Summary

The Hungerford & Terry, Inc. process effectively reduced the arsenic at the California American Water Isleton, CA Well 3A site to as low as 5 μ g/L using 5 mg Fe/L. The arsenic was reduced to less than the 10 μ g/L MCL with just 3 mg Fe/L. The 5 mg Fe/L dosage results in a 14 hour runlength. It is being recommended that an all Manganese Greensand media bed be considered, because the iron tends to filter in-depth.

Pilot Plant Set-Up

The Hungerford & Terry, Inc. pilot plant is a small self-contained unit capable of being transported, along with the required appurtenances, to the test location. The fiberglass tank is approximately 5 feet tall and 9 $\frac{1}{2}$ inches in diameter. This provides a media surface area of 0.5 ft².



The media was composed of two different layers. The bottom layer consists of approximately 18" Ferrosand, or Manganese Greensand and the top layer consisted of approximately 18" of anthracite. The pilot plant was shipped to the location with the media already installed per the manufacturer's recommendation. Prior to entering the filter, ferric chloride was injected into the system with a solenoid pump. The unit is equipped with an in-line static mixer. An in-line flow meter attached to the unit monitors flow entering the unit (the target flow was 1.5 gpm, (3.0 gpm/ft²)). The chemical feed pump was a solenoid driven pump manufactured by Jesco America Corp., Jesco model MAGDOS 1102B0002C-D2DD with a capacity of 0.5 gph at 150 psig.

Raw water was delivered to the pilot via hose, which was tapped directly to the Hydropnuematic tank downstream of the well pump. The supply tap was equipped with a back-flow preventer.



Illustration 2. Hydropnuematic tank and pilot plant feed. Isleton, CA. Well 3A

Pilot Plant Data

During each run, the treated water (effluent) was tested to determine the concentrations of arsenic (As), iron (Fe), pH, and free chlorine (Cl₂). Analysis of the data will indicate the ability to effectively treat arsenic.

The effluent was predominantly monitored using Hach field test kits, which largely consist of color comparison tests. The arsenic was monitored using an arsenic test kit manufactured by Industrial Test Systems. The pilot results, with the exception of arsenic, were confirmed by Hungerford & Terry, Inc.'s laboratory. The arsenic was confirmed by submitting samples to a laboratory selected by California American Water (CAW), BSK Analytical Laboratories. Additionally, CAW elected to analyze the same samples for iron, manganese, color, turbidity, and general physicals. The field test kits are intended to provide qualitative data. They are better capable of indicating the presence, or absence of a given constituent, and are not intended to provide the accuracy that a laboratory should.

The arsenic test is particularly subject to error. The color shades are difficult to differentiate which makes this test suitable for qualitative analysis, but not quantitative. The arsenic color comparison chart is below.



Procedure 1.0. Changing Solution Concentration

When it is required to change the dosage of a chemical feed, it is sometimes necessary to change the solution concentration. To change the solution concentration, it is necessary to first determine the existing solution concentration, the remaining solution volume, the desired solution concentration and the final solution volume required. Once these variables have been determined, it is then possible to determine the proper adjustment required. It is important to understand that any changes in solution concentration will not effect the solution already in the pump suction tubing. It will then be necessary to adjust the stroke, and/or frequency of the pump to deliver the desired dosage until the old solution can be flushed from the tubing. The alternative is to discharge the solution to waste. Approximately 0.25 gallons is required to flush the tubing.

Example:

The original ferric chloride solution is set to deliver 2 mg Fe/L and it is desired to change the solution concentration to deliver 3 mg Fe/L. The solution volume at the time of change is 2.5 gal. and it is desired to make up enough solution to have a final solution volume of 7.5 gallons.

The existing solution has a concentration of $13.2 \text{ g FeCl}_3/\text{gal}$. The new solution requires a concentration of 19.8 g FeCl3/gal. The difference between the two concentrations multiplied by the remaining solution volume gives the amount of FeCl₃ required to adjust the existing solution.

(1) $(19.8 \text{ g FeCl}_3/\text{gal} - 13.2 \text{ g FeCl}_3/\text{gal}) * 2.5 \text{ gallons} = 16.5 \text{ g Fe/Cl}_3$

Adjusting the existing solution requires that 16.5 g FeCl₃ be added to the remaining 2.5 gallons of solution.

Then determine the amount of FeCl₃ required to make up the additional volume of solution required:

(2) $(19.8 \text{ g FeCl}_3/\text{gal}) * 5 \text{ gallons} = 99 \text{ g FeCl}_3$

Therefore it is required to added a total of 115.5 g FeCl₃ (adding equations 1 and 2) to enough water to make a final solution of 7.5 gallons.

Manganese Removal

The raw water manganese concentration was determined to be at or below the current MCL of 0.05 mg/L and therefore, was not a primary concern of this study. None-the-less, it is worth noting that the treatment process reduced the manganese from the raw water concentration of 0.04 - 0.05 mg/L to non-detectable concentrations. The utilization of Manganese Greensand effectively treated the low manganese concentration using chlorine as the only oxidant.

Manganese Greensand can operate in some applications with chlorine as the only oxidant when a sufficient free chlorine residual is maintained. Hungerford & Terry, Inc. is of the opinion that Isleton, CA is suitable for this process. Under these conditions, Manganese acts as a catalyst in the oxidation of manganese. The media in the filter was regenerated prior to start-up to ensure the media was ready for service. The pilot unit had sat idle for an extended period of time prior to the study at Isleton, CA. Extended idle times can cause the media to partially exhaust. The regeneration was conducted as a matter of good practice.

Arsenic Treatment

Arsenic treatment with iron was the primary focus of this study. It was desired to determine the minimum iron dosage required for acceptable arsenic removal, arsenic removal as a function of iron dosage, arsenic quality at filter start-up, filter runlength at acceptable arsenic quality and how, if at all, other parameters impact, or are impacted by the treatment process. Table 1 lists the parameters analyzed for and the respective influent water quality. Table 1 includes only the results from the samples collected for comprehensive analysis. The samples that were collected to monitor the steady-state conditions were limited to arsenic and iron analysis and are reported elsewhere. The data presented in Table 1 is as reported by BSK Analytical Laboratories. Hungerford & Terry, Inc. collected the samples submitted to the laboratory throughout the pilot study.

Table 1. Comprehensive Influent Water Quality													
Results (mg/L, except where noted)													
			B	SK Sample	e ID								
Analyte	624690	625547	626384	627483	627509	627589	628953	Average					
Aluminum (Al)	0.050	-	-	ND	ND	ND	ND						
Calcium (Ca)	6.3	6.4	6.6	6.5	6.5	6.5	6.1	6.4					
Iron (Fe)	ND	ND	ND	ND	ND	ND	ND	ND					
Magnesium (Mg)	2.7	2.8	2.9	2.8	2.8	2.8	2.7	2.8					
Manganese (Mn)	0.040	0.040	0.040	0.050	0.050	0.050	0.040	0.044					
Arsenic (As), µg/L	23	-	23	23	22	24	22	23					
o-Phosphate as PO ₄	1.2	1.5	1.2	1.2	1.2	1.2	1.2	1.2					
Sulfate (SO ₄)	19	19	19	19	19	19	18	19					
Color (A.P.H.A.)	15	15	15	20	20	15	15	16					
Turbidity (NTU)	0.50	0.80	0.90	0.50	0.60	0.60	0.80	7					
Alkalinity (as CaCO ₃)	250	-	250	250	260	250	250	252					
Bicarbonate (as CaCO ₃)	240	-	240	240	240	240	240	240					
Carbonate (as CaCO ₃)	13	-	11	10	18	11	12	13					
Hardness (as CaCO ₃)	-	-	-	28	28	28	26	28					
Hydroxide (as CaCO ₃)	ND	-	ND	ND	ND	ND	ND	ND					
pH	8.5	8.5	8.5	8.4	8.5	8.5	8.5	8.5					

4

It was desired to collect arsenic quality data at the various iron dosages with the understanding that quick laboratory turn-around times would facilitate decisions and process evaluations. Difficulties with a quick turn-around time were encountered, which delayed the reporting of results, therefore, process evaluations and changes were largely based on field results. It was apparent from the field results, that arsenic reduction was taking place with 2 mg Fe/L. However, the arsenic field test kit has a history of reading low and therefore, the reduction could not be accurately quantified. It was assumed that the indicated arsenic reduction was insufficient to meet the process goal of 10 μ g As/L, or less. Laboratory results later confirmed the effluent arsenic to be 14 μ g As/L, which fails to meet the MCL of 10 μ g As/L limit, thereby supporting the conclusion that 2 mg Fe/L dosage was insufficient. The iron dosage was subsequently increased to 3 mg Fe/L by changing the ferric chloride solution concentration. This change took place in accordance with Procedure 1.0. The filter was not backwashed at this change in iron dosage.

Initial field results indicated that increasing the iron dosage from 2 mg Fe/L to 3 mg Fe/L had minimal, if any impact on arsenic removal. The laboratory data, from this same period, indicates that changing the iron dosage to 3 mg Fe/L dosage had no impact. Based on the field data, the filter was backwashed and the iron dosage was further increased to 5 mg Fe/L, which did result in a significant reduction of the arsenic. The pilot was operated for two runs, at the 5 mg Fe/L dosage and these runs are discussed below. The iron dosage was returned to 3 mg Fe/L so that the process may be better evaluated using 3 mg Fe/L dosage. Steady-state conditions with the 3 mg Fe/L dosage suggest that arsenic can be reduced to $8 - 9 \mu g$ As/L at this iron dosage. Although $8 - 9 \mu g$ As/L is below the MCL for arsenic, it would leave little room for error and might not be practical on a full-scale system. It is not clear as to why the initial application of 3 mg Fe/L failed to show a significant change even though the process presumably had enough time to reach steady-state conditions.

The application of 5 mg Fe/L effectively reduced the arsenic to $5 - 6 \mu g$ As/L, at steady-state. The ferric chloride solution concentration was increased to deliver 5 mg Fe/L. The change in iron dosage was done in accordance with Procedure 1.0. Two filter runs were operated at this dosage. The first run was used to primarily determine the runlength achievable and to help evaluate the time required to reach steady-state conditions. This run was operated overnight, which did not permit sampling beyond the start-up. The second run was used to determine the steady-state arsenic reduction achievable while verifying the runlength and arsenic quality at start-up. This run was operated over the course of several days, shutting the unit down after each day so as not to overrun the breakpoint.

Figure 1 depicts the steady-state effluent arsenic concentrations as a function of iron dosage. The data, as mentioned above, indicates that an iron dosage of 3 mg/L would be sufficient to reduce the arsenic to the current 10 μ g As/L MCL. Furthermore, it is apparent that there is a diminishing return on the iron dosage applied. The 2 mg Fe/L dosage effectively reduced the influent arsenic by 42%, while the subsequent 3 and 5 mg Fe/L dosages reduced the influent arsenic by 63 – 66% and 75 – 79%, respectively. These percentages are based on an influent quality of 24 μ g As/L and an effluent quality of 14 μ g As/L, 9 – 8 μ g As/L and 6 – 5 μ g As/L, respectively. Increasing the iron dosage by 50%, from 2 mg Fe/L to 3 mg Fe/L, improved arsenic removal by 40%. Further increasing the iron dosage by 67% from 3 mg Fe/L to 5 mg Fe/L improved arsenic removal by only 35%.



The runlength at 5 mg Fe/L was determined to be approximately 14 hours. The end of the run was determined by an elevated effluent iron concentration. The iron primarily filtered in-depth over the course of this study resulting in a headloss of less than 10 psi across the filter, at the time of iron breakthrough. The headloss on a clean bed was approximately 2 psi and went as high as 8 - 9 psi. It would be my recommendation that a deeper Manganese Greensand bed be utilized. However, California American Water would be better served by using a media bed consisting of no anthracite. But replacing all of the anthracite with Manganese Greensand has the potential to exceed the maximum recommended pressure differential for that media. The maximum pressure differential for Manganese Greensand is 10 psi. The pilot unit was operated to a pressure differential of approximately 8 - 9 psi with the dual Manganese Greensand/anthracite bed when the iron broke through. Replacement of the anthracite with Manganese Greensand would surely cause the maximum headloss to be exceeded.

If it is desired to move forward without anthracite, the best media selection would then be Greensand Plus, which is not limited to 10 psi pressure differential. Greensand Plus is manufactured from a different substrate than Manganese Greensand and it is this substrate that makes operating beyond the 10 psi possible. Alternatively, if it is desired to remain with Manganese Greensand and to replace some of the anthracite, the recommendation would then be to include no more than 24 inches of Manganese Greensand and 12 inches of anthracite, as opposed the original 18 inches of each. The effective size of Manganese Greensand and Greensand Plus, compared to anthracite, makes them better suited for applications where indepth filtration is predominant. The runlength of the filter, when operated at the 2 and 3 mg Fe/L dosages, were estimated at 35 and 23 hours, respectively.

The iron to arsenic ratio is 208:1at the 5 mg Fe/L dosage, which is high, compared to some applications. Ratios as low as 20:1 have been experienced. Water quality, i.e., pH, silica, etc., can interfere with this process thereby increasing the iron:arsenic. Although the iron:arsenic is considerably high for this application, it may not be feasible to improve this ratio.

The coagulation/filtration process for arsenic removal is typically more efficient at lower pH's. Well 3A had a relatively high pH of 8.3 - 8.5. The high pH most likely makes this process less efficient than a process operated at lower pH. Ferric chloride is acidic in nature and did reduce the pH to 7.5 - 7.8, at a 5 mg Fe/L dosage, according to the field measurements. Lower iron dosages brought about lessor reductions in pH. Table 2, below, gives the results from the samples submitted for a comprehensive analysis. The sample times are the same as those for Table 1.

Table 2. Comprehensive	e Effluent (Quality						
		Re	esults (mg/	L, except w	where noted	l)		
			BS	K Sample I	D			
Analyte	624691	625548	626383	627588	627510	627484	628952	Average
Aluminum (Al)	0.10	-	-	ND	ND	ND	ND	ND
Calcium (Ca)	4.9	5.9	8.2	6.6	6.3	6.4	5.6	6.3
Iron (Fe)	ND	ND	0.050	0.11	ND	ND	0.080	0.03
Magnesium (Mg)	2.8	2.6	3.2	2.9	2.8	2.8	2.6	2.8
Manganese (Mn)	0.010	ND	ND	ND	ND	ND	ND	ND
Arsenic (As), µg/L	14	-	8.0	7.0	5.0	5.0	7.0	N/A
o-Phosphate as PO ₄	0.60	0.60	ND	ND	ND	ND	ND	N/A
Sulfate (SO ₄)	19	19	19	19	19	19	19	19
Color (A.P.H.A.)	ND	ND	ND	ND	ND	ND	5.0	0.7
Turbidity (NTU)	ND	0.20	0.10	0.10	0.20	ND	0.40	0.14
Alkalinity (as CaCO ₃)	240	-	230	240	240	230	240	237
Bicarbonate (as CaCO ₃)	240	-	230	240	240	230	240	237
Carbonate (as CaCO ₃)	2.0	-	ND	ND	ND	ND	ND	0.3
Hardness (as CaCO ₃)	-	-	-	28	27	28	25	27
Hydroxide (as $CaCO_3$)	ND	-	ND	ND	ND	ND	ND	ND
pН	8.3	8.3	8.1	8.1	8.2	8.0	8.1	N/A

The laboratory pH measurements in Tables 1 and 2 indicate that the pH was reduced from 8.3 to 8.1, regardless of the iron dosage applied. The pH reduction at the iron dosages applied during this study was not significant and the study of arsenic reduction as a function of pH was outside the scope of this study. The field results for pH are available in Appendix B.

Although the study of arsenic reduction as a function of pH was outside the scope of this study, it was feasible to study pH as a function of acid dosage. Jar testing was used to evaluate pH as a function of acid dosage to determine if the pH could be feasibly reduced by acid addition. The jar tests were conducted using an 8 μ g As/L sulfuric acid solution and 500 mL samples of raw water. The results are plotted in Figure 2. High acid dosages result in only minimal pH changes due to the high alkalinity of the water. It can be concluded from the jar test results that the costs of applying acid, including the pumps, operator safety, operator training and overall operations, would not be feasible enough to offset the inefficiency that a higher pH imposes on the process.



Phosphate is another known interference that can hamper arsenic treatment. California American Water/RBF elected to include o-Phosphate in the analytical results and those results are presented in Figure 3. Figure 3 was provided by RBF and modified to include operating conditions by Hungerford & Terry, Inc. The results indicate that o-Phosphate is removed to non-detectable concentrations with 3 mg Fe/L, or less. The elimination of o-Phosphate does coincide with the lowest arsenic results, but there is not enough data to suggest that the presence, or elimination of the o-Phosphate impacted the results of this study. It is my opinion that the data indicates that the relationship between iron and arsenic is stronger than the relationship between o-phosphate and arsenic, or o-Phosphate and iron. The data indicates that satisfactory arsenic removal was not achieved until after sufficient iron was applied. It is worthwhile to note that the lowest effluent arsenic concentrations coincided with the lowest effluent o-Phosphate concentrations. However, it should also be noted, as a point of interest, that the lowest iron:arsenic coincided with the lowest iron dosage applied, 2 mg Fe/L, and in the presence of o-Phosphate. This is not to suggest that the effluent arsenic concentration of 14 μ g/L, at the 2 mg Fe/L dosage, is an acceptable result.



The iron to arsenic ratio at the 2 mg Fe/L dosage was approximately 143:1, or 2 mg Fe/L removed 14 μ g As/L. This took place without meeting the o-Phosphate demand. The BSK data indicates that the effluent o-Phosphate was 0.6 mg/L at this iron dosage. The iron:arsenic only increases as the o-Phosphate demand is met and exceeded. The respective iron:arsenic ratios at the 3 mg Fe/L and 5 mg Fe/L dosages are 194:1 and 270:1 assuming an influent arsenic concentration of 24 μ g/L and effluent of 8.5 μ g/L and 5.5 μ g/L, at the respective iron dosages. In meeting the o-Phosphate demand, theoretically eliminating this source of

interference, the iron:arsenic, in my opinion would have leveled off, if not decrease. The fact that the iron:arsenic continued to rise even after meeting the o-Phosphate demand, in my opinion, implies that a direct correlation between the iron dosage and o-Phosphate is questionable.

Silica is another known interference in the arsenic treatment process. Hungerford & Terry, Inc. determined the influent silica concentration to be 38 mg/L as SiO₂. This is a relatively high concentration and is believed to have had some impact on arsenic treatment.

The time required for the arsenic to reach steady-state was evaluated during this study. Samples were collected at 5, 10, 15 and 30 minutes after filter start up and sent to BSK for iron and arsenic analysis. Figure 4 displays the typical start-up trend for arsenic and indicates that the arsenic can be reduced to 10 μ g As/L within 7 – 10 minutes. Backwashing with raw water, as the pilot unit was, would have contributed to the time required. Backwashing with raw water filled the unit with untreated, arsenic laden water. The unit holds approximately 14 gallons of water, which would take approximately 9 minutes, at 1.5 gpm (3 gpm/ft²), to flush, assuming plug flow.



The effluent iron quality took longer than anticipated to reach steady-state conditions, taking approximately 5 minutes to fall below the MCL of 0.3 mg/L. The rinse time is typically three minutes. Extended rinse times are fairly common on applications where the iron filters in-depth. Start-up of the filter can subject the filter to changing head pressures, which would work to push the iron through. With regard to this specific application, previous study at this site demonstrated that changes in feed pressure could severely impact the effluent iron quality by pushing the iron through. Changes in feed pressure during this study were minimized by the incorporation of a hydropnuematic tank and a pressure regulating valve, none-theless, changes in feed pressure were still noticeable, especially at start-up. Changing the media configuration in accordance with the previously recommended media change might be sufficient to eliminate this extended rinse time.

The recommended backwash rate for this site is 15 gpm/ft^2 given the water temperature of 70 °F. Lower water temperatures permit lower backwash rates due to differences in viscosity. The recommended bed expansion upon backwash is 40% for which the 15 gpm/ft^2 would be required, here. Achieving the required 15 gpm/ft^2 backwash rate was known to be a problem at this site, because of this backwash supply was boosted with a portable pump, which allowed a higher backwash flowrate than that achievable without the pump. Figure 5 gives the recommended backwash flowrate as a function of water temperature.



Color and Turbidity

The color and turbidity were significantly reduced with color often reaching non-detectable levels and turbidity reaching 0.1 - 0.2 NTU. Tables 1 and 2 contain the laboratory results for Color and Turbidity for the Influent and Effluent, respectively.

Backwash Sludge

The backwash sludge was collected for the purpose of collecting as much sludge as was possible for submission to BSK. California American Water intended to perform the California WET test on the sludge. The sludge was collected at the end of the study period by first allowing the backwash waste to settle, then siphoning off the supernatant. The sludge was collected in glass jars provided by BSK.

It should be noted that the bulk of the sludge did readily settle, but left a cloudy supernatant. The supernatant became clear when allowed to sit overnight. Below are two photographs of the backwash sludge. The sludge was collected in a large trash can. The trash can was purchased new by California American Water at the beginning of this study for the purpose of containing the backwash. The left photograph shows how the supernatant typically looked after settling. Here, the sludge had settled for seven hours. The right photograph shows how the supernatant typically looked after it sat overnight. The supernatant is quite clear. The lid to the trash can was put on after backwashing so that no debris could enter the can while it sat idle.



Conclusions

Arsenic can be reduced to less than 10 µg As/L with as little as 3 mg Fe/L, but that an iron dosage of 5 mg Fe/L might best meet California American Water's needs.

Reducing the pH with an acid in an effort to improve arsenic removal would not be feasible.

In-depth filtration is the primary iron filtration mechanism. Increasing the depth of Manganese Greensand should be beneficial by reducing the time required for rinse and to help prevent iron breakthrough when the feed pressure changes.

The impact of o-Phosphate on this process is inconclusive, although o-Phosphate was reduced to nondetectable concentrations with less than 3 mg Fe/L.

Appendix A

Hungerford & Terry, Inc. Sample Analysis

Appendix A

Hungerford & Terry, Inc. Sample Analysis

WATER ANALYSIS

by HUNGERFORD & TERRY, INC. MANUFACTURERS OF WATER TREATING EQUIPMENT CLAYTON, NEW JERSEY 08312

Customer: California American Water Co. Address: Isleton, CA

Date Taken:	8/29/05
Received:	9/9/05
Analyzed:	9/16/05

LAB.NO. SOURCE		42199 Well 3A w/Cl2	42201 Pilot Effluent
CATIONS Calcium Magnesium Sodium Calc. Sodium Anal.	mg/L as CaCO3 mg/L as CaCO3 mg/L as CaCO3 mg/L as CaCO3	13 7 309	 300
TOTAL ANIONS Hydroxide Alk. Carbonate Alk. Bicarb. Alk. Chloride Sulfate Nitrate	mg/L as CaCO ₃ mg/L as CaCO ₃	329 0 240 77 12 0.4	0 0 217
Carbon Dioxide Soluble Silica Iron (Total) Manganese Chlorine (Total) Total Hardness Nitrate Spec. Cond. pH Turbidity True Color Ammonia Sediment	mg/L as CaCO3 mg/L as CO2 mg/L as SiO2 mg/L as Fe mg/L as Mn mg/L as Cl2 mg/L as CaCO3 mg/L as Nitrogen (µS/cm @ 25°C) (at Lab.) (NTU) (APHA units) mg/L as Nitrogen (Appearance)	11 38.6 0.02 0.057 0.03 20 0.1 678 7.9 0.29 <5 <0.05 None	 0.04 <0.04 0.02 19 680 7.6 0.13 <5 <0.05 None

Remarks:Sample #42199: 8:30 AM Sample #42201: 8:30 AM

Analyzed by:

(Robin D. Biegenwald)

To convert mg/L (ppm) to grains per gallon divide by 17.1.

To convert mg/L as calcium carbonate to equivalents per liter, divide by 50.

To convert to other, refer to chart available through your representative.

To convert specific conductance in uS/cm (micromhos/cm) to specific resistance in ohms, divide the uS/cm into 1 million.

WATER ANALYSIS

by HUNGERFORD & TERRY, INC. MANUFACTURERS OF WATER TREATING EQUIPMENT CLAYTON, NEW JERSEY 08312

Customer: California American Water Co.Date Taken: 8/25/05Address: Isleton, CAReceived: 9/9/05Analyzed: 9/14/05

LAB.NO. SOURCE		42197 8/25 Inf.	42198 8/29 Inf.	42200 8/30 Inf.	
CATIONS					
Calcium	mg/L as CaCO3				
Magnesium	mg/L as CaCO ₃				
Sodium Calc.	mg/L as CaCO ₃				
Sodium Anal.	mg/L as CaCO ₃				
TOTAL	mg/L as CaCO₃				
ANIONS					
Hydroxide Alk.	mg∕L as CaCO₃				
Carbonate Alk.	mg∕L as CaCO₃				
Bicarb. Alk.	mg∕L as CaCO₃				
Chloride	mg/L as CaCO3				
Sulfate	mg∕L as CaCO₃				
Nitrate	mg/L as CaCO3				
TOTAL	mg/L as CaCO ₃				
Carbon Dioxide	mg/L as CO ₂			·	
Soluble Silica	mg/L as SiO ₂				
Iron (Total)	mg/L as Fe	4.74	4.38	3.24	
Manganese	mg/L as Mn				
Chlorine (Total)	mg/L as Cl ₂				
Total Hardness	mg∕L as CaCO₃				
Nitrate	mg/L as Nitroge:	n			
Spec. Cond.	(µS/cm @ 25°C)				
рH	(at Lab.)				
Turbidity	(NTU)				
True Color	(APHA units)				
Ammonia	mg/L as Nitroge	n			
Sediment	(Appearance)				

Remarks:Sample #42197: 8/25/05 @ 12:00 PM Sample #42198: 8/29/05 @ 8:30 AM Sample #42200: 8/30/05 @ 10:00 AM

Analyzed by:_

(Robin D. Biegenwald)

To convert mg/L (ppm) to grains per gallon divide by 17.1.

To convert mg/L as calcium carbonate to equivalents per liter, divide by 50.

To convert to other, refer to chart available through your representative.

To convert specific conductance in uS/cm (micromhos/cm) to specific resistance in ohms, divide the uS/cm into 1 million.

> **Appendix B** Field Results

For: California American Water / Isleton, CA Well 3A

Matan	T :	Flow	Pres	ssure	Chem Feed (mg/L)			Infl. (mg/L) Effl. (mg/L)						Remarks	
Meter	Time	(gpm)	In	Out	Fe	Cl ₂		As	Mn	Cl ₂	Fe	As	Cl ₂	Mn	
8/23/2005															
827768	9:05	1.5	34	32	2				0.05	0.7					Fe @ 4.75 gal
															T _i = 21°C (70°F) From Hydrotank
															pH _i = 8.34
	9:25	1.5	34	32	2			10-14			0.11	<5	1.2		Effl Highly effervescent. $pH_f = 7.68$
		Arsenic s	amples a	llowed to	o rest unti	il temp =	24°C. N	Aeter stop	ped to fi	x leak, bi	ut plant re	mained	running		
827833	10:00	1.5	37	35	2										$Fe_{Eff} = 2.1$ sample dilution of 1:2 resulting in Fe = 0.7
	11:50	1.5	38	36		1.1		20-30				<10	1.1		$pH_i = 8.08$ $T_i = 22^{\circ}C$ Fe @ 4 gal
															$pH_f = 7.72$ $T_f = 23^{\circ}C$
	1:00pm	1.5	38	36						1.2			1.0		Fe @ 3.75 gal
															$T_{f} = 24^{\circ}C$ $pH_{f} = 7.7$
															$T_i = 22^{\circ}C$ $pH_i = 8.3$
828226	3:00		36	33	2			14-30			0.06	<10	0.7	0.0	$pH_f = 7.76$ $T_f = 23^{\circ}C$ Fe @ 3 gal
															$pH_i = 8.2$ $T_i = 22^{\circ}C$
															FeCl ₃ made-up w/66gal, FeCl ₃ 6H ₂ 0. to 5 gal/n of sol'n. Fe @ 8 gal
828315	4:00	1.5	33	30											
8/24/2005	8:00							20-30	0.04		0.06	<5	0.9	0.0	Ambient T=18°C; T _E =20°C; pH _E =7.97
829479	8:30	Flow corr	rected to	1.5 gpm	(10.6 sec/	L)									$pH_i = 8.37$ $T_i = 20^{\circ}C$ Fe @ 3.5 gal

California American Water / Isleton, CA Well 3A For:

8/24/2005					2										
829717	11:00	1.5	33	28	3				0.04	0.9	0.04		0.7	0.0	Made-up FeCl ₃ . Start 2.5 gal
		Increased	l FeCl ₃ I	Dosage to	3 mg/L	by increa	sing pun	ıp.							Finish 7.5 gal
		Frequenc	y to 55 u	ntil lines	were flu	shed (aap	orox. 0.3	gal) pum	p to be r	eturned t	o frequen	cy of 37	when line	e is flushe	ed w/higher sol'n conc.
															T _E =22°C pH _E =7.9
															$T_i = 21^{\circ}C$ $pH_i = 8.3$
															Drawdown = 0.37gph
		Effluent	sampled	before Fe	e dosage o	change. 1	nfluent l	Fe @ 2.5	w/ 1.4 di	lution &	0.56 mg/.	L			
	11:40	Fe pump	returned	to 37 fre	quency.	Fe dosag	e = 3 mg	ŗ/L							Fe @ 8.25 gal
829811	12:00	1.5	36	30	3			12-30			0.04	\$	1.0		$pH_f = 7.9, T_f = 22^{\circ}C pHi = 8.38 $ Ti = 21°C
	1:20	Fe = 2.85	5 mg/L(a	pprox. 3.	0mg Fe/I	.) Based	on color	reading o	f 0.57 mg	g/L w/ 1:	4 dilution	l			
	1:30	1.5										<5			As sample only (field)
															$pH_f = 7.89$ $T_f = 22^{\circ}C$
															Fe sol'n pH=1.8
830164	3:30	1.5	35	28	3				0.03	1.0	0.06	<5	0.8	0.0	$pH_f = 7.86$ T _f = 23°C Fe @ 6.125 gal
															$pH_i = 8.35$ $T_i = 22^{\circ}C$
	4:00	1.5	33	26	Made up	2 gallon	s FeCl ₃	to continu	ue 3 mg/I	Fe dosa	ige				
		FeCl ₃ sta	rt @ 6 ga	ıl. Final	vol 8 gal										

For: California American Water / Isleton, CA Well 3A

8/25/2005					3										
831649	8:20	1.5	35	26							0.6				Iron break. B/W
															$pH_f = 7.86$ T _f = 20°C Fe @ 3.25 gal
		Changed	sol'n con	ic. To de	liver 5 mg	g/L Fe. N	lade up 3	3 gallons o	of sol'n u	sing 141	.9 g FeCl	$_{3}$ 6 H ₂ 0 t	o 3 gallon	s of sol'ı	n. Final level: 6.25 gal
	9:26	Restart 1	Fe increa	sed frequ	uency to 6	2 to flus	h tubing	and deliv	er 5 mg I	Fe/L					
		1.5	34	32	5										
	9:50	1.5	35	33	5				0.05	1.1	0.06	<5	0.3	0.0	$pH_{f} = 7.6$ $T_{f} = 22^{\circ}C$
															$pH_i = 8.35$ $T_i = 22^{\circ}C$
	10:20	Fe @ 6 g	al. Fe slo	owed/retu	urned to f	=37									
831867	12:00	1.5	33	30	5					0.9	0.05	<3	0.9	0.0	Fe @ 5.5 gal $pH_f = 7.5$ $T_f = 23^{\circ}C$
															$pH_i = 8.36$ $T_i = 21^{\circ}C$
					4.2	Per influ	ent test o	liluted 1:	19 Influ	ent 0.2	2 mg/L *	20 = 4.2	mg/L		
832199	2:30	1.5	34	31	5				0.05	1.0	0.04	0.9	0.0		$pH_f = 7.57$ $T_f = 23^{\circ}C$
		Fe @ 4.7	5 gal. M	ake up 3	gal Fe 5	mg/L do:	sage								$pH_i = 8.4$ $T_i = 22^{\circ}C$
		Final leve	el: 7.75 g	al											
		Sludge su	ipernatan	t not cle	ar althoug	h bulk o	f sludge	did settle							
8/26/2005															
833500	8:00	1.5	34	26	5						>1.0				Fe @ 2.75 gal B/W
		Sludge fr	om first l	B/W sett	led overni	ght									
	9:02	Restart	33	31	5										
	9:30	1.5	33	31	5				0.05	0.9	0.1	<	0.5	0.0	$pH_i = 8.5 T_i = 22^{\circ}C$
															$T_{\rm f} = 21^{\circ} C \ pH_{\rm f} = 7.82$
	10:30	Made-up	Fe sol'n	w/165 g	FeCl ₃ -6	H_20 and	enough I	H_20 for 5	gal. Star	t @ 2.25	gal. Fina	l level: 7	25 gal		
833776	12:00	1.5	32	30	5			20-30		0.9	0.08	<3	0.8		$pH_i = 8.4 T_i = 22^{\circ}C$
															$pH_f = 7.5$ $T_f = 23^{\circ}C$ Fe @ 7 gal
	2:00pm	1.5						20-30		0.5	0.06	<5	0.3	0.0	$pH_i = 8.3 T_i = 23^{\circ}C$
834069	3:00	Shut dow	n-overni	ght											$pH_f = 7.83$ $T_f = 23^{\circ}C$
8/27/2005	1:06	Restarted	. B/W s	ludge set	ttled										Fe @ 6 gal

California American Water / Isleton, CA Well 3A For:

		1.5	34	30	5										
	1:30	1.5	35	31	5			16-30		0.8	0.06	4-7	0.2		$pH_f = 7.72 \ T_f = 25^{\circ}C$
															$pH_i = 8.38 T_i = 22^{\circ}C$
	3:00	1.5	34	29	5						0.06	<4			$pH_f = 7.6 T_f = 24^{\circ}C$
		10 µg/L a	as standa	rd was d	iluted 1:1	.5 Giving	; a 4μg/L	sol'n and	field tes	ted besid	e effluent	t sample.			
		Effluent	was dete	ermined t	o be <4 b	y compar	ison to k	nown sar	nple						
834397	5:00pm	1.5	33	28	5						0.06		0.4		$pH_f = 7.5 T_f = 24^{\circ}C.$ Shut off overnight
8/28/2005	10:20am	Restart													
		1.5	33	28	5		Fe @ 4.8 gal								
	10:45										0.06			0.3	$pH_f = 7.6 T_f = 23^{\circ}C$
	11:30	1.5	35	30	5			16-30	0.05	1.0	0.06	<4	0.4	0.0	pH _f =7.5, T _f =24°C, pH _i =8.3, T _i =23°C
															Sampled for BSK
	12:00														FeCl ₃ @ 4.25 gal
	1:30pm	Sampled.	For B.S	5.K.											
834743	2:30	1.5	33	26	5						0.1				$pH_f = 7.61 T_f = 25^{\circ}C$ Fe @ 3.75 gal
834760	14:40		0.2												B/W
	19:00	Restart	.estart												
		1.5	1.5 36 34 Fe @ 3.5 gal made-up 5 gal for 5mgFe/L dosage w/165 g FeCl ₃ -6H ₂ 0 to enough											water for	5 gal. Final level: 8.5gal
		B/W slud	W sludge settled supernatant is clear. This better than past B/W's												

For: California American Water / Isleton, CA Well 3A

8/29/2005															
835818	8:30	1.5	33	27	5					0.7	0.04	<4	0.4		$pH_f = 7.73$ $T_f = 20^{\circ}C$
															$pH_i = 8.41$ $T_i = 20^{\circ}C$ Fe @ 4.75 gal
		* Sample	ed for H&	&Т & В.S	S.K.										
	9:00	1.5	35	27							0.06			0.0	$pH_f = 7.68 T_f = 21^{\circ}C$
	9:30										0.1				
	9:50										0.12				
833960	10:00	1.5	32	25							0.2				Stop
8/30/2005	8:00	B/W w/B	Booster pi	ump.											Fe @ 4 gal
	8:30	Restart.	w/Fe fre	quency s	set at 23 to	o effective	ely redu	ce Fe dosa	age to 3 n	ng/L					
		1.5	34	32	3				0.6				0.3		$T_f = 23 \text{ pH}_f = 7.9 \text{ pH}_i = 8.43 T_i = 22^{\circ}\text{C}$
836103	10:00														
	10:30	1.5	30	32	3						0.04			0.0	
836277	12:00	1.5	32	30	3								0.2		$pH_f = 7.7$ $T_f = 23^{\circ}C$ Fe @ 3.5 gal
															$pH_i = 8.26 T_i = 22^{\circ}C$
836455	2:00	1.5	34	31	3				0.7		0.04		0.3		$pH_i = 8.33 T_i = 22^{\circ}C$
															$pH_f = 7.8 T_f = 23^{\circ}C$
836688	5:30	END	33	30	3										

> Appendix C BSK Laboratory Results

> > 14

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082005

BSK Sample ID #: 624690

Project ID / Desc.: Isleton Submission Comments: Sample Type: Liquid Sample Description: Filter Influent Sample Comments:

Inorganics

Certificate of Analysis

NELAP Certificate #04227CA

ELAP Certificate #1180



Report Issue Date: 08/29/2005

Date Sampled: 08/23/2005 Time Sampled: 1130 Date Received: 08/24/2005

Inorganics							Prep	Analysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date	Date
Aluminum (Al)	EPA 200.7	0.050	mg/L	0.05	1	0.05	08/26/2005	08/26/2005
Calcium (Ca)	EPA 200.7	6.3	mg/L	0.1	1	0.1	08/26/2005	08/26/2005
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/26/2005	08/26/2005
Magnesium (Mg)	EPA 200.7	2.7	mg/L	0.1	1	0.1	08/26/2005	08/26/2005
Manganese (Mn)	EPA 200.7	0.040	mg/L	0.01	1	0.01	08/26/2005	08/26/2005
Arsenic (As)	EPA 200.8	23	μg/L	2	1	2	08/26/2005	08/26/2005
o-Phosphate as PO4	EPA 300.0	1.2	mg/L	0.6	1	0.6	08/24/2005	08/24/2005
Sulfate (SO4)	EPA 300.0	19	mg/L	2	1	2	08/24/2005	08/24/2005
Color (A.P.H.A)	SM 2120 B	15	units	1	1	1	08/24/2005	08/24/2005
Turbidity	SM 2130 B	0.50	NTU	0.1	1	0.1	08/24/2005	08/24/2005
Alkalinity (as CaCO3)	SM 2320 B	250	mg/L	1	1	1	08/24/2005	08/24/2005
Bicarbonate (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	08/24/2005	08/24/2005
Carbonate (as CaCO3)	SM 2320 B	13	mg/L	1	1	1	08/24/2005	08/24/2005
Hydroxide (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	08/24/2005	08/24/2005
pH	SM 4500-H+ B	8.5	Std.Unit	-	1	N/A	08/24/2005	08/24/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082005

BSK Sample ID #: 624691

Project ID / Desc.: Isleton Submission Comments: Sample Type: Liquid Sample Description: Finished Sample Comments:

Inorganics

Certificate of Analysis

NELAP Certificate #04227CA

ELAP Certificate #1180



Report Issue Date: 08/29/2005

Date Sampled: 08/23/2005 Time Sampled: 1130 Date Received: 08/24/2005

Inorganics							Prep	Analysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date	Date
Aluminum (Al)	EPA 200.7	0.10	mg/L	0.05	1	0.05	08/26/2005	08/26/2005
Calcium (Ca)	EPA 200.7	4.9	mg/L	0.1	1	0.1	08/26/2005	08/26/2005
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/26/2005	08/26/2005
Magnesium (Mg)	EPA 200.7	2.8	mg/L	0.1	1	0.1	08/26/2005	08/26/2005
Manganese (Mn)	EPA 200.7	0.010	mg/L	0.01	1	0.01	08/26/2005	08/26/2005
Arsenic (As)	EPA 200.8	14	μg/L	2	1	2	08/26/2005	08/26/2005
o-Phosphate as PO4	EPA 300.0	0.60	mg/L	0.6	1	0.6	08/24/2005	08/24/2005
Sulfate (SO4)	EPA 300.0	19	mg/L	2	1	2	08/24/2005	08/24/2005
Color (A.P.H.A)	SM 2120 B	ND	units	1	1	1	08/24/2005	08/24/2005
Turbidity	SM 2130 B	ND	NTU	0.1	1	0.1	08/24/2005	08/24/2005
Alkalinity (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	08/24/2005	08/24/2005
Bicarbonate (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	08/24/2005	08/24/2005
Carbonate (as CaCO3)	SM 2320 B	2.0	mg/L	1	1	1	08/24/2005	08/24/2005
Hydroxide (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	08/24/2005	08/24/2005
pH	SM 4500-H+ B	8.3	Std.Unit	-	1	N/A	08/24/2005	08/24/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082029

BSK Sample ID #: 624797

Project ID / Desc.: Isle Submission Comments: Sample Type: L Sample Description: Sample Comments:

n Jid	Report Issue Date: 08/29/20
iquid	Date Sampled: 08/23/2005
Filter Influent	Time Sampled: 1300

Inorganics						Prep	Analysis	
Analyte	Method	Result	Units	PQL	Dilution	n DLR	Date	Date
Arsenic (As)	EPA 200.8	23	μg/L	2	1	2	08/26/2005	08/26/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

Certificate of Analysis

NELAP Certificate #04227CA ELAP Certificate #1180



05

Date Received: 08/24/2005

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082029

BSK Sample ID #: 624798

Project ID / Desc.: Isleton Submission Comments: Sample Type: Liquid Sample Description: Finished Sample Comments:

Inorganics

NELAP Certificate #04227CA ELAP Certificate #1180



Report Issue Date: 08/29/2005

 Date Sampled:
 08/23/2005

 Time Sampled:
 1300

 Date Received:
 08/24/2005

morganics							Prep	Analysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date	Date
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/26/2005	08/29/2005
Arsenic (As)	EPA 200.8	14	µg/L	2	1	2	08/26/2005	08/26/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates) PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

EPA 200.8

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082134

BSK Sample ID #: 625554

Arsenic (As)

Project ID / Desc.: Isleton Submission Comments: Sample Type т :. S S _

Sample Type:	Liquid							Date Sampled:	08/23/2005
Sample Description:	Filter Influent							Time Sampled:	1500
Sample Comments:								Date Received:	08/25/2005
Inorganics								Pre	p Analysis
Analyte		Method	Result	Units	PQL	Dilution	DLR	Dat	e Date

μg/L

2

1

2

24

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb)

%Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments



08/26/2005

Report Issue Date: 08/29/2005

Date

08/29/2005

Certificate of Analysis

NELAP Certificate #04227CA

ELAP Certificate #1180

EPA 200.7

EPA 200.8

ND

15

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082134

BSK Sample ID #: 625555

Project ID / Desc.: Isleton Submission Comments: Sample Type: Liquid Sample Description Sample Comments

Inorganics

Analyte

Iron (Fe)

Arsenic (As)

					Pre	p	Analysis
5:	Timbled				Date Received:	08/2	5/2005
n:	Finished				Time Sampled:	1500)
					-		

mg/L

μg/L

0.05

2

1

1

0.05

2

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

Certificate of Analysis

NELAP Certificate #04227CA ELAP Certificate #1180



Report Issue Date: 08/29/2005

Date Sampled: 08/23/2005

08/26/2005

08/26/2005

08/29/2005

08/29/2005

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082132

BSK Sample ID #: 625547

Project ID / Desc.: Isleton Submission Comments: Sample Type: Liquid Sample Description: Filter Influent Sample Comments:

Inorganics

Certificate of Analysis

NELAP Certificate #04227CA

ELAP Certificate #1180



Report Issue Date: 08/29/2005

Date Sampled: 08/24/2005 Time Sampled: 0820 Date Received: 08/25/2005

Inorganics							Prep	Analysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date	Date
Calcium (Ca)	EPA 200.7	6.4	mg/L	0.1	1	0.1	08/26/2005	08/29/2005
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/26/2005	08/29/2005
Magnesium (Mg)	EPA 200.7	2.8	mg/L	0.1	1	0.1	08/26/2005	08/29/2005
Manganese (Mn)	EPA 200.7	0.040	mg/L	0.01	1	0.01	08/26/2005	08/29/2005
o-Phosphate as PO4	EPA 300.0	1.5	mg/L	0.6	1	0.6	08/25/2005	08/25/2005
Sulfate (SO4)	EPA 300.0	19	mg/L	2	1	2	08/25/2005	08/25/2005
Color (A.P.H.A)	SM 2120 B	15	units	1	1	1	08/25/2005	08/25/2005 F
Turbidity	SM 2130 B	0.80	NTU	0.1	1	0.1	08/25/2005	08/25/2005 F
pH	SM 4500-H+ B	8.5	Std.Unit	-	1	N/A	08/25/2005	08/25/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082132

BSK Sample ID #: 625548

Project ID / Desc.: Isleton Submission Comments: Sample Type: Liquid Sample Description: Finished Sample Comments:

Inorganics

Certificate of Analysis

NELAP Certificate #04227CA

ELAP Certificate #1180



Report Issue Date: 08/29/2005

Date Sampled: 08/24/2005 Time Sampled: 0820 Date Received: 08/25/2005

Inorganics							Prep	Analysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date	Date
Calcium (Ca)	EPA 200.7	5.9	mg/L	0.1	1	0.1	08/26/2005	08/29/2005
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/26/2005	08/29/2005
Magnesium (Mg)	EPA 200.7	2.6	mg/L	0.1	1	0.1	08/26/2005	08/29/2005
Manganese (Mn)	EPA 200.7	ND	mg/L	0.01	1	0.01	08/26/2005	08/29/2005
o-Phosphate as PO4	EPA 300.0	0.60	mg/L	0.6	1	0.6	08/25/2005	08/25/2005
Sulfate (SO4)	EPA 300.0	19	mg/L	2	1	2	08/25/2005	08/25/2005
Color (A.P.H.A)	SM 2120 B	ND	units	1	1	1	08/25/2005	08/25/2005 P
Turbidity	SM 2130 B	0.20	NTU	0.1	1	0.1	08/25/2005	08/25/2005 P
pH	SM 4500-H+ B	8.3	Std.Unit	-	1	N/A	08/25/2005	08/25/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

EPA 200.8

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082225

BSK Sample ID #: 625909

Arsenic (As)

Project ID / Desc.: Submission Comments: Sample Type: Liquid Sample Description: Filter Influent Sample Comments:

Analyte		Method	Result	Units	PQL	Dilution	DLR	Date	e Da	ıte
Inorganics								Pre	p Analys	sis
Sample Description: Sample Comments:	Filter Influent							Time Sampled: Date Received:	1200 08/25/2005	

μg/L

2

1

2

24

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates) PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments



NELAP Certificate #04227CA ELAP Certificate #1180



Report Issue Date: 08/29/2005

Date Sampled: 08/24/2005

08/26/2005

08/29/2005

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082225

BSK Sample ID #: 625910

Project ID / Desc.: Submission Comments: Sample Type: Liquid Sample Description: Finished Sample Comments:

Inorganics

Report Issue Date: 08/29/2005

Date Sampled:08/24/2005Time Sampled:1200Date Received:08/25/2005

morganics							Prep	Analysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date	Date
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/26/2005	08/29/2005
Arsenic (As)	EPA 200.8	15	μg/L	2	1	2	08/26/2005	08/29/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates) PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

Certificate of Analysis NELAP Certificate #04227CA

ELAP Certificate #1180

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082133

BSK Sample ID #: 625552

Arsenic (As)

Project ID / Desc.: Isleton Submission Comments: Sample Type: Liquid Sample Description: Filter Influent Sample Comments:

Sample Description:	Filter Influent							Time Sampled:	1200	
Sample Comments:								Date Received:	08/25	/2005
Inorganics										
morganics								Pre	p ₽	Analysis
Analyte		Method	Result	Units	PQL	Dilution	DLR	Dat	te	Date

μg/L

2

1

2

23

EPA 200.8

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates) PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments



ELAP Certificate #1180



Report Issue Date: 08/29/2005

Date Sampled: 08/24/2005

08/26/2005

08/29/2005

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082133

BSK Sample ID #: 625553

Project ID / Desc.: Isleton Submission Comments: Sample Type: Liquid Sample Description: Finished Sample Comments:

Inorganics

Certific	ate of	f Ana	lysis

NELAP Certificate #04227CA ELAP Certificate #1180



Report Issue Date: 08/29/2005

Date Sampled:08/24/2005Time Sampled:1200Date Received:08/25/2005

morganics							Prep	Analysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date	Date
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/26/2005	08/29/2005
Arsenic (As)	EPA 200.8	11	μg/L	2	1	2	08/26/2005	08/29/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates) PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082275

BSK Sample ID #: 626402

Project ID / Desc.: Submission Comments:



Certificate of Analysis NELAP Certificate #04227CA

ELAP Certificate #1180

Report Issue Date: 08/29/2005

Inorganics			
Sample Comments:		Date Received:	08/26/2005
Sample Description	Filter Influent	Time Sampled:	1530
Sample Type:	Liquid	Date Sampled:	08/24/2005

morganics							Prep	Analysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date	Date
Arsenic (As)	EPA 200.8	24	μg/L	2	1	2	08/29/2005	08/29/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments
09/20/2005

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468



Dear Shawn Sevey,

Thank you for selecting BSK Analytical Laboratories for your analytical testing needs. We have prepared this report in response to your request for analytical services. Please find enclosed the following sections for your complete laboratory report, each uniquely paginated:

CASE NARRATIVE: An overview of the work performed. CERTIFICATE OF ANALYSIS: Analytical results. REPORT OF SAMPLE INTEGRITY CHAIN OF CUSTODY FORM

Certification: I certify that this data package is in compliance with NELAC Standards for applicable analyses under NELAP Certificate #04227CA, and is in compliance with ELAP Standards for applicable certified analyses under ELAP Certificate #1180, except for the conditions listed.

If additional clarification of any information is required, please contact your Client Services Representative, Debra Skelton, at (800) 877-8310 or (559) 497-2888.

BSK ANALYTICAL LABORATORIES

Debra Skelton Client Services Representative

SAMPLE AND RECEIPT INFORMATION

The sample(s) was received, prepared, and analyzed within the method specified holding times unless otherwise noted on the Certificate of Analysis. Samples, when shipped, arrived within acceptable temperature requirements of 0° to 6° Celsius unless otherwise noted on the Report of Sample Integrity. Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.

QUALITY CONTROL

All analytical quality controls are within established method criteria except when noted in the Quality Control section or on the Certificate of Analysis. All positive results for EPA Methods 504.1, 502.2, and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed. QC samples may include analytes not requested in this submission.

SAMPLE RESULT INFORMATION

Samples are analyzed as received (wet weight basis) unless noted here. The results relate only to the items tested. Any exceptions to be considered when evaluating these results are also listed here, if applicable. Results contained in this package shall not be reproduced, except in full, without written approval of BSK Analytical Laboratories.

ORDER TEST ANALYTE

COMMENT

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082473 BSK Sample ID #: 627567 Project ID: Project Desc: Isleton Submission Comments:

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180



Submission Commen	nts:								
Sample Type:	Liquid							Date	e Sampled: 08/24/2005
Sample Description:	Finished							Time	e Sampled: 1530
Sample Comments:								Date	Received: 08/30/2005
Inorganics									
0								Dron	Analysis
Analyte		Method	Result	Units	PQL 1	Dilution	DLR	Prep Date/Time	Analysis Date/Time
Analyte Arsenic (As)		Method EPA 200.8	Result	Units µg/L	PQL 1	Dilution	DLR 2	Prep Date/Time	Analysis Date/Time 09/16/05

mg/L: Milligrams/Liter (ppm)	POL: Practical Quantitation Limit	H: Analyzed outsic	le of hold time	
mg/Kg: Milligrams/Kilogram (ppm)	DLR: Detection Limit for Reporting	P: Preliminary result		
µg/L: Micrograms/Liter (ppb)	: PQL x Dilution	S: Suspect result.	See Case Narrative for comments.	
µg/Kg: Micrograms/Kilogram (ppb)	ND: None Detected at DLR	E: Analysis performed by External laboratory.		
%Rec: Percent Recovered (surrogates)	pCi/L: Picocurie per Liter	See External La	boratory Report attachments.	
Report Authentication Code:			Page 1 of 1	
1414 Stanislaus Street Fresno,	CA 93706-1623 Phone 559-497-2888,	In CA 800-877-8310	Fax 559-485-6935	

Sample Integrity Pg of	C 2005082473 08/30/2005
Date Received 083005	
Section 1- Sampled Same Day Sample Transport: Walk In S.W. B Has chilling process begun? Y N Samples Recer	SK-Courier Transported In: Ice Chest Box Hand ved: Chilled to Touch / Ambient / On Ice
Section 2- Sampled Previous); Sample Transport: CAO UPS SJVC Walk-In No. Coolers/Ice Chests: Temperature(Was Temperature In Range : Y N Received Describe type of packing materials: Bubble Wrap Foan Were ice chest custody seals present? Y N Ir	BSK-Courier GSO Fed Exp. Other:
Weie ice chest chartery	Completed Info From
Section 3- COC Into. Yes No Container Was COC Received	Yes No Container Analysis Requested
Were bottle custody seals intact? Did all bottle labels agree with COC?: Were correct containers used for the tests requested?: Were correct preservations used for the tests requested?: Was a sufficient amount of sample sent for tests indicated? Were bubbles present in VOA Vials?: (Volatile Methods C Were Ascorbic Acid Bottles received with the VOAs	
Section 5- Comments / Discrepancies Sample(s) Split/Preserve: Yes No Container: Was Client Service Rep. notified of discrepancies: Yes No	Preservation:
Explanations / Comments Explanations / Comments Report Comment Entered: F:/SHARE/OC/DOCCONTROL/FORMS/SMPINTG05	Labeled by:

- ----

......

2004-2029-2029-20

Sample Integrity Pg Vof V			יד ד ב זאוד
BSK Bottles	(Yes)	No	2005082473 08/30/2005
$P_{0,7}(\Lambda) = 1607(\mathbb{R}) = 3207(\mathbb{C})$ Amber Glass (AG)	\bigcirc		CAL AM SAC TAT: Standard
$\frac{1}{2} \sum_{n=1}^{\infty} \frac{1}{2} \sum_{n=1}^{\infty} \frac{1}$	1		
Container(s) Received		_/	
Bacti Na ₂ S ₂ O ₃			
None (n) White Cap	10-AS	•	
None (p) Blue Cap			
HNO ₃ (p) Red Cap	1A-		
$H_2SO_4(p)$ Yellow Cap			
NaOH (p) Green Cap			
Other:			
Dissolved Oxygen 300ml (g)			
250ml (AG) None			
250ml (AG) H ₂ SO ₄ TOC,COD ^{Yellow Label}			
250ml (AG) Na ₂ S ₂ O ₃ 515,547 ^{Blue Label}			
250 ml (AG) Na ₂ S ₂ O ₃ + MCAA 531.1 ^{Orange Label}			
250ml (AG) NH ₄ Cl 552 ^{Purple Label}			
250ml (AG) EDA DBPs blown Edder			
250ml (AG) Other:			
500ml (AG) None			
500ml (AG) H ₂ SO ₄ TPH-Diesel ^{Yellow Label}			
500ml (AG) Other:			
1 Liter (AG) None			
$\frac{1 \text{ Liter (AG) } H_2 \text{ SO}_4 \qquad \text{O&G}}{1 \text{ Liter (AG) } N_5 \text{ SO}_5 \text{ SO}_5 \text{ N-Green Label}}$			X CAN CAN LAND CAN LA
1 Liter (AG) $Na_2SO_3 = 523$ 1 Liter (AG) $Na_2SO_3 = 548^{\text{Blue Label}}$			
1 Liter (P) Na ₂ S ₂ O ₃ + H_2SO_4 549			
1 Liter (AG) NaOH+ZnAc Sulfide			
1 Liter (AG) Other:			
40ml VOA Vial Clear – HCL			
40ml VOA Vial Amber – Na ₂ S ₂ O ₃			
$40 \text{ml VOA Vial Clear - Na}S_2O_2 = 504 = 505$			
40ml VOA Vial Other			
Other:			
Asbestos 1-Liter Plastic/Foil			
Radiological GA / GB (⁷ ₂ Gai Flastic) Radiological 226 / 228 (32 oz plastic N-BSK)			
Radon 200ml Clear (g)			
Low Level Hg/Metals Double Baggie			
THM-FP 4-40ml VOA None			
250 Clear Glass Jar		-	
500 Clear Glass Jar			
I Liter Clear Glass Jar			
Soil Tube Brass / Steel / Plastic			
Tedlar Bags			

2005082473 08/30/2005	830055			2/	1 St							Company	Company	Company	Check/Cash/Card PIA # Init. Edit 10% opt anomum SSK & Assentations shall be artified to recover on dalio.	at 1%, a per invent, to the per annum, work a hashed and the Client, and the Client agrees to be responsible for pay- lier the Client agricultonized again of the Client, and the Client agrees to be responsible for pay- ill begin the next business day.
D TEMP:	X # E-mail:	USN MUN Carbon Copies: (Check Box) CDHS FresnoCo	Day 1Day Other:	Me Regulatory Compliance Electronic Data Transfer: Y N Level III System #	Waste Water BW = Bottled Water ater DW = Drinking Water SO = Solid	Matrix Comments / Station Code	X VIV	MANUV 1				Time Received by (Signature and Print Name)	Time Received by (Signature and Print Name)	Time Received by (Signature and Print Name)	Time Payment Received at Delivery:	The person signing for the Client/Company expressly acknowledges that they are eith this Chain of Custody. The turn around time for any samples received after 3:00 pm w
A L 1414 Stanislaus Street ZIE S (559) 497-2888, (800) 877-831 FAX (559) 485-6935	ttn: Phone # FA	tame Project #	PO # Rush Regulate Control Po # Po	Signature QC Required (Circle Circle	V = Chlorinated Finished Water CWW = Chlorinated Tinished Water WW = Waste Water SW = Storm W	Sample Description/Location	MISHER					Company Date Date	Company Date	Company Date	Main Point Point Date Date Strom when myoursed. If not so paid, account talances are deemed definitioned.	 Iligation whether concluded by judgement, settlement, compromise, or otherwise, of the analysis requested, either type or quantities, will be noted and agreed upon
BSK ANALYTIC	Client, Name Reports	Address Project I	City State Zip Quote #	Sampler Name Printed Sampler	Matrix Types: RSW = Raw Surface Water CFV RGW = Raw Ground Water FW = I	A A X, I. Y VALEA TIME	1 ACCY SOLAR A. A			peben2		Relinquished by: (Signature and Printed Name) B. CASULU E. R. M.	Relinquished by: (Signature and Printed Name)	Relinquished by: (Signature and Printed Name)	Received for tab by ICSR printing and Printed Name)	quent accounted ones of collections, including attorneys tees incurred prior or it ment for analytical services requested on this Chain of Custody. Any modifications

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082274

BSK Sample ID #: 626380

Project ID / Desc.: Pilot Study Isleton Ca Well 3A Submission Comments: Sample Type: Liquid Sample Description: Finishe 5

Sample Description: Finishe Sample Comments:

Inorganics							Prep	Analysis	
Analyte	Method	Result	Units	PQL	Dilutio	n DLR	Date	Date	
Iron (Fe)	EPA 200.7	0.41	mg/L	0.05	1	0.05	08/29/2005	08/29/2005	

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments



Report Issue Date: 08/29/2005

 Date Sampled:
 08/25/2005

 Time Sampled:
 0931

 Date Received:
 08/26/2005

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Certificate of Analysis NELAP Certificate #04227CA

ELAP Certificate #1180

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082274

BSK Sample ID #: 626381

Project ID / Desc.: Pilot Study Isleton Ca Well 3A Submission Comments: Sample Type: Liquid

Sample Description: Finishe 10 Sample Comments:

Inorganics

morganics							Prep	Analysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date	Date
Iron (Fe)	EPA 200.7	0.15	mg/L	0.05	1	0.05	08/29/2005	08/29/2005
Arsenic (As)	EPA 200.8	14	μg/L	2	1	2	08/29/2005	08/29/2005

Certificate of Analysis

NELAP Certificate #04227CA ELAP Certificate #1180



Report Issue Date: 08/29/2005

 Date Sampled:
 08/25/2005

 Time Sampled:
 0931

 Date Received:
 08/26/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082274

BSK Sample ID #: 626382

Project ID / Desc.: Pilot Study Isleton Ca Well 3A Submission Comments: Sample Type: Liquid

Sample Description: Finishe 15 Sample Comments:

I

Inorganics							Prep	Analysi
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date	Date
Iron (Fe)	EPA 200.7	0.080	mg/L	0.05	1	0.05	08/29/2005	08/29/2005
Arsenic (As)	EPA 200.8	12	μg/L	2	1	2	08/29/2005	08/29/2005

Certificate of Analysis

NELAP Certificate #04227CA ELAP Certificate #1180



Report Issue Date: 08/29/2005

Date Sampled: 08/25/2005 Time Sampled: 0931 Date Received: 08/26/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

1414 Stanislaus Street Fresno, CA 93706-1623

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

Page 3 of 7

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082274

BSK Sample ID #: 626383

Project ID / Desc.: Pilot Study Isleton Ca Well 3A Submission Comments: Sample Type: Liquid

Sample Description: Finishe 30 Sample Comments:

Inorganics

Certificate of Analysis

NELAP Certificate #04227CA

ELAP Certificate #1180



Report Issue Date: 08/29/2005

Date Sampled: 08/25/2005 Time Sampled: