



Trip Report for WEFTA Visit to El Salvador

September/October 2015

INTRODUCTION

At the request of Habitat for Humanity (HFH) in El Salvador, John Lincoln (senior civil engineer) and Scott McKittrick (senior hydrogeologist) of WEFTA travelled to El Salvador to explore opportunities to help provide potable water and sanitation systems in several communities where Habitat for Humanity El Salvador has been involved. This visit occurred from September 28 through October 2, 2015.

The HFH organization was established in 1992 in El Salvador and has provided livable housing for more than 13,500 families since then. They have extensive experience in managing, financing, and constructing housing units and associated facilities (community centers, etc.), but virtually no experience in water supply or sanitary systems. Recently, HFH has been approached by several communities in El Salvador for help with existing water supply systems that were not functioning properly, or with supply of water systems in communities served only by centralized community wells (typically hand-dug wells with buckets to raise the water to the surface). Because supply of clean water and adequate sanitation systems are an essential part of a livable habitat, HFH was interested in pursuing an association with WEFTA to provide assistance with water supply and sanitation systems in El Salvador.

The WEFTA team stayed in the capital city of San Salvador and travelled with representatives of HFH to several communities in outlying areas. These included Valle Nuevo, Isla La Calzada, Tepeagua, Los Buenos, and Getsemani. These communities are shown in the map below.

The WEFTA team also visited a site for a low-income housing project being developed by another non-profit organization in El Salvador called Homes from the Heart. This project is known as the Monsignor Romero project, located on the outskirts of San Salvador (see map). This proposed community needs a water system and a sanitary sewer collection system.

WEFTA would like to thank the staff of Habitat for Humanity El Salvador for organizing our visit, for transportation to the communities, and for all of their gracious help and patience in helping the WEFTA staff to understand the local issues. WEFTA would also like to thank Señor Jorge Molina, Executive Director of HFH El Salvador, for the invitation to partner with his organization

and for making sure that our visit was productive and successful. And lastly, WEFTA would like to thank Arq. Alberto Harth, who facilitated the introductions between WEFTA and HFH, and without whose tireless efforts our visit could not have taken place.



Map showing El Salvador, communities visited, and surrounding area for reference

VALLE NUEVO

On September 27, the WEFTA/HFH team visited Valle Nuevo, a small community located about 60 miles northeast of San Salvador. The WEFTA representatives included John Lincoln and Scott McKittrick. The HFH representatives included Briseida Cruz (coordinator and translator) and Julio Argueda (construction engineer). Valle Nuevo is a community of about 150 families adjacent to the larger community of Santa Marta. There is an existing water system constructed in 2001 that provides potable water to the Santa Marta/Valle Nuevo community through a transmission pipeline from a spring catchment about 8 kilometers away. The water is stored in a concrete tank and then distributed to the community through a piped system to each of the families. The water supply has diminished over the years, partially from an earthquake that reduced the flow of the spring, and partially from leaks in the distribution system. The distribution system is divided into zones, and each zone gets water about once every 22 days. When the water is flowing in their zone, homeowners fill all available storage (concrete tanks called pilas, cisterns, bottles, buckets, etc.). There are also a number of small springs in the valley that are collected in pilas, and the residents use the water in the pilas for washing, bathing, and cleaning.





Local residents in Valle Nuevo washing clothes in a spring-fed pila

Valle Nuevo would like a water supply system separate from Santa Marta, and asked the WEFTA crew if it would be possible to construct a new well and storage system to connect to their existing water distribution system. Given the hydrogeology of the area, it would not be practical to drill a single well with adequate production. A system of shallow wells could be constructed with a combined capacity that might be adequate. Water quality testing by WEFTA indicated that the shallow groundwater is likely acceptable as a drinking water source (see Appendix A for water quality testing results). However, it would be prohibitively expensive to construct a shallow groundwater pumping/treatment/transmission/storage system adequate to serve the community (likely greater than \$300,000 USD).

There is a local organization called Asociacion de Desarrollo Economico y Social Santa Marta (ADES) that has been studying the water supply system for the Valle Nuevo/Santa Marta communities. On September 28, the WEFTA/HFH team met with the Valle Nuevo leaders and ADES representatives, and the WEFTA team was shown a preliminary report prepared by ADES with the conclusions of their study. The ADES study identified a number of measures to repair/renovate the water supply and distribution system that should significantly improve the water supply to the two communities. In addition, the ADES representatives indicated that the final report with budget estimates would be available by November 2015, and improvements and repairs could begin in early 2016. The recommendation of the WEFTA team to the Valle Nuevo leaders was that the conclusions of the ADES report made sense, and that Valle Nuevo needed to work together with ADES to implement the water system improvements identified by ADES.

HOMES FROM THE HEART - TONACATEPEQUE

On the afternoon of September 28, John and Scott from WEFTA met with Michael Bonderer of Homes from the Heart, and Leslie Schuld of the Center for Exchange and Solidarity (the HFH people did not accompany us on this portion of the trip). Their organizations have been working together to develop low income housing in El Salvador. We travelled to Tonacatepeque about 12 miles northeast of San Salvador to look at the site of the Monsignor Romero community for 70 families that Homes from the Heart is proposing to develop. The proposed development is currently vacant land adjacent to recent residential developments. The land for the proposed development is in a small valley on both sides of an existing drainage swale.

Because the Romero community is adjacent to existing developments, it is within the service area of the national utility called Administracion Nacional de Acueductos y Alcantarillados (ANDA). The ANDA organization is an agency of the national government and provides water and sewer service for many of the developed areas in El Salvador. Michael Bonderer has had meetings with ANDA and they apparently told Michael that they could provide the water service to the Romero development, but that ANDA wanted Homes for the Heart to install a 10-inch well on land just south of the development. A 10-inch well is much larger than needed for the Romero community, and it is likely that ANDA wants a well this size to augment their regional water supply system. Michael had also had conversations with a local Non-Government Organization (NGO) called Living Waters. Living Waters supplies simple wells with hand pumps to small communities in El Salvador that are outside of the service area of ANDA. However, Living Waters typically installs 4-inch wells and has drill rigs that are capable of drilling only smaller wells (they could not drill a 10-inch well). Michael's preferred concept would therefore be for Living Waters to drill the 4-inch well, and for some other entity (in this case presumably WEFTA) to provide an electric pump and appurtenances to supply only the Romero community. Living waters completed a 4-inch supply well at the Romero community after the WEFTA visit. The well found abundant water at 80 meters, and was completed with a hand pump.

John and Michael also discussed the situation regarding wastewater. Because of the small lot sizes proposed, John recommended that a sewer system be installed to handle wastewater from the homes, rather than individual wastewater systems such as septic tanks/drain fields. Michael's conversations with ANDA indicated that ANDA could not serve much of the community with gravity sewers. This is because the land is at a low point in the topography, and the existing ANDA sewers are upgradient from most of the land. It would be possible to construct a sewage pump station at the low point in the land and pump to the existing ANDA sewer system. However, Michael indicated that ANDA was not supportive of this concept, likely because of the maintenance required for a sewage pump station. John indicated that a community septic tank/drain field system could be constructed near the low point in the land. However, the groundwater is close to the surface (~10 to 12 feet below ground surface) and the proposed development is apparently in a groundwater protection area, which would likely make a septic tank/drain field system problematic.

Because of the groundwater and topography issues at the site and the situation regarding ANDA, the WEFTA team does not recommend significant further involvement by WEFTA with Homes from the Heart at the Romero community. It would make more sense for Homes from the Heart to



continue the discussions with ANDA so that ANDA can provide water and wastewater facilities for the Romero development. WEFTA could certainly provide designs of water distribution and sewage collection systems within the boundaries of the community. However, it may make more sense for Homes from the Heart to engage a local consulting engineer familiar with negotiations with ANDA and with the local situation regarding the protected groundwater area to complete the designs for the water and wastewater systems for the Romero community.

ISLA LA CALZADA

On September 28, the WEFTA/HFH team visited the island of La Calzada about 40 miles southeast of San Salvador. The island is near the Pacific coast and is surrounded by a tidal lagoon and mangrove swamp. The main access to the island is by water taxi from the mainland.



