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# Well Reconfiguration of CdV-R-15-3 Field Summary Report



Prepared by the Environmental Programs Directorate

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EP2013-0183

# Well Reconfiguration of CdV-R-15-3
# Field Summary Report

September 2013

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**Acronyms and Abbreviations**

| | |
|---|---|
| amsl | above mean sea level |
| bgs | below ground surface |
| GGRL | Geochemistry and Geomaterials Research Laboratory (LANL) |
| gpm | gallons per minute |
| hp | horsepower |
| I.D. | inside diameter |
| IDW | investigation-derived waste |
| LANL | Los Alamos National Laboratory |
| NAD | North American Datum |
| NMED | New Mexico Environment Department |
| NTU | nephelometric turbidity unit |
| O.D. | outside diameter |
| PVC | polyvinyl chloride |
| RPF | Records Processing Facility |
| SOP | standard operating procedure |
| TA | technical area |
| WCSF | waste characterization strategy form |

## 1.0 INTRODUCTION

This report provides a summary of field activities associated with the reconfiguration of monitoring well CdV-R-15-3 at Los Alamos National Laboratory (LANL or the Laboratory). The report is written in accordance with the requirements for well completion reports in Section IV.A.3.e.iv of the March 1, 2005 (revised 2012), Compliance Order on Consent (Consent Order). Plans for the reconfiguration were presented in the "Work Plan to Reconfigure Well CdV-R-15-3" (LANL 2012, 232343) that was approved by the New Mexico Environment Department (NMED) in an approval with modifications letter dated December 21, 2012 (NMED 2012, 521745).

The primary objective of the work was to reconfigure CdV-R-15-3 from a multiscreen well into a single-screen well equipped for sampling. Three dry well screen intervals remain above the retained screen 4 interval.

Field activities for the reconfiguration of CdV-R-15-3 occurred between July 13 and July 30, 2013. Field activities performed as part of the reconfiguration included removing two packers isolating screens 5 and 6, abandoning the lower well screens, redeveloping screen 4, purging and sampling, and installing a dedicated sampling system.

The information presented in this report was compiled from field reports and daily activity summaries. Records, including field reports, field logs, and survey information, are on file at the Laboratory's Records Processing Facility (RPF). This report contains brief descriptions of field activities and supporting figures, and tables associated with the well reconfiguration.

## 2.0 WELL RECONFIGURATION

Well CdV-R-15-3 is located on the mesa above Cañon de Valle in Technical Area 15 (TA-15) (Figure 2.0-1). The well was installed to evaluate transport pathways, including the deep perched and regional saturated zones that potentially carry contamination from Consolidated Unit 16-021(c)-99 at TA-16 (LANL 2012, 213573). The borehole was drilled using standard air-rotary drilling methods to a total depth of 1722 ft below ground surface (bgs) and completed with six pipe-based wire-wrapped screens (Kopp et al. 2002, 073179). Pertinent well information is as follows:

- 4.5-in.–inside diameter (I.D.) stainless-steel casing
- Screen 1, 617.7–624.5 ft bgs (dry)
- Screen 2, 800.8–807.8 ft bgs (dry)
- Screen 3, 964.8–980.9 ft bgs (dry)
- Screen 4, 1235.1–1278.9 ft bgs
- Screen 5, 1348.4–1355.3 ft bgs
- Screen 6, 1637.9–1644.8 ft bgs
- Depth to water for screen 4 is 1244 ft bgs, standing approximately 9 ft below the top of the screen

Figure 2.0-2 presents the CdV-R-15-3 monitoring well construction and disposition before reconfiguration activities started.

Testing of screen 4 indicates the screen is capable of producing 9.1 gallons per minute (gpm) at 0.7 ft of drawdown for a specific capacity of 12.2 gpm/ft (LANL 2011, 205233).

### 2.1 Packer Removal

Two sliding-end inflatable packers had been installed between the screen intervals on 2-in. drop pipe to prevent cross-flow between screens 4 and 5 and between screens 5 and 6. The packers were located at depths of 1293 ft bgs and 1376 ft bgs, respectively. The packers were in place and inflated as required. The packers were removed from the well on July 13, 2013.

### 2.2 Lower Well Screen Abandonment

Following packer removals, a hybrid tremie pipe consisting of 150 ft of 2-in. schedule 40 polyvinyl chloride (PVC) pipe on the bottom and 1360 ft of steel BQ-size core pipe (above the PVC) was installed in the well on July 14, 2013. (Note: BQ is a specific core rod diameter.) A cross-over coupling was used to join the compositionally different pipes. A 45-degree bevel was cut on the leading edge of the PVC, and a stainless-steel centralizer was installed on the bottom of the PVC section. Before it was backfilled, the bottom of the well was measured at 1676.2 ft bgs. The bottom of the well was filled with 10/20 filter-grade sand to a depth of 1525.4 ft bgs, after which 20/40 filter-grade sand was installed to a depth of 1508.7 ft bgs. A total of 104 gal. of neat cement was installed above the 20/40 sand by pumping through the tremie pipe. A total of 25 gal. of chase water was pumped through the tremie pipe to clear the upper (steel) portion of the pipe. The volume of chase water was determined as the volume of the tremie pipe over the distance between the top of cement target (1385 ft bgs) and the measured static water level in the well (1245.03 ft bgs). The lower sand backfill and the installation of the cement interval took place on July 14, 2013.

The technical approach for the cementing work at CdV-R-15-3 included cementing in place the lower PVC section of the tremie pipe. This approach resulted in the least possible amount of time the well screens were in open communication. This approach also minimized the upper screen's exposure to fugitive cement grout because the tremie pipe had not been separated and removed until the following work shift.

The cement was allowed to cure for 24 h before the tremie pipe was rotated clockwise to cause the PVC to fail and break off at the top of the cement. A total of 20 ft of PVC was recovered after the tremie pipe was removed, and 130 ft of PVC remain embedded in the cement. The tremie pipe was broken off on July 15, 2013, and the top of the cement interval was measured at 1364.6 ft bgs on July 16, 2013. The abandoned portion of the tremie pipe is located at 1364.6 to 1494.6 ft bgs.

A submersible pump was installed in the well to purge any cement-impacted water before the upper sand backfill was emplaced. Pumping from immediately above the cement seal was conducted for 46 min at 7.0 gpm. Approximately 326 gal. was purged before the pump was removed on July 17, 2013. One sample was collected for analysis at LANL's Geochemistry and Geomaterials Research Laboratory (GGRL). Table 2.2-1 presents a summary of samples collected during the well reconfiguration at CdV-R-15-3. Appendix A presents analytical results for the samples collected.

The tremie pipe was installed in the well and 10/20 filter-grade sand was emplaced from 1364.6 to 1340.4 ft bgs, after which 20/40 filter-grade sand was emplaced from 1340.4 to 1335.1 ft bgs. The tremie pipe was removed from the well before continuing with the upper cement seal. The upper cement seal was installed with a 4-in. dump bailer. A total of 5 ft of washed gravel was installed from 1335.1 to 1330 ft bgs to provide a hard substrate for the dump bailer's glass sealing disc to break upon. The dump bailer was run in the well to emplace 1.7 $ft^3$ of neat cement above the washed gravel. Installation of the intermediate

sand intervals and upper cement seal took place on July 18, 2013. The top of the upper cement seal was measured at 1325.8 ft bgs on July 19, 2013, at nearly 11 ft below the target depth of 1315 ft bgs. Cement loss is attributed to the highly permeable washed-gravel interval below. The decision was made to install additional cement to reach the target depth, but the previously installed cement was not hard enough to break the dump bailer's sealing disc. An additional 2 ft of washed gravel was installed between 1325.8 and 1323.6 ft bgs before 1.2 $ft^3$ of neat cement was installed with the dump bailer. The cement seal was completed on July 19, 2013. The top of the upper cement seal was measured at 1312.6 ft bgs on July 20, 2013, before the tremie pipe was installed. The 10/20 filter-grade sand was installed between 1312.6 and 1299.4 ft bgs. The tremie pipe was removed, and a k-packer constructed of stainless steel and Viton was installed above the upper sand backfill. The top of the k-packer was measured at 1298.4 ft bgs. Backfilling the well was completed, and the k-packer was installed on July 20, 2013.

The cement was mixed and the sand backfill was emplaced with potable water from the Los Alamos County municipal supply source near the Los Alamos County Eco Station on East Jemez Road.

Well reconfiguration details and the final disposition of CdV-R-15-3 are presented on Figure 2.2.1. Backfill material volumes for the respective intervals are presented in Table 2.2-2.

Previous cross-flow estimates at CdV-R-15-3 indicate the combined inflow of screens 4 and 5 into screen 6 was on the order of 1.3 gpm. The packers were deflated at 08:50 on July 13, 2013, and the cement seal was installed at 15:35 on July 14, 2013. The duration between packer deflation and cement installation was 1845 min, resulting in a total cross-flow volume into the screen 6 interval of approximately 2400 gal. during reconfiguration activities. Previous cross-flow estimates between screen 4 and screen 5, when screen 6 was isolated, were negligible.

### 2.3 Redevelopment, Purging, and Sampling Activities

Following reconfiguration, redevelopment was performed per the work plan on screen 4 between July 20 and July 29, 2013 (LANL 2012, 232343; NMED 2012, 521745). Redevelopment activities consisted of swabbing and bailing and then pumping throughout the screen interval with a submersible pump.

A 4.25-in.–outside diameter (O.D.), 1-in.-thick nylon disc attached to a weighted steel rod was used for swabbing. The wireline conveyed tool was drawn repeatedly across the screened interval, causing a surging action across the screen interval and filter pack. A 4.0-in.- O.D. by 21.0-ft-long carbon-steel bailer with a total capacity of 12 gal. was used for bailing. The bailer was lowered by wireline and repeatedly filled, withdrawn from the well, and emptied into a container. Approximately 120 gal. of groundwater was removed during bailing activities. Swabbing and bailing took approximately 2 h on July 20, 2013. Water-quality parameters were not recorded during swabbing and bailing.

After swabbing and bailing, a 5 horsepower (hp) submersible pump inside a pump shroud was installed in the well. Initially, 8 h of pump development was prescribed for the retained screen 4 interval. The pump was raised throughout the screen interval from bottom to top in 2-ft increments for 10- to 15-min intervals between the screen bottom at 1279 and 1251 ft bgs. The pumping level was encountered at 1251 ft bgs, and no discrete pumping was conducted above that depth. The pump was repositioned in the sump at 1294 ft bgs, and purging continued for the remainder of the 8-h pumping duration. Because the purge water pH levels were elevated, the pump development duration was extended an additional 8 d to July 29, 2013. Samples were collected for analysis at GGRL during pump development. Appendix A presents the analytical results for the samples collected.

Elevated pH levels were measured in purge water immediately after the reconfiguration and development, indicating the surging action of the development may have pushed cement-impacted water out into the filter pack and formation around screen 4. Initial field parameters collected during the pumping phase of development provide evidence of the potential cement impact with pH as high as 11.3. In addition, a field-screening sample submitted to GGRL showed elevated calcium and sodium, both of which are indicators for residual cement influences.

A decision was made to conduct additional pumping at CdV-R-15-3 with the dedicated sampling system. Daily pumping was conducted during the period from August 16 to August 21, 2013. During this period, a total of 19,231 gal. was purged from CdV-R-15-3 screen 4. Field parameters were measured hourly, and time-series samples were collected for analyses of filtered metals at GGRL. Measured pH concentrations during this pumping period typically ranged from 7.6 to 8.4. The final field parameters were measured on August 21, 2013, with a final pH reading of 8.03 standard units, and a dissolved oxygen reading of 7.19. Analytical results and field water-quality parameters for the full 6 d of additional pumping are shown in Appendix A.

Table 2.3-1 summarizes the volumes purged and the water-quality parameters measured during development and additional pumping. Approximately 31,834 gal. of groundwater was purged with the submersible pump during the initial development activities, and an another 19,232 gal. of groundwater was purged during the additional pumping activities for a total estimated purge volume of 51,066 gal.

## 3.0 DEDICATED SAMPLING SYSTEM INSTALLATION

The dedicated sampling system for CdV-R-15-3 was installed on July 30, 2013. The pumping system utilizes an environmentally retrofitted 4-in. 5 hp Grundfos submersible pump installed in a stainless-steel pump shroud. The bottom of the pump shroud (the pump intake) is set below the screened interval at 1290.4 ft bgs. The pump column is constructed of 1-in. threaded/coupled, schedule 80, passivated stainless-steel pipe. A weep hole was installed at the bottom of the uppermost pipe joint to protect the pump column from freezing. To measure water levels in the well, two 1-in.-I.D. schedule 80, flush threaded PVC pipes have been installed to sufficient depth to set a dedicated transducer and to provide access for manual water-level measurements. The PVC transducer tubes are equipped with 0.75-ft sections of 0.010-in. slot screen with a threaded end cap on the bottom of each tube. An In-Situ Level Troll 500 30-psig transducer is installed in one of the PVC tubes to monitor the water level in the well's screened interval.

Details of the sampling system for CdV-R-15-3 are provided in Figures 3.0-1 and 3.0-2.

## 4.0 GEODETIC SURVEY

A New Mexico licensed professional land surveyor conducted a geodetic survey on July 15, 2013 (Table 4.0-1). The survey data collected conform to LANL's Information Architecture project standards IA-CB02, "GIS Horizontal Spatial Reference System," and IA-D802, "Geospatial Positioning Accuracy Standard for A/E/C and Facility Management." All coordinates are expressed relative to the New Mexico State Plane Coordinate System Central Zone (North American Datum [NAD] 83); elevation is expressed relative to feet above mean sea level (amsl) using the National Geodetic Vertical Datum of 1929. Survey points include ground-surface elevation near the concrete pad, the top of the brass cap in the concrete pad, the top of the well casing, and the top of the protective casing for the CdV-R-15-3 monitoring well.

## 5.0 DEVIATIONS FROM WORK PLAN

The in situ abandonment of the PVC portion of the tremie pipe within the cement seal was not part of the NMED-approved work plan (LANL 2012, 232343; NMED 2012, 521745).

The placement of the upper cement seal was to be accomplished with a single downhole trip with the dump bailer. However, placement of the intermediate interval of washed gravel and second downhole trip with the dump bailer was necessitated to meet the upper cement target depth.

## 6.0 WASTE MANAGEMENT

All investigation-derived waste (IDW) generated during well reconfiguration activities will be managed in accordance with the applicable standard operating procedures (SOP). The SOP incorporates the requirements of all applicable U.S. Environmental Protection Agency and NMED regulations, U.S. Department of Energy orders, and LANL requirements. The SOP applicable to the characterization and management of IDW is

- SOP-10021, Characterization and Management of Environmental Program Waste.

A waste characterization strategy form (WCSF) has been prepared and approved per requirements of SOP-10021. The WCSF provides detailed information on IDW characterization methods, management, containerization, and potential volumes.

Fluids (i.e., redevelopment and decontamination waters) and contact waste (e.g., gloves, paper towels, plastic, and/or glass sample bottles) were the primary waste streams generated during well reconfiguration activities. The fluids produced will be sampled and analyzed for the suite of constituents listed in the WCSF. The contact waste will be characterized using the data of the environmental media (i.e., groundwater) with which it came into contact.

Fluids produced during well reconfiguration activities were containerized, and the fluids will be sampled and evaluated for compliance with the New Mexico Water Quality Control Commission Regulation 3103 groundwater standards and applicable Resource Conservation and Recovery Act regulatory limits before any water is released. Decisions regarding the release of water will be made in accordance with the 2006 notice of intent decision tree for drilling, development, rehabilitation, and sampling purge water. The decontamination water, contact waste, and any other IDW will be managed in accordance with the approved WCSF.

## 7.0 REFERENCES AND MAP DATA SOURCES

### 7.1 References

*The following list includes all documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ER ID. This information is also included in text citations. ER IDs are assigned by the Environmental Programs Directorate's RPF and are used to locate the document at the RPF and, where applicable, in the master reference set.*

*Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.*

Kopp, B., A. Crowder, M. Everett, D. Vaniman, D. Hickmott, W. Stone, N. Clayton, S. Pearson, and D. Larssen, April 2002. "Well CdV-R-15-3 Completion Report," Los Alamos National Laboratory report LA-13906-MS, Los Alamos, New Mexico. (Kopp et al. 2002, 073179)

LANL (Los Alamos National Laboratory), August 2011. "Reliability Assessment of Multiscreened Westbay Wells," Los Alamos National Laboratory document LA-UR-11-4445, Los Alamos, New Mexico. (LANL 2011, 205233)

LANL (Los Alamos National Laboratory), March 2012. "Technical Area 16 Well Network Evaluation and Recommendations," Los Alamos National Laboratory document LA-UR-12-1082, Los Alamos, New Mexico. (LANL 2012, 213573)

LANL (Los Alamos National Laboratory), November 2012. "Work Plan to Reconfigure Well CdV-R-15-3," Los Alamos National Laboratory document LA-UR-12-26362, Los Alamos, New Mexico. (LANL 2012, 232343)

NMED (New Mexico Environment Department), December 21, 2012. "Approval with Modifications, Work Plan to Reconfigure Well CdV-R-15-3," New Mexico Environment Department letter to P. Maggiore (DOE-LASO) and J.D. Mousseau (LANL) from J.E. Kieling (NMED-HWB), Santa Fe, New Mexico. (NMED 2012, 521745)

### 7.2 Map Data Sources

Point Feature Locations of the Environmental Restoration Project Database; Los Alamos National Laboratory, Waste and Environmental Services Division, EP2008-0109; 14 March 2012.

Hypsography, 100 and 20 Foot Contour Interval; Los Alamos National Laboratory, ENV Environmental Remediation and Surveillance Program; 1991.

Surface Drainages, 1991; Los Alamos National Laboratory, ENV Environmental Remediation and Surveillance Program, ER2002-0591; 1:24,000 Scale Data; Unknown publication date.

Paved Road Arcs; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Dirt Road Arcs; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Structures; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Technical Area Boundaries; Los Alamos National Laboratory, Site Planning & Project Initiation Group, Infrastructure Planning Division; 4 December 2009.

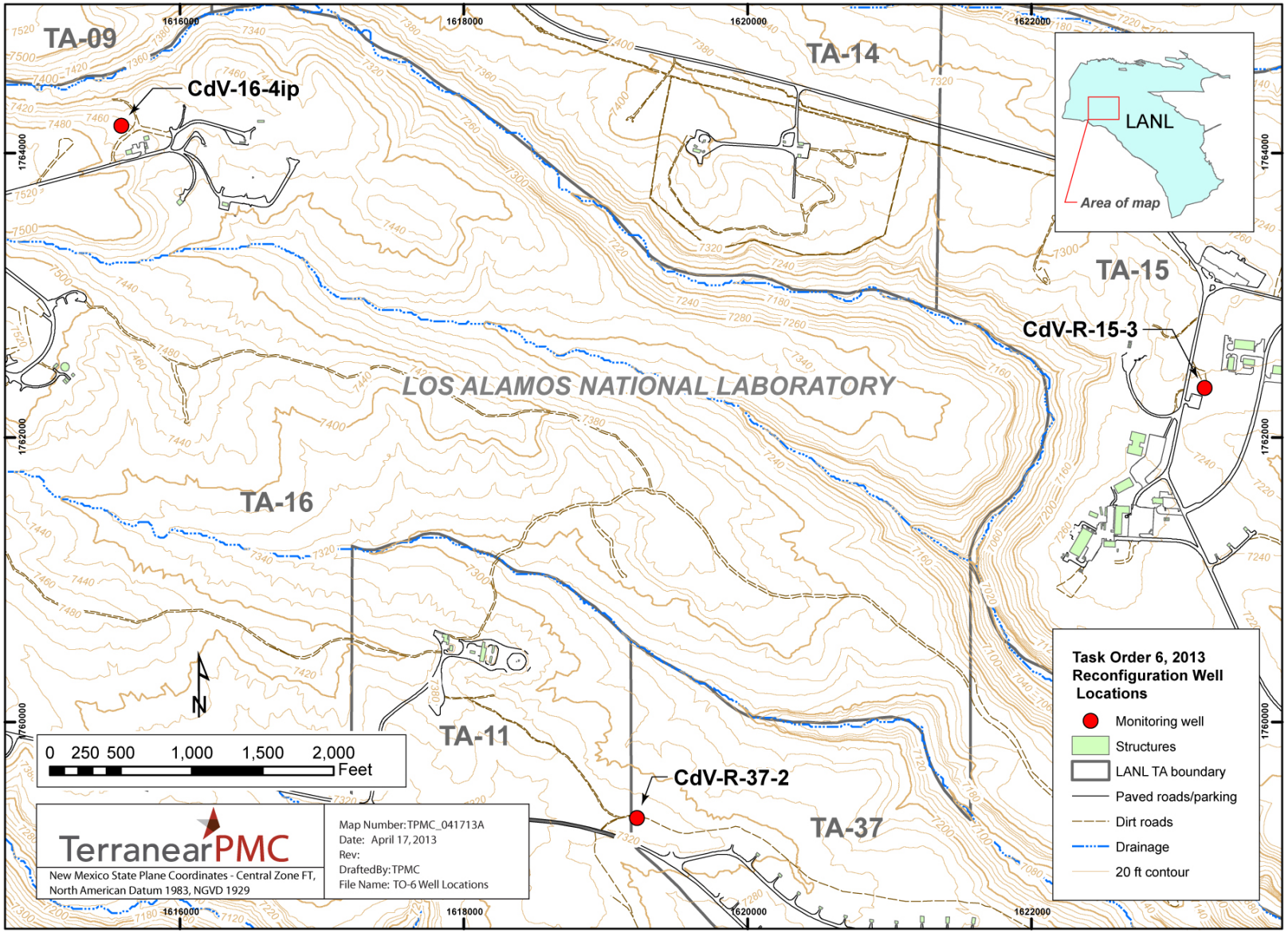



**Figure 2.0-1 Location of well CdV-R-15-3**

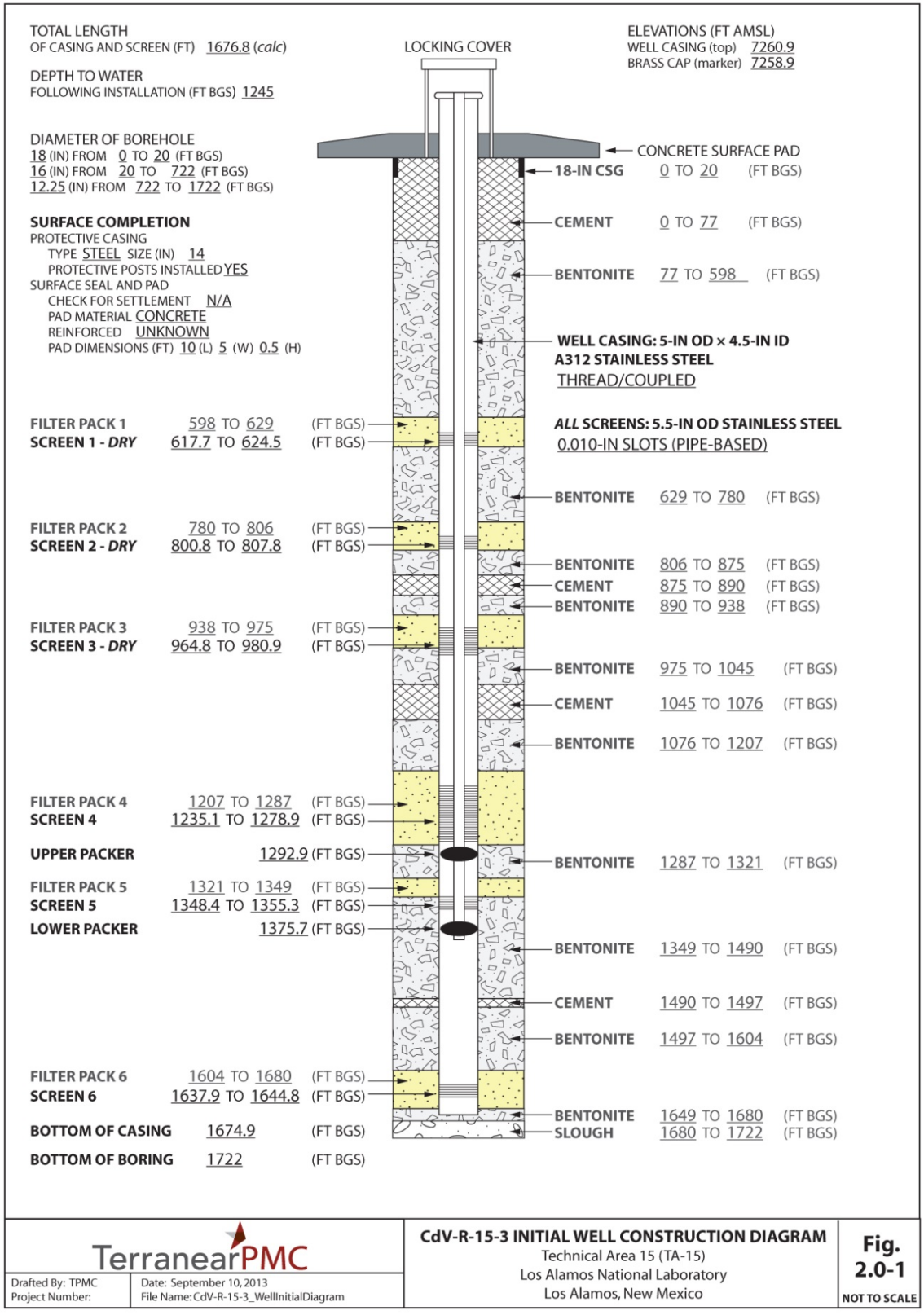



**Figure 2.0-2 Initial well construction diagram of monitoring well CdV-R-15-3**

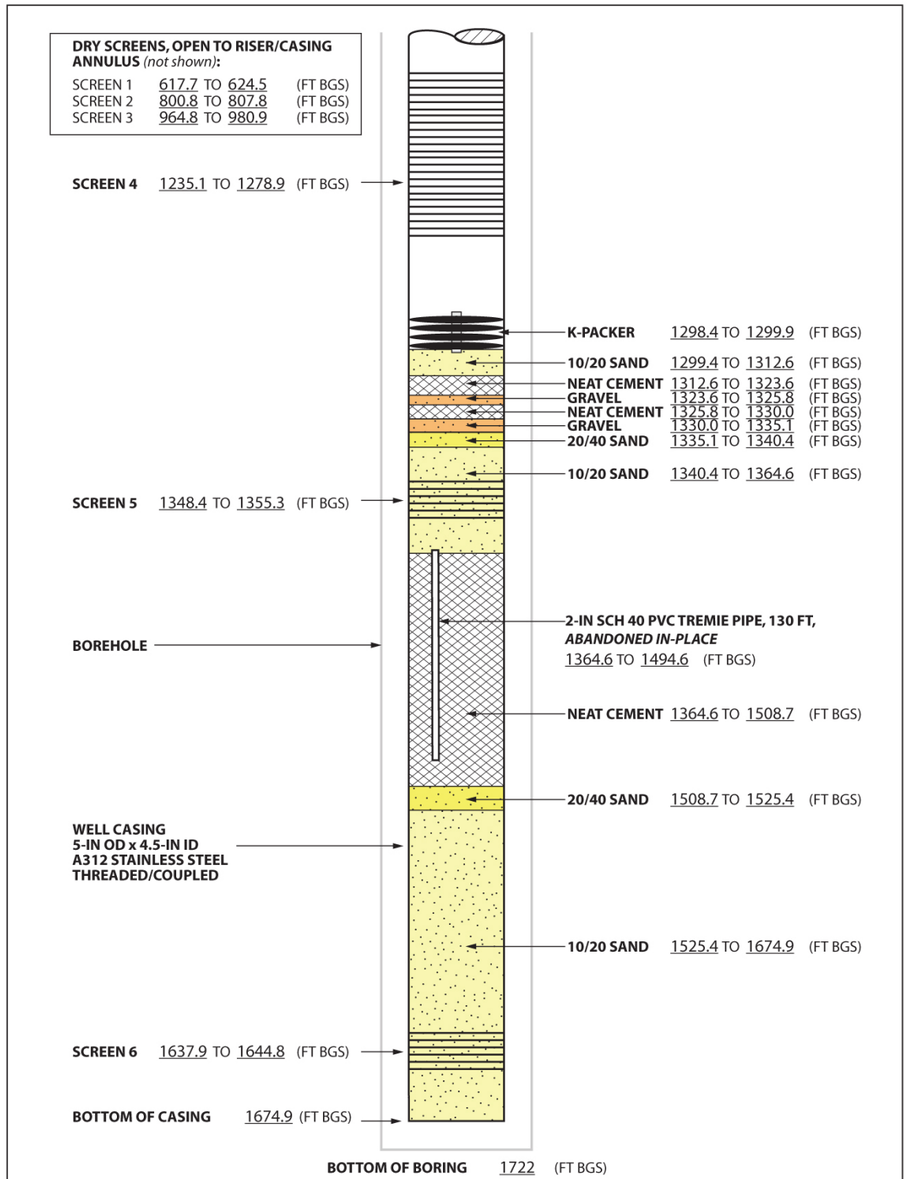



**Figure 2.2-1 Backfill diagram of monitoring well CdV-R-15-3**

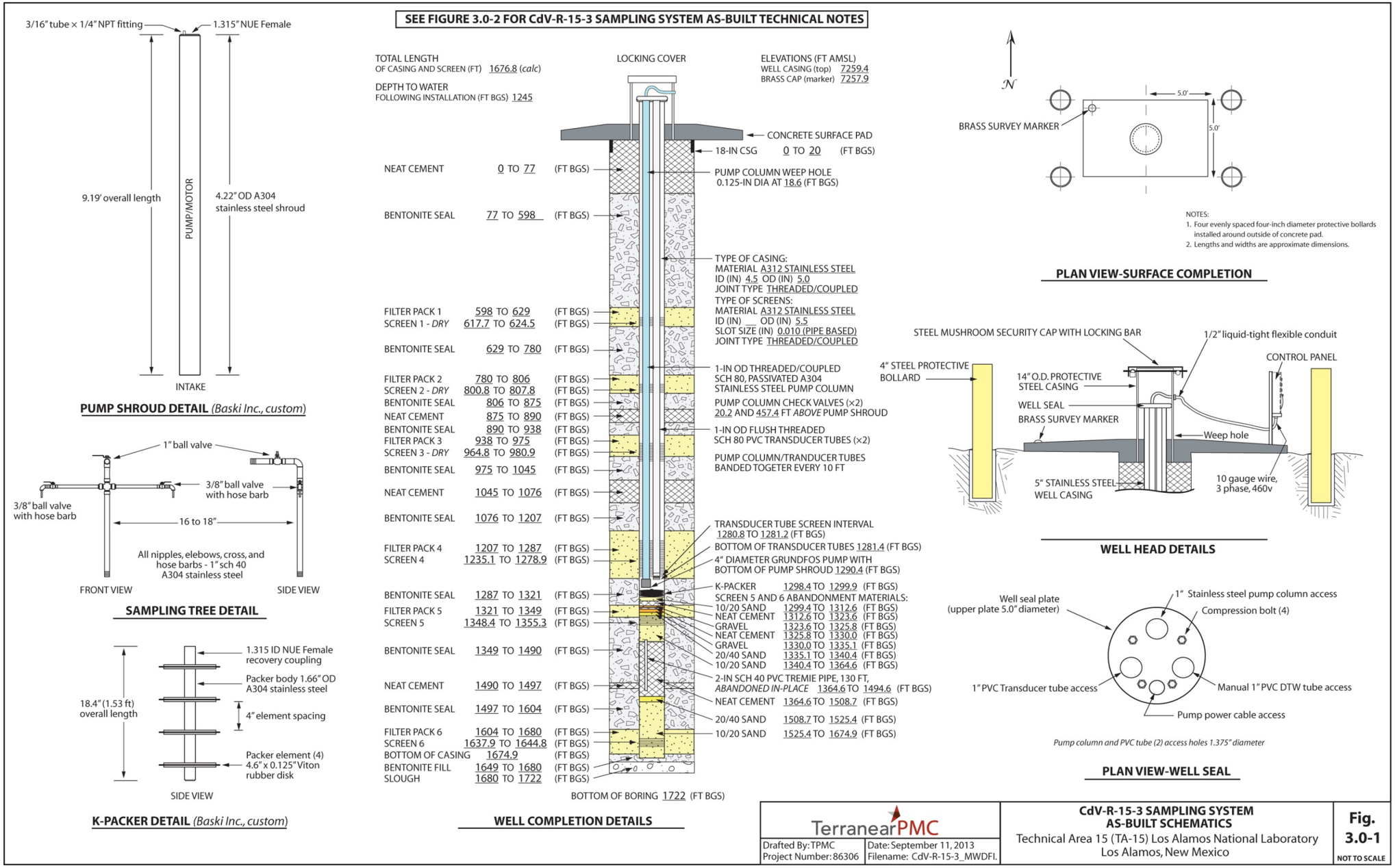
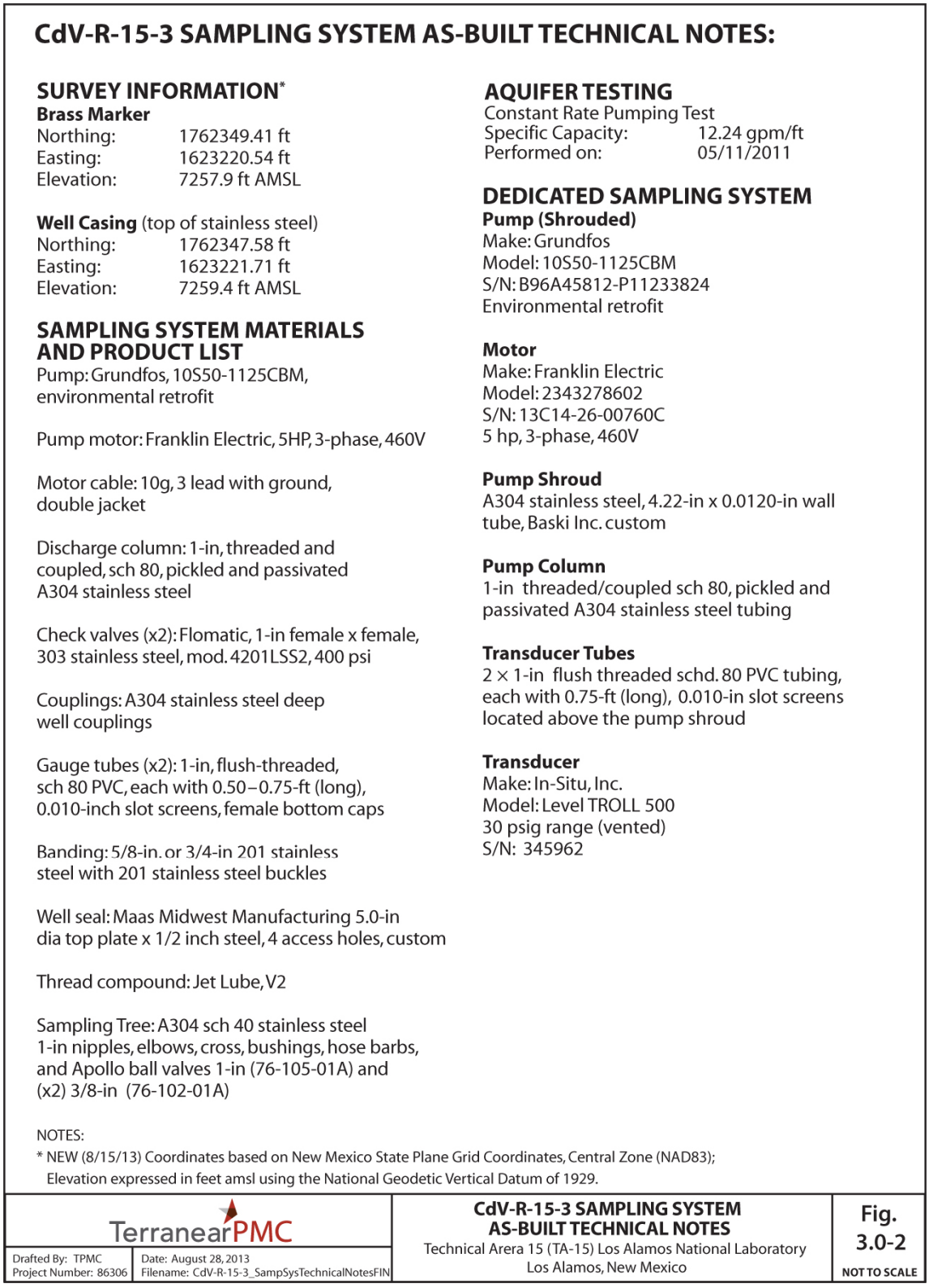



**Figure 3.0-1 As-built schematics of monitoring well CdV-R-15-3 sampling system**



## CdV-R-15-3 SAMPLING SYSTEM AS-BUILT TECHNICAL NOTES:

### SURVEY INFORMATION*

**Brass Marker**

Northing: 1762349.41 ft
Easting: 1623220.54 ft
Elevation: 7257.9 ft AMSL

**Well Casing** (top of stainless steel)

Northing: 1762347.58 ft
Easting: 1623221.71 ft
Elevation: 7259.4 ft AMSL

### SAMPLING SYSTEM MATERIALS AND PRODUCT LIST

Pump: Grundfos, 10S50-1125CBM, environmental retrofit

Pump motor: Franklin Electric, 5HP, 3-phase, 460V

Motor cable: 10g, 3 lead with ground, double jacket

Discharge column: 1-in, threaded and coupled, sch 80, pickled and passivated A304 stainless steel

Check valves (x2): Flomatic, 1-in female x female, 303 stainless steel, mod. 4201LSS2, 400 psi

Couplings: A304 stainless steel deep well couplings

Gauge tubes (x2): 1-in, flush-threaded, sch 80 PVC, each with 0.50–0.75-ft (long), 0.010-inch slot screens, female bottom caps

Banding: 5/8-in. or 3/4-in 201 stainless steel with 201 stainless steel buckles

Well seal: Maas Midwest Manufacturing 5.0-in dia top plate x 1/2 inch steel, 4 access holes, custom

Thread compound: Jet Lube, V2

Sampling Tree: A304 sch 40 stainless steel 1-in nipples, elbows, cross, bushings, hose barbs, and Apollo ball valves 1-in (76-105-01A) and (x2) 3/8-in (76-102-01A)

### AQUIFER TESTING

Constant Rate Pumping Test
Specific Capacity: 12.24 gpm/ft
Performed on: 05/11/2011

### DEDICATED SAMPLING SYSTEM

**Pump (Shrouded)**

Make: Grundfos
Model: 10S50-1125CBM
S/N: B96A45812-P11233824
Environmental retrofit

**Motor**

Make: Franklin Electric
Model: 2343278602
S/N: 13C14-26-00760C
5 hp, 3-phase, 460V

**Pump Shroud**

A304 stainless steel, 4.22-in x 0.0120-in wall tube, Baski Inc. custom

**Pump Column**

1-in threaded/coupled sch 80, pickled and passivated A304 stainless steel tubing

**Transducer Tubes**

2 × 1-in flush threaded schd. 80 PVC tubing, each with 0.75-ft (long), 0.010-in slot screens located above the pump shroud

**Transducer**

Make: In-Situ, Inc.
Model: Level TROLL 500
30 psig range (vented)
S/N: 345962

NOTES:

* NEW (8/15/13) Coordinates based on New Mexico State Plane Grid Coordinates, Central Zone (NAD83); Elevation expressed in feet amsl using the National Geodetic Vertical Datum of 1929.

TerranearPMC

Drafted By: TPMC
Project Number: 86306
Date: August 28, 2013
Filename: CdV-R-15-3_SampSysTechnicalNotesFIN

**CdV-R-15-3 SAMPLING SYSTEM AS-BUILT TECHNICAL NOTES**
Technical Arera 15 (TA-15) Los Alamos National Laboratory
Los Alamos, New Mexico

Fig. 3.0-2
NOT TO SCALE

**Figure 3.0-2 Technical notes for as-built sampling system for monitoring well CdV-R-15-3**

**Table 2.2-1**
**Summary of Groundwater Samples Collected during Reconfiguration of Well CdV-R-15-3**

| Location ID | Sample ID | Date Collected | Screen | Analysis* |
|---|---|---|---|---|
| **Chase Water Purge After Cementing** | | | | |
| CdV-R-15-3 | CAWA-13-36213 | 7/17/13; 1225h | Screen 4 | HEXP, ALK, ANIONS, TOC |
| CdV-R-15-3 | CAWA-13-36218 | 7/17/13; 1225h | Screen 4 | MET |
| **4-hour Redevelopment Samples (1293.9 ft bgs)** | | | | |
| CdV-R-15-3 | CAWA-13-36214 | 7/21/13; 1455h | Screen 4 | HEXP, ALK, ANIONS, TOC |
| CdV-R-15-3 | CAWA-13-36219 | 7/21/13; 1455h | Screen 4 | MET |
| **8-hour Redevelopment Samples (1293.9 ft bgs)** | | | | |
| CdV-R-15-3 | CAWA-13-36215 | 7/21/13; 1900h | Screen 4 | HEXP, ALK, ANIONS, TOC |
| CdV-R-15-3 | CAWA-13-36220 | 7/21/13; 1900h | Screen 4 | MET |
| **Extended Redevelopment Pumping Samples (1293.9 ft bgs)** | | | | |
| CdV-R-15-3 | CAWA-13-36216 | 7/22/13; 1500h | Screen 4 | HEXP, ALK, ANIONS, TOC |
| CdV-R-15-3 | CAWA-13-36221 | 7/22/13; 1500h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-36217 | 7/24/13; 1215h | Screen 4 | HEXP, ALK, ANIONS, TOC |
| CdV-R-15-3 | CAWA-13-36222 | 7/24/13; 1215h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-39341 | 7/25/13; 1835h | Screen 4 | HEXP, ALK, ANIONS, TOC |
| CdV-R-15-3 | CAWA-13-39336 | 7/25/13; 1835h | Screen 4 | MET |
| **Bailer Sample (1250 – 1270 ft bgs)** | | | | |
| CdV-R-15-3 | CAWA-13-39409 | 7/29/13; 1440h | Screen 4 | ALK, ANIONS, CATIONS |
| **Sampling System Rinsate Samples (Equipment Blank)** | | | | |
| CdV-R-15-3 | CAWA-13-36223 | 7/29/13; 1600h | 1” SS Drop Pipe | VOC, SVOC |
| CdV-R-15-3 | CAWA-13-36224 | 7/29/13; 1610h | Pump & Motor | VOC, SVOC |
| CdV-R-15-3 | CAWA-13-36225 | 7/29/13; 1620h | Pump Shroud | VOC, SVOC |
| CdV-R-15-3 | CAWA-13-36226 | 8/16/13; 0940h | First Water | VOC, SVOC |
| **Extended Redevelopment Pumping Samples with Dedicated Sampling System** | | | | |
| CdV-R-15-3 | CAWA-13-40545 | 8/16/2013; 0948h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40546 | 8/16/2013; 1118h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40547 | 8/16/2013; 1248h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40548 | 8/16/2013; 1418h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40549 | 8/16/2013; 1548h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40550 | 8/16/2013; 1718h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40551 | 8/16/2013; 1848h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40552 | 8/17/2013; 0804h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40553 | 8/17/2013; 1404h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40554 | 8/18/2013; 0747h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40555 | 8/18/2013; 1347h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40556 | 8/19/2013; 0759h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40557 | 8/19/2013; 1359h | Screen 4 | MET |

**Table 2.2-1 (continued)**

| Location ID | Sample ID | Date Collected | Screen | Analysis |
|---|---|---|---|---|
| CdV-R-15-3 | CAWA-13-40558 | 8/20/2013; 0751h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40559 | 8/20/2013; 1351h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40560 | 8/21/2013; 0743h | Screen 4 | MET |
| CdV-R-15-3 | CAWA-13-40561 | 8/21/2013; 1439h | Screen 4 | MET |

Analysis abbreviations: ALK = alkalinity, ANIONS = positive (+) ions, CATIONS = negative (–) ions, HEXP = high explosives, MET = metals, SVOC = semi-volatile organics, TOC = total organic carbon, VOC = volatile organics.

**Table 2.2-2**
**CdV-R-15-3 Monitoring Well Lower Well Screen Abandonment Materials**

| Material | Interval (ft bgs) | Emplaced Volume ($ft^3$) | Calculated Volume ($ft^3$) |
|---|---|---|---|
| Lower 10/20 filter-grade sand interval | 1525.4–1674.9 | 16 | 16.5 |
| Lower 20/40 filter-grade sand interval | 1508.7–1525.4 | 1.75 | 1.8 |
| Lower cement interval | 1364.6–1508.7 | 13.9 | 15.9 |
| Mid10/20 filter-grade sand interval | 1340.4–1364.6 | 3.25 | 2.7 |
| Mid 20/40 filter-grade sand interval | 1335.1–1340.4 | 0.5 | 0.6 |
| Washed gravel interval (lower) | 1330.0–1335.1 | 0.7 | 0.6 |
| Cement interval (lower) | 1325.8–1330.0 | 1.7 | 1.9 |
| Washed gravel interval (upper) | 1323.6–1325.8 | 0.13 | 0.2 |
| Cement interval (upper) | 1312.6–1323.6 | 1.0 | 1.2 |
| Upper 10/20 filter-grade sand interval | 1299.4–1312.6 | 0.83 | 1.5 |

**Table 2.3-1**
**Purge Volumes and Field Parameters during Well Redevelopment at CdV-R-15-3**

| Date | pH | Temp (°C) | Dissolved Oxygen (mg/L) | Oxidation-Reduction Potential (mV) | Eh (mV) | Specific Conductivity (µS/cm) | Turbidity (NTU*) | Purge Volume between Samples (gal.) | Cumulative Purge Volume (gal.) |
|---|---|---|---|---|---|---|---|---|---|
| **Well Re-Development** | | | | | | | | | |
| 7/21/13 | 11.30 | 20.36 | 6.54 | 27.6 | 226.1 | 1.381 | 50.3 | 96 | 96 |
| | 11.19 | 17.20 | 6.74 | 48.7 | 257.6 | 0.960 | 47.1 | 96 | 191 |
| | 11.28 | 17.79 | 6.75 | 61.5 | 265.4 | 0.814 | 30.1 | 96 | 287 |
| | 11.21 | 17.93 | 6.53 | 84.6 | 288.5 | 0.742 | 23.6 | 96 | 382 |
| | 11.18 | 18.36 | 6.36 | 106.2 | 310.1 | 0.686 | 10.3 | 96 | 478 |
| | 11.13 | 18.58 | 6.25 | 127.9 | 331.8 | 0.633 | 6.7 | 96 | 573 |
| | 11.05 | 18.66 | 6.17 | 145.8 | 349.7 | 0.563 | 3.9 | 96 | 669 |
| | 10.92 | 18.67 | 6.19 | 164.5 | 368.4 | 0.486 | 3.1 | 96 | 764 |
| | 10.77 | 18.69 | 6.18 | 181.5 | 385.4 | 0.404 | 2.9 | 96 | 860 |
| | 10.77 | 18.65 | 6.21 | 192.3 | 396.2 | 0.422 | 2.7 | 96 | 955 |
| | 10.80 | 18.77 | 6.17 | 195.0 | 398.9 | 0.419 | 2.6 | 96 | 1051 |
| | 10.36 | 19.00 | 6.80 | 227.2 | 431.1 | 0.393 | 2.3 | 96 | 1146 |
| | 10.75 | 18.77 | 7.01 | 210.1 | 414.0 | 0.379 | 2.3 | 96 | 1242 |
| | 10.29 | 18.62 | 6.87 | 239.2 | 443.1 | 0.363 | 4.5 | 96 | 1337 |
| | 10.22 | 17.59 | 7.53 | 234.9 | 438.8 | 0.307 | 20.6 | 96 | 1433 |
| | 10.48 | 17.81 | 7.21 | 228.5 | 432.4 | 0.279 | 9.9 | 96 | 1528 |
| | 11.12 | 18.71 | 7.08 | 181.9 | 385.8 | 0.940 | 13.3 | 96 | 1624 |
| | 10.97 | 18.91 | 6.80 | 207.3 | 411.2 | 0.533 | 2.0 | 96 | 1719 |
| | 10.00 | 18.65 | 6.71 | 233.6 | 437.5 | 0.266 | 1.2 | 96 | 1815 |
| | 10.21 | 19.07 | 6.66 | 273.4 | 477.3 | 0.255 | 1.1 | 96 | 1910 |
| | 9.74 | 18.41 | 6.57 | 314.7 | 518.6 | 0.233 | 1.3 | 96 | 2006 |
| | 9.77 | 18.40 | 6.59 | 313.1 | 517.0 | 0.232 | 0.9 | 96 | 2101 |
| | 9.88 | 18.24 | 6.63 | 301.2 | 505.1 | 0.224 | 1.4 | 96 | 2197 |
| | 10.03 | 17.99 | 6.60 | 281.5 | 485.4 | 0.215 | 0.9 | 96 | 2292 |
| | 10.18 | 17.96 | 6.58 | 252.5 | 456.4 | 0.210 | 0.9 | 96 | 2388 |
| | 10.17 | 18.06 | 6.52 | 234.5 | 438.4 | 0.203 | 0.8 | 96 | 2483 |
| | 10.14 | 18.11 | 6.46 | 226.4 | 430.3 | 0.198 | 0.7 | 96 | 2579 |
| | 10.02 | 17.79 | 6.43 | 225.5 | 429.4 | 0.194 | 0.8 | 96 | 2674 |
| | 10.10 | 17.99 | 6.43 | 213.1 | 417.0 | 0.191 | 0.7 | 96 | 2770 |
| | 9.94 | 17.53 | 6.41 | 216.1 | 420.0 | 0.188 | 0.7 | 96 | 2865 |
| | 9.99 | 17.46 | 6.42 | 202.9 | 411.8 | 0.184 | 0.7 | 96 | 2961 |
| | 10.02 | 17.49 | 6.42 | 195.5 | 404.4 | 0.182 | 0.8 | 96 | 3056 |

**Table 2.3-1 (continued)**

| Date | pH | Temp (°C) | Dissolved Oxygen (mg/L) | Oxidation-Reduction Potential (mV) | Eh (mV) | Specific Conductivity (µS/cm) | Turbidity (NTU) | Purge Volume between Samples (gal.) | Cumulative Purge Volume (gal.) |
|---|---|---|---|---|---|---|---|---|---|
| 7/22/13 | 10.80 | 18.23 | 6.45 | 37.8 | 241.7 | 0.253 | 0.7 | 108 | 3164 |
| | 10.40 | 19.27 | 6.38 | 72.2 | 276.1 | 0.202 | 0.4 | 108 | 3272 |
| | 10.02 | 19.18 | 6.33 | 114.5 | 318.4 | 0.188 | 0.4 | 108 | 3380 |
| | 9.97 | 19.32 | 6.34 | 141.6 | 345.5 | 0.181 | 0.4 | 108 | 3489 |
| | 9.86 | 19.78 | 6.34 | 170.5 | 374.4 | 0.177 | 0.3 | 108 | 3597 |
| | 9.75 | 19.96 | 6.34 | 198.6 | 402.5 | 0.174 | 0.4 | 108 | 3705 |
| | 9.69 | 20.47 | 6.30 | 221.3 | 425.2 | 0.172 | 0.2 | 108 | 3813 |
| | 9.71 | 39.32 | 4.87 | 23.0 | 221.5 | 0.169 | 0.3 | 108 | 3921 |
| | 8.83 | 17.53 | 6.10 | 184.5 | 388.4 | 0.163 | 1.8 | 108 | 4029 |
| | 9.20 | 18.49 | 6.14 | 210.2 | 414.1 | 0.162 | 2.6 | 108 | 4137 |
| | 9.66 | 19.59 | 6.48 | 209.7 | 413.6 | 0.175 | 0.7 | 108 | 4246 |
| | 9.59 | 20.39 | 6.39 | 222.5 | 426.4 | 0.171 | 0.1 | 108 | 4354 |
| | 9.41 | 20.27 | 6.38 | 240.8 | 444.7 | 0.167 | 0.4 | 108 | 4462 |
| | 9.33 | 20.41 | 6.37 | 256.5 | 460.4 | 0.165 | 0.3 | 108 | 4570 |
| | 9.25 | 20.43 | 6.38 | 271.7 | 475.6 | 0.164 | 0.1 | 108 | 4678 |
| | 9.11 | 20.01 | 6.42 | 291.6 | 495.5 | 0.163 | 0.2 | 108 | 4786 |
| | 9.00 | 20.36 | 6.37 | 308.3 | 512.2 | 0.162 | 0.2 | 108 | 4894 |
| | 8.60 | 19.02 | 6.41 | 338.2 | 542.1 | 0.161 | 0.3 | 108 | 5003 |
| | 8.94 | 18.87 | 6.40 | 319.4 | 523.3 | 0.160 | 0.3 | 108 | 5111 |
| | 9.16 | 18.84 | 6.40 | 300.7 | 504.6 | 0.160 | 0.2 | 108 | 5219 |
| | 8.96 | 17.48 | 6.42 | 307.1 | 516.0 | 0.159 | 0.5 | 108 | 5327 |
| | 9.28 | 17.39 | 6.41 | 269.6 | 478.5 | 0.158 | 0.4 | 108 | 5435 |
| | 9.49 | 17.71 | 6.42 | 238.6 | 442.5 | 0.158 | 0.3 | 108 | 5543 |
| | 9.52 | 17.97 | 6.42 | 222.9 | 426.8 | 0.158 | 0.3 | 108 | 5651 |
| | 9.51 | 18.04 | 6.42 | 215.1 | 419.0 | 0.157 | 0.4 | 108 | 5760 |
| | 9.52 | 18.09 | 6.42 | 210.2 | 414.1 | 0.157 | 0.3 | 108 | 5868 |
| | 9.52 | 18.19 | 6.43 | 208.2 | 412.1 | 0.157 | 0.3 | 108 | 5976 |
| | 9.51 | 18.20 | 6.43 | 209.0 | 412.9 | 0.156 | 0.3 | 108 | 6084 |

**Table 2.3-1 (continued)**

| Date | pH | Temp (°C) | Dissolved Oxygen (mg/L) | Oxidation-Reduction Potential (mV) | Eh (mV) | Specific Conductivity (µS/cm) | Turbidity (NTU) | Purge Volume between Samples (gal.) | Cumulative Purge Volume (gal.) |
|---|---|---|---|---|---|---|---|---|---|
| | 10.01 | 18.07 | 6.61 | 99.2 | 303.1 | 0.159 | 1.1 | 112 | 6196 |
| | 9.83 | 18.28 | 6.57 | 116.3 | 320.2 | 0.157 | 0.5 | 112 | 6309 |
| | 9.73 | 18.58 | 6.51 | 131.3 | 335.2 | 0.156 | 0.5 | 112 | 6421 |
| | 9.67 | 19.26 | 6.46 | 147.6 | 351.5 | 0.155 | 0.4 | 112 | 6533 |
| | 9.54 | 19.55 | 6.44 | 176.0 | 379.9 | 0.154 | 0.4 | 112 | 6645 |
| | 9.38 | 19.77 | 6.46 | 213.3 | 417.2 | 0.153 | 0.3 | 112 | 6758 |
| | 9.27 | 19.79 | 6.45 | 246.8 | 450.7 | 0.153 | 0.5 | 112 | 6870 |
| | 9.19 | 19.96 | 6.43 | 270.0 | 473.9 | 0.152 | 2.0 | 112 | 6982 |
| | 9.19 | 19.71 | 6.57 | 279.5 | 483.4 | 0.153 | 1.2 | 112 | 7095 |
| | 8.44 | 18.88 | 6.43 | 333.0 | 536.9 | 0.150 | 0.9 | 112 | 7207 |
| | 8.84 | 19.15 | 6.47 | 321.0 | 524.9 | 0.151 | 0.6 | 112 | 7319 |
| | 8.79 | 19.28 | 6.46 | 330.4 | 534.3 | 0.151 | 0.7 | 112 | 7432 |
| | 8.74 | 19.46 | 6.48 | 338.8 | 542.7 | 0.150 | 0.7 | 112 | 7544 |
| | 8.71 | 19.77 | 6.65 | 343.8 | 547.7 | 0.150 | 1.1 | 112 | 7656 |
| | 8.57 | 19.76 | 6.70 | 356.0 | 559.9 | 0.150 | 0.2 | 112 | 7768 |
| | 8.57 | 19.79 | 6.63 | 359.0 | 562.9 | 0.148 | 1.8 | 112 | 7881 |
| | 8.59 | 19.62 | 6.56 | 357.8 | 561.7 | 0.148 | 0.3 | 112 | 7993 |
| | 8.63 | 19.78 | 6.57 | 355.1 | 559.0 | 0.147 | 0.4 | 112 | 8105 |
| 7/23/13 | 8.54 | 19.66 | 6.44 | 358.9 | 562.8 | 0.145 | 0.6 | 112 | 8218 |
| | 8.55 | 19.84 | 6.46 | 358.9 | 562.8 | 0.145 | 0.4 | 112 | 8330 |
| | 8.51 | 20.15 | 6.42 | 360.2 | 564.1 | 0.143 | 0.6 | 112 | 8442 |
| | 8.11 | 19.23 | 6.46 | 385.3 | 589.2 | 0.144 | 0.1 | 112 | 8555 |
| | 8.18 | 18.70 | 6.46 | 381.5 | 585.4 | 0.144 | 0.3 | 112 | 8667 |
| | 8.52 | 18.47 | 6.44 | 356.6 | 560.5 | 0.144 | 0.7 | 112 | 8779 |
| | 8.80 | 18.54 | 6.40 | 329.2 | 533.1 | 0.144 | 0.4 | 112 | 8891 |
| | 8.95 | 18.61 | 6.41 | 300.7 | 504.6 | 0.144 | 1.1 | 112 | 9004 |
| | 9.00 | 18.34 | 6.40 | 280.4 | 484.3 | 0.144 | 0.5 | 112 | 9116 |
| | 9.06 | 18.21 | 6.42 | 262.1 | 466.0 | 0.144 | 0.3 | 112 | 9228 |
| | 9.12 | 18.19 | 6.43 | 249.1 | 453.0 | 0.143 | 1.2 | 112 | 9341 |
| | 9.12 | 18.05 | 6.43 | 240.6 | 444.5 | 0.143 | 0.3 | 112 | 9453 |
| | 9.11 | 17.78 | 6.23 | 235.0 | 438.9 | 0.143 | 0.4 | 112 | 9565 |
| | 9.14 | 17.75 | 6.25 | 227.9 | 431.8 | 0.143 | 4.5 | 112 | 9678 |
| | 9.19 | 17.86 | 6.18 | 220.3 | 424.2 | 0.143 | 0.4 | 112 | 9790 |
| | 9.22 | 18.00 | 6.24 | 215.0 | 418.9 | 0.143 | 0.3 | 112 | 9902 |
| | 9.24 | 18.08 | 6.20 | 196.7 | 400.6 | 0.142 | 0.4 | 112 | 10,014 |
| | 9.24 | 18.11 | 6.25 | 198.2 | 402.1 | 0.142 | 0.3 | 112 | 10,127 |
| | 9.22 | 18.08 | 6.26 | 201.6 | 405.5 | 0.142 | 1.4 | 112 | 10,239 |

**Table 2.3-1 (continued)**

| Date | pH | Temp (°C) | Dissolved Oxygen (mg/L) | Oxidation-Reduction Potential (mV) | Eh (mV) | Specific Conductivity (µS/cm) | Turbidity (NTU) | Purge Volume between Samples (gal.) | Cumulative Purge Volume (gal.) |
|---|---|---|---|---|---|---|---|---|---|
| | 9.44 | 17.52 | 5.47 | 114.4 | 318.3 | 0.145 | 7.5 | 99 | 10,338 |
| | 9.63 | 19.29 | 5.76 | 106.7 | 310.6 | 0.139 | 3.0 | 99 | 10,437 |
| | 9.48 | 19.34 | 5.72 | 130.8 | 334.7 | 0.140 | 0.7 | 99 | 10,536 |
| | 9.30 | 19.27 | 5.85 | 164.4 | 368.3 | 0.141 | 0.5 | 99 | 10,636 |
| | 9.30 | 19.58 | 5.98 | 188.9 | 392.8 | 0.141 | 0.9 | 99 | 10,735 |
| | 8.37 | 18.47 | 6.38 | 158.6 | 362.5 | 0.141 | 2.7 | 99 | 10,834 |
| | 8.58 | 18.22 | 7.05 | 244.2 | 448.1 | 0.140 | 0.7 | 99 | 10,933 |
| | 11.33 | 18.63 | 6.79 | 122.6 | 326.5 | 1.599 | 348.1 | 99 | 11,032 |
| | 10.00 | 25.50 | 6.05 | 173.5 | 372.0 | 0.003 | 0.4 | 99 | 11,131 |
| | 9.11 | 19.31 | 6.87 | 273.2 | 477.1 | 0.174 | 18.5 | 99 | 11,230 |
| | 9.31 | 19.30 | 6.82 | 285.5 | 489.4 | 0.184 | 16.2 | 99 | 11,329 |
| | 9.81 | 19.32 | 6.78 | 268.9 | 472.8 | 0.224 | 29.5 | 99 | 11,429 |
| | 9.23 | 19.06 | 6.76 | 311.2 | 515.1 | 0.179 | 13.0 | 99 | 11,528 |
| | 9.21 | 19.37 | 6.73 | 308.8 | 512.7 | 0.162 | 5.2 | 99 | 11,627 |
| | 8.72 | 19.26 | 6.70 | 321.7 | 525.6 | 0.153 | 4.0 | 99 | 11,726 |
| | 8.85 | 19.38 | 6.68 | 320.2 | 524.1 | 0.150 | 3.1 | 99 | 11,825 |
| | 8.86 | 19.45 | 6.66 | 321.2 | 525.1 | 0.148 | 2.6 | 99 | 11,924 |
| | 8.76 | 19.43 | 6.63 | 322.6 | 526.5 | 0.145 | 1.9 | 99 | 12,023 |
| 7/24/13 | 9.24 | 19.34 | 6.62 | 300.3 | 504.2 | 0.174 | 7.7 | 99 | 12,123 |
| | 8.92 | 19.28 | 6.61 | 312.4 | 516.3 | 0.146 | 1.3 | 99 | 12,222 |
| | 8.84 | 19.06 | 6.50 | 308.4 | 512.3 | 0.145 | 3.0 | 99 | 12,321 |
| | 8.99 | 19.03 | 6.53 | 288.2 | 492.1 | 0.143 | 1.3 | 99 | 12,420 |
| | 8.87 | 18.78 | 6.51 | 288.5 | 492.4 | 0.143 | 5.4 | 99 | 12,519 |
| | 8.95 | 19.01 | 6.57 | 276.2 | 480.1 | 0.141 | 1.0 | 99 | 12,618 |
| | 8.99 | 19.16 | 6.48 | 275.6 | 479.5 | 0.141 | 0.6 | 99 | 12,717 |
| | 9.04 | 19.48 | 6.44 | 272.3 | 476.2 | 0.141 | 0.8 | 99 | 12,817 |
| | 9.12 | 20.01 | 6.41 | 263.9 | 467.8 | 0.141 | 0.9 | 99 | 12,916 |
| | 9.17 | 21.31 | 6.44 | 256.7 | 460.6 | 0.142 | 0.3 | 99 | 13,015 |
| | 9.18 | 23.77 | 6.41 | 247.1 | 445.6 | 0.143 | 0.5 | 99 | 13,114 |
| | 9.14 | 24.25 | 6.38 | 247.7 | 446.2 | 0.144 | 0.6 | 99 | 13,213 |
| | 9.07 | 23.80 | 9.29 | 250.7 | 449.2 | 0.143 | 18.3 | 99 | 13,312 |
| | 9.46 | 22.33 | 6.35 | 223.1 | 427.0 | 0.177 | 8.6 | 99 | 13,411 |
| | 9.22 | 21.11 | 6.39 | 225.7 | 429.6 | 0.157 | 3.2 | 99 | 13,510 |
| | 9.10 | 20.63 | 6.42 | 229.3 | 433.2 | 0.148 | 2.4 | 99 | 13,610 |
| | 9.18 | 20.48 | 6.45 | 220.4 | 424.3 | 0.146 | 1.4 | 99 | 13,709 |
| | 9.19 | 20.45 | 6.46 | 214.9 | 418.8 | 0.144 | 1.1 | 99 | 13,808 |
| | 9.07 | 19.86 | 6.47 | 193.6 | 397.5 | 0.142 | 2.8 | 99 | 13,907 |

**Table 2.3-1 (continued)**

| Date | pH | Temp (°C) | Dissolved Oxygen (mg/L) | Oxidation-Reduction Potential (mV) | Eh (mV) | Specific Conductivity (µS/cm) | Turbidity (NTU) | Purge Volume between Samples (gal.) | Cumulative Purge Volume (gal.) |
|---|---|---|---|---|---|---|---|---|---|
| 7/25/13 | 8.93 | 14.53 | 3.06 | 164.1 | 373.0 | 0.132 | 47.1 | 100 | 14,007 |
| | 9.82 | 16.28 | 5.67 | 129.5 | 338.4 | 0.148 | 4.1 | 100 | 14,107 |
| | 9.60 | 17.85 | 6.03 | 144.4 | 348.3 | 0.142 | 2.1 | 100 | 14,208 |
| | 9.47 | 18.35 | 6.13 | 156.8 | 360.7 | 0.140 | 1.4 | 100 | 14,308 |
| | 9.36 | 18.58 | 6.21 | 167.7 | 371.6 | 0.138 | 0.8 | 100 | 14,408 |
| | 9.31 | 18.55 | 6.26 | 173.1 | 377.0 | 0.137 | 0.8 | 100 | 14,508 |
| | 9.29 | 18.56 | 6.25 | 178.6 | 382.5 | 0.138 | 0.7 | 100 | 14,609 |
| | 9.24 | 18.76 | 6.30 | 185.3 | 389.2 | 0.137 | 0.5 | 100 | 14,709 |
| | 9.17 | 18.64 | 6.29 | 192.7 | 396.6 | 0.136 | 0.8 | 100 | 14,809 |
| | 9.12 | 18.57 | 6.30 | 198.9 | 402.8 | 0.135 | 0.7 | 100 | 14,909 |
| | 9.05 | 18.53 | 6.32 | 213.1 | 417.0 | 0.136 | 0.5 | 100 | 15,010 |
| | 9.06 | 18.45 | 6.34 | 220.9 | 424.8 | 0.135 | 0.5 | 100 | 15,110 |
| | 9.05 | 18.38 | 6.33 | 224.0 | 427.9 | 0.135 | 0.5 | 100 | 15,210 |
| | 9.05 | 18.58 | 6.33 | 233.1 | 437.0 | 0.136 | 0.5 | 100 | 15,310 |
| | 9.05 | 18.51 | 6.35 | 233.0 | 436.9 | 0.136 | 0.5 | 100 | 15,411 |
| | 8.97 | 18.60 | 6.36 | 233.1 | 437.0 | 0.144 | 0.9 | 100 | 15,511 |
| | 9.29 | 18.59 | 6.35 | 233.4 | 437.3 | 0.143 | 10.4 | 100 | 15,611 |
| | 9.16 | 18.54 | 6.35 | 241.1 | 445.0 | 0.137 | 0.9 | 100 | 15,711 |
| | 9.07 | 18.51 | 6.37 | 245.1 | 449.0 | 0.136 | 0.8 | 100 | 15,812 |
| | 9.03 | 18.46 | 6.37 | 249.3 | 453.2 | 0.135 | 0.8 | 100 | 15,912 |
| | 9.00 | 18.41 | 6.38 | 251.4 | 455.3 | 0.135 | 0.8 | 100 | 16,012 |
| | 8.95 | 18.45 | 6.38 | 260.0 | 463.9 | 0.134 | 0.7 | 100 | 16,112 |
| | 8.96 | 18.44 | 6.37 | 261.4 | 465.3 | 0.134 | 0.6 | 100 | 16,213 |
| | 8.95 | 18.55 | 6.37 | 264.9 | 468.8 | 0.134 | 0.6 | 100 | 16,313 |
| | 8.96 | 18.55 | 6.38 | 265.0 | 468.9 | 0.134 | 0.7 | 100 | 16,413 |
| | 8.84 | 18.60 | 6.39 | 285.3 | 489.2 | 0.133 | 0.5 | 100 | 16,513 |
| | 8.78 | 18.52 | 6.40 | 288.0 | 491.9 | 0.134 | 0.5 | 100 | 16,614 |
| | 8.69 | 18.52 | 6.40 | 294.4 | 498.3 | 0.133 | 0.5 | 100 | 16,714 |
| | 8.60 | 18.51 | 6.39 | 294.0 | 497.9 | 0.133 | 0.4 | 100 | 16,814 |
| | 8.50 | 18.60 | 6.39 | 299.9 | 503.8 | 0.133 | 0.4 | 100 | 16,914 |
| | 8.47 | 18.59 | 6.39 | 299.3 | 503.2 | 0.133 | 0.4 | 100 | 17,015 |
| | 8.28 | 18.16 | 6.40 | 299.8 | 503.7 | 0.132 | 0.6 | 100 | 17,115 |
| | 8.41 | 18.19 | 6.39 | 300.6 | 504.5 | 0.132 | 0.6 | 100 | 17,215 |
| | 8.60 | 18.24 | 6.40 | 286.0 | 489.9 | 0.132 | 0.5 | 100 | 17,315 |
| | 8.69 | 18.30 | 6.40 | 279.3 | 483.2 | 0.133 | 0.5 | 100 | 17,416 |
| | 8.81 | 18.24 | 6.41 | 269.0 | 472.9 | 0.132 | 0.5 | 100 | 17,516 |
| | 8.80 | 18.25 | 6.41 | 265.8 | 469.7 | 0.132 | 0.5 | 100 | 17,616 |
| | 8.84 | 18.14 | 6.41 | 261.3 | 465.2 | 0.132 | 0.5 | 100 | 17,716 |

**Table 2.3-1 (continued)**

| Date | pH | Temp (°C) | Dissolved Oxygen (mg/L) | Oxidation-Reduction Potential (mV) | Eh (mV) | Specific Conductivity (µS/cm) | Turbidity (NTU) | Purge Volume between Samples (gal.) | Cumulative Purge Volume (gal.) |
|---|---|---|---|---|---|---|---|---|---|
| 7/25/13 (cont.) | 8.85 | 18.07 | 6.41 | 254.4 | 458.3 | 0.132 | 0.5 | 100 | 17,817 |
| | 8.88 | 18.11 | 6.41 | 249.2 | 453.1 | 0.132 | 0.6 | 100 | 17,917 |
| | 8.89 | 18.11 | 6.42 | 244.2 | 448.1 | 0.131 | 0.5 | 100 | 18,017 |
| 7/26/13 | 8.70 | 12.74 | 2.61 | 158.4 | 367.3 | 0.126 | 67.3 | 107 | 18,124 |
| | 8.97 | 12.80 | 2.54 | 154.3 | 363.2 | 0.145 | 59.1 | 107 | 18,232 |
| | 9.79 | 15.50 | 4.25 | 145.3 | 354.2 | 0.141 | 3.5 | 107 | 18,339 |
| | 9.82 | 15.55 | 4.51 | 159.0 | 367.9 | 0.146 | 4.3 | 107 | 18,447 |
| | 9.36 | 17.69 | 5.93 | 138.3 | 342.2 | 0.134 | 1.5 | 107 | 18,554 |
| | 9.35 | 17.76 | 5.85 | 150.1 | 354.0 | 0.138 | 2.1 | 107 | 18,662 |
| | 9.18 | 17.92 | 6.10 | 143.4 | 347.3 | 0.133 | 2.9 | 107 | 18,769 |
| | 9.23 | 17.98 | 6.03 | 161.0 | 364.9 | 0.137 | 1.4 | 107 | 18,877 |
| | 9.08 | 17.99 | 6.19 | 151.3 | 355.2 | 0.132 | 0.7 | 107 | 18,984 |
| | 9.16 | 18.07 | 6.09 | 157.1 | 361.0 | 0.136 | 1.1 | 107 | 19,091 |
| | 9.03 | 18.02 | 6.23 | 159.8 | 363.7 | 0.131 | 0.7 | 107 | 19,199 |
| | 9.12 | 18.10 | 6.13 | 166.1 | 370.0 | 0.135 | 1.0 | 107 | 19,306 |
| | 8.96 | 18.07 | 6.26 | 175.5 | 379.4 | 0.131 | 0.6 | 107 | 19,414 |
| | 9.09 | 18.16 | 6.17 | 168.8 | 372.7 | 0.134 | 1.1 | 107 | 19,521 |
| | 8.92 | 18.11 | 6.27 | 191.0 | 394.9 | 0.130 | 0.5 | 107 | 19,629 |
| | 9.07 | 18.20 | 6.18 | 170.9 | 374.8 | 0.134 | 0.9 | 107 | 19,736 |
| | 8.87 | 18.11 | 6.30 | 214.4 | 418.3 | 0.130 | 0.5 | 107 | 19,843 |
| | 9.03 | 18.21 | 6.19 | 174.9 | 378.8 | 0.134 | 0.9 | 107 | 19,951 |
| | 8.84 | 18.16 | 6.31 | 230.0 | 433.9 | 0.130 | 0.4 | 107 | 20,058 |
| | 9.01 | 18.24 | 6.20 | 179.3 | 383.2 | 0.134 | 0.9 | 107 | 20,166 |
| | 8.70 | 18.08 | 6.23 | 244.5 | 448.4 | 0.129 | 2.2 | 107 | 20,273 |
| | 8.84 | 18.15 | 6.27 | 244.3 | 448.2 | 0.129 | 1.0 | 107 | 20,381 |
| | 8.74 | 18.06 | 6.31 | 250.6 | 454.5 | 0.129 | 0.7 | 107 | 20,488 |
| | 8.76 | 17.98 | 6.30 | 249.3 | 453.2 | 0.129 | 0.8 | 107 | 20,596 |
| | 8.88 | 17.81 | 6.62 | 254.3 | 458.2 | 0.132 | 20.2 | 107 | 20,703 |
| | 8.79 | 17.80 | 6.69 | 254.5 | 458.4 | 0.129 | 2.7 | 107 | 20,810 |
| | 8.83 | 17.97 | 6.58 | 250.1 | 454.0 | 0.129 | 1.4 | 107 | 20,918 |
| | 8.83 | 18.10 | 6.57 | 247.3 | 451.2 | 0.129 | 1.2 | 107 | 21,025 |
| | 8.84 | 18.36 | 6.53 | 245.7 | 449.6 | 0.129 | 1.1 | 107 | 21,133 |
| | 8.41 | 18.27 | 6.46 | 315.0 | 518.9 | 0.129 | 2.0 | 107 | 21,240 |
| | 8.36 | 18.47 | 6.46 | 324.5 | 528.4 | 0.128 | 1.2 | 107 | 21,348 |
| | 8.17 | 18.16 | 6.45 | 321.4 | 525.3 | 0.128 | 0.8 | 107 | 21,455 |
| | 8.29 | 18.08 | 6.45 | 308.2 | 512.1 | 0.128 | 0.9 | 107 | 21,562 |
| | 8.47 | 18.06 | 6.44 | 294.6 | 498.5 | 0.128 | 0.8 | 107 | 21,670 |
| | 8.51 | 18.00 | 6.44 | 291.1 | 495.0 | 0.128 | 0.6 | 107 | 21,777 |

**Table 2.3-1 (continued)**

| Date | pH | Temp (°C) | Dissolved Oxygen (mg/L) | Oxidation-Reduction Potential (mV) | Eh (mV) | Specific Conductivity (µS/cm) | Turbidity (NTU) | Purge Volume between Samples (gal.) | Cumulative Purge Volume (gal.) |
|---|---|---|---|---|---|---|---|---|---|
| 7/26/13 (cont.) | 8.72 | 17.48 | 6.35 | 263.4 | 472.3 | 0.127 | 1.4 | 107 | 21,885 |
| | 8.76 | 17.61 | 6.36 | 253.3 | 457.2 | 0.127 | 1.1 | 107 | 21,992 |
| | 8.76 | 17.57 | 6.36 | 243.2 | 447.1 | 0.127 | 0.9 | 107 | 22,100 |
| | 8.73 | 17.54 | 6.38 | 240.0 | 443.9 | 0.127 | 0.7 | 107 | 22,207 |
| | 8.79 | 17.56 | 6.36 | 234.8 | 438.7 | 0.127 | 0.7 | 107 | 22,315 |
| | 8.77 | 17.58 | 6.38 | 234.4 | 438.3 | 0.127 | 0.9 | 107 | 22,422 |
| 7/27/13 | 9.08 | 15.72 | 2.47 | 159.6 | 368.5 | 0.128 | 20.2 | 140 | 22,562 |
| | 9.03 | 17.55 | 5.45 | 156.5 | 360.4 | 0.130 | 2.1 | 140 | 22,702 |
| | 9.10 | 18.03 | 5.70 | 165.5 | 369.4 | 0.129 | 1.3 | 140 | 22,842 |
| | 8.99 | 18.08 | 5.85 | 176.6 | 380.5 | 0.129 | 1.0 | 140 | 22,982 |
| | 8.94 | 18.13 | 5.94 | 186.6 | 390.5 | 0.128 | 0.8 | 140 | 23,122 |
| | 8.92 | 18.13 | 5.96 | 189.8 | 393.7 | 0.128 | 0.8 | 140 | 23,262 |
| | 8.75 | 18.28 | 5.93 | 234.7 | 438.6 | 0.128 | 4.5 | 140 | 23,402 |
| | 8.66 | 18.31 | 5.99 | 264.9 | 468.8 | 0.127 | 0.8 | 140 | 23,541 |
| | 8.55 | 18.34 | 6.08 | 292.8 | 496.7 | 0.127 | 0.7 | 140 | 23,681 |
| | 8.42 | 18.32 | 6.13 | 299.2 | 503.1 | 0.127 | 0.8 | 140 | 23,821 |
| | 8.37 | 18.34 | 6.14 | 295.7 | 499.6 | 0.127 | 0.7 | 140 | 23,961 |
| | 8.35 | 18.35 | 6.15 | 295.8 | 499.7 | 0.127 | 0.5 | 140 | 24,101 |
| | 8.49 | 18.46 | 6.01 | 285.7 | 489.6 | 0.127 | 6.2 | 140 | 24,241 |
| | 8.56 | 18.50 | 6.05 | 280.7 | 484.6 | 0.126 | 0.6 | 140 | 24,381 |
| | 8.55 | 18.51 | 6.09 | 281.2 | 485.1 | 0.126 | 0.5 | 140 | 24,521 |
| | 8.59 | 18.49 | 6.12 | 277.4 | 481.3 | 0.126 | 0.4 | 140 | 24,661 |
| | 8.62 | 18.51 | 6.16 | 274.5 | 478.4 | 0.126 | 0.6 | 140 | 24,801 |
| | 8.63 | 18.55 | 6.15 | 273.4 | 477.3 | 0.126 | 0.5 | 140 | 24,941 |
| | 9.12 | 18.27 | 6.60 | 219.5 | 423.4 | 0.135 | 25.1 | 140 | 25,081 |
| | 8.44 | 18.42 | 6.64 | 285.9 | 489.8 | 0.127 | 0.9 | 140 | 25,221 |
| | 8.21 | 18.42 | 6.55 | 299.1 | 503.0 | 0.126 | 0.7 | 140 | 25,361 |
| | 7.90 | 18.39 | 6.48 | 312.0 | 515.9 | 0.126 | 1.1 | 140 | 25,500 |
| | 7.98 | 18.19 | 6.44 | 313.4 | 517.3 | 0.126 | 0.7 | 140 | 25,640 |
| | 8.22 | 18.21 | 6.42 | 295.6 | 499.5 | 0.126 | 0.2 | 140 | 25,780 |
| | 8.42 | 18.05 | 6.43 | 283.5 | 487.4 | 0.126 | 0.4 | 140 | 25,920 |
| | 8.55 | 18.03 | 6.37 | 270.4 | 474.3 | 0.125 | 0.3 | 140 | 26,060 |
| | 8.60 | 18.01 | 6.38 | 261.3 | 465.2 | 0.126 | 0.5 | 140 | 26,200 |
| | 8.60 | 17.91 | 6.36 | 258.4 | 462.3 | 0.125 | 0.6 | 140 | 26,340 |

**Table 2.3-1 (continued)**

| Date | pH | Temp (°C) | Dissolved Oxygen (mg/L) | Oxidation-Reduction Potential (mV) | Eh (mV) | Specific Conductivity (µS/cm) | Turbidity (NTU) | Purge Volume between Samples (gal.) | Cumulative Purge Volume (gal.) |
|---|---|---|---|---|---|---|---|---|---|
| 7/28/13 | 9.05 | 15.47 | 2.53 | 146.3 | 355.2 | 0.127 | 10.9 | 200 | 26,540 |
| | 9.17 | 17.57 | 5.62 | 139.0 | 342.9 | 0.129 | 1.5 | 200 | 26,740 |
| | 8.94 | 17.88 | 5.94 | 145.9 | 349.8 | 0.127 | 0.8 | 200 | 26,941 |
| | 8.84 | 17.99 | 6.03 | 146.4 | 350.3 | 0.126 | 0.6 | 200 | 27,141 |
| | 8.79 | 18.08 | 6.14 | 167.1 | 371.0 | 0.126 | 0.5 | 200 | 27,341 |
| | 8.73 | 18.18 | 6.16 | 188.9 | 392.8 | 0.125 | 0.4 | 200 | 27,541 |
| | 8.72 | 18.23 | 6.19 | 206.9 | 410.8 | 0.125 | 0.5 | 200 | 27,741 |
| | 8.66 | 18.25 | 6.19 | 220.1 | 424.0 | 0.125 | 0.4 | 200 | 27,941 |
| | 8.47 | 17.91 | 6.21 | 248.3 | 452.2 | 0.125 | 0.4 | 200 | 28,142 |
| | 8.62 | 18.09 | 6.22 | 250.5 | 454.4 | 0.125 | 0.4 | 200 | 28,342 |
| | 8.63 | 18.16 | 6.23 | 282.1 | 486.0 | 0.125 | 0.3 | 200 | 28,542 |
| | 8.63 | 18.14 | 6.25 | 259.4 | 463.3 | 0.125 | 0.4 | 200 | 28,742 |
| | 8.62 | 18.16 | 6.25 | 250.4 | 454.3 | 0.125 | 0.4 | 200 | 28,942 |
| | 8.56 | 17.95 | 6.26 | 262.6 | 466.5 | 0.124 | 0.4 | 200 | 29,142 |
| | 8.64 | 18.27 | 6.25 | 263.1 | 467.0 | 0.124 | 0.4 | 200 | 29,343 |
| | 8.56 | 17.94 | 6.28 | 274.7 | 478.6 | 0.124 | 0.4 | 200 | 29,543 |
| | 8.63 | 18.05 | 6.27 | 265.9 | 469.8 | 0.124 | 0.5 | 200 | 29,743 |
| | 8.58 | 17.84 | 6.29 | 261.3 | 465.2 | 0.124 | 0.3 | 200 | 29,943 |
| | 8.61 | 17.84 | 6.30 | 251.8 | 455.7 | 0.124 | 0.4 | 200 | 30,143 |
| | 8.51 | 17.82 | 6.30 | 248.5 | 452.4 | 0.124 | 0.4 | 200 | 30,343 |
| | 8.59 | 17.81 | 6.30 | 244.0 | 447.9 | 0.125 | 0.4 | 200 | 30,544 |
| | 8.60 | 17.91 | 6.29 | 242.1 | 446.0 | 0.124 | 0.4 | 200 | 30,744 |
| | 8.59 | 17.91 | 6.31 | 242.3 | 446.2 | 0.124 | 0.3 | 200 | 30,944 |
| 7/29/13 | 8.95 | 15.44 | 3.11 | 136.9 | 345.8 | 0.126 | 14.4 | 223 | 31,167 |
| | 9.09 | 17.52 | 5.48 | 141.0 | 344.9 | 0.127 | 1.3 | 223 | 31,389 |
| | 8.83 | 17.87 | 5.93 | 142.3 | 346.2 | 0.125 | 0.7 | 223 | 31,612 |
| | 8.75 | 17.98 | 6.04 | 144.9 | 348.8 | 0.125 | 0.5 | 223 | 31,834 |
| 8/17/13 | 8.63 | 16.99 | 7.01 | 182.8 | 391.7 | 0.124 | 1.8 | 3462 | 35,296 |
| | 8.39 | 17.23 | 7.00 | 277.1 | 486.0 | 0.123 | 1.5 | 364 | 35,659 |
| | 8.18 | 17.21 | 7.04 | 350.6 | 559.5 | 0.123 | 1.6 | 364 | 36,023 |
| | 8.45 | 17.15 | 7.01 | 341.2 | 550.1 | 0.123 | 1.4 | 364 | 36,386 |
| | 8.27 | 17.57 | 6.97 | 362.9 | 566.8 | 0.123 | 1.2 | 364 | 36,750 |
| | 7.94 | 17.66 | 7.01 | 405.4 | 609.3 | 0.123 | 1.3 | 364 | 37,113 |
| | 7.57 | 17.57 | 6.99 | 431.6 | 635.5 | 0.122 | 0.5 | 364 | 37,477 |
| | 7.95 | 17.40 | 7.02 | 420.2 | 629.1 | 0.122 | 1.8 | 364 | 37,840 |
| | 8.35 | 17.37 | 7.01 | 375.0 | 583.9 | 0.122 | 1.5 | 364 | 38,204 |
| | 8.40 | 17.19 | 7.03 | 362.7 | 571.6 | 0.122 | 1.5 | 364 | 38,567 |

**Table 2.3-1 (continued)**

| Date | pH | Temp (°C) | Dissolved Oxygen (mg/L) | Oxidation-Reduction Potential (mV) | Eh (mV) | Specific Conductivity (µS/cm) | Turbidity (NTU) | Purge Volume between Samples (gal.) | Cumulative Purge Volume (gal.) |
|---|---|---|---|---|---|---|---|---|---|
| 8/18/13 | 8.36 | 15.94 | 6.82 | 159.6 | 368.5 | 0.123 | 2.3 | 307 | 38,874 |
| | 8.49 | 16.85 | 7.08 | 164.8 | 373.7 | 0.125 | 2.1 | 307 | 39,181 |
| | 8.45 | 17.03 | 7.09 | 213.1 | 422.0 | 0.123 | 2.2 | 307 | 39,488 |
| | 8.37 | 17.15 | 7.10 | 290.0 | 498.9 | 0.122 | 1.8 | 307 | 39,795 |
| | 8.30 | 17.32 | 7.08 | 343.8 | 552.7 | 0.122 | 1.4 | 307 | 40,102 |
| | 8.19 | 17.24 | 7.09 | 379.4 | 588.3 | 0.122 | 1.3 | 307 | 40,408 |
| | 8.20 | 17.20 | 7.08 | 393.5 | 602.4 | 0.123 | 1.6 | 307 | 40,715 |
| | 8.46 | 16.22 | 7.11 | 311.5 | 520.4 | 0.122 | 2.0 | 307 | 41,022 |
| | 8.49 | 17.18 | 7.10 | 291.0 | 499.9 | 0.122 | 1.6 | 307 | 41,329 |
| | 8.44 | 17.20 | 7.09 | 303.9 | 512.8 | 0.121 | 1.5 | 307 | 41,636 |
| | 8.43 | 17.16 | 7.11 | 320.8 | 529.7 | 0.121 | 1.3 | 307 | 41,943 |
| 8/19/13 | 8.36 | 16.11 | 6.82 | 157.2 | 366.1 | 0.123 | 1.7 | 310 | 42,253 |
| | 8.41 | 16.31 | 7.10 | 164.4 | 373.3 | 0.124 | 2.1 | 310 | 42,563 |
| | 8.43 | 17.05 | 7.12 | 186.0 | 394.9 | 0.123 | 2.2 | 310 | 42,873 |
| | 8.41 | 17.22 | 7.14 | 225.5 | 434.4 | 0.122 | 2.2 | 310 | 43,183 |
| | 8.18 | 17.42 | 7.12 | 330.6 | 539.5 | 0.122 | 2.3 | 310 | 43,493 |
| | 7.96 | 17.15 | 7.14 | 401.2 | 610.1 | 0.122 | 2.1 | 310 | 43,803 |
| | 8.24 | 17.20 | 7.15 | 382.7 | 591.6 | 0.121 | 1.9 | 310 | 44,113 |
| | 8.26 | 17.19 | 7.14 | 368.8 | 577.7 | 0.122 | 2.9 | 310 | 44,423 |
| | 8.19 | 17.17 | 7.15 | 388.9 | 597.8 | 0.122 | 1.4 | 310 | 44,733 |
| | 8.20 | 17.33 | 7.14 | 389.1 | 598.0 | 0.121 | 1.2 | 310 | 45,043 |
| | 8.23 | 17.20 | 7.14 | 385.6 | 594.5 | 0.121 | 1.1 | 310 | 45,353 |
| 8/20/13 | 8.44 | 15.94 | 6.85 | 151.1 | 360.0 | 0.123 | 1.7 | 302 | 45,655 |
| | 8.40 | 16.73 | 7.14 | 160.2 | 369.1 | 0.123 | 1.8 | 302 | 45,958 |
| | 8.43 | 16.94 | 7.15 | 172.3 | 381.2 | 0.122 | 2.0 | 302 | 46,260 |
| | 8.42 | 17.14 | 7.18 | 199.3 | 408.2 | 0.122 | 2.0 | 302 | 46,562 |
| | 8.35 | 17.18 | 7.17 | 145.6 | 354.5 | 0.122 | 1.8 | 302 | 46,865 |
| | 8.23 | 17.27 | 7.17 | 294.9 | 503.8 | 0.122 | 1.7 | 302 | 47,167 |
| | 7.86 | 17.34 | 7.17 | 399.8 | 608.7 | 0.122 | 1.8 | 302 | 47,470 |
| | 7.81 | 17.26 | 7.16 | 422.0 | 630.9 | 0.121 | 1.5 | 302 | 47,772 |
| | 8.32 | 15.26 | 7.17 | 194.8 | 403.7 | 0.121 | 1.6 | 302 | 48,074 |
| | 8.39 | 16.99 | 7.17 | 221.9 | 430.8 | 0.122 | 1.7 | 302 | 48,377 |
| | 8.35 | 17.09 | 7.17 | 245.7 | 454.6 | 0.121 | 1.6 | 302 | 48,679 |

**Table 2.3-1 (continued)**

| Date | pH | Temp (°C) | Dissolved Oxygen (mg/L) | Oxidation-Reduction Potential (mV) | Eh (mV) | Specific Conductivity (µS/cm) | Turbidity (NTU) | Purge Volume between Samples (gal.) | Cumulative Purge Volume (gal.) |
|---|---|---|---|---|---|---|---|---|---|
| 8/21/13 | 8.47 | 16.14 | 6.84 | 152.3 | 361.2 | 0.122 | 1.5 | 298 | 48,977 |
| | 8.43 | 16.74 | 7.18 | 167.8 | 376.7 | 0.123 | 1.3 | 298 | 49,276 |
| | 8.41 | 16.91 | 7.18 | 183.5 | 392.4 | 0.122 | 1.4 | 298 | 49,574 |
| | 8.37 | 17.01 | 7.19 | 210.3 | 419.2 | 0.122 | 1.1 | 298 | 49,873 |
| | 8.32 | 17.11 | 7.18 | 257.5 | 466.4 | 0.122 | 1.2 | 298 | 50,171 |
| | 8.23 | 17.13 | 7.19 | 322.1 | 531.0 | 0.122 | 1.1 | 298 | 50,469 |
| | 8.04 | 17.20 | 7.18 | 386.3 | 595.2 | 0.122 | 1.1 | 298 | 50,768 |
| | 8.03 | 17.20 | 7.19 | 403.3 | 612.2 | 0.121 | 1.2 | 298 | 51,066 |

*NTU =Nephelometric turbidity unit.

**Table 4.0-1**
**CdV-R-15-3 Survey Coordinates**

| Identification | Northing | Easting | Elevation |
|---|---|---|---|
| CdV-R-15-3 brass cap embedded in pad | 1762349.41 | 1623220.54 | 7257.94 |
| CdV-R-15-3 ground surface near pad | 1762351.10 | 1623219.41 | 7257.76 |
| CdV-R-15-3 top of stainless-steel well casing | 1762347.58 | 1623221.71 | 7259.41 |
| CdV-R-15-3 top of 10-in. protective casing | 1762347.27 | 1623221.34 | 7261.07 |

Note: All coordinates are expressed as New Mexico State Plane Coordinate System Central Zone (NAD 83); elevation is expressed in feet amsl using the National Geodetic Vertical Datum of 1929.

# Appendix A

*CdV-R-15-3 Indicator Suite and Dedicated Sampling System Equipment Blank Analytical Results*

**Table A-1**
**Well CdV-R-15-3Indicator Suite Analytical Results Using Development Pump**

| Parameter Name | Analytical Method | CAWA-13-36213 07/17/2013 12:25 | CAWA-13-36218 07/17/2013 12:25 | CAWA-13-36214 07/21/2013 14:55 | CAWA-13-36219 07/21/2013 14:55 | CAWA-13-36215 07/21/2013 19:00 | CAWA-13-36220 07/21/2013 19:00 |
|---|---|---|---|---|---|---|---|
| Acidity or Alklalinity of a Solution | EPA:150.1 | 8.33 SU[a] | —[b] | 10.2 SU | — | 9.50 SU | — |
| Alkalinity-$CO_3$ | EPA:310.1 | 7.29 mg/L | — | 75.2 mg/L | — | 38.8 mg/L | — |
| Alkalinity-$CO^3$+$HCO_3$ | EPA:310.1 | 85.2 mg/L | — | 14.1 mg/L | — | 28.7 mg/L | — |
| Aluminum | EPA:200.7 | — | 1 µg/L (U) | — | 1 µg/L (U) | — | 1 µg/L (U) |
| Antimony | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | — | 1 µg/L (U) |
| Arsenic | EPA:200.8 | — | 1.26 µg/L | — | 0.62 µg/L | — | 0.78 µg/L |
| Barium | EPA:200.7 | — | 173 µg/L | — | 41.2 µg/L | — | 34.4 µg/L |
| Beryllium | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | — | 1 µg/L (U) |
| Boron | EPA:200.7 | — | 16.7 µg/L | — | 6.67 µg/L | — | 8.39 µg/L |
| Bromide | EPA:300.0 | 0.01 mg/L (U) | — | 0.01 mg/L (U) | — | 0.01 mg/L (U) | — |
| Cadmium | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | — | 1 µg/L (U) |
| Calcium | EPA:200.7 | — | 14.5 mg/L | — | 20 mg/L | — | 10.9 mg/L |
| Cesium | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | — | 1 µg/L (U) |
| Chloride | EPA:300.0 | 1.58 mg/L | — | 1.8 mg/L | — | 1.65 mg/L | — |
| Chromium | EPA:200.8 | — | 6.38 µg/L | — | 6.98 µg/L | — | 5.04 µg/L |
| Cobalt | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | — | 1 µg/L (U) |
| Copper | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | — | 1 µg/L (U) |
| Fluoride | EPA:300.0 | 0.132 mg/L | — | 0.188 mg/L | — | 0.184 mg/L | — |
| Iron | EPA:200.7 | — | 288 µg/L | — | 10 µg/L (U) | — | 10 µg/L (U) |
| Lead | EPA:200.8 | — | 0.75 µg/L | — | 0.2 µg/L (U) | — | 0.2 µg/L (U) |
| Lithium | EPA:200.7 | — | 21.3 µg/L | — | 20.6 µg/L | — | 20.7 µg/L |
| Magnesium | EPA:200.7 | — | 3.36 mg/L | — | 1.77 mg/L | — | 2.33 mg/L |
| Manganese | EPA:200.7 | — | 1.02 µg/L | — | 1 µg/L (U) | — | 1 µg/L (U) |
| Mercury | EPA:200.8 | — | 0.05 µg/L (U) | — | 0.05 µg/L (U) | — | 0.05 µg/L (U) |

**Table A-1 (cont.)**

| Parameter Name | Analytical Method | CAWA-13-36213 07/17/2013 12:25 | CAWA-13-36218 07/17/2013 12:25 | CAWA-13-36214 07/21/2013 14:55 | CAWA-13-36219 07/21/2013 14:55 | CAWA-13-36215 07/21/2013 19:00 | CAWA-13-36220 07/21/2013 19:00 |
|---|---|---|---|---|---|---|---|
| Molybdenum | EPA:200.8 | — | 1.65 µg/L | — | 4.76 µg/L | — | 2.8 µg/L |
| Nickel | EPA:200.8 | — | 1 µg/L (U) | — | 1.02 µg/L | — | 1 µg/L (U) |
| Nitrate | EPA:300.0 | 1.31 mg/L | — | 1.39 mg/L | — | 1.35 mg/L | — |
| Nitrite | EPA:300.0 | 0.0384 mg/L | — | 0.01 mg/L (U) | — | 0.01 mg/L (U) | — |
| Oxalate | EPA:300.0 | 0.01 mg/L (U) | — | 0.01 mg/L (U) | — | 0.01 mg/L (U) | — |
| Phosphorus, Orthophosphate (Expressed as $PO_4$) | EPA:300.0 | 0.01 mg/L (U) | — | 0.01 mg/L (U) | — | 0.01 mg/L (U) | — |
| Potassium | EPA:200.7 | — | 3.39 mg/L | — | 3.63 mg/L | — | 2.46 mg/L |
| Selenium | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | — | 1 µg/L (U) |
| Silicon Dioxide | EPA:200.7 | — | 64.8 mg/L | — | 60.7 mg/L | — | 64.5 mg/L |
| Silver | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | — | 1 µg/L (U) |
| Sodium | EPA:200.7 | — | 10.4 mg/L | — | 11.2 mg/L | — | 10.2 mg/L |
| Strontium | EPA:200.7 | — | 59.2 µg/L | — | 94.7 µg/L | — | 64.3 µg/L |
| Sulfate | EPA:300.0 | 2.8 mg/L | — | 12.9 mg/L | — | 5.75 mg/L | — |
| Thallium | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | — | 1 µg/L (U) |
| Tin | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | — | 1 µg/L (U) |
| Titanium | EPA:200.7 | — | 2 µg/L (U) | — | 2 µg/L (U) | — | 2 µg/L (U) |
| Total Organic Carbon | SW-846:9060 | 0.257 mg/L | — | 0.778 mg/L | — | 0.2 mg/L (U) | — |
| Uranium | EPA:200.8 | — | 0.64 µg/L | — | 0.2 µg/L (U) | — | 0.46 µg/L |
| Vanadium | EPA:200.8 | — | 3.46 µg/L | — | 4.69 µg/L | — | 4.79 µg/L |
| Zinc | EPA:200.7 | — | 34.6 µg/L | — | 9.35 µg/L | — | 12.6 µg/L |

**Table A-1 (cont.)**

| Parameter Name | Analytical Method | CAWA-13-36216 07/22/2013 15:00 | CAWA-13-36221 07/22/2013 15:00 | CAWA-13-36217 07/24/2013 12:15 | CAWA-13-36222 07/24/2013 12:15 | CAWA-13-39336 07/25/2013 18:35 | CAWA-13-39341 07/25/2013 18:35 |
|---|---|---|---|---|---|---|---|
| Acidity or Alklalinity of a solution | EPA:150.1 | 9.39 SU | — | 9.28 SU | — | — | 8.80 SU |
| Alkalinity-$CO_3$ | EPA:310.1 | 34.4 mg/L | — | 33.6 mg/L | — | — | 14.2 mg/L |
| Alkalinity-$CO^3$+$HCO_3$ | EPA:310.1 | 46.2 mg/L | — | 63.5 mg/L | — | — | 84.3 mg/L |
| Aluminum | EPA:200.7 | — | 1 µg/L (U) | — | 1 µg/L (U) | 123 µg/L | — |
| Antimony | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | 1 µg/L (U) | — |
| Arsenic | EPA:200.8 | — | 0.76 µg/L | — | 0.92 µg/L | 0.6 µg/L | — |
| Barium | EPA:200.7 | — | 127 µg/L | — | 191 µg/L | 210 µg/L | — |
| Beryllium | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | 1 µg/L (U) | — |
| Boron | EPA:200.7 | — | 11.4 µg/L | — | 24.3 µg/L | 65.3 µg/L | — |
| Bromide | EPA:300.0 | 0.01 mg/L (U) | — | 0.01 mg/L (U) | — | — | 0.01 mg/L (U) |
| Cadmium | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | 1 µg/L (U) | — |
| Calcium | EPA:200.7 | — | 12.6 mg/L | — | 19.2 mg/L | 14.4 mg/L | — |
| Cesium | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | 1 µg/L (U) | — |
| Chloride | EPA:300.0 | 1.6 mg/L | — | 1.51 mg/L | — | — | 1.45 mg/L |
| Chromium | EPA:200.8 | — | 4.45 µg/L | — | 4.44 µg/L | 5.12 µg/L | — |
| Cobalt | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | 1 µg/L (U) | — |
| Copper | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | 1.73 µg/L | — |
| Fluoride | EPA:300.0 | 0.169 mg/L | — | 0.161 mg/L | — | — | 0.139 mg/L |
| Iron | EPA:200.7 | — | 10.3 µg/L | — | 21.6 µg/L | 108 µg/L | — |
| Lead | EPA:200.8 | — | 0.2 µg/L (U) | — | 0.2 µg/L (U) | 0.2 µg/L (U) | — |
| Lithium | EPA:200.7 | — | 19.8 µg/L | — | 19.2 µg/L | 15.4 µg/L | — |
| Magnesium | EPA:200.7 | — | 2.44 mg/L | — | 2.89 mg/L | 3.12 mg/L | — |
| Manganese | EPA:200.7 | — | 1 µg/L (U) | — | 1 µg/L (U) | 2.54 µg/L | — |
| Mercury | EPA:200.8 | — | 0.05 µg/L (U) | — | 0.05 µg/L (U) | 0.05 µg/L (U) | — |
| Molybdenum | EPA:200.8 | — | 1.92 µg/L | — | 1 µg/L (U) | 1 µg/L (U) | — |

**Table A-1 (cont.)**

| Parameter Name | Analytical Method | CAWA-13-36216 07/22/2013 15:00 | CAWA-13-36221 07/22/2013 15:00 | CAWA-13-36217 07/24/2013 12:15 | CAWA-13-36222 07/24/2013 12:15 | CAWA-13-39336 07/25/2013 18:35 | CAWA-13-39341 07/25/2013 18:35 |
|---|---|---|---|---|---|---|---|
| Nickel | EPA:200.8 | — | 1 µg/L (U) | — | 1.13 µg/L | 1 µg/L (U) | — |
| Nitrate | EPA:300.0 | 1.4 mg/L | — | 1.34 mg/L | — | — | 1.38 mg/L |
| Nitrite | EPA:300.0 | 0.01 mg/L (U) | — | 0.01 mg/L (U) | — | — | 0.0683 mg/L |
| Oxalate | EPA:300.0 | 0.01 mg/L (U) | — | 0.01 mg/L (U) | — | — | 0.01 mg/L (U) |
| Phosphorus, Orthophosphate (Expressed as $PO_4$) | EPA:300.0 | 0.01 mg/L (U) | — | 0.01 mg/L (U) | — | — | 0.01 mg/L (U) |
| Potassium | EPA:200.7 | — | 2.11 mg/L | — | 1.61 mg/L | 1.35 mg/L | — |
| Selenium | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | 1 µg/L (U) | — |
| Silicon Dioxide | EPA:200.7 | — | 65 mg/L | — | 64.6 mg/L | 60 mg/L | — |
| Silver | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | 1 µg/L (U) | — |
| Sodium | EPA:200.7 | — | 10.4 mg/L | — | 10.2 mg/L | 11 mg/L | — |
| Strontium | EPA:200.7 | — | 64.2 µg/L | — | 67.7 µg/L | 59.8 µg/L | — |
| Sulfate | EPA:300.0 | 4.15 mg/L | — | 3.16 mg/L | — | — | 2.43 mg/L |
| Thallium | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | 1 µg/L (U) | — |
| Tin | EPA:200.8 | — | 1 µg/L (U) | — | 1 µg/L (U) | 1 µg/L (U) | — |
| Titanium | EPA:200.7 | — | 2 µg/L (U) | — | 2 µg/L (U) | 2 µg/L (U) | — |
| Total Organic Carbon | SW-846:9060 | 0.2 mg/L (U) | — | 0.2 mg/L (U) | — | — | 0.2 mg/L (U) |
| Uranium | EPA:200.8 | — | 0.48 µg/L | — | 0.51 µg/L | 0.38 µg/L | — |
| Vanadium | EPA:200.8 | — | 4.44 µg/L | — | 4.84 µg/L | 4.25 µg/L | — |
| Zinc | EPA:200.7 | — | 14.8 µg/L | — | 19.3 µg/L | 6.42 µg/L | — |

**Table A-1 (cont.)**

| Parameter Name | Analytical Method | CAWA-13-36213 07/17/2013 12:25 | CAWA-13-36214 07/21/2013 14:55 | CAWA-13-36215 07/21/2013 19:00 | CAWA-13-36216 07/22/2013 15:00 | CAWA-13-36217 07/24/2013 12:15 | CAWA-13-39341 07/25/2013 18:35 |
|---|---|---|---|---|---|---|---|
| 2,4-Diamino-6-nitrotoluene | SW-846:8321A_MOD | 2.65 µg/L (U) | 2.59 µg/L (U) | 2.59 µg/L (U) | 2.7 µg/L (U) | 2.72 µg/L (U) | 2.75 µg/L (U) |
| 2,6-Diamino-4-nitrotoluene | SW-846:8321A_MOD | 2.65 µg/L (U) | 2.59 µg/L (U) | 2.59 µg/L (U) | 2.7 µg/L (U) | 2.72 µg/L (U) | 2.75 µg/L (U) |
| 3,5-Dinitroaniline | SW-846:8321A_MOD | 1.06 µg/L (U) | 1.04 µg/L (U) | 1.04 µg/L (U) | 1.08 µg/L (U) | 1.09 µg/L (U) | 1.1 µg/L (U) |
| Acenaphthene | SW-846:8270C | — | — | — | — | — | — |
| Acenaphthylene | SW-846:8270C | — | — | — | — | — | — |
| Acetone | SW-846:8260B | — | — | — | — | — | — |
| Acetonitrile | SW-846:8260B | — | — | — | — | — | — |
| Acrolein | SW-846:8260B | — | — | — | — | — | — |
| Acrylonitrile | SW-846:8260B | — | — | — | — | — | — |
| Amino-2,6-dinitrotoluene[4-] | SW-846:8321A_MOD | 0.265 µg/L (U) | 0.259 µg/L (U) | 0.259 µg/L (U) | 0.27 µg/L (U) | 0.272 µg/L (U) | 0.275 µg/L (U) |
| Amino-4,6-dinitrotoluene[2-] | SW-846:8321A_MOD | 0.265 µg/L (U) | 0.259 µg/L (U) | 0.259 µg/L (U) | 0.27 µg/L (U) | 0.272 µg/L (U) | 0.275 µg/L (U) |
| Aniline | SW-846:8270C | — | — | — | — | — | — |
| Anthracene | SW-846:8270C | — | — | — | — | — | — |
| Atrazine | SW-846:8270C | — | — | — | — | — | — |
| Azobenzene | SW-846:8270C | — | — | — | — | — | — |
| Benzene | SW-846:8260B | — | — | — | — | — | — |
| Benzidine | SW-846:8270C | — | — | — | — | — | — |
| Benzo(a)anthracene | SW-846:8270C | — | — | — | — | — | — |
| Benzo(a)pyrene | SW-846:8270C | — | — | — | — | — | — |
| Benzo(b)fluoranthene | SW-846:8270C | — | — | — | — | — | — |
| Benzo(g,h,i)perylene | SW-846:8270C | — | — | — | — | — | — |
| Benzo(k)fluoranthene | SW-846:8270C | — | — | — | — | — | — |
| Benzoic Acid | SW-846:8270C | — | — | — | — | — | — |
| Benzyl Alcohol | SW-846:8270C | — | — | — | — | — | — |
| Bis(2-chloroethoxy)methane | SW-846:8270C | — | — | — | — | — | — |

**Table A-1 (cont.)**

| Parameter Name | Analytical Method | CAWA-13-36213 07/17/2013 12:25 | CAWA-13-36214 07/21/2013 14:55 | CAWA-13-36215 07/21/2013 19:00 | CAWA-13-36216 07/22/2013 15:00 | CAWA-13-36217 07/24/2013 12:15 | CAWA-13-39341 07/25/2013 18:35 |
|---|---|---|---|---|---|---|---|
| Bis(2-chloroethyl)ether | SW-846:8270C | — | — | — | — | — | — |
| Bis(2-ethylhexyl)phthalate | SW-846:8270C | — | — | — | — | — | — |
| Bromobenzene | SW-846:8260B | — | — | — | — | — | — |
| Bromochloromethane | SW-846:8260B | — | — | — | — | — | — |
| Bromodichloromethane | SW-846:8260B | — | — | — | — | — | — |
| Bromoform | SW-846:8260B | — | — | — | — | — | — |
| Bromomethane | SW-846:8260B | — | — | — | — | — | — |
| Bromophenyl-phenylether[4-] | SW-846:8270C | — | — | — | — | — | — |
| Butanol[1-] | SW-846:8260B | — | — | — | — | — | — |
| Butanone[2-] | SW-846:8260B | — | — | — | — | — | — |
| Butylbenzene[n-] | SW-846:8260B | — | — | — | — | — | — |
| Butylbenzene[sec-] | SW-846:8260B | — | — | — | — | — | — |
| Butylbenzene[tert-] | SW-846:8260B | — | — | — | — | — | — |
| Butylbenzylphthalate | SW-846:8270C | — | — | — | — | — | — |
| Carbon Disulfide | SW-846:8260B | — | — | — | — | — | — |
| Carbon Tetrachloride | SW-846:8260B | — | — | — | — | — | — |
| Chloro-1,3-butadiene[2-] | SW-846:8260B | — | — | — | — | — | — |
| Chloro-1-propene[3-] | SW-846:8260B | — | — | — | — | — | — |
| Chloro-3-methylphenol[4-] | SW-846:8270C | — | — | — | — | — | — |
| Chloroaniline[4-] | SW-846:8270C | — | — | — | — | — | — |
| Chlorobenzene | SW-846:8260B | — | — | — | — | — | — |
| Chlorodibromomethane | SW-846:8260B | — | — | — | — | — | — |
| Chloroethane | SW-846:8260B | — | — | — | — | — | — |
| Chloroform | SW-846:8260B | — | — | — | — | — | — |
| Chloromethane | SW-846:8260B | — | — | — | — | — | — |
| Chloronaphthalene[2-] | SW-846:8270C | — | — | — | — | — | — |

**Table A-1 (cont.)**

| Parameter Name | Analytical Method | CAWA-13-36213 07/17/2013 12:25 | CAWA-13-36214 07/21/2013 14:55 | CAWA-13-36215 07/21/2013 19:00 | CAWA-13-36216 07/22/2013 15:00 | CAWA-13-36217 07/24/2013 12:15 | CAWA-13-39341 07/25/2013 18:35 |
|---|---|---|---|---|---|---|---|
| Chlorophenol[2-] | SW-846:8270C | — | — | — | — | — | — |
| Chlorophenyl-phenyl[4-] Ether | SW-846:8270C | — | — | — | — | — | — |
| Chlorotoluene[2-] | SW-846:8260B | — | — | — | — | — | — |
| Chlorotoluene[4-] | SW-846:8260B | — | — | — | — | — | — |
| Chrysene | SW-846:8270C | — | — | — | — | — | — |
| Dibenz(a,h)anthracene | SW-846:8270C | — | — | — | — | — | — |
| Dibenzofuran | SW-846:8270C | — | — | — | — | — | — |
| Dibromo-3-Chloropropane[1,2-] | SW-846:8260B | — | — | — | — | — | — |
| Dibromoethane[1,2-] | SW-846:8260B | — | — | — | — | — | — |
| Dibromomethane | SW-846:8260B | — | — | — | — | — | — |
| Dichlorobenzene[1,2-] | SW-846:8260B | — | — | — | — | — | — |
| Dichlorobenzene[1,2-] | SW-846:8270C | — | — | — | — | — | — |
| Dichlorobenzene[1,3-] | SW-846:8260B | — | — | — | — | — | — |
| Dichlorobenzene[1,3-] | SW-846:8270C | — | — | — | — | — | — |
| Dichlorobenzene[1,4-] | SW-846:8260B | — | — | — | — | — | — |
| Dichlorobenzene[1,4-] | SW-846:8270C | — | — | — | — | — | — |
| Dichlorobenzidine[3,3'-] | SW-846:8270C | — | — | — | — | — | — |
| Dichlorodifluoromethane | SW-846:8260B | — | — | — | — | — | — |
| Dichloroethane[1,1-] | SW-846:8260B | — | — | — | — | — | — |
| Dichloroethane[1,2-] | SW-846:8260B | — | — | — | — | — | — |
| Dichloroethene[1,1-] | SW-846:8260B | — | — | — | — | — | — |
| Dichloroethene[cis-1,2-] | SW-846:8260B | — | — | — | — | — | — |
| Dichloroethene[trans-1,2-] | SW-846:8260B | — | — | — | — | — | — |
| Dichlorophenol[2,4-] | SW-846:8270C | — | — | — | — | — | — |
| Dichloropropane[1,2-] | SW-846:8260B | — | — | — | — | — | — |
| Dichloropropane[1,3-] | SW-846:8260B | — | — | — | — | — | — |

**Table A-1 (cont.)**

| Parameter Name | Analytical Method | CAWA-13-36213 07/17/2013 12:25 | CAWA-13-36214 07/21/2013 14:55 | CAWA-13-36215 07/21/2013 19:00 | CAWA-13-36216 07/22/2013 15:00 | CAWA-13-36217 07/24/2013 12:15 | CAWA-13-39341 07/25/2013 18:35 |
|---|---|---|---|---|---|---|---|
| Dichloropropane[2,2-] | SW-846:8260B | — | — | — | — | — | — |
| Dichloropropene[1,1-] | SW-846:8260B | — | — | — | — | — | — |
| Dichloropropene[cis-1,3-] | SW-846:8260B | — | — | — | — | — | — |
| Dichloropropene[trans-1,3-] | SW-846:8260B | — | — | — | — | — | — |
| Diethyl Ether | SW-846:8260B | — | — | — | — | — | — |
| Diethylphthalate | SW-846:8270C | — | — | — | — | — | — |
| Dimethyl Phthalate | SW-846:8270C | — | — | — | — | — | — |
| Dimethylphenol[2,4-] | SW-846:8270C | — | — | — | — | — | — |
| Di-n-butylphthalate | SW-846:8270C | — | — | — | — | — | — |
| Dinitro-2-methylphenol[4,6-] | SW-846:8270C | — | — | — | — | — | — |
| Dinitrobenzene[1,3-] | SW-846:8321A_MOD | 0.265 µg/L (U) | 0.259 µg/L (U) | 0.259 µg/L (U) | 0.27 µg/L (U) | 0.272 µg/L (U) | 0.275 µg/L (U) |
| Dinitrophenol[2,4-] | SW-846:8270C | — | — | — | — | — | — |
| Dinitrotoluene[2,4-] | SW-846:8270C | — | — | — | — | — | — |
| Dinitrotoluene[2,4-] | SW-846:8321A_MOD | 0.265 µg/L (U) | 0.259 µg/L (U) | 0.259 µg/L (U) | 0.27 µg/L (U) | 0.272 µg/L (U) | 0.275 µg/L (U) |
| Dinitrotoluene[2,6-] | SW-846:8270C | — | — | — | — | — | — |
| Dinitrotoluene[2,6-] | SW-846:8321A_MOD | 0.265 µg/L (U) | 0.259 µg/L (U) | 0.259 µg/L (U) | 0.27 µg/L (U) | 0.272 µg/L (U) | 0.275 µg/L (U) |
| Di-n-octylphthalate | SW-846:8270C | — | — | — | — | — | — |
| Dinoseb | SW-846:8270C | — | — | — | — | — | — |
| Dioxane[1,4-] | SW-846:8270C | — | — | — | — | — | — |
| Diphenylamine | SW-846:8270C | — | — | — | — | — | — |
| Ethyl Methacrylate | SW-846:8260B | — | — | — | — | — | — |
| Ethylbenzene | SW-846:8260B | — | — | — | — | — | — |
| Fluoranthene | SW-846:8270C | — | — | — | — | — | — |
| Fluorene | SW-846:8270C | — | — | — | — | — | — |
| Hexachlorobenzene | SW-846:8270C | — | — | — | — | — | — |
| Hexachlorobutadiene | SW-846:8260B | — | — | — | — | — | — |

**Table A-1 (cont.)**

| Parameter Name | Analytical Method | CAWA-13-36213 07/17/2013 12:25 | CAWA-13-36214 07/21/2013 14:55 | CAWA-13-36215 07/21/2013 19:00 | CAWA-13-36216 07/22/2013 15:00 | CAWA-13-36217 07/24/2013 12:15 | CAWA-13-39341 07/25/2013 18:35 |
|---|---|---|---|---|---|---|---|
| Hexachlorobutadiene | SW-846:8270C | — | — | — | — | — | — |
| Hexachlorocyclopentadiene | SW-846:8270C | — | — | — | — | — | — |
| Hexachloroethane | SW-846:8270C | — | — | — | — | — | — |
| Hexanone[2-] | SW-846:8260B | — | — | — | — | — | — |
| HMX | SW-846:8321A_MOD | 0.265 µg/L (U) | 0.259 µg/L (U) | 0.259 µg/L (U) | 0.27 µg/L (U) | 0.272 µg/L (U) | 0.275 µg/L (U) |
| Indeno(1,2,3-cd)pyrene | SW-846:8270C | | | | | | |
| Iodomethane | SW-846:8260B | — | — | — | — | — | — |
| Isobutyl alcohol | SW-846:8260B | — | — | — | — | — | — |
| Isophorone | SW-846:8270C | — | — | — | — | — | — |
| Isopropylbenzene | SW-846:8260B | — | — | — | — | — | — |
| Isopropyltoluene[4-] | SW-846:8260B | — | — | — | — | — | — |
| Methacrylonitrile | SW-846:8260B | — | — | — | — | — | — |
| Methyl Methacrylate | SW-846:8260B | — | — | — | — | — | — |
| Methyl tert-Butyl Ether | SW-846:8260B | — | — | — | — | — | — |
| Methyl-2-pentanone[4-] | SW-846:8260B | — | — | — | — | — | — |
| Methylene Chloride | SW-846:8260B | — | — | — | — | — | — |
| Methylnaphthalene[1-] | SW-846:8270C | — | — | — | — | — | — |
| Methylnaphthalene[2-] | SW-846:8270C | — | — | — | — | — | — |
| Methylphenol[2-] | SW-846:8270C | — | — | — | — | — | — |
| Methylphenol[4-] | SW-846:8270C | — | — | — | — | — | — |
| Naphthalene | SW-846:8260B | — | — | — | — | — | — |
| Naphthalene | SW-846:8270C | — | — | — | — | — | — |
| Nitroaniline[2-] | SW-846:8270C | — | — | — | — | — | — |
| Nitroaniline[3-] | SW-846:8270C | — | — | — | — | — | — |
| Nitroaniline[4-] | SW-846:8270C | — | — | — | — | — | — |
| Nitrobenzene | SW-846:8270C | — | — | — | — | — | — |

**Table A-1 (cont.)**

| Parameter Name | Analytical Method | CAWA-13-36213 07/17/2013 12:25 | CAWA-13-36214 07/21/2013 14:55 | CAWA-13-36215 07/21/2013 19:00 | CAWA-13-36216 07/22/2013 15:00 | CAWA-13-36217 07/24/2013 12:15 | CAWA-13-39341 07/25/2013 18:35 |
|---|---|---|---|---|---|---|---|
| Nitrobenzene | SW-846:8321A_MOD | 0.265 µg/L (U) | 0.259 µg/L (U) | 0.259 µg/L (U) | 0.27 µg/L (U) | 0.272 µg/L (U) | 0.275 µg/L (U) |
| Nitrophenol[2-] | SW-846:8270C | — | — | — | — | — | — |
| Nitrophenol[4-] | SW-846:8270C | — | — | — | — | — | — |
| Nitrosodiethylamine[N-] | SW-846:8270C | — | — | — | — | — | — |
| Nitrosodimethylamine[N-] | SW-846:8270C | — | — | — | — | — | — |
| Nitroso-di-n-butylamine[N-] | SW-846:8270C | — | — | — | — | — | — |
| Nitroso-di-n-propylamine[N-] | SW-846:8270C | — | — | — | — | — | — |
| Nitrosopyrrolidine[N-] | SW-846:8270C | — | — | — | — | — | — |
| Nitrotoluene[2-] | SW-846:8321A_MOD | 0.265 µg/L (U) | 0.259 µg/L (U) | 0.259 µg/L (U) | 0.27 µg/L (U) | 0.272 µg/L (U) | 0.275 µg/L (U) |
| Nitrotoluene[3-] | SW-846:8321A_MOD | 0.265 µg/L (U) | 0.259 µg/L (U) | 0.259 µg/L (U) | 0.27 µg/L (U) | 0.272 µg/L (U) | 0.275 µg/L (U) |
| Nitrotoluene[4-] | SW-846:8321A_MOD | 0.529 µg/L (U) | 0.518 µg/L (U) | 0.518 µg/L (U) | 0.541 µg/L (U) | 0.543 µg/L (U) | 0.549 µg/L (U) |
| Oxybis(1-chloropropane)[2,2'-] | SW-846:8270C | — | — | — | — | — | — |
| Pentachlorobenzene | SW-846:8270C | — | — | — | — | — | — |
| Pentachlorophenol | SW-846:8270C | — | — | — | — | — | — |
| PETN | SW-846:8321A_MOD | 0.529 µg/L (U) | 0.518 µg/L (U) | 0.518 µg/L (U) | 0.541 µg/L (U) | 0.543 µg/L (U) | 0.549 µg/L (U) |
| Phenanthrene | SW-846:8270C | — | — | — | — | — | — |
| Phenol | SW-846:8270C | — | — | — | — | — | — |
| Propionitrile | SW-846:8260B | — | — | — | — | — | — |
| Propylbenzene[1-] | SW-846:8260B | — | — | — | — | — | — |
| Pyrene | SW-846:8270C | — | — | — | — | — | — |
| Pyridine | SW-846:8270C | — | — | — | — | — | — |
| RDX | SW-846:8321A_MOD | 0.116 µg/L (J) | 0.259 µg/L (U) | 0.259 µg/L (U) | 0.27 µg/L (U) | 0.272 µg/L (U) | 0.275 µg/L (U) |
| Styrene | SW-846:8260B | — | — | — | — | — | — |
| TATB | SW-846:8321A_MOD | 1.06 µg/L (U) | 1.04 µg/L (U) | 1.04 µg/L (U) | 1.08 µg/L (U) | 1.09 µg/L (U) | 1.1 µg/L (U) |
| Tetrachlorobenzene[1,2,4,5] | SW-846:8270C | — | — | — | — | — | — |
| Tetrachloroethane[1,1,1,2-] | SW-846:8260B | — | — | — | — | — | — |

**Table A-1 (cont.)**

| Parameter Name | Analytical Method | CAWA-13-36213 07/17/2013 12:25 | CAWA-13-36214 07/21/2013 14:55 | CAWA-13-36215 07/21/2013 19:00 | CAWA-13-36216 07/22/2013 15:00 | CAWA-13-36217 07/24/2013 12:15 | CAWA-13-39341 07/25/2013 18:35 |
|---|---|---|---|---|---|---|---|
| Tetrachloroethane[1,1,2,2-] | SW-846:8260B | — | — | — | — | — | — |
| Tetrachloroethene | SW-846:8260B | — | — | — | — | — | — |
| Tetrachlorophenol[2,3,4,6-] | SW-846:8270C | — | — | — | — | — | — |
| Tetryl | SW-846:8321A_MOD | 0.529 µg/L (U) | 0.518 µg/L (U) | 0.518 µg/L (U) | 0.541 µg/L (U) | 0.543 µg/L (U) | 0.549 µg/L (U) |
| Toluene | SW-846:8260B | — | — | — | — | — | — |
| Trichloro-1,2,2-trifluoroethane[1,1,2-] | SW-846:8260B | — | — | — | — | — | — |
| Trichlorobenzene[1,2,3-] | SW-846:8260B | — | — | — | — | — | — |
| Trichlorobenzene[1,2,4-] | SW-846:8260B | — | — | — | — | — | — |
| Trichlorobenzene[1,2,4-] | SW-846:8270C | — | — | — | — | — | — |
| Trichloroethane[1,1,1-] | SW-846:8260B | — | — | — | — | — | — |
| Trichloroethane[1,1,2-] | SW-846:8260B | — | — | — | — | — | — |
| Trichloroethene | SW-846:8260B | — | — | — | — | — | — |
| Trichlorofluoromethane | SW-846:8260B | — | — | — | — | — | — |
| Trichlorophenol[2,4,5-] | SW-846:8270C | — | — | — | — | — | — |
| Trichlorophenol[2,4,6-] | SW-846:8270C | — | — | — | — | — | — |
| Trichloropropane[1,2,3-] | SW-846:8260B | — | — | — | — | — | — |
| Trimethylbenzene[1,2,4-] | SW-846:8260B | — | — | — | — | — | — |
| Trimethylbenzene[1,3,5-] | SW-846:8260B | — | — | — | — | — | — |
| Trinitrobenzene[1,3,5-] | SW-846:8321A_MOD | 0.265 µg/L (U) | 0.259 µg/L (U) | 0.259 µg/L (U) | 0.27 µg/L (U) | 0.272 µg/L (U) | 0.275 µg/L (U) |

**Table A-1 (cont.)**

| Parameter Name | Analytical Method | CAWA-13-36213 07/17/2013 12:25 | CAWA-13-36214 07/21/2013 14:55 | CAWA-13-36215 07/21/2013 19:00 | CAWA-13-36216 07/22/2013 15:00 | CAWA-13-36217 07/24/2013 12:15 | CAWA-13-39341 07/25/2013 18:35 |
|---|---|---|---|---|---|---|---|
| Trinitrotoluene[2,4,6-] | SW-846:8321A_MOD | 0.265 µg/L (U) | 0.259 µg/L (U) | 0.259 µg/L (U) | 0.27 µg/L (U) | 0.272 µg/L (U) | 0.275 µg/L (U) |
| Tris (o-cresyl) phosphate | SW-846:8321A_MOD | 1.06 µg/L (U) | 1.04 µg/L (U) | 1.04 µg/L (U) | 1.08 µg/L (U) | 1.09 µg/L (U) | 1.1 µg/L (U) |
| Vinyl acetate | SW-846:8260B | — | — | — | — | — | — |
| Vinyl Chloride | SW-846:8260B | — | — | — | — | — | — |
| Xylene[1,2-] | SW-846:8260B | — | — | — | — | — | — |
| Xylene[1,3-]+Xylene[1,4-] | SW-846:8260B | — | — | — | — | — | — |

Notes: U = The analyte was analyzed for but was not detected. J = The analyte was positively identified, and the associated numerical value is estimated to be more uncertain than would normally be expected for that analysis.

[a] SU = Standard unit.

[b] — = Not analyzed.

**Table A-2**
**Well CdV-R-15-3 Indicator Suite Analytical Results for Extended Development Using Dedicated Sampling System**

| Parameter Name | Analytical Method | CAWA-13-39409 07/29/2013 14:40 | CAWA-13-40545 08/16/2013 9:48 | CAWA-13-40546 08/16/2013 11:18 | CAWA-13-40547 08/16/2013 12:48 | CAWA-13-40548 08/16/2013 14:18 | CAWA-13-40549 08/16/2013 15:48 |
|---|---|---|---|---|---|---|---|
| Acidity or Alklalinity of a solution | EPA:150.1 | 8.71 SU | —* | — | — | — | — |
| Alkalinity-$CO_3$ | EPA:310.1 | 17.1 mg/L | — | — | — | — | — |
| Alkalinity-$CO_3$+$HCO_3$ | EPA:310.1 | 69 mg/L | — | — | — | — | — |
| Aluminum | EPA:200.7 | 6.57 µg/L | 9.61 µg/L | 15.7 µg/L | 20.7 µg/L | 18.7 µg/L | 17.4 µg/L |
| Antimony | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Arsenic | EPA:200.8 | 0.8 µg/L | 0.91 µg/L | 0.93 µg/L | 0.92 µg/L | 0.83 µg/L | 0.8 µg/L |
| Barium | EPA:200.7 | 387 µg/L | 20.2 µg/L | 20.2 µg/L | 20 µg/L | 20.1 µg/L | 20.4 µg/L |
| Beryllium | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Boron | EPA:200.7 | 59.3 µg/L | 29.9 µg/L | 18 µg/L | 13.6 µg/L | 10 µg/L | 9.13 µg/L |
| Bromide | EPA:300.0 | 0.01 mg/L (U) | — | — | — | — | — |
| Cadmium | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Calcium | EPA:200.7 | 14.4 mg/L | 13 mg/L | 12.8 mg/L | 12.4 mg/L | 12.2 mg/L | 11.9 mg/L |
| Cesium | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Chloride | EPA:300.0 | 7.83 mg/L | — | — | — | — | — |
| Chromium | EPA:200.8 | 5.21 µg/L | 5.77 µg/L | 5.27 µg/L | 4.8 µg/L | 4.89 µg/L | 4.87 µg/L |
| Cobalt | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Copper | EPA:200.8 | 1.44 µg/L | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Fluoride | EPA:300.0 | 0.146 mg/L | — | — | — | — | — |
| Iron | EPA:200.7 | 61.7 µg/L | 38.7 µg/L | 17.9 µg/L | 15.8 µg/L | 14.1 µg/L | 15 µg/L |
| Lead | EPA:200.8 | 0.25 µg/L | 0.2 µg/L (U) | 0.2 µg/L (U) | 0.2 µg/L (U) | 0.2 µg/L (U) | 0.2 µg/L (U) |
| Lithium | EPA:200.7 | 15.1 µg/L | 16.6 µg/L | 16.2 µg/L | 16 µg/L | 15.6 µg/L | 14.5 µg/L |
| Magnesium | EPA:200.7 | 3.57 mg/L | 3.15 mg/L | 3.08 mg/L | 3.13 mg/L | 3.07 mg/L | 3.08 mg/L |
| Manganese | EPA:200.7 | 1 µg/L (U) | 1.35 µg/L | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |

**Table A-2 (continued)**

| Parameter Name | Analytical Method | CAWA-13-39409 07/29/2013 14:40 | CAWA-13-40545 08/16/2013 9:48 | CAWA-13-40546 08/16/2013 11:18 | CAWA-13-40547 08/16/2013 12:48 | CAWA-13-40548 08/16/2013 14:18 | CAWA-13-40549 08/16/2013 15:48 |
|---|---|---|---|---|---|---|---|
| Mercury | EPA:200.8 | 0.05 µg/L (U) | 0.09 µg/L | 0.05 µg/L | 0.05 µg/L (U) | 0.06 µg/L | 0.05 µg/L (U) |
| Molybdenum | EPA:200.8 | 1 µg/L (U) | 1.61 µg/L | 1.13 µg/L | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Nickel | EPA:200.8 | 1 µg/L (U) | 1.7 µg/L | 1.44 µg/L | 1.31 µg/L | 1.24 µg/L | 1.18 µg/L |
| Nitrate | EPA:300.0 | 1.6 mg/L | — | — | — | — | — |
| Nitrite | EPA:300.0 | 0.01 mg/L (U) | — | — | — | — | — |
| Oxalate | EPA:300.0 | 0.01 mg/L (U) | — | — | — | — | — |
| Phosphorus, Orthophosphate (Expressed as $PO_4$) | EPA:300.0 | 0.0198 mg/L | — | — | — | — | — |
| Potassium | EPA:200.7 | 1.54 mg/L | 1.69 mg/L | 1.65 mg/L | 1.58 mg/L | 1.54 mg/L | 1.54 mg/L |
| Selenium | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Silicon Dioxide | EPA:200.7 | 71.7 mg/L | 64.9 mg/L | 65.1 mg/L | 65.3 mg/L | 63.9 mg/L | 64.2 mg/L |
| Silver | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Sodium | EPA:200.7 | 12 mg/L | 10.7 mg/L | 11.1 mg/L | 10.9 mg/L | 10.5 mg/L | 10.5 mg/L |
| Strontium | EPA:200.7 | 44.4 µg/L | 60 µg/L | 58.9 µg/L | 58.4 µg/L | 57.5 µg/L | 57.2 µg/L |
| Sulfate | EPA:300.0 | 3.22 mg/L | — | — | — | — | — |
| Thallium | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Tin | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Titanium | EPA:200.7 | 2 µg/L (U) | 2 µg/L (U) | 2 µg/L (U) | 2 µg/L (U) | 2 µg/L (U) | 2 µg/L (U) |
| Total Organic Carbon | SW-846:9060 | — | — | — | — | — | — |
| Uranium | EPA:200.8 | 0.39 µg/L | 0.58 µg/L | 0.58 µg/L | 0.56 µg/L | 0.53 µg/L | 0.53 µg/L |
| Vanadium | EPA:200.8 | 4.83 µg/L | 5.49 µg/L | 5.61 µg/L | 5.46 µg/L | 5.44 µg/L | 5.36 µg/L |
| Zinc | EPA:200.7 | 5.14 µg/L | 5.05 µg/L | 6.59 µg/L | 6.23 µg/L | 4.7 µg/L | 4.37 µg/L |

**Table A-2 (continued)**

| Parameter Name | Analytical Method | CAWA-13-40550 08/16/2013 17:18 | CAWA-13-40551 08/16/2013 18:48 | CAWA-13-40552 08/17/2013 8:04 | CAWA-13-40553 08/17/2013 14:04 | CAWA-13-40554 08/18/2013 7:47 | CAWA-13-40555 08/18/2013 13:47 |
|---|---|---|---|---|---|---|---|
| Acidity or Alklalinity of a solution | EPA:150.1 | — | — | — | — | — | — |
| Alkalinity-$CO_3$ | EPA:310.1 | — | — | — | — | — | — |
| Alkalinity-$CO_3$+$HCO_3$ | EPA:310.1 | — | — | — | — | — | — |
| Aluminum | EPA:200.7 | 12.6 µg/L | 16.6 µg/L | 10.6 µg/L | 30.2 µg/L | 14.4 µg/L | 29 µg/L |
| Antimony | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Arsenic | EPA:200.8 | 0.77 µg/L | 0.84 µg/L | 0.75 µg/L | 0.73 µg/L | 0.68 µg/L | 0.66 µg/L |
| Barium | EPA:200.7 | 20.2 µg/L | 20.7 µg/L | 21.9 µg/L | 20.9 µg/L | 22 µg/L | 21.9 µg/L |
| Beryllium | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Boron | EPA:200.7 | 8.67 µg/L | 8.12 µg/L | 7.24 µg/L | 7.11 µg/L | 50.7 µg/L | 51.4 µg/L |
| Bromide | EPA:300.0 | — | — | — | — | — | — |
| Cadmium | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Calcium | EPA:200.7 | 12.1 mg/L | 12 mg/L | 12.1 mg/L | 11.7 mg/L | 11.7 mg/L | 12 mg/L |
| Cesium | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Chloride | EPA:300.0 | — | — | — | — | — | — |
| Chromium | EPA:200.8 | 4.82 µg/L | 4.75 µg/L | 4.99 µg/L | 4.81 µg/L | 4.89 µg/L | 3.59 µg/L |
| Cobalt | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Copper | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Fluoride | EPA:300.0 | — | — | — | — | — | — |
| Iron | EPA:200.7 | 10 µg/L (U) | 12.1 µg/L | 13.2 µg/L | 18 µg/L | 13.1 µg/L | 15.2 µg/L |
| Lead | EPA:200.8 | 0.2 µg/L (U) | 0.2 µg/L (U) | 0.2 µg/L (U) | 0.35 µg/L | 0.2 µg/L (U) | 0.2 µg/L (U) |
| Lithium | EPA:200.7 | 14.1 µg/L | 14.1 µg/L | 14.4 µg/L | 13.6 µg/L | 14.3 µg/L | 14.4 µg/L |
| Magnesium | EPA:200.7 | 3.14 mg/L | 3.14 mg/L | 3.25 mg/L | 3.18 mg/L | 3.22 mg/L | 3.16 mg/L |
| Manganese | EPA:200.7 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Mercury | EPA:200.8 | 0.05 µg/L (U) | 0.09 µg/L | 0.05 µg/L (U) | 0.08 µg/L | 0.05 µg/L (U) | 0.05 µg/L (U) |
| Molybdenum | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1.38 µg/L | 1 µg/L (U) | 1 µg/L (U) |

**Table A-2 (continued)**

| Parameter Name | Analytical Method | CAWA-13-40550 08/16/2013 17:18 | CAWA-13-40551 08/16/2013 18:48 | CAWA-13-40552 08/17/2013 8:04 | CAWA-13-40553 08/17/2013 14:04 | CAWA-13-40554 08/18/2013 7:47 | CAWA-13-40555 08/18/2013 13:47 |
|---|---|---|---|---|---|---|---|
| Nickel | EPA:200.8 | 1.15 µg/L | 1.05 µg/L | 1.16 µg/L | 1.08 µg/L | 1.16 µg/L | 1.01 µg/L |
| Nitrate | EPA:300.0 | — | — | — | — | — | — |
| Nitrite | EPA:300.0 | — | — | — | — | — | — |
| Oxalate | EPA:300.0 | — | — | — | — | — | — |
| Phosphorus, Orthophosphate (Expressed as $PO_4$) | EPA:300.0 | — | — | — | — | — | — |
| Potassium | EPA:200.7 | 1.56 mg/L | 1.57 mg/L | 1.51 mg/L | 1.52 mg/L | 1.56 mg/L | 1.53 mg/L |
| Selenium | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Silicon Dioxide | EPA:200.7 | 65.4 mg/L | 65.5 mg/L | 65.1 mg/L | 64.6 mg/L | 65 mg/L | 59.8 mg/L |
| Silver | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Sodium | EPA:200.7 | 10.6 mg/L | 10.4 mg/L | 9.89 mg/L | 10.4 mg/L | 9.93 mg/L | 9.82 mg/L |
| Strontium | EPA:200.7 | 56.8 µg/L | 57 µg/L | 58 µg/L | 56.4 µg/L | 57.6 µg/L | 57.4 µg/L |
| Sulfate | EPA:300.0 | — | — | — | — | — | — |
| Thallium | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Tin | EPA:200.8 | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Titanium | EPA:200.7 | 2 µg/L (U) | 2 µg/L (U) | 2 µg/L (U) | 2 µg/L (U) | 2 µg/L (U) | 2 µg/L (U) |
| Total Organic Carbon | SW-846:9060 | — | — | — | — | — | — |
| Uranium | EPA:200.8 | 0.52 µg/L | 0.51 µg/L | 0.48 µg/L | 0.51 µg/L | 0.48 µg/L | 0.49 µg/L |
| Vanadium | EPA:200.8 | 5.32 µg/L | 5.21 µg/L | 5.24 µg/L | 5.15 µg/L | 5.35 µg/L | 4.75 µg/L |
| Zinc | EPA:200.7 | 5.63 µg/L | 10.8 µg/L | 3.68 µg/L | 5.25 µg/L | 5.77 µg/L | 4.54 µg/L |

Notes: SU = Standard unit. U = The analyte was analyzed for but was not detected.

*— = Not analyzed.

**Table A-3**
**Well CdV-R-15-3 Dedicated Sampling System Equipment Blank Analytical Results**

| Parameter Name | Analytical Method | CAWA-13-36223 07/29/2013 16:00 | CAWA-13-36224 07/29/2013 16:10 | CAWA-13-36225 07/29/2013 16:20 |
|---|---|---|---|---|
| 2,4-Diamino-6-nitrotoluene | SW-846:8321A_MOD | —* | — | — |
| 2,6-Diamino-4-nitrotoluene | SW-846:8321A_MOD | — | — | — |
| 3,5-Dinitroaniline | SW-846:8321A_MOD | — | — | — |
| Acenaphthene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Acenaphthylene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Acetone | SW-846:8260B | 10 µg/L (U) | 10 µg/L (U) | 10 µg/L (U) |
| Acetonitrile | SW-846:8260B | 25 µg/L (U) | 25 µg/L (U) | 25 µg/L (U) |
| Acrolein | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Acrylonitrile | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Amino-2,6-dinitrotoluene[4-] | SW-846:8321A_MOD | — | — | — |
| Amino-4,6-dinitrotoluene[2-] | SW-846:8321A_MOD | — | — | — |
| Aniline | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Anthracene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Atrazine | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Azobenzene | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Benzene | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Benzidine | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Benzo(a)anthracene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Benzo(a)pyrene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Benzo(b)fluoranthene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Benzo(g,h,i)perylene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Benzo(k)fluoranthene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Benzoic Acid | SW-846:8270C | 20 µg/L (U) | 11.4 µg/L (J) | 20.2 µg/L (U) |
| Benzyl Alcohol | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |

**Table A-3 (continued)**

| Parameter Name | Analytical Method | CAWA-13-36223 07/29/2013 16:00 | CAWA-13-36224 07/29/2013 16:10 | CAWA-13-36225 07/29/2013 16:20 |
|---|---|---|---|---|
| Bis(2-chloroethoxy)methane | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Bis(2-chloroethyl)ether | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Bis(2-ethylhexyl)phthalate | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Bromobenzene | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Bromochloromethane | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Bromodichloromethane | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Bromoform | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Bromomethane | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Bromophenyl-phenylether[4-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Butanol[1-] | SW-846:8260B | 50 µg/L (U) | 50 µg/L (U) | 50 µg/L (U) |
| Butanone[2-] | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Butylbenzene[n-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Butylbenzene[sec-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Butylbenzene[tert-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Butylbenzylphthalate | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Carbon Disulfide | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Carbon Tetrachloride | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Chloro-1,3-butadiene[2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Chloro-1-propene[3-] | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Chloro-3-methylphenol[4-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Chloroaniline[4-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Chlorobenzene | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Chlorodibromomethane | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Chloroethane | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Chloroform | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Chloromethane | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |

**Table A-3 (continued)**

| Parameter Name | Analytical Method | CAWA-13-36223 07/29/2013 16:00 | CAWA-13-36224 07/29/2013 16:10 | CAWA-13-36225 07/29/2013 16:20 |
|---|---|---|---|---|
| Chloronaphthalene[2-] | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Chlorophenol[2-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Chlorophenyl-phenyl[4-] Ether | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Chlorotoluene[2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Chlorotoluene[4-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Chrysene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Dibenz(a,h)anthracene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Dibenzofuran | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dibromo-3-Chloropropane[1,2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dibromoethane[1,2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dibromomethane | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichlorobenzene[1,2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichlorobenzene[1,2-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dichlorobenzene[1,3-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichlorobenzene[1,3-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dichlorobenzene[1,4-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichlorobenzene[1,4-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dichlorobenzidine[3,3'-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dichlorodifluoromethane | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichloroethane[1,1-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichloroethane[1,2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichloroethene[1,1-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichloroethene[cis-1,2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichloroethene[trans-1,2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichlorophenol[2,4-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dichloropropane[1,2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |

**Table A-3 (continued)**

| Parameter Name | Analytical Method | CAWA-13-36223 07/29/2013 16:00 | CAWA-13-36224 07/29/2013 16:10 | CAWA-13-36225 07/29/2013 16:20 |
|---|---|---|---|---|
| Dichloropropane[1,3-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichloropropane[2,2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichloropropene[1,1-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichloropropene[cis-1,3-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Dichloropropene[trans-1,3-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Diethyl Ether | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Diethylphthalate | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dimethyl Phthalate | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dimethylphenol[2,4-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Di-n-butylphthalate | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dinitro-2-methylphenol[4,6-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dinitrobenzene[1,3-] | SW-846:8321A_MOD | — | — | — |
| Dinitrophenol[2,4-] | SW-846:8270C | 20 µg/L (U) | 20.2 µg/L (U) | 20.2 µg/L (U) |
| Dinitrotoluene[2,4-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dinitrotoluene[2,4-] | SW-846:8321A_MOD | — | — | — |
| Dinitrotoluene[2,6-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dinitrotoluene[2,6-] | SW-846:8321A_MOD | — | — | — |
| Di-n-octylphthalate | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dinoseb | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Dioxane[1,4-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Diphenylamine | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Ethyl Methacrylate | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Ethylbenzene | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Fluoranthene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Fluorene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Hexachlorobenzene | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |

**Table A-3 (continued)**

| Parameter Name | Analytical Method | CAWA-13-36223 07/29/2013 16:00 | CAWA-13-36224 07/29/2013 16:10 | CAWA-13-36225 07/29/2013 16:20 |
|---|---|---|---|---|
| Hexachlorobutadiene | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Hexachlorobutadiene | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Hexachlorocyclopentadiene | SW-846:8270C | 10 µg/L (UJ) | 10.1 µg/L (UJ) | 10.1 µg/L (UJ) |
| Hexachloroethane | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Hexanone[2-] | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| HMX | SW-846:8321A_MOD | — | — | — |
| Indeno(1,2,3-cd)pyrene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Iodomethane | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Isobutyl alcohol | SW-846:8260B | 50 µg/L (U) | 50 µg/L (U) | 50 µg/L (U) |
| Isophorone | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Isopropylbenzene | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Isopropyltoluene[4-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Methacrylonitrile | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Methyl Methacrylate | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Methyl tert-Butyl Ether | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Methyl-2-pentanone[4-] | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Methylene Chloride | SW-846:8260B | 10 µg/L (U) | 10 µg/L (U) | 10 µg/L (U) |
| Methylnaphthalene[1-] | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Methylnaphthalene[2-] | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Methylphenol[2-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Methylphenol[4-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Naphthalene | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Naphthalene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Nitroaniline[2-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Nitroaniline[3-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Nitroaniline[4-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |

**Table A-3 (continued)**

| Parameter Name | Analytical Method | CAWA-13-36223 07/29/2013 16:00 | CAWA-13-36224 07/29/2013 16:10 | CAWA-13-36225 07/29/2013 16:20 |
|---|---|---|---|---|
| Nitrobenzene | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Nitrobenzene | SW-846:8321A_MOD | — | — | — |
| Nitrophenol[2-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Nitrophenol[4-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Nitrosodiethylamine[N-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Nitrosodimethylamine[N-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Nitroso-di-n-butylamine[N-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Nitroso-di-n-propylamine[N-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Nitrosopyrrolidine[N-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Nitrotoluene[2-] | SW-846:8321A_MOD | — | — | — |
| Nitrotoluene[3-] | SW-846:8321A_MOD | — | — | — |
| Nitrotoluene[4-] | SW-846:8321A_MOD | — | — | — |
| Oxybis(1-chloropropane)[2,2'-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Pentachlorobenzene | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Pentachlorophenol | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| PETN | SW-846:8321A_MOD | — | — | — |
| Phenanthrene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Phenol | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Propionitrile | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Propylbenzene[1-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Pyrene | SW-846:8270C | 1 µg/L (U) | 1.01 µg/L (U) | 1.01 µg/L (U) |
| Pyridine | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| RDX | SW-846:8321A_MOD | — | — | — |
| Styrene | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| TATB | SW-846:8321A_MOD | — | — | — |
| Tetrachlorobenzene[1,2,4,5] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |

**Table A-3 (continued)**

| Parameter Name | Analytical Method | CAWA-13-36223 07/29/2013 16:00 | CAWA-13-36224 07/29/2013 16:10 | CAWA-13-36225 07/29/2013 16:20 |
|---|---|---|---|---|
| Tetrachloroethane[1,1,1,2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Tetrachloroethane[1,1,2,2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Tetrachloroethene | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Tetrachlorophenol[2,3,4,6-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Tetryl | SW-846:8321A_MOD | — | — | — |
| Toluene | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Trichloro-1,2,2-trifluoroethane[1,1,2-] | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Trichlorobenzene[1,2,3-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Trichlorobenzene[1,2,4-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Trichlorobenzene[1,2,4-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Trichloroethane[1,1,1-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Trichloroethane[1,1,2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Trichloroethene | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Trichlorofluoromethane | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Trichlorophenol[2,4,5-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Trichlorophenol[2,4,6-] | SW-846:8270C | 10 µg/L (U) | 10.1 µg/L (U) | 10.1 µg/L (U) |
| Trichloropropane[1,2,3-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Trimethylbenzene[1,2,4-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Trimethylbenzene[1,3,5-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Trinitrobenzene[1,3,5-] | SW-846:8321A_MOD | — | — | — |
| Trinitrotoluene[2,4,6-] | SW-846:8321A_MOD | — | — | — |

**Table A-3 (continued)**

| Parameter Name | Analytical Method | CAWA-13-36223 07/29/2013 16:00 | CAWA-13-36224 07/29/2013 16:10 | CAWA-13-36225 07/29/2013 16:20 |
|---|---|---|---|---|
| Tris (o-cresyl) phosphate | SW-846:8321A_MOD | — | — | — |
| Vinyl acetate | SW-846:8260B | 5 µg/L (U) | 5 µg/L (U) | 5 µg/L (U) |
| Vinyl Chloride | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Xylene[1,2-] | SW-846:8260B | 1 µg/L (U) | 1 µg/L (U) | 1 µg/L (U) |
| Xylene[1,3-]+Xylene[1,4-] | SW-846:8260B | 2 µg/L (U) | 2 µg/L (U) | 2 µg/L (U) |

Notes: U = The analyte was analyzed for but was not detected. J = The analyte was positively identified, and the associated numerical value is estimated to be more uncertain than would normally be expected for that analysis.

*— = Not analyzed.