC

COC Rev 9.9/99

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses

10 7 5 4 3 2 1 <1

Petroleum Hydrocarbon Analyses

5 4 3 2 1 <1

STD.

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

MATRIX (W, S, O)	# OF CONT.	COMMENTS/SAMPLER'S INITIAL	NCA WO ID
W	3		

RELINQUISHED BY: Dana Dommenigiani	DATE: 6/29/15	RECEIVED BY: [Signature]	DATE: 6/30/15
PRINT NAME:	TIME: 1500	PRINT NAME:	TIME: 1115
FIRM: PBS		FIRM: MIE	
RELINQUISHED BY: [Signature]		RECEIVED BY: [Signature]	
PRINT NAME:		PRINT NAME:	
FIRM: MIE		FIRM: PBS	

TEMP: 34	PAGE 1 OF 1
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K/P/L



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

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

Login Number: 51251
List Number: 1
Creator: Gonzales, Steve

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (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	



Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

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

Login Number: 51251
List Number: 2
Creator: Nelson, Kym D

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

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



TestAmerica

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



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

Sarah Murphy, Project Manager I
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Results relate only to the items tested and the sample(s) as received by the laboratory.

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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.



Definitions/Glossary

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

TestAmerica Job ID: 580-51243-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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

Matrix: Water

Date Received: 06/30/15 11:15

Method: 8330A - Nitroaromatics and Nitramines

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	1

Method: 331.0 - Perchlorate (LC/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 19:19	1

QC Sample Results

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

TestAmerica Job ID: 580-51243-1

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	MB Result	MB 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
Surrogate	MB %Recovery	MB 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
Analysis Batch: 79733

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 78705

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

Analyte	MB Result	MB 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
Matrix: Water
Analysis Batch: 79252

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

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

Lab Sample ID: 580-51243-1 MS
Matrix: Water
Analysis Batch: 80087

Client Sample ID: 0000-062915
Prep Type: Total/NA
Prep Batch: 78892

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	ND		5.00	4.81		ug/L		96	80 - 120

Lab Sample ID: 580-51243-1 MSD
Matrix: Water
Analysis Batch: 79252

Client Sample ID: 0000-062915
Prep Type: Total/NA
Prep Batch: 78892

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Perchlorate	ND		5.00	4.93		ug/L		99	80 - 120	3	20

TestAmerica Seattle

Lab Chronicle

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

Matrix: Water

Date Received: 06/30/15 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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 20:34	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 19:19	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: 580-51243-1

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

* 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

- 1
- 2
- 3
- 4
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- 10
- 11

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51243-1

Login Number: 51243

List Number: 1

Creator: Gonzales, Steve

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 $<6\text{mm}$ (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	

Login Sample Receipt Checklist

Client: PBS Engineering and Environmental

Job Number: 580-51243-1

Login Number: 51243
List Number: 2
Creator: Nelson, Kym D

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

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