WEFTA/HFH team taking Water Taxi to Isla La Calzada

The island was originally settled in 1970 and there are currently about 1,500 people living on the island. There is an existing water supply system that serves about 40 percent of the population, which was constructed by a Swiss NGO called Solidar a few years ago. The water source for the system is a well located on the mainland, with a 2-inch pipeline to the island. The water system also includes a small treatment system and a tablet-style hypochlorination system. The treatment system appears to be a hybrid system. It includes a circular tank about 12 feet in diameter and about 9 feet high, filled part way with a sand filtering media underlain by gravel and an underdrain piping system. The operation is similar to a gravity downflow sand filter, except that the sand filtering media used is green sand. The filter does not have backflushing capability; rather, the operator scrapes off the surface of the green sand and replaces it with new green sand about every one to two weeks.



The 60 percent of the population that are not connected to the water supply system use shallow hand-dug wells (groundwater is at 3-5 feet below ground surface) with bucket systems to bring the water to the surface. The wells are 3-4 feet in diameter, lined with bricks or concrete. There are a total of six wells spread throughout the community. Many of the families that are not currently served by the water system have been reluctant to connect to the system. Part of the reason is economic (\$70 hookup fee and \$11/month service fee), and part of the reason is the objectionable taste of the water in the system (according to residents that drink the water).

To determine if the bad taste of the water was due to the water quality, the WEFTA team took water quality samples from the existing water distribution system (at the discharge from the water treatment system). We also took samples from three of the shallow wells in the community. The results indicated that the normal analytical parameters that might impact taste (chloride, iron, and manganese) were somewhat elevated in the existing water distribution system, but not enough to cause a noticeable taste problem (other parameters in this sample were within acceptable ranges). It was reported by the locals users that the chlorination system might be the source of the taste problem in the distribution system. This is possible, but unlikely, because the tablet-style of chlorinator used is not normally subject to over-chlorination if properly adjusted. The samples from the shallow wells indicated that chloride was somewhat elevated in two of the wells, but not enough to cause taste problems. In addition, lead was slightly elevated in one of the shallow wells and nitrate was elevated in two of the shallow wells (sampling results are included in Appendix A).

The shallow groundwater on the island has also been tested previously (by others) and it is reportedly elevated in fecal coliform, likely from the pit toilets that have been in common use since the island was settled. The island is a farming area, so many of the homes are spread out across the island. Even within the communities, the homes tend to be spaced out. Therefore, a wastewater collection system does not appear to be practical or affordable. The residents have recognized the problem and many are transitioning to composting toilets. These consist of a raised toilet with the floor approximately three feet above grade. There are typically two seats in the toilet, each emptying into separate plastic tanks under the seats. One side of the toilet is used until the underlying tank fills up, then that tank is closed and allowed to compost, while the other side of the toilet is used. Once composted, the waste is then applied to the fields, and the emptied tank returned to service. Lime and clay soils are added to the toilets periodically to hold down odors and encourage the composting process. This type of composting toilet is comparatively inexpensive to construct, is protective of shallow groundwater, and could be used in many places in Latin America where centralized sewer systems are not practical.

WEFTA's recommendations for Isla La Calzada include:

1. The water in the existing distribution system appears to be appropriate for potable uses. The residual chlorine in the treated water should be checked periodically to assure that residual chlorine is not elevated (greater than 2.0 mg/L). If so, the chlorination system should be adjusted.
2. The water distribution system should be extended and the residents hooked up to the system so that the entire community could be served by the system.
3. Existing standard pit toilets should be replaced with composting toilets as soon as practicable.





Composting toilet on Isla La Calzada

TEPEAGUA

On October 1, the WEFTA/HFH team visited the community of Tepeagua, located about 20 miles south of San Salvador, a few miles from the Pacific coast. Tepeagua is a community of 135 families totaling about 900 people. About 40 percent of the community was served by a water supply system that was constructed in 1997, however, a major earthquake in 2001 resulted in the water supply wells going dry. Since then, the community has had to rely on hand dug bucket wells lined with bricks or concrete. The community has about 20 of these wells and the typical depth the groundwater is about 50 feet below ground surface. The community has contacted ANDA regarding water supply, but the nearest ANDA facilities are more than five kilometers from Tepeagua, and ANDA has no current plans to extend their system to Tepeagua.

The community has been very pro-active in pursuing a new water supply system. They have saved about \$3,000 (USD) to help pay for a new system. In addition, the local Lutheran Church has been in contact with a Lutheran Church in Wisconsin that is willing to help fund the new water system. Also, the community has been in contact with Living Waters, a non-profit that constructs small drinking water wells in El Salvador.



The WEFTA/HFH team conducted a reconnaissance of the area around the community, in conjunction with Angel Rosas of Living Waters, to determine if a water supply and distribution system was feasible. We visited a potential site for a well identified by the community, but this site was not suitable because of ownership issues and distance from electrical power. Angel Rosas, who is very familiar with the hydrogeology of the area, suggested a site for a new well near the Lutheran Church, which is near the center of the community. After reviewing regional hydrogeology reports and visiting some of the nearby hand-dug wells, Scott McKitrick/WEFTA hydrogeologist, concurred that the church site was appropriate. The team then went to visit a site for a potential storage tank located about 0.4 kilometers from the church on top of a hill. The storage tank site is ideal in that it has very good bedrock foundation conditions and is high enough above the community to provide sufficient pressure to feed the water distribution system by gravity (in case of power outages). The site is also owned by the local bishop, so use of the site by the community is not an issue. Scott McKitrick then took water quality samples from two of the hand-dug wells in the community to assure that the groundwater was acceptable as a potable water source.



Scott McKitrick collecting a water quality sample from a hand-dug well in Tepeagua

Water quality testing indicated that water from the hand-dug well near the Lutheran Church contained an elevated concentration of nitrate (24 mg/l $\text{NO}_3\text{-N}$, EPA Maximum Contaminant Level 10.0 mg/l). Given that the well is open to the land surface, there is potential that the elevated nitrate concentration is related to contaminants entering the well through the wellhead, and not an indication of more widespread groundwater contamination. A second well sampled near the soccer field approximately 1,000 feet south of the well at the Lutheran Church did not contain an elevated nitrate concentration. Analytical results of other parameters from both wells were not elevated, indicating that groundwater in the vicinity of the proposed well is likely to be acceptable as a potable water source.



Following the reconnaissance, the WEFTA/HFH/Living Waters team met with community leaders and Margarita Moreno, the local Lutheran pastor. The following was determined:

1. Tepeagua is an appropriate community for WEFTA/HFH/Living Waters involvement. The community has money saved to help pay for a new water system, strong leadership committed to the project, and a willingness to provide “sweat equity” in terms of local residents providing labor for construction of the project. In addition, the proposed well site and reservoir site are appropriate to provide acceptable quality potable water, adequate water storage, and sufficient pressure for a new water supply system.
2. Living Waters is willing to construct a 4-inch well near the Lutheran Church as long as the community can provide some of the labor and materials to construct the well. The community leaders committed to providing labor and some of the materials for the well. Living Waters typically provides hand pumps with their wells, but they can eliminate the hand pump and their standard well design is compatible with an electric pumping system.
3. The community does not have existing as-built drawings of the existing abandoned water distribution system. They thought that the system was a combination of galvanized iron transmission lines and PVC distribution lines. The community committed to providing hand-drawn maps of the community and the existing water distribution system, which have been received by WEFTA.
4. Habitat for Humanity is willing to provide coordination for the project and construction management expertise. HFH is also willing to provide a low-interest loan to the community for purchase of materials for the pipelines and storage tank.
5. The Lutheran Church in Wisconsin is willing to provide some funding (amount to be determined) and some volunteers to travel to El Salvador to help with the construction.
6. WEFTA is willing to supply the technical expertise required for the project. This includes preparation of design drawings and technical specifications, and training for the HFH construction manager and the community in proper construction techniques for water pipelines. WEFTA may also be willing to fund a portion of the materials required for the project, especially the well pump and appurtenances.
7. The community of Tepeagua is willing to provide unskilled labor for construction of as much of the project as possible. The community is also willing to provide lunch for WEFTA/HFH/Living Waters personnel when they are working on the project in the community.

Living Waters indicated that they could construct the well as early as January, 2016. Once the well has been constructed and the yield determined, WEFTA can complete the design of the system and prepare a cost estimate such that funding for the project can be finalized.

MEETING WITH EXECUTIVE DIRECTOR OF HABITAT EL SALVADOR

The WEFTA team was invited to dinner on the evening of October 1 by Jorge Molina, the executive director of Habitat for Humanity El Salvador. Also in attendance were HFH staff and Simon Melendez, a member of the Board of Directors of HFH El Salvador. Señor Molina commended WEFTA on its willingness to assist the people of El Salvador in obtaining adequate potable water and sanitation. He also felt that the two organizations shared many common goals, and that our respective methodologies for conducting work were very compatible. His hope was that the association of WEFTA and Habitat For Humanity El Salvador would be long and



productive. The HFH crew also presented John and Scott with some local artwork. It was hand-made and hand-painted wooden letters spelling out W-E-F-T-A (on the table in photo below).



From left—Ernesto Tobar/HFH, Claudia Garcia/HFH, Simon Melendez/HFH, John Lincoln/WEFTA, Jorge Molina/HFH, Beatriz Bejarano/HFH, Scott McKittrick/WEFTA, and Carlos Vargas/HFH

LOS BUENOS AND GETSEMANI

On October 2, the WEFTA/HFH team travelled to the community of Los Buenos, located about 60 miles west of San Salvador. The community has about 70 families, virtually all going by the surname of Los Buenos (hence the name of the community). The community obtains water from a single, centrally-located hydrant. The water in the hydrant is supplied by a pipeline (about 300 meters long) connected to the ANDA system, which serves an adjacent community. The visit by the WEFTA/HFH team was timely, because the community leaders had met the previous day with ANDA representatives to discuss extending the ANDA system to serve Los Buenos. The ANDA representatives indicated that ANDA could likely serve the Los Buenos community; however, the community needed to become better organized and needed to get the entire community behind the project. The issue with community involvement is that only about 30 of the families were currently interested in participating in the project. The problem was apparently the cost. Each of the families would have to pay a \$118 (USD) connection fee and about \$2 per month service fee. In addition, the community would have to pay for and install an upgrade of the transmission pipeline from the existing ANDA system and for the distribution pipelines within the community. ANDA did provide an incentive for the community to get behind the project—if any family did not participate up front, the future connection fee would be \$400.

The WEFTA team reviewed the drawings of the proposed transmission pipeline and concurred that ANDA had developed an appropriate plan for serving the Los Buenos community with potable water. HFH indicated that they could likely provide a loan to the community for purchase of the pipeline materials and appurtenances. The recommendation of the WEFTA/HFH team was



therefore that the community continue to pursue connection to the ANDA system and that the community construct the water transmission/distribution system utilizing a loan from HFH for funding of materials, as needed.

From Los Buenos, the WEFTA/HFH team drove a short distance to the Getsemani community. The HFH representatives wanted to show the WEFTA crew a community where there had been significant involvement of HFH in providing housing and a new community center. Water supply was not an issue in Getsemani because the community was already supplied by the ANDA system.



**Typical
Habitat
for
Humanity
home in
Getsemani**

CONCLUSIONS AND RECOMMENDATIONS

Based upon this site visit, WEFTA has the following conclusions and recommendations:

1. The community of Valle Nuevo should work with Santa Marta and the local NGO called ADES to implement the recommendations of the ADES report. Valle Nuevo should not pursue development of a water supply system independent from Santa Marta.
2. Homes from the Heart should continue negotiations with ANDA and determine the status of the protected groundwater in the Tonacatepeque area. Homes from the Heart should then negotiate with ANDA for provision of potable water and wastewater collection. WEFTA may consider providing design of the water distribution system.

3. Isla La Calzada should conduct periodic testing of residual chlorine within the existing water distribution system and make adjustments as needed to reduce taste problems. The community should also expand the existing water distribution system to the remainder of the community. The families currently served by pit toilets should construct composting toilets as soon as practicable.
4. Tepeagua should continue to pursue construction of a new water supply and distribution system. Living Waters should construct a well on the property of the Lutheran Church as soon as practicable. This well should be tested for yield and standard water quality parameters and the results provided to WEFTA. WEFTA will then prepare a design for a water supply and distribution system and prepare cost estimates for the system. Habitat for Humanity, the Lutheran Church, and WEFTA will then discuss funding for the various elements of the water supply system.
5. Los Buenos should continue to pursue discussions with ANDA and construction of a water distribution system using water supplied by ANDA.



APPENDIX A – ANALYTICAL RESULTS





Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 29, 2015

Scott McKittrick

Souder Miller & Associates
3451 Candelaria, NE Suite D
Albuquerque, NM 87107
TEL: (505) 299-0942
FAX

RE: Valle Nuevo

OrderNo.: 1510226

Dear Scott McKittrick:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/5/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', written in a cursive style.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510226

Date Reported: 10/29/2015

CLIENT: Souder Miller & Associates

Client Sample ID: Membrano Pila

Project: Valle Nuevo

Collection Date: 9/28/2015 2:00:00 PM

Lab ID: 1510226-001

Matrix: AQUEOUS

Received Date: 10/5/2015 3:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Antimony	ND	0.0010		mg/L	1	10/12/2015 5:55:42 PM	B29480
Arsenic	ND	0.0010		mg/L	1	10/12/2015 5:55:42 PM	B29480
Lead	ND	0.00050		mg/L	1	10/12/2015 5:55:42 PM	B29480
Selenium	ND	0.0010		mg/L	1	10/12/2015 5:55:42 PM	B29480
Thallium	ND	0.00050		mg/L	1	10/12/2015 5:55:42 PM	B29480
Uranium	ND	0.00050		mg/L	1	10/12/2015 5:55:42 PM	B29480
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.10	0.10		mg/L	1	10/9/2015 5:21:14 PM	R29470
Chloride	2.2	0.50		mg/L	1	10/9/2015 5:21:14 PM	R29470
Nitrogen, Nitrite (As N)	ND	0.10	H	mg/L	1	10/9/2015 5:21:14 PM	R29470
Bromide	ND	0.10		mg/L	1	10/9/2015 5:21:14 PM	R29470
Nitrogen, Nitrate (As N)	0.83	0.10	H	mg/L	1	10/9/2015 5:21:14 PM	R29470
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	10/9/2015 5:21:14 PM	R29470
Sulfate	1.2	0.50		mg/L	1	10/9/2015 5:21:14 PM	R29470
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	184	20.0	H	mg/L	1	10/7/2015 7:06:00 PM	21690
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.015	0.0020		mg/L	1	10/13/2015 8:49:44 PM	B29512
Beryllium	ND	0.0020		mg/L	1	10/13/2015 8:49:44 PM	B29512
Cadmium	ND	0.0020		mg/L	1	10/13/2015 8:49:44 PM	B29512
Calcium	20	1.0		mg/L	1	10/13/2015 8:49:44 PM	B29512
Chromium	ND	0.0060		mg/L	1	10/13/2015 8:49:44 PM	B29512
Copper	ND	0.0060		mg/L	1	10/13/2015 8:49:44 PM	B29512
Iron	ND	0.020		mg/L	1	10/14/2015 8:00:24 PM	C29542
Magnesium	6.9	1.0		mg/L	1	10/13/2015 8:49:44 PM	B29512
Manganese	ND	0.0020		mg/L	1	10/13/2015 8:49:44 PM	B29512
Potassium	2.5	1.0		mg/L	1	10/13/2015 8:49:44 PM	B29512
Silver	ND	0.0050		mg/L	1	10/14/2015 8:00:24 PM	C29542
Sodium	9.1	1.0		mg/L	1	10/13/2015 8:49:44 PM	B29512

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	Page 1 of 8
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510226

Date Reported: 10/29/2015

CLIENT: Souder Miller & Associates

Client Sample ID: Juana's Well

Project: Valle Nuevo

Collection Date: 9/28/2015 2:30:00 PM

Lab ID: 1510226-002

Matrix: AQUEOUS

Received Date: 10/5/2015 3:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Antimony	ND	0.0010		mg/L	1	10/12/2015 6:00:51 PM	B29480
Arsenic	ND	0.0010		mg/L	1	10/12/2015 6:00:51 PM	B29480
Lead	ND	0.00050		mg/L	1	10/12/2015 6:00:51 PM	B29480
Selenium	ND	0.0010		mg/L	1	10/12/2015 6:00:51 PM	B29480
Thallium	ND	0.00050		mg/L	1	10/12/2015 6:00:51 PM	B29480
Uranium	ND	0.00050		mg/L	1	10/12/2015 6:00:51 PM	B29480
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.11	0.10		mg/L	1	10/9/2015 5:33:39 PM	R29470
Chloride	2.1	0.50		mg/L	1	10/9/2015 5:33:39 PM	R29470
Nitrogen, Nitrite (As N)	ND	0.10	H	mg/L	1	10/9/2015 5:33:39 PM	R29470
Bromide	ND	0.10		mg/L	1	10/9/2015 5:33:39 PM	R29470
Nitrogen, Nitrate (As N)	1.2	0.10	H	mg/L	1	10/9/2015 5:33:39 PM	R29470
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	10/9/2015 5:33:39 PM	R29470
Sulfate	12	0.50		mg/L	1	10/9/2015 5:33:39 PM	R29470
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	239	20.0	H	mg/L	1	10/7/2015 7:06:00 PM	21690
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.034	0.0020		mg/L	1	10/13/2015 8:51:46 PM	B29512
Beryllium	ND	0.0020		mg/L	1	10/13/2015 8:51:46 PM	B29512
Cadmium	ND	0.0020		mg/L	1	10/13/2015 8:51:46 PM	B29512
Calcium	40	1.0		mg/L	1	10/13/2015 8:51:46 PM	B29512
Chromium	ND	0.0060		mg/L	1	10/13/2015 8:51:46 PM	B29512
Copper	ND	0.0060		mg/L	1	10/13/2015 8:51:46 PM	B29512
Iron	0.12	0.020		mg/L	1	10/14/2015 8:02:28 PM	C29542
Magnesium	18	1.0		mg/L	1	10/13/2015 8:51:46 PM	B29512
Manganese	0.0076	0.0020		mg/L	1	10/13/2015 8:51:46 PM	B29512
Potassium	1.4	1.0		mg/L	1	10/13/2015 8:51:46 PM	B29512
Silver	ND	0.0050		mg/L	1	10/14/2015 8:02:28 PM	C29542
Sodium	12	1.0		mg/L	1	10/13/2015 8:51:46 PM	B29512

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 2 of 8
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510226

29-Oct-15

Client: Souder Miller & Associates

Project: Valle Nuevo

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B29512		RunNo: 29512							
Prep Date:	Analysis Date: 10/13/2015		SeqNo: 897649		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B29512		RunNo: 29512							
Prep Date:	Analysis Date: 10/13/2015		SeqNo: 897650		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	103	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.7	85	115			
Calcium	49	1.0	50.00	0	97.9	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Copper	0.48	0.0060	0.5000	0	95.9	85	115			
Magnesium	51	1.0	50.00	0	103	85	115			
Manganese	0.47	0.0020	0.5000	0	94.9	85	115			
Potassium	50	1.0	50.00	0	99.3	85	115			
Sodium	50	1.0	50.00	0	100	85	115			

Sample ID LLLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B29512		RunNo: 29512							
Prep Date:	Analysis Date: 10/13/2015		SeqNo: 897651		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020	0.002000	0	91.0	50	150			
Beryllium	ND	0.0020	0.002000	0	87.0	50	150			
Cadmium	0.0026	0.0020	0.002000	0	128	50	150			
Calcium	ND	1.0	0.5000	0	132	50	150			
Chromium	0.0077	0.0060	0.006000	0	128	50	150			
Copper	0.0087	0.0060	0.006000	0	144	50	150			
Magnesium	ND	1.0	0.5000	0	104	50	150			
Manganese	0.0023	0.0020	0.002000	0	116	50	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510226

29-Oct-15

Client: Souder Miller & Associates

Project: Valle Nuevo

Sample ID LLLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B29512		RunNo: 29512							
Prep Date:	Analysis Date: 10/13/2015		SeqNo: 897651		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	ND	1.0	0.5000	0	104	50	150			
Sodium	ND	1.0	0.5000	0	121	50	150			

Sample ID MB-C	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: C29542		RunNo: 29542							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 898765		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								
Silver	ND	0.0050								

Sample ID LCS-C	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: C29542		RunNo: 29542							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 898766		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Silver	0.091	0.0050	0.1000	0	90.6	85	115			

Sample ID LLLCS-C	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: C29542		RunNo: 29542							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 898767		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020	0.02000	0	97.4	50	150			
Silver	ND	0.0050	0.005000	0	95.4	50	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510226

29-Oct-15

Client: Souder Miller & Associates

Project: Valle Nuevo

Sample ID	LCS		SampType:	LCS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID:	B29480		RunNo:	29480				
Prep Date:			Analysis Date:	10/12/2015		SeqNo:	896562		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Antimony	0.024	0.0010	0.02500	0	97.1	85	115				
Arsenic	0.025	0.0010	0.02500	0	98.5	85	115				
Lead	0.012	0.00050	0.01250	0	97.6	85	115				
Selenium	0.025	0.0010	0.02500	0	98.6	85	115				
Thallium	0.012	0.00050	0.01250	0	98.4	85	115				
Uranium	0.012	0.00050	0.01250	0	99.0	85	115				

Sample ID	LLCS		SampType:	LCSLL		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	BatchQC		Batch ID:	B29480		RunNo:	29480				
Prep Date:			Analysis Date:	10/12/2015		SeqNo:	896563		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Antimony	ND	0.0010	0.001000	0	92.2	50	150				
Arsenic	ND	0.0010	0.001000	0	98.8	50	150				
Lead	0.00053	0.00050	0.0005000	0	105	50	150				
Selenium	0.0011	0.0010	0.001000	0	106	50	150				
Thallium	0.00051	0.00050	0.0005000	0	101	50	150				
Uranium	0.00051	0.00050	0.0005000	0	102	50	150				

Sample ID	MB		SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	PBW		Batch ID:	B29480		RunNo:	29480				
Prep Date:			Analysis Date:	10/12/2015		SeqNo:	896564		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Antimony	ND	0.0010									
Arsenic	ND	0.0010									
Lead	ND	0.00050									
Selenium	ND	0.0010									
Thallium	ND	0.00050									
Uranium	ND	0.00050									

Sample ID	1510226-002BMS		SampType:	MS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	Juana's Well		Batch ID:	B29480		RunNo:	29480				
Prep Date:			Analysis Date:	10/12/2015		SeqNo:	896830		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Antimony	0.021	0.0010	0.02500	0	84.1	70	130				
Arsenic	0.025	0.0010	0.02500	0.0007439	95.4	70	130				
Lead	0.013	0.00050	0.01250	.00006847	99.8	70	130				
Selenium	0.024	0.0010	0.02500	0.0003130	93.1	70	130				

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510226

29-Oct-15

Client: Souder Miller & Associates

Project: Valle Nuevo

Sample ID	1510226-002BMS		SampType:	MS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	Juana's Well		Batch ID:	B29480		RunNo:	29480				
Prep Date:			Analysis Date:	10/12/2015		SeqNo:	896830		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Thallium	0.013	0.00050	0.01250	000007636	101	70	130				
Uranium	0.013	0.00050	0.01250	.00009746	105	70	130				

Sample ID	1510226-002BMSD		SampType:	MSD		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	Juana's Well		Batch ID:	B29480		RunNo:	29480				
Prep Date:			Analysis Date:	10/12/2015		SeqNo:	896831		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Antimony	0.021	0.0010	0.02500	0	84.1	70	130	0.0542	20		
Arsenic	0.025	0.0010	0.02500	0.0007439	96.8	70	130	1.43	20		
Lead	0.013	0.00050	0.01250	.00006847	101	70	130	0.953	20		
Selenium	0.024	0.0010	0.02500	0.0003130	93.6	70	130	0.448	20		
Thallium	0.013	0.00050	0.01250	000007636	102	70	130	0.687	20		
Uranium	0.013	0.00050	0.01250	.00009746	106	70	130	1.59	20		

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510226

29-Oct-15

Client: Souder Miller & Associates

Project: Valle Nuevo

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29470		RunNo: 29470							
Prep Date:	Analysis Date: 10/9/2015		SeqNo: 896309		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R29470		RunNo: 29470							
Prep Date:	Analysis Date: 10/9/2015		SeqNo: 896310		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	0.51	0.10	0.5000	0	103	90	110			
Chloride	4.8	0.50	5.000	0	96.3	90	110			
Nitrogen, Nitrite (As N)	0.99	0.10	1.000	0	98.8	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Phosphorus, Orthophosphate (As P)	4.9	0.50	5.000	0	98.0	90	110			
Sulfate	9.9	0.50	10.00	0	98.8	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510226

29-Oct-15

Client: Souder Miller & Associates

Project: Valle Nuevo

Sample ID	MB-21690	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	21690	RunNo:	29379					
Prep Date:	10/6/2015	Analysis Date:	10/7/2015	SeqNo:	893351	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-21690	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	21690	RunNo:	29379					
Prep Date:	10/6/2015	Analysis Date:	10/7/2015	SeqNo:	893352	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	998	20.0	1000	0	99.8	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

Sample Log-In Check List

Client Name: SMA ABQ

Work Order Number: 1510226

RcptNo: 1

Received by/date: AT 10/05/15

Logged By: 10/5/2015 3:55:00 PM

Completed By: Anne Thorne 10/6/2015 *Anne Thorne*

Reviewed By: CS 10/06/15

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered?

Log In

- 4. Was an attempt made to cool the samples? Yes No NA

APPROVED BY CLIENT

- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA

Approved by client.

- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA

- 10. VOA vials have zero headspace? Yes No HNO3 No VOA Vials

- 11. Were any sample containers received broken? Yes No

- 12. Does paperwork match bottle labels? Yes No

(Note discrepancies on chain of custody)

- 13. Are matrices correctly identified on Chain of Custody? Yes No

- 14. Is it clear what analyses were requested? Yes No

- 15. Were all holding times able to be met? Yes No

(If no, notify customer for authorization.)

of preserved bottles checked for pH: 2

(2 or >12 unless noted)

Adjusted? See below

Checked by: AT 10/06/15

AT 10/06/15

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____

By Whom: _____ Via: eMail Phone Fax In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

DISSOLVED METALS BOTTLE PRESERVED IN LAB w/ 25 mL HN03 FOR ACCEPTABLE pH/at 10/6/15

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	22.0	Good	Not Present			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 29, 2015

Scott McKittrick
Souder Miller & Associates
3451 Candelaria, NE Suite D
Albuquerque, NM 87107
TEL: (505) 299-0942
FAX

RE: Isla la Calzada

OrderNo.: 1510223

Dear Scott McKittrick:

Hall Environmental Analysis Laboratory received 4 sample(s) on 10/5/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written in a cursive style.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510223

Date Reported: 10/29/2015

CLIENT: Souder Miller & Associates

Client Sample ID: School drive point-good

Project: Isla la Calzada

Collection Date: 9/30/2015 12:30:00 PM

Lab ID: 1510223-001

Matrix: AQUEOUS

Received Date: 10/5/2015 3:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Antimony	ND	0.0010		mg/L	1	10/12/2015 5:24:48 PM	B29480
Arsenic	0.0031	0.0010		mg/L	1	10/12/2015 5:24:48 PM	B29480
Lead	0.0014	0.00050		mg/L	1	10/12/2015 5:24:48 PM	B29480
Selenium	0.0055	0.0010		mg/L	1	10/12/2015 5:24:48 PM	B29480
Thallium	ND	0.00050		mg/L	1	10/12/2015 5:24:48 PM	B29480
Uranium	ND	0.00050		mg/L	1	10/12/2015 5:24:48 PM	B29480
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	10/9/2015 4:31:35 PM	R29470
Chloride	210	50		mg/L	100	10/8/2015 11:32:35 PM	R29414
Nitrogen, Nitrite (As N)	ND	0.10	H	mg/L	1	10/9/2015 4:31:35 PM	R29470
Bromide	0.82	0.10		mg/L	1	10/9/2015 4:31:35 PM	R29470
Nitrogen, Nitrate (As N)	4.6	0.10	H	mg/L	1	10/9/2015 4:31:35 PM	R29470
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	10/9/2015 4:31:35 PM	R29470
Sulfate	50	5.0		mg/L	10	10/8/2015 11:20:10 PM	R29414
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	662	20.0	*	mg/L	1	10/7/2015 7:06:00 PM	21690
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.0028	0.0020		mg/L	1	10/13/2015 8:34:03 PM	B29512
Beryllium	ND	0.0020		mg/L	1	10/13/2015 8:34:03 PM	B29512
Cadmium	ND	0.0020		mg/L	1	10/13/2015 8:34:03 PM	B29512
Calcium	78	1.0		mg/L	1	10/13/2015 8:34:03 PM	B29512
Chromium	ND	0.0060		mg/L	1	10/13/2015 8:34:03 PM	B29512
Copper	ND	0.0060		mg/L	1	10/13/2015 8:34:03 PM	B29512
Iron	0.36	0.020	*	mg/L	1	10/14/2015 7:52:04 PM	C29542
Magnesium	48	1.0		mg/L	1	10/13/2015 8:34:03 PM	B29512
Manganese	0.0043	0.0020		mg/L	1	10/13/2015 8:34:03 PM	B29512
Potassium	8.0	1.0		mg/L	1	10/13/2015 8:34:03 PM	B29512
Silver	ND	0.0050		mg/L	1	10/14/2015 7:52:04 PM	C29542
Sodium	23	1.0		mg/L	1	10/13/2015 8:34:03 PM	B29512

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510223

Date Reported: 10/29/2015

CLIENT: Souder Miller & Associates

Client Sample ID: Water system @ tank

Project: Isla la Calzada

Collection Date: 9/30/2015 1:30:00 PM

Lab ID: 1510223-002

Matrix: AQUEOUS

Received Date: 10/5/2015 3:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Antimony	ND	0.0010		mg/L	1	10/12/2015 5:40:17 PM	B29480
Arsenic	0.0071	0.0010		mg/L	1	10/12/2015 5:40:17 PM	B29480
Lead	ND	0.00050		mg/L	1	10/12/2015 5:40:17 PM	B29480
Selenium	0.0052	0.0010		mg/L	1	10/12/2015 5:40:17 PM	B29480
Thallium	ND	0.00050		mg/L	1	10/12/2015 5:40:17 PM	B29480
Uranium	0.00063	0.00050		mg/L	1	10/12/2015 5:40:17 PM	B29480
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	10/9/2015 4:44:00 PM	R29470
Chloride	180	50		mg/L	100	10/8/2015 11:57:24 PM	R29414
Nitrogen, Nitrite (As N)	ND	0.10	H	mg/L	1	10/9/2015 4:44:00 PM	R29470
Bromide	0.33	0.10		mg/L	1	10/9/2015 4:44:00 PM	R29470
Nitrogen, Nitrate (As N)	1.1	0.10	H	mg/L	1	10/9/2015 4:44:00 PM	R29470
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	10/9/2015 4:44:00 PM	R29470
Sulfate	48	5.0		mg/L	10	10/8/2015 11:45:00 PM	R29414
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	645	20.0	*	mg/L	1	10/7/2015 7:06:00 PM	21690
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.0068	0.0020		mg/L	1	10/13/2015 8:43:28 PM	B29512
Beryllium	ND	0.0020		mg/L	1	10/13/2015 8:43:28 PM	B29512
Cadmium	ND	0.0020		mg/L	1	10/13/2015 8:43:28 PM	B29512
Calcium	51	1.0		mg/L	1	10/13/2015 8:43:28 PM	B29512
Chromium	ND	0.0060		mg/L	1	10/13/2015 8:43:28 PM	B29512
Copper	ND	0.0060		mg/L	1	10/13/2015 8:43:28 PM	B29512
Iron	ND	0.020		mg/L	1	10/14/2015 7:54:11 PM	C29542
Magnesium	36	1.0		mg/L	1	10/13/2015 8:43:28 PM	B29512
Manganese	0.0030	0.0020		mg/L	1	10/13/2015 8:43:28 PM	B29512
Potassium	9.0	1.0		mg/L	1	10/13/2015 8:43:28 PM	B29512
Silver	ND	0.0050		mg/L	1	10/14/2015 7:54:11 PM	C29542
Sodium	95	1.0		mg/L	1	10/13/2015 8:43:28 PM	B29512

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510223

Date Reported: 10/29/2015

CLIENT: Souder Miller & Associates

Client Sample ID: Public well hand dug

Project: Isla la Calzada

Collection Date: 9/30/2015 12:00:00 PM

Lab ID: 1510223-003

Matrix: AQUEOUS

Received Date: 10/5/2015 3:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Antimony	ND	0.0010		mg/L	1	10/12/2015 5:45:25 PM	B29480
Arsenic	0.0063	0.0010		mg/L	1	10/12/2015 5:45:25 PM	B29480
Lead	ND	0.00050		mg/L	1	10/12/2015 5:45:25 PM	B29480
Selenium	ND	0.0010		mg/L	1	10/12/2015 5:45:25 PM	B29480
Thallium	ND	0.00050		mg/L	1	10/12/2015 5:45:25 PM	B29480
Uranium	ND	0.00050		mg/L	1	10/12/2015 5:45:25 PM	B29480
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.17	0.10		mg/L	1	10/9/2015 4:56:24 PM	R29470
Chloride	12	0.50		mg/L	1	10/9/2015 4:56:24 PM	R29470
Nitrogen, Nitrite (As N)	ND	0.10	H	mg/L	1	10/9/2015 4:56:24 PM	R29470
Bromide	ND	0.10		mg/L	1	10/9/2015 4:56:24 PM	R29470
Nitrogen, Nitrate (As N)	0.70	0.10	H	mg/L	1	10/9/2015 4:56:24 PM	R29470
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	10/9/2015 4:56:24 PM	R29470
Sulfate	10	0.50		mg/L	1	10/9/2015 4:56:24 PM	R29470
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	234	20.0		mg/L	1	10/7/2015 7:06:00 PM	21690
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	ND	0.0020		mg/L	1	10/13/2015 8:45:42 PM	B29512
Beryllium	ND	0.0020		mg/L	1	10/13/2015 8:45:42 PM	B29512
Cadmium	ND	0.0020		mg/L	1	10/13/2015 8:45:42 PM	B29512
Calcium	17	1.0		mg/L	1	10/13/2015 8:45:42 PM	B29512
Chromium	ND	0.0060		mg/L	1	10/13/2015 8:45:42 PM	B29512
Copper	ND	0.0060		mg/L	1	10/13/2015 8:45:42 PM	B29512
Iron	ND	0.020		mg/L	1	10/14/2015 7:56:23 PM	C29542
Magnesium	7.2	1.0		mg/L	1	10/13/2015 8:45:42 PM	B29512
Manganese	0.16	0.0020	*	mg/L	1	10/13/2015 8:45:42 PM	B29512
Potassium	3.3	1.0		mg/L	1	10/13/2015 8:45:42 PM	B29512
Silver	ND	0.0050		mg/L	1	10/14/2015 7:56:23 PM	C29542
Sodium	17	1.0		mg/L	1	10/13/2015 8:45:42 PM	B29512

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510223

Date Reported: 10/29/2015

CLIENT: Souder Miller & Associates

Client Sample ID: School hand dug well

Project: Isla la Calzada

Collection Date: 9/30/2015 11:00:00 AM

Lab ID: 1510223-004

Matrix: AQUEOUS

Received Date: 10/5/2015 3:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Antimony	ND	0.0010		mg/L	1	10/12/2015 5:50:34 PM	B29480
Arsenic	0.0078	0.0010		mg/L	1	10/12/2015 5:50:34 PM	B29480
Lead	ND	0.00050		mg/L	1	10/12/2015 5:50:34 PM	B29480
Selenium	ND	0.0050		mg/L	5	10/14/2015 4:04:36 PM	B29547
Thallium	ND	0.00050		mg/L	1	10/12/2015 5:50:34 PM	B29480
Uranium	ND	0.00050		mg/L	1	10/12/2015 5:50:34 PM	B29480
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.15	0.10		mg/L	1	10/9/2015 5:08:49 PM	R29470
Chloride	69	5.0		mg/L	10	10/9/2015 12:34:37 AM	R29414
Nitrogen, Nitrite (As N)	ND	0.10	H	mg/L	1	10/9/2015 5:08:49 PM	R29470
Bromide	0.24	0.10		mg/L	1	10/9/2015 5:08:49 PM	R29470
Nitrogen, Nitrate (As N)	19	1.0	*H	mg/L	10	10/17/2015 2:38:26 AM	R29627
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	10/9/2015 5:08:49 PM	R29470
Sulfate	74	5.0		mg/L	10	10/9/2015 12:34:37 AM	R29414
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	537	20.0	*	mg/L	1	10/7/2015 7:06:00 PM	21690
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.046	0.0020		mg/L	1	10/13/2015 8:47:39 PM	B29512
Beryllium	ND	0.0020		mg/L	1	10/13/2015 8:47:39 PM	B29512
Cadmium	ND	0.0020		mg/L	1	10/13/2015 8:47:39 PM	B29512
Calcium	56	1.0		mg/L	1	10/13/2015 8:47:39 PM	B29512
Chromium	ND	0.0060		mg/L	1	10/13/2015 8:47:39 PM	B29512
Copper	ND	0.0060		mg/L	1	10/13/2015 8:47:39 PM	B29512
Iron	ND	0.020		mg/L	1	10/14/2015 7:58:22 PM	C29542
Magnesium	14	1.0		mg/L	1	10/13/2015 8:47:39 PM	B29512
Manganese	0.075	0.0020	*	mg/L	1	10/13/2015 8:47:39 PM	B29512
Potassium	14	1.0		mg/L	1	10/13/2015 8:47:39 PM	B29512
Silver	ND	0.0050		mg/L	1	10/14/2015 7:58:22 PM	C29542
Sodium	64	1.0		mg/L	1	10/13/2015 8:47:39 PM	B29512

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510223

29-Oct-15

Client: Souder Miller & Associates

Project: Isla la Calzada

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B29512		RunNo: 29512							
Prep Date:	Analysis Date: 10/13/2015		SeqNo: 897649		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B29512		RunNo: 29512							
Prep Date:	Analysis Date: 10/13/2015		SeqNo: 897650		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	103	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.7	85	115			
Calcium	49	1.0	50.00	0	97.9	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Copper	0.48	0.0060	0.5000	0	95.9	85	115			
Magnesium	51	1.0	50.00	0	103	85	115			
Manganese	0.47	0.0020	0.5000	0	94.9	85	115			
Potassium	50	1.0	50.00	0	99.3	85	115			
Sodium	50	1.0	50.00	0	100	85	115			

Sample ID LLLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B29512		RunNo: 29512							
Prep Date:	Analysis Date: 10/13/2015		SeqNo: 897651		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020	0.002000	0	91.0	50	150			
Beryllium	ND	0.0020	0.002000	0	87.0	50	150			
Cadmium	0.0026	0.0020	0.002000	0	128	50	150			
Calcium	ND	1.0	0.5000	0	132	50	150			
Chromium	0.0077	0.0060	0.006000	0	128	50	150			
Copper	0.0087	0.0060	0.006000	0	144	50	150			
Magnesium	ND	1.0	0.5000	0	104	50	150			
Manganese	0.0023	0.0020	0.002000	0	116	50	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510223

29-Oct-15

Client: Souder Miller & Associates

Project: Isla la Calzada

Sample ID LLLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B29512		RunNo: 29512							
Prep Date:	Analysis Date: 10/13/2015		SeqNo: 897651		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	ND	1.0	0.5000	0	104	50	150			
Sodium	ND	1.0	0.5000	0	121	50	150			

Sample ID MB-C	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: C29542		RunNo: 29542							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 898765		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								
Silver	ND	0.0050								

Sample ID LCS-C	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: C29542		RunNo: 29542							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 898766		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Silver	0.091	0.0050	0.1000	0	90.6	85	115			

Sample ID LLLCS-C	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: C29542		RunNo: 29542							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 898767		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020	0.02000	0	97.4	50	150			
Silver	ND	0.0050	0.005000	0	95.4	50	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510223

29-Oct-15

Client: Souder Miller & Associates

Project: Isla la Calzada

Sample ID LCS	SampType: LCS		TestCode: EPA 200.8: Dissolved Metals							
Client ID: LCSW	Batch ID: B29480		RunNo: 29480							
Prep Date:	Analysis Date: 10/12/2015		SeqNo: 896562		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.1	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.5	85	115			
Lead	0.012	0.00050	0.01250	0	97.6	85	115			
Selenium	0.025	0.0010	0.02500	0	98.6	85	115			
Thallium	0.012	0.00050	0.01250	0	98.4	85	115			
Uranium	0.012	0.00050	0.01250	0	99.0	85	115			

Sample ID LLCS	SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals							
Client ID: BatchQC	Batch ID: B29480		RunNo: 29480							
Prep Date:	Analysis Date: 10/12/2015		SeqNo: 896563		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010	0.001000	0	92.2	50	150			
Arsenic	ND	0.0010	0.001000	0	98.8	50	150			
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Selenium	0.0011	0.0010	0.001000	0	106	50	150			
Thallium	0.00051	0.00050	0.0005000	0	101	50	150			
Uranium	0.00051	0.00050	0.0005000	0	102	50	150			

Sample ID MB	SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals							
Client ID: PBW	Batch ID: B29480		RunNo: 29480							
Prep Date:	Analysis Date: 10/12/2015		SeqNo: 896564		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00050								
Uranium	ND	0.00050								

Sample ID LCS	SampType: LCS		TestCode: EPA 200.8: Dissolved Metals							
Client ID: LCSW	Batch ID: B29547		RunNo: 29547							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 899205		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.023	0.0010	0.02500	0	93.0	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510223

29-Oct-15

Client: Souder Miller & Associates

Project: Isla la Calzada

Sample ID LLLCS	SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals							
Client ID: BatchQC	Batch ID: B29547		RunNo: 29547							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 899208		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010	0.001000	0	84.3	50	150			

Sample ID MB	SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals							
Client ID: PBW	Batch ID: B29547		RunNo: 29547							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 899211		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510223

29-Oct-15

Client: Souder Miller & Associates

Project: Isla la Calzada

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29414		RunNo: 29414							
Prep Date:	Analysis Date: 10/8/2015		SeqNo: 894692		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R29414		RunNo: 29414							
Prep Date:	Analysis Date: 10/8/2015		SeqNo: 894693		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.4	90	110			
Sulfate	9.9	0.50	10.00	0	99.4	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29470		RunNo: 29470							
Prep Date:	Analysis Date: 10/9/2015		SeqNo: 896309		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R29470		RunNo: 29470							
Prep Date:	Analysis Date: 10/9/2015		SeqNo: 896310		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	103	90	110			
Chloride	4.8	0.50	5.000	0	96.3	90	110			
Nitrogen, Nitrite (As N)	0.99	0.10	1.000	0	98.8	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Phosphorus, Orthophosphate (As P)	4.9	0.50	5.000	0	98.0	90	110			
Sulfate	9.9	0.50	10.00	0	98.8	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510223

29-Oct-15

Client: Souder Miller & Associates

Project: Isla la Calzada

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29627		RunNo: 29627							
Prep Date:	Analysis Date: 10/16/2015		SeqNo: 902085		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R29627		RunNo: 29627							
Prep Date:	Analysis Date: 10/16/2015		SeqNo: 902086		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.5	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510223

29-Oct-15

Client: Souder Miller & Associates

Project: Isla la Calzada

Sample ID	MB-21690	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	21690	RunNo:	29379					
Prep Date:	10/6/2015	Analysis Date:	10/7/2015	SeqNo:	893351	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-21690	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	21690	RunNo:	29379					
Prep Date:	10/6/2015	Analysis Date:	10/7/2015	SeqNo:	893352	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	998	20.0	1000	0	99.8	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 29, 2015

Scott McKittrick
Souder Miller & Associates
3451 Candelaria, NE Suite D
Albuquerque, NM 87107
TEL: (505) 299-0942
FAX

RE: Tepeagua

OrderNo.: 1510221

Dear Scott McKittrick:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/5/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510221

Date Reported: 10/29/2015

CLIENT: Souder Miller & Associates

Client Sample ID: Soccer field well

Project: Tepeagua

Collection Date: 10/1/2015 11:20:00 AM

Lab ID: 1510221-001

Matrix: AQUEOUS

Received Date: 10/5/2015 3:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Antimony	ND	0.0010		mg/L	1	10/12/2015 5:14:32 PM	B29480
Arsenic	0.0018	0.0010		mg/L	1	10/12/2015 5:14:32 PM	B29480
Lead	ND	0.00050		mg/L	1	10/12/2015 5:14:32 PM	B29480
Selenium	ND	0.0010		mg/L	1	10/12/2015 5:14:32 PM	B29480
Thallium	ND	0.00050		mg/L	1	10/12/2015 5:14:32 PM	B29480
Uranium	ND	0.00050		mg/L	1	10/12/2015 5:14:32 PM	B29480
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.16	0.10		mg/L	1	10/9/2015 4:06:46 PM	R29470
Chloride	3.0	0.50		mg/L	1	10/9/2015 4:06:46 PM	R29470
Nitrogen, Nitrite (As N)	ND	0.10	H	mg/L	1	10/9/2015 4:06:46 PM	R29470
Bromide	ND	0.10		mg/L	1	10/9/2015 4:06:46 PM	R29470
Nitrogen, Nitrate (As N)	0.66	0.10	H	mg/L	1	10/9/2015 4:06:46 PM	R29470
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	10/9/2015 4:06:46 PM	R29470
Sulfate	4.0	0.50		mg/L	1	10/9/2015 4:06:46 PM	R29470
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	189	20.0		mg/L	1	10/7/2015 7:06:00 PM	21690
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.018	0.0020		mg/L	1	10/13/2015 8:29:59 PM	B29512
Beryllium	ND	0.0020		mg/L	1	10/13/2015 8:29:59 PM	B29512
Cadmium	ND	0.0020		mg/L	1	10/13/2015 8:29:59 PM	B29512
Calcium	4.7	1.0		mg/L	1	10/13/2015 8:29:59 PM	B29512
Chromium	ND	0.0060		mg/L	1	10/13/2015 8:29:59 PM	B29512
Copper	ND	0.0060		mg/L	1	10/13/2015 8:29:59 PM	B29512
Iron	ND	0.020		mg/L	1	10/14/2015 7:47:57 PM	C29542
Magnesium	1.8	1.0		mg/L	1	10/13/2015 8:29:59 PM	B29512
Manganese	ND	0.0020		mg/L	1	10/13/2015 8:29:59 PM	B29512
Potassium	5.4	1.0		mg/L	1	10/13/2015 8:29:59 PM	B29512
Silver	ND	0.0050		mg/L	1	10/14/2015 7:47:57 PM	C29542
Sodium	13	1.0		mg/L	1	10/13/2015 8:29:59 PM	B29512

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	Page 1 of 8
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510221

Date Reported: 10/29/2015

CLIENT: Souder Miller & Associates

Client Sample ID: Church well

Project: Tepeagua

Collection Date: 10/1/2015 12:00:00 PM

Lab ID: 1510221-002

Matrix: AQUEOUS

Received Date: 10/5/2015 3:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Antimony	ND	0.0010		mg/L	1	10/12/2015 5:19:40 PM	B29480
Arsenic	0.0017	0.0010		mg/L	1	10/12/2015 5:19:40 PM	B29480
Lead	0.00069	0.00050		mg/L	1	10/12/2015 5:19:40 PM	B29480
Selenium	ND	0.0010		mg/L	1	10/12/2015 5:19:40 PM	B29480
Thallium	ND	0.00050		mg/L	1	10/12/2015 5:19:40 PM	B29480
Uranium	ND	0.00050		mg/L	1	10/12/2015 5:19:40 PM	B29480
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.10	0.10		mg/L	1	10/9/2015 4:19:10 PM	R29470
Chloride	34	5.0		mg/L	10	10/8/2015 10:30:30 PM	R29414
Nitrogen, Nitrite (As N)	ND	0.10	H	mg/L	1	10/9/2015 4:19:10 PM	R29470
Bromide	ND	0.10		mg/L	1	10/9/2015 4:19:10 PM	R29470
Nitrogen, Nitrate (As N)	24	1.0	*H	mg/L	10	10/17/2015 2:26:01 AM	R29627
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	10/9/2015 4:19:10 PM	R29470
Sulfate	21	0.50		mg/L	1	10/9/2015 4:19:10 PM	R29470
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	407	20.0		mg/L	1	10/7/2015 7:06:00 PM	21690
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.55	0.0020		mg/L	1	10/13/2015 8:31:58 PM	B29512
Beryllium	ND	0.0020		mg/L	1	10/13/2015 8:31:58 PM	B29512
Cadmium	ND	0.0020		mg/L	1	10/13/2015 8:31:58 PM	B29512
Calcium	39	1.0		mg/L	1	10/13/2015 8:31:58 PM	B29512
Chromium	ND	0.0060		mg/L	1	10/13/2015 8:31:58 PM	B29512
Copper	ND	0.0060		mg/L	1	10/13/2015 8:31:58 PM	B29512
Iron	0.032	0.020		mg/L	1	10/14/2015 7:49:59 PM	C29542
Magnesium	8.8	1.0		mg/L	1	10/13/2015 8:31:58 PM	B29512
Manganese	0.0067	0.0020		mg/L	1	10/13/2015 8:31:58 PM	B29512
Potassium	21	1.0		mg/L	1	10/13/2015 8:31:58 PM	B29512
Silver	ND	0.0050		mg/L	1	10/13/2015 8:31:58 PM	B29512
Sodium	23	1.0		mg/L	1	10/13/2015 8:31:58 PM	B29512

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510221

29-Oct-15

Client: Souder Miller & Associates

Project: Tepeagua

Sample ID MB	SampType: MBLK	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: PBW	Batch ID: B29512	RunNo: 29512								
Prep Date:	Analysis Date: 10/13/2015	SeqNo: 897649	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								

Sample ID LCS	SampType: LCS	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: LCSW	Batch ID: B29512	RunNo: 29512								
Prep Date:	Analysis Date: 10/13/2015	SeqNo: 897650	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.51	0.0020	0.5000	0	103	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.7	85	115			
Calcium	49	1.0	50.00	0	97.9	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Copper	0.48	0.0060	0.5000	0	95.9	85	115			
Magnesium	51	1.0	50.00	0	103	85	115			
Manganese	0.47	0.0020	0.5000	0	94.9	85	115			
Potassium	50	1.0	50.00	0	99.3	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Sodium	50	1.0	50.00	0	100	85	115			

Sample ID LLLCS	SampType: LCSLL	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: BatchQC	Batch ID: B29512	RunNo: 29512								
Prep Date:	Analysis Date: 10/13/2015	SeqNo: 897651	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.0020	0.002000	0	91.0	50	150			
Beryllium	ND	0.0020	0.002000	0	87.0	50	150			
Cadmium	0.0026	0.0020	0.002000	0	128	50	150			
Calcium	ND	1.0	0.5000	0	132	50	150			
Chromium	0.0077	0.0060	0.006000	0	128	50	150			
Copper	0.0087	0.0060	0.006000	0	144	50	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510221

29-Oct-15

Client: Souder Miller & Associates

Project: Tepeagua

Sample ID LLLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B29512		RunNo: 29512							
Prep Date:	Analysis Date: 10/13/2015		SeqNo: 897651		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	ND	1.0	0.5000	0	104	50	150			
Manganese	0.0023	0.0020	0.002000	0	116	50	150			
Potassium	ND	1.0	0.5000	0	104	50	150			
Silver	ND	0.0050	0.005000	0	87.6	50	150			
Sodium	ND	1.0	0.5000	0	121	50	150			

Sample ID MB-C	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: C29542		RunNo: 29542							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 898765		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								
Silver	ND	0.0050								

Sample ID LCS-C	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: C29542		RunNo: 29542							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 898766		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Silver	0.091	0.0050	0.1000	0	90.6	85	115			

Sample ID LLLCS-C	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: C29542		RunNo: 29542							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 898767		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020	0.02000	0	97.4	50	150			
Silver	ND	0.0050	0.005000	0	95.4	50	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510221

29-Oct-15

Client: Souder Miller & Associates

Project: Tepeagua

Sample ID LCS	SampType: LCS		TestCode: EPA 200.8: Dissolved Metals							
Client ID: LCSW	Batch ID: B29480		RunNo: 29480							
Prep Date:	Analysis Date: 10/12/2015		SeqNo: 896562		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.1	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.5	85	115			
Lead	0.012	0.00050	0.01250	0	97.6	85	115			
Selenium	0.025	0.0010	0.02500	0	98.6	85	115			
Thallium	0.012	0.00050	0.01250	0	98.4	85	115			
Uranium	0.012	0.00050	0.01250	0	99.0	85	115			

Sample ID LLCS	SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals							
Client ID: BatchQC	Batch ID: B29480		RunNo: 29480							
Prep Date:	Analysis Date: 10/12/2015		SeqNo: 896563		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010	0.001000	0	92.2	50	150			
Arsenic	ND	0.0010	0.001000	0	98.8	50	150			
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Selenium	0.0011	0.0010	0.001000	0	106	50	150			
Thallium	0.00051	0.00050	0.0005000	0	101	50	150			
Uranium	0.00051	0.00050	0.0005000	0	102	50	150			

Sample ID MB	SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals							
Client ID: PBW	Batch ID: B29480		RunNo: 29480							
Prep Date:	Analysis Date: 10/12/2015		SeqNo: 896564		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00050								
Uranium	ND	0.00050								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510221

29-Oct-15

Client: Souder Miller & Associates

Project: Tepeagua

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29414		RunNo: 29414							
Prep Date:	Analysis Date: 10/8/2015		SeqNo: 894692		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R29414		RunNo: 29414							
Prep Date:	Analysis Date: 10/8/2015		SeqNo: 894693		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.4	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29470		RunNo: 29470							
Prep Date:	Analysis Date: 10/9/2015		SeqNo: 896309		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R29470		RunNo: 29470							
Prep Date:	Analysis Date: 10/9/2015		SeqNo: 896310		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	103	90	110			
Chloride	4.8	0.50	5.000	0	96.3	90	110			
Nitrogen, Nitrite (As N)	0.99	0.10	1.000	0	98.8	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Phosphorus, Orthophosphate (As P)	4.9	0.50	5.000	0	98.0	90	110			
Sulfate	9.9	0.50	10.00	0	98.8	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29627		RunNo: 29627							
Prep Date:	Analysis Date: 10/16/2015		SeqNo: 902085		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510221

29-Oct-15

Client: Souder Miller & Associates

Project: Tepeagua

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29627		RunNo: 29627							
Prep Date:	Analysis Date: 10/16/2015		SeqNo: 902085		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R29627		RunNo: 29627							
Prep Date:	Analysis Date: 10/16/2015		SeqNo: 902086		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.5	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510221

29-Oct-15

Client: Souder Miller & Associates

Project: Tepeagua

Sample ID	MB-21690	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	21690	RunNo:	29379					
Prep Date:	10/6/2015	Analysis Date:	10/7/2015	SeqNo:	893351	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-21690	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	21690	RunNo:	29379					
Prep Date:	10/6/2015	Analysis Date:	10/7/2015	SeqNo:	893352	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	998	20.0	1000	0	99.8	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

Sample Log-In Check List

Client Name: SMA ABQ

Work Order Number: 1510221

RcptNo: 1

Received by/date: AT 10/5/15

Logged By: Anne Thorne 10/5/2015 3:55:00 PM *Anne Thorne*

Completed By: Anne Thorne 10/6/2015 *Anne Thorne*

Reviewed By: AT 10/6/15

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA

APPROVED BY CLIENT

- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA

Approved by client.

- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No *AT 10/6/15*
- 9. Was preservative added to bottles? Yes No NA

- 10. VOA vials have zero headspace? Yes No No VOA Vials

- 11. Were any sample containers received broken? Yes No

- 12. Does paperwork match bottle labels? Yes No

(Note discrepancies on chain of custody)

- 13. Are matrices correctly identified on Chain of Custody? Yes No

- 14. Is it clear what analyses were requested? Yes No

- 15. Were all holding times able to be met? Yes No

(If no, notify customer for authorization.)

of preserved bottles checked for pH: 2
 (or >12 unless noted)
 Adjusted? See below
 Checked by: AT 10/6/15

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks: dissolved metals bottle preserved in lab w/ 125 mL HX103 for acceptable pH / AT 10/6/15

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	22.0	Good	Not Present			

Chain-of-Custody Record

Client: SMA

Turn-Around Time:

Standard Rush

Project Name:

Tepeagua

Project #:

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

www.hallenvironmental.com

10/16/29

Project Manager:
Scott Meltrach

Sampler:

On Ice: Yes No

Sample Temperature: 22°C

Accreditation: NELAP Other

QA/QC Package: Level 4 (Full Validation)

EDD (Type)

Container Type and #

Preservative Type

HEAL No.

11/15 1120 H2O Soren field well 125ml-2 none 1510221-202

11/15 1200 " Church well " " 202

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCBs

8260B (VOA)

8270 (Semi-VOA)

Ba, Be, Cd, Ag, Cu, Fe,

Mn, As, Pb, Se, Sb,

Ti, U, Cr

Cations, Anions, TDS

Air Bubbles (Y or N)

Date: 1/5/15

Time: 1555

Relinquished by: [Signature]

Date: 10/5/15

Time: 1555

Received by: [Signature]

Date: 10/5/15

Time: 1555

Remarks: