PBS | Engineering + Environmental

December 30, 2016

Jeremy Miller
Maintenance Manager
Department of Administrative Services
Enterprise Asset Management Division
1225 Ferry Street SE
Salem, Oregon 97301

Via email: Jeremy.W.MILLER@oregon.gov

Regarding: Drinking Water Sampling for Lead
Blind Commission Building
535 SE 12th Avenue
Portland, Oregon 97214
PBS Project # 25103.003 Phase 0037

Dear Mr. Miller:

On October 19 and 22, 2016, PBS Engineering and Environmental Inc. (PBS) performed drinking water sampling at the Blind Commission building located at 535 SE 12th Avenue in Portland, Oregon. The testing was requested by State of Oregon Department of Administrative Services in an effort to ensure that concentrations of lead in drinking water remain below the EPA action level.

Sampling methodology and the interpretation of laboratory results were based on the EPA Lead and Copper Rule (LCR). Following LCR sampling guidelines, PBS collected the first 1000 milliliters (mL) of water from each test location (first draw) early in the morning following an overnight stagnation period. The LCR's stagnation period, and sampling protocol specifying the first 1000 mL samples, is designed to maximize the likelihood that the highest concentrations of lead are identified in water used for consumption. At each sample location, immediately following first draw sampling, a flush sample was collected after the water had been allowed to run for 30 seconds.

The water sampling process was supervised by a certified industrial hygienist (CIH) who is also an Oregon Health Authority certified lead risk assessor.

The action level set by the EPA for lead is 15 parts per billion (ppb). If the action level is exceeded in more than 10 percent of taps sampled, then action must be taken to control plumbing-material corrosion.

Eighteen first draw and flush drinking water samples were collected and delivered under chain of custody to BSK Laboratories in Vancouver, Washington for lead analysis. Initially, only first draw samples were analyzed. Any first draw sample that exceeded the EPA action level for lead had its associated flush sample analyzed.

Concentrations of lead in the first draw samples ranged from none detected to 1.8 ppb. Laboratory analysis indicates that all of these drinking water samples contained lead at concentrations below the EPA action level of 15 ppb.

The following table presents all first draw sample locations and lead concentrations in ppb.

4412 SW Corbett Avenue, Portland, OR 97239
503.248.1939 Main
866.727.0140 Fax
888.248.1939 Toll-Free
www.pbsenv.com

**First Draw Drinking Water Sample Locations and Lead Concentrations**

| Sample Number | Sample Location | Lead Concentration (ppb) |
|---|---|---|
| SK-BLC-001-FD | Break room first floor adjacent to Richard Hoover Conference room across from mail room | 1.5 |
| SK-BLC-003-FD | Student lounge adjacent to exercise room first floor kitchen sink | 1.8 |
| WF-BLC-005-FD | Water fountain between men's and women's bathrooms across from training kitchen | ND |
| SK-BLC-007-FD | Training kitchen sink northeast first floor | ND |
| SK-BLC-009-FD | Training kitchen sink southeast first floor | ND |
| SK-BLC-011-FD | Training kitchen sink southwest first floor | ND |
| SK-BLC-013-FD | Training kitchen sink northwest first floor | ND |
| WF-BLC-015-FD OR OSHA | Upper water fountain between room 118 and 120 | 1.2 |
| SK-BLC-017-FD | First floor lab kitchen sink | ND |

ND: None Detected

Please refer to the attached Chain of Custody form and laboratory data for greater details. It should be noted that quality control (QC) sample results are included at the end of laboratory information. The QC samples are both laboratory blanks and spiked samples used internally by the laboratory to assess accuracy.

Please feel free to contact me at 503.417.7602 or derek.may@pbsenv.com with any questions or comments.

Sincerely,
PBS Engineering and Environmental Inc.

Derek May, Principal

Attachments: Laboratory Results
Chain of Custody Form

DM::bmp

BSK Associates Fresno
1414 Stanislaus St
Fresno, CA 93706
559-497-2888 (Main)
559-485-6935 (FAX)

**A6J2557**
**11/02/2016**

Derek May
PBS Environmental
4412 SW Corbett Ave
Portland, OR 97239

**RE: Report for A6J2557 Oregon DAS - Lead**

Dear Derek May,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 10/20/2016. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2009 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

If additional clarification of any information is required, please contact your Project Manager, Debra Karlsson , at 559-497-2888.

Thanks again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

Debra Karlsson, Project Coordinator

Accredited in Accordance with NELAP
ORELAP #4021

# Case Narrative

| Project and Report Details | | Invoice Details | |
|---|---|---|---|
| **Client:** | PBS Environmental | **Invoice To:** | PBS Environmental |
| **Report To:** | Derek May | **Invoice Attn:** | Accounts Payable |
| **Project #:** | Blink Commission #25103.003 PH 37 | **Project PO#:** | - |
| **Received:** | 10/20/2016 - 09:00 | | |
| **Report Due:** | 11/03/2016 | | |

## Sample Receipt Conditions

**Cooler:** Default Cooler
**Temperature on Receipt ºC:** 19.6

Containers Intact
COC/Labels Agree
Received with no thermal preservation.
Sample(s) split after receipt at the laboratory.
Initial receipt at BSK-VAL

## Data Qualifiers

**The following qualifiers have been applied to one or more analytical results:**

***None applied***

## Report Distribution

| Recipient(s) | Report Format | CC: |
|---|---|---|
| Derek May | FINAL.RPT | |

# Certificate of Analysis

**Sample ID:** A6J2557-01
**Sampled By:** Client
**Sample Description:** SK-BLC-001-FD // Breakroom 1st Floor adjacent to Richard Hoover Conference room across from Mail Room

**Sample Date - Time:** 10/19/16 - 00:00
**Matrix:** Drinking Water
**Sample Type:** First Draw

## *BSK Associates Fresno*

## Metals

| Analyte | Method | Result | RL | Units | RL Mult | Batch | Prepared | Analyzed | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Lead | EPA 200.8 | **0.0015** | 0.0010 | mg/L | 1 | A614767 | 10/26/16 | 10/27/16 | |

# Certificate of Analysis

**Sample ID:** A6J2557-03
**Sampled By:** Client
**Sample Description:** SK-BLC-003-FD // Student lounge adjacent to exercise room 1st Floor kitchen sink

**Sample Date - Time:** 10/19/16 - 00:00
**Matrix:** Drinking Water
**Sample Type:** First Draw

## *BSK Associates Fresno*

## Metals

| Analyte | Method | Result | RL | Units | RL Mult | Batch | Prepared | Analyzed | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Lead | EPA 200.8 | **0.0018** | 0.0010 | mg/L | 1 | A614767 | 10/26/16 | 10/27/16 | |

# Certificate of Analysis

**Sample ID:** A6J2557-05
**Sampled By:** Client
**Sample Description:** WF-BLC-005-FD // Water fountain between men's/women's bathroom across from training kitchen

**Sample Date - Time:** 10/19/16 - 00:00
**Matrix:** Drinking Water
**Sample Type:** First Draw

## *BSK Associates Fresno*

## Metals

| Analyte | Method | Result | RL | Units | RL Mult | Batch | Prepared | Analyzed | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Lead | EPA 200.8 | ND | 0.0010 | mg/L | 1 | A614767 | 10/26/16 | 10/27/16 | |

# Certificate of Analysis

**Sample ID:** A6J2557-07
**Sampled By:** Client
**Sample Description:** SK-BLC-007-FD // Training kitchen sink Northeast 1st Floor

**Sample Date - Time:** 10/19/16 - 00:00
**Matrix:** Drinking Water
**Sample Type:** First Draw

## *BSK Associates Fresno*

## Metals

| Analyte | Method | Result | RL | Units | RL Mult | Batch | Prepared | Analyzed | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Lead | EPA 200.8 | ND | 0.0010 | mg/L | 1 | A614767 | 10/26/16 | 10/27/16 | |

# Certificate of Analysis

**Sample ID:** A6J2557-09
**Sampled By:** Client
**Sample Description:** SK-BLC-009-FD // Training kitchen sink Southeast 1st Floor

**Sample Date - Time:** 10/19/16 - 00:00
**Matrix:** Drinking Water
**Sample Type:** First Draw

## *BSK Associates Fresno*

## Metals

| Analyte | Method | Result | RL | Units | RL Mult | Batch | Prepared | Analyzed | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Lead | EPA 200.8 | ND | 0.0010 | mg/L | 1 | A614767 | 10/26/16 | 10/27/16 | |

# Certificate of Analysis

**Sample ID:** A6J2557-11
**Sampled By:** Client
**Sample Description:** SK-BLC-011-FD // Training kitchen sink Southwest 1st Floor

**Sample Date - Time:** 10/19/16 - 00:00
**Matrix:** Drinking Water
**Sample Type:** First Draw

## *BSK Associates Fresno*

## Metals

| Analyte | Method | Result | RL | Units | RL Mult | Batch | Prepared | Analyzed | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Lead | EPA 200.8 | ND | 0.0010 | mg/L | 1 | A614767 | 10/26/16 | 10/27/16 | |

# Certificate of Analysis

**Sample ID:** A6J2557-13
**Sampled By:** Client
**Sample Description:** SK-BLC-013-FD // Training kitchen sink Northwest 1st Floor

**Sample Date - Time:** 10/19/16 - 00:00
**Matrix:** Drinking Water
**Sample Type:** First Draw

## *BSK Associates Fresno*

## Metals

| Analyte | Method | Result | RL | Units | RL Mult | Batch | Prepared | Analyzed | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Lead | EPA 200.8 | ND | 0.0010 | mg/L | 1 | A614767 | 10/26/16 | 10/27/16 | |

# Certificate of Analysis

**Sample ID:** A6J2557-15
**Sampled By:** Client
**Sample Description:** WF-BLC-015-FD OR OSHA // Upper water fountain between Room 118 and 120

**Sample Date - Time:** 10/19/16 - 00:00
**Matrix:** Drinking Water
**Sample Type:** First Draw

## *BSK Associates Fresno*

## Metals

| Analyte | Method | Result | RL | Units | RL Mult | Batch | Prepared | Analyzed | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Lead | EPA 200.8 | **0.0012** | 0.0010 | mg/L | 1 | A614767 | 10/26/16 | 10/27/16 | |

## *BSK Associates Fresno*

## Metals Quality Control Report

| Analyte | Result | RL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Date Analyzed | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **EPA 200.8 - Quality Control** | | | | | | | | | | | |
| **Batch: A614767** | | | | | | | | | | Prepared: 10/26/2016 | |
| **Prep Method: EPA 200.2 - Pb/Cu Rule** | | | | | | | | | | Analyst: GNG | |
| **Blank (A614767-BLK1)** | | | | | | | | | | | |
| Lead | ND | 0.0010 | mg/L | | | | | | | 10/27/16 | |
| **Blank Spike (A614767-BS1)** | | | | | | | | | | | |
| Lead | 0.096 | 0.0010 | mg/L | 0.10 | | 96 | 85-115 | | | 10/27/16 | |
| **Blank Spike Dup (A614767-BSD1)** | | | | | | | | | | | |
| Lead | 0.097 | 0.0010 | mg/L | 0.10 | | 97 | 85-115 | 1 | 20 | 10/27/16 | |
| **Matrix Spike (A614767-MS1), Source: A6J1964-74** | | | | | | | | | | | |
| Lead | 0.20 | 0.0020 | mg/L | 0.20 | 0.0035 | 99 | 70-130 | | | 10/27/16 | |
| **Matrix Spike (A614767-MS2), Source: A6J2557-01** | | | | | | | | | | | |
| Lead | 0.20 | 0.0020 | mg/L | 0.20 | ND | 97 | 70-130 | | | 10/27/16 | |
| **Matrix Spike Dup (A614767-MSD1), Source: A6J1964-74** | | | | | | | | | | | |
| Lead | 0.20 | 0.0020 | mg/L | 0.20 | 0.0035 | 100 | 70-130 | 1 | 20 | 10/27/16 | |
| **Matrix Spike Dup (A614767-MSD2), Source: A6J2557-01** | | | | | | | | | | | |
| Lead | 0.20 | 0.0020 | mg/L | 0.20 | ND | 98 | 70-130 | 0 | 20 | 10/27/16 | |

# Certificate of Analysis

## Notes:

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method , all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.

## Definitions

| | | | | | |
|---|---|---|---|---|---|
| mg/L: | Milligrams/Liter (ppm) | MDL: | Method Detection Limit | MDA95: | Min. Detected Activity |
| mg/Kg: | Milligrams/Kilogram (ppm) | RL: | Reporting Limit: DL x Dilution | MPN: | Most Probable Number |
| µg/L: | Micrograms/Liter (ppb) | ND: | None Detected at RL | CFU: | Colony Forming Unit |
| µg/Kg: | Micrograms/Kilogram (ppb) | pCi/L: | Picocuries per Liter | Absent: | Less than 1 CFU/100mLs |
| %: | Percent Recovered (surrogates) | RL Mult: | RL Multiplier | Present: | 1 or more CFU/100mLs |
| NR: | Non-Reportable | MCL: | Maximum Contaminant Limit | | |

**Please see the individual Subcontract Lab's report for applicable certifications.**

**BSK is not accredited under the NELAP program for the following parameters:** **NA**

**Certifications:** **Please refer to our website for a copy of our Accredited Fields of Testing under each certification.**

| | | | |
|---|---|---|---|
| **Fresno** | | | |
| State of California - ELAP | 1180 | State of Hawaii | 4021 |
| State of Nevada | CA000792016-1 | State of Oregon - NELAP | 4021 |
| EPA - UCMR3 | CA00079 | State of Washington | C997-16 |
| **Sacramento** | | | |
| State of California - ELAP | 2435 | | |
| **San Bernardino** | | | |
| State of California - ELAP | 2993 | State of Oregon - NELAP | 4119-001 |
| **Vancouver** | | | |
| State of Oregon - NELAP | WA100008-008 | State of Washington | C824-16 |

PBS | Engineering + Environmental

A6J2557 10/20/2016
PBSEN1939 10

OREGON DAS [redacted]
LEAD IN DRINKING WATER TESTING PROGRAM

FACILITY NAME: BLIND COMMISSION

PROJECT #: 25103.003 [redacted] PH 37

ANALYSIS REQUESTED:
- ☑ LEAD (PB) IN DRINKING WATER
- ☐ COPPER (CU) IN DRINKING WATER

DATE: 10/19/16

RELINQ'D BY/SIGNATURE: Mike Golden

DATE/TIME: 10/19/16 1700

19.6° RECEIVED BY/SIGNATURE: Renea Rangell

DATE/TIME: 10/20/16 0900

EMAIL RESULTS TO: derek.may@pbsenv.com

TURN AROUND TIME: 7-10 days

SAMPLE DATA FORM

| LAB | SAMPLE # | BUILDING SECTIONS | ROOM | LOCATION IN ROOM |
|---|---|---|---|---|
| 1 | SK-BLC-001-FD | BLIND | | Breakroom, 1st Floor, adjacent to |
| 2 | SK-BLC-002-FL | COMMISSION | | Richard Hoover Conference Room, across from Mail Room |
| 3 | SK-BLC-003-FD | | | Student Lounge, adjacent to |
| 4 | SK-BLC-004-FL | | | exercise Room, 1st Floor, Kitchen Sink |
| 5 | WF-BLC-005-FD | | | Water Fountain, between mens/womens |
| 6 | WF-BLC-006-FL | | | bathroom, across from Kitchen (training) |
| 7 | SK-BLC-007-FD | | | Kitchen (training), Kitchen |
| 8 | SK-BLC-008-FL | | | Sink Northeast, 1st Floor |
| 9 | SK-BLC-009-FD | | | Kitchen (training), Kitchen |
| 10 | SK-BLC-010-FL | | | Sink Southeast, 1st Floor |
| 11 | SK-BLC-011-FD | | | Kitchen (training), Kitchen |
| 12 | SK-BLC-012-FL | | | Sink, Southwest, 1st Floor |
| 13 | SK-BLC-013-FD | | | Kitchen (training), Kitchen Sink, |
| 14 | SK-BLC-014-FL | | | Northwest, 1st Floor |
| *15 | WF-BLC-015-FD | OR OSHA | | Water Fountain (upper) |
| 16 | WF-BLC-016-FL | | | between Room 118 and 120 |
| | ~~SK-BLC-017-FD~~ | | | |
| | ~~SK-BLC-018-FL~~ | | | |

*Half full RSR

PAGE 1 OF 1

PBS ENGINEERING + ENVIRONMENTAL, 4412 SW Corbett Av

BSK Associates SR-FL-0002-16

# Sample Integrity

A6J2557
PBSEN1939
10/20/2016
10

BSK Bottles: (Yes) No Page 1 of 1

**COC Info**

| | | | |
|---|---|---|---|
| Was temperature within range? Chemistry ≤ 6°C Micro < 10°C | Yes No (NA) | Were correct con... received for the tests requested? | ... No NA |
| If samples were taken today, is there evidence that chilling has begun? | Yes No (NA) | Were there bubbles in the VOA vials? (Volatiles Only) | Yes No (NA) |
| Did all bottles arrive unbroken and intact? | (Yes) No | Was a sufficient amount of sample received? | (Yes) No |
| Did all bottle labels agree with COC? | (Yes) No | Do samples have a hold time <72 hours? | Yes (No) |
| Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present? | Yes No (NA) | Was PM notified of discrepancies? PM: By/Time: | Yes No (NA) |

**Bottles Received**

"_" means preservation/chlorine checks are either N/A or are performed in the lab

| 250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V) | Checks | Passed? | 1–16 | | | | |
|---|---|---|---|---|---|---|---|
| Bacti $Na_2S_2O_3$ | — | — | | | | | |
| None (P) White Cap | — | — | | | | | |
| Cr6 (P) Lt. Green Label/Blue Cap NH4OH(NH4)2SO4 **DW** | Cl, pH > 8 | Y N | | | | | |
| Cr6 (P) Pink Label/Blue Cap NH4OH(NH4)2SO4 **WW** | pH 9.3-9.7 | Y N | | | | | |
| Cr6 (P) Black Label/Blue Cap NH4OH(NH4)2SO4 **7199** ***24 HOUR HOLD TIME*** | pH 9.0-9.5 | Y N | | | | | |
| $HNO_3$ (P) ~~Red Cap~~ Brown or HCl (P) Purple Cap/Lt. Blue Label | — | — | 1C | | | | |
| $H_2SO_4$ (P) or (AG) Yellow Cap/Label | pH < 2 | Y N | | | | | |
| NaOH (P) Green Cap | Cl, pH >10 | Y N | | | | | |
| NaOH + ZnAc (P) | pH > 9 | Y N | | | | | |
| Dissolved Oxygen 300ml (g) | — | — | | | | | |
| None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270 | — | — | | | | | |
| HCl (AG) Lt. Blue Label O&G, Diesel | — | — | | | | | |
| Ascorbic, EDTA, $KH_2Ct$ (AG) Pink Label 525 | — | — | | | | | |
| $Na_2O_3S$ 250mL (AG) Neon Green Label 515 | — | — | | | | | |
| $Na_2S_2O_3$ 1 Liter (Brown P) 549 | — | — | | | | | |
| $Na_2S_2O_3$ (AG) Blue Label 548, THM, 524 | — | — | | | | | |
| $Na_2S_2O_3$ (CG) Blue Label 504, 505, 547 | — | — | | | | | |
| $Na_2S_2O_3$ + MCAA (CG) Orange Label 531 | pH < 3 | Y N | | | | | |
| $NH_4Cl$ (AG) Purple Label 552 | — | — | | | | | |
| EDA (AG) Brown Label DBPs | — | — | | | | | |
| HCL (CG) 524.2,BTEX,Gas, MTBE, 8260/624 | — | — | | | | | |
| Buffer pH 4 (CG) | — | — | | | | | |
| $H_3PO_4$ (CG) Salmon Label | — | — | | | | | |
| Other: | | | | | | | |
| Asbestos 1Liter Plastic w/ Foil | — | — | | | | | |
| Low Level Hg / Metals Double Baggie | — | — | | | | | |
| Bottled Water | — | — | | | | | |
| Clear Glass 250mL / 500mL / 1 Liter | — | — | | | | | |
| Soil Tube Brass / Steel / Plastic | — | — | | | | | |
| Tedlar Bag / Plastic Bag | — | — | | | | | |

**Split**

| | Container | Preservative | Date/Time/Initials | | Container | Preservative | Date/Time/Initials |
|---|---|---|---|---|---|---|---|
| (S) P | 250* | | | S P | | | |
| S P | | | | S P | | | |

**Comments**

* Odd numbers only. RLR

Labeled by: _____ @ _____ Labels checked by: _____ @ _____ RUSH Paged by: _____

A6J2557

**10212016**

PBSEN1939

Turnaround: Standard
Due Date: 11/3/2016

PBS Environmental

Printed: 10/26/2016 11:34:23AM

BSK Associates SR-FL-0002-16

# Sample Integrity

A6J2557 10/20/2016
PBSEN1939 10

BSK Bottles: Yes No Page 1 of 1

**COC Info**

| | | | |
|---|---|---|---|
| Was temperature within range? Chemistry ≤ 6°C Micro < 10°C | Yes No NA | Were correct con received for the tests requested? | Yes No NA |
| If samples were taken today, is there evidence that chilling has begun? | Yes No NA | Were there bubbles in the VOA vials? (Volatiles Only) | Yes No NA |
| Did all bottles arrive unbroken and intact? | Yes No | Was a sufficient amount of sample received? | Yes No |
| Did all bottle labels agree with COC? | Yes No | Do samples have a hold time <72 hours? | Yes No |
| Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present? | Yes No NA | Was PM notified of discrepancies? PM: By/Time: | Yes No NA |

**Bottles Received** ("-" means preservation/chlorine checks are either N/A or are performed in the lab)

| 250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V) | Checks | Passed? | 1–16 | | | | |
|---|---|---|---|---|---|---|---|
| Bacti $Na_2S_2O_3$ | — | — | | | | | |
| None (P) White Cap | — | — | | | | | |
| Cr6 (P) Lt. Green Label/Blue Cap NH4OH(NH4)2SO4 **DW** | Cl, pH > 8 | Y N | | | | | |
| Cr6 (P) Pink Label/Blue Cap NH4OH(NH4)2SO4 **WW** | pH 9.3-9.7 | Y N | | | | | |
| Cr6 (P) Black Label/Blue Cap NH4OH(NH4)2SO4 **7199** ***24 HOUR HOLD TIME*** | pH 9.0-9.5 | Y N | | | | | |
| $HNO_3$ (P) Red Cap Brown or HCl (P) Purple Cap/Lt. Blue Label | — | — | 1C | | | | |
| $H_2SO_4$ (P) or (AG) Yellow Cap/Label | pH < 2 | Y N | | | | | |
| NaOH (P) Green Cap | Cl, pH >10 | Y N | | | | | |
| NaOH + ZnAc (P) | pH > 9 | Y N | | | | | |
| Dissolved Oxygen 300ml (g) | — | — | | | | | |
| None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270 | — | — | | | | | |
| HCl (AG) Lt. Blue Label O&G, Diesel | — | — | | | | | |
| Ascorbic, EDTA, $KH_2Ct$ (AG) Pink Label 525 | — | — | | | | | |
| $Na_2O_3S$ 250mL (AG) Neon Green Label **515** | — | — | | | | | |
| $Na_2S_2O_3$ 1 Liter (Brown P) 549 | — | — | | | | | |
| $Na_2S_2O_3$ (AG) Blue Label 548, THM, 524 | — | — | | | | | |
| $Na_2S_2O_3$ (CG) Blue Label 504, 505, 547 | — | — | | | | | |
| $Na_2S_2O_3$ + MCAA (CG) Orange Label 531 | pH < 3 | Y N | | | | | |
| $NH_4Cl$ (AG) Purple Label 552 | — | — | | | | | |
| EDA (AG) Brown Label DBPs | — | — | | | | | |
| HCL (CG) 524.2,BTEX,Gas, MTBE, 8260/624 | — | — | | | | | |
| Buffer pH 4 (CG) | — | — | | | | | |
| $H_3PO_4$ (CG) Salmon Label | — | — | | | | | |
| Other: | | | | | | | |
| Asbestos 1Liter Plastic w/ Foil | — | — | | | | | |
| Low Level Hg / Metals Double Baggie | — | — | | | | | |
| Bottled Water | — | — | | | | | |
| Clear Glass 250mL / 500mL / 1 Liter | — | — | | | | | |
| Soil Tube Brass / Steel / Plastic | — | — | | | | | |
| Tedlar Bag / Plastic Bag | — | — | | | | | |

**Split**

| | Container | Preservative | Date/Time/Initials | | Container | Preservative | Date/Time/Initials |
|---|---|---|---|---|---|---|---|
| (S) P | 250* | | | S P | | | |
| S P | | | | S P | | | |

**Comments**

*Odd numbers only. RLR All containers received intact MP 10/25

Labeled by: _____ @ _____ Labels checked by: _____ @ _____ RUSH Paged by: _____ @

BSK Associates Fresno
1414 Stanislaus St
Fresno, CA 93706
559-497-2888 (Main)
559-485-6935 (FAX)

**A6J3200**
**11/09/2016**

Derek May
PBS Environmental
4412 SW Corbett Ave
Portland, OR 97239

**RE: Report for A6J3200 Oregon DAS - Lead**

Dear Derek May,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 10/27/2016. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2009 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

If additional clarification of any information is required, please contact your Project Manager, Debra Karlsson , at 559-497-2888.

Thanks again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

Debra Karlsson, Project Coordinator

Accredited in Accordance with NELAP
ORELAP #4021

BSK ASSOCIATES

# Case Narrative

| Project and Report Details | | Invoice Details | |
|---|---|---|---|
| **Client:** | PBS Environmental | **Invoice To:** | PBS Environmental |
| **Report To:** | Derek May | **Invoice Attn:** | Accounts Payable |
| **Project #:** | Blind Commission #25103.003 PH 37 | **Project PO#:** | - |
| **Received:** | 10/27/2016 - 15:10 | | |
| **Report Due:** | 11/10/2016 | | |

## Sample Receipt Conditions

**Cooler:** Default Cooler
**Temperature on Receipt ºC:** 20.4

Containers Intact
COC/Labels Agree
Received with no thermal preservation.
Sample(s) split after receipt at the laboratory.
Initial receipt at BSK-VAL

## Data Qualifiers

**The following qualifiers have been applied to one or more analytical results:**

***None applied***

## Report Distribution

| Recipient(s) | Report Format | CC: |
|---|---|---|
| Derek May | FINAL.RPT | beth.powers@pbsenv.com |

# Certificate of Analysis

**Sample ID:** A6J3200-01
**Sampled By:** Client
**Sample Description:** SK-BLC-017-FD // 1st Floor lab kitchen sink

**Sample Date - Time:** 10/22/16 - 00:00
**Matrix:** Drinking Water
**Sample Type:** First Draw

## *BSK Associates Fresno*

## Metals

| Analyte | Method | Result | RL | Units | RL Mult | Batch | Prepared | Analyzed | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Lead | EPA 200.8 | ND | 0.0010 | mg/L | 1 | A615042 | 11/01/16 | 11/02/16 | |

## *BSK Associates Fresno*

## Metals Quality Control Report

| Analyte | Result | RL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Date Analyzed | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **EPA 200.8 - Quality Control** | | | | | | | | | | | |
| **Batch: A615042** | | | | | | | | | | Prepared: 11/1/2016 | |
| **Prep Method: EPA 200.2** | | | | | | | | | | Analyst: GNG | |
| **Blank (A615042-BLK1)** | | | | | | | | | | | |
| Lead | ND | 0.0010 | mg/L | | | | | | | 11/02/16 | |
| **Blank Spike (A615042-BS1)** | | | | | | | | | | | |
| Lead | 0.10 | 0.0010 | mg/L | 0.10 | | 100 | 85-115 | | | 11/02/16 | |
| **Blank Spike Dup (A615042-BSD1)** | | | | | | | | | | | |
| Lead | 0.10 | 0.0010 | mg/L | 0.10 | | 102 | 85-115 | 2 | 20 | 11/02/16 | |
| **Matrix Spike (A615042-MS1), Source: A6J3197-01** | | | | | | | | | | | |
| Lead | 0.20 | 0.0020 | mg/L | 0.20 | ND | 98 | 70-130 | | | 11/02/16 | |
| **Matrix Spike (A615042-MS2), Source: A6J3200-01** | | | | | | | | | | | |
| Lead | 0.19 | 0.0020 | mg/L | 0.20 | ND | 95 | 70-130 | | | 11/02/16 | |
| **Matrix Spike Dup (A615042-MSD1), Source: A6J3197-01** | | | | | | | | | | | |
| Lead | 0.20 | 0.0020 | mg/L | 0.20 | ND | 99 | 70-130 | 1 | 20 | 11/02/16 | |
| **Matrix Spike Dup (A615042-MSD2), Source: A6J3200-01** | | | | | | | | | | | |
| Lead | 0.19 | 0.0020 | mg/L | 0.20 | ND | 96 | 70-130 | 1 | 20 | 11/02/16 | |

# Certificate of Analysis

## Notes:

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.

## Definitions

| | | | | | |
|---|---|---|---|---|---|
| mg/L: | Milligrams/Liter (ppm) | MDL: | Method Detection Limit | MDA95: | Min. Detected Activity |
| mg/Kg: | Milligrams/Kilogram (ppm) | RL: | Reporting Limit: DL x Dilution | MPN: | Most Probable Number |
| µg/L: | Micrograms/Liter (ppb) | ND: | None Detected at RL | CFU: | Colony Forming Unit |
| µg/Kg: | Micrograms/Kilogram (ppb) | pCi/L: | Picocuries per Liter | Absent: | Less than 1 CFU/100mLs |
| %: | Percent Recovered (surrogates) | RL Mult: | RL Multiplier | Present: | 1 or more CFU/100mLs |
| NR: | Non-Reportable | MCL: | Maximum Contaminant Limit | | |

**Please see the individual Subcontract Lab's report for applicable certifications.**

**BSK is not accredited under the NELAP program for the following parameters:** **NA**

## Certifications: Please refer to our website for a copy of our Accredited Fields of Testing under each certification.

| | | | |
|---|---|---|---|
| **Fresno** | | | |
| State of California - ELAP | 1180 | State of Hawaii | 4021 |
| State of Nevada | CA000792016-1 | State of Oregon - NELAP | 4021 |
| EPA - UCMR3 | CA00079 | State of Washington | C997-16 |
| **Sacramento** | | | |
| State of California - ELAP | 2435 | | |
| **San Bernardino** | | | |
| State of California - ELAP | 2993 | State of Oregon - NELAP | 4119-001 |
| **Vancouver** | | | |
| State of Oregon - NELAP | WA100008-008 | State of Washington | C824-16 |

PBS | Engineering + Environmental

A6J3200
PBSEN1939

10/27/2016
10

OREGON DAS [redacted]
LEAD IN DRINKING WATER
TESTING PROGRAM

FACILITY NAME: BLIND COMMISSION

PROJECT #: 25103.003 [redacted] PH37

ANALYSIS REQUESTED:

☑ LEAD (PB) IN DRINKING WATER

☐ COPPER (CU) IN DRINKING WATER

DATE: 10/22/16

RELINQ'D BY/SIGNATURE: Mike Golden

DATE/TIME: 10/26/16 1300

20.4° RECEIVED BY/SIGNATURE:

DATE/TIME: 10/27/16 15:10

EMAIL RESULTS TO: derek.may@pbsenv.com

TURN AROUND TIME: 7-10 days

SAMPLE DATA FORM

| LAB | SAMPLE # | BUILDING | ROOM | LOCATION IN ROOM | |
|---|---|---|---|---|---|
| 1 | SK-BLC-017-FD | | | 1st Floor, Lab, Kitchen Sink | |
| 2 | SK-BLC-018-FL | | | | |
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PAGE 1 OF 1

BSK Associates SR-FL-0002-16

# Sample Integrity

A6J3200
PBSEN1939
10/27/2016
10

BSK Bottles: (Yes) No Page 1 of 1

**COC Info**

| | | | |
|---|---|---|---|
| Was temperature within range? Chemistry ≤ 6°C Micro < 10°C | Yes No (NA) | Were correct containers and preservatives received for the tests requested? | (Yes) No NA |
| If samples were taken today, is there evidence that chilling has begun? | Yes No (NA) | Were there bubbles in the VOA vials? (Volatiles Only) | Yes No (NA) |
| Did all bottles arrive unbroken and intact? | (Yes) No | Was a sufficient amount of sample received? | (Yes) No |
| Did all bottle labels agree with COC? | (Yes) No | Do samples have a hold time <72 hours? | (Yes) No |
| Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present? | Yes No (NA) | Was PM notified of discrepancies? PM: By/Time: | Yes No (NA) |

**Bottles Received**

"—" means preservation/chlorine checks are either N/A or are performed in the lab

| 250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V) | Checks | Passed? | 1–2 | | | | |
|---|---|---|---|---|---|---|---|
| Bacti $Na_2S_2O_3$ | — | — | | | | | |
| None (P) White Cap | — | — | | | | | |
| Cr6 (P) Lt. Green Label/Blue Cap NH4OH(NH4)2SO4 **DW** | Cl, pH > 8 | Y N | | | | | |
| Cr6 (P) Pink Label/Blue Cap NH4OH(NH4)2SO4 **WW** | pH 9.3-9.7 | Y N | | | | | |
| Cr6 (P) Black Label/Blue Cap NH4OH(NH4)2SO4 **7199** ***24 HOUR HOLD TIME*** | pH 9.0-9.5 | Y N | | | | | |
| $HNO_3$ (P) Red Cap Brown or HCl (P) Purple Cap/Lt. Blue Label | — | — | IC | | | | |
| $H_2SO_4$ (P) or (AG) Yellow Cap/Label | pH < 2 | Y N | | | | | |
| NaOH (P) Green Cap | Cl, pH >10 | Y N | | | | | |
| NaOH + ZnAc (P) | pH > 9 | Y N | | | | | |
| Dissolved Oxygen 300ml (g) | — | — | | | | | |
| None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270 | — | — | | | | | |
| HCl (AG) Lt. Blue Label O&G, Diesel | — | — | | | | | |
| Ascorbic, EDTA, $KH_2Ct$ (AG) Pink Label 525 | — | — | | | | | |
| $Na_2O_3S$ 250mL (AG) Neon Green Label 515 | — | — | | | | | |
| $Na_2S_2O_3$ 1 Liter (Brown P) 549 | — | — | | | | | |
| $Na_2S_2O_3$ (AG) Blue Label 548, THM, 524 | — | — | | | | | |
| $Na_2S_2O_3$ (CG) Blue Label 504, 505, 547 | — | — | | | | | |
| $Na_2S_2O_3$ + MCAA (CG) Orange Label 531 | pH < 3 | Y N | | | | | |
| $NH_4Cl$ (AG) Purple Label 552 | — | — | | | | | |
| EDA (AG) Brown Label DBPs | — | — | | | | | |
| HCL (CG) 524.2,BTEX,Gas, MTBE, 8260/624 | — | — | | | | | |
| Buffer pH 4 (CG) | — | — | | | | | |
| $H_3PO_4$ (CG) Salmon Label | — | — | | | | | |
| Other: | | | | | | | |
| Asbestos 1Liter Plastic w/ Foil | — | — | | | | | |
| Low Level Hg / Metals Double Baggie | — | — | | | | | |
| Bottled Water | — | — | | | | | |
| Clear Glass 250mL / 500mL / 1 Liter | — | — | | | | | |
| Soil Tube Brass / Steel / Plastic | — | — | | | | | |
| Tedlar Bag / Plastic Bag | — | — | | | | | |

**Split**

| | Container | Preservative | Date/Time/Initials | | Container | Preservative | Date/Time/Initials |
|---|---|---|---|---|---|---|---|
| (S) P | 250* | | | S P | | | |
| S P | | | | S P | | | |

**Comments**

*Odd numbers only. RLR

Labeled by: _____ @ _____ Labels checked by: _____ @ _____ RUSH Paged by: _____ @ _____

A6J3200

**10282016**

PBSEN1939

Turnaround: Standard
Due Date: 11/10/2016

PBS Environmental

Printed: 10/31/2016 4:09:57PM

# Sample Integrity

A693200
PBSEN1939
10/27/2016
10

BSK Bottles: (Yes) No Page 1 of 1

**COC Info**

| | | | |
|---|---|---|---|
| Was temperature within range? Chemistry ≤ 6°C Micro < 10°C | Yes No (NA) | Were correct containers and preservatives received for the tests requested? | (Yes) No NA |
| If samples were taken today, is there evidence that chilling has begun? | Yes No (NA) | Were there bubbles in the VOA vials? (Volatiles Only) | Yes No (NA) |
| Did all bottles arrive unbroken and intact? | (Yes) No | Was a sufficient amount of sample received? | (Yes) No |
| Did all bottle labels agree with COC? | (Yes) No | Do samples have a hold time <72 hours? | Yes (No) |
| Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present? | Yes No (NA) | Was PM notified of discrepancies? PM: By/Time: | Yes No (NA) |

**Bottles Received**

"I" means preservation/chlorine checks are either N/A or are performed in the lab

| 250ml(A) 500ml(B) 1Liter(C) 40ml VOA(V) | Checks | Passed? | 1–2 | | | | |
|---|---|---|---|---|---|---|---|
| Bacti $Na_2S_2O_3$ | — | — | | | | | |
| None (P) White Cap | — | — | | | | | |
| Cr6 (P) Lt. Green Label/Blue Cap NH4OH(NH4)2SO4 DW | Cl, pH > 8 | Y N | | | | | |
| Cr6 (P) Pink Label/Blue Cap NH4OH(NH4)2SO4 WW | pH 9.3-9.7 | Y N | | | | | |
| Cr6 (P) Black Label/Blue Cap NH4OH(NH4)2SO4 7199 ***24 HOUR HOLD TIME*** | pH 9.0-9.5 | Y N | | | | | |
| $HNO_3$ (P) Red Cap (Brown) or HCl (P) Purple Cap/Lt. Blue Label | — | — | IC | | | | |
| $H_2SO_4$ (P) or (AG) Yellow Cap/Label | pH < 2 | Y N | | | | | |
| NaOH (P) Green Cap | Cl, pH >10 | Y N | | | | | |
| NaOH + ZnAc (P) | pH > 9 | Y N | | | | | |
| Dissolved Oxygen 300ml (g) | — | — | | | | | |
| None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270 | — | — | | | | | |
| HCl (AG) Lt. Blue Label O&G, Diesel | — | — | | | | | |
| Ascorbic, EDTA, $KH_2Ct$ (AG) Pink Label 525 | — | — | | | | | |
| $Na_2O_3S$ 250mL (AG) Neon Green Label 515 | — | — | | | | | |
| $Na_2S_2O_3$ 1 Liter (Brown P) 549 | — | — | | | | | |
| $Na_2S_2O_3$ (AG) Blue Label 548, THM, 524 | — | — | | | | | |
| $Na_2S_2O_3$ (CG) Blue Label 504, 505, 547 | — | — | | | | | |
| $Na_2S_2O_3$ + MCAA (CG) Orange Label 531 | pH < 3 | Y N | | | | | |
| $NH_4Cl$ (AG) Purple Label 552 | — | — | | | | | |
| EDA (AG) Brown Label DBPs | — | — | | | | | |
| HCL (CG) 524.2,BTEX,Gas, MTBE, 8260/624 | — | — | | | | | |
| Buffer pH 4 (CG) | — | — | | | | | |
| $H_3PO_4$ (CG) Salmon Label | — | — | | | | | |
| Other: | | | | | | | |
| Asbestos 1Liter Plastic w/ Foil | — | — | | | | | |
| Low Level Hg / Metals Double Baggie | — | — | | | | | |
| Bottled Water | — | — | | | | | |
| Clear Glass 250mL / 500mL / 1 Liter | — | — | | | | | |
| Soil Tube Brass / Steel / Plastic | — | — | | | | | |
| Tedlar Bag / Plastic Bag | — | — | | | | | |

**Split**

| | Container | Preservative | Date/Time/Initials | | Container | Preservative | Date/Time/Initials |
|---|---|---|---|---|---|---|---|
| (S) P | 250* | | | S P | | | |
| S P | | | | S P | | | |

**Comments**

*Odd numbers only. RR
Rec all odd bottles 10/31/16

Labeled by: _____ @ _____ Labels checked by: _____ @ _____ RUSH Paged by: _____ @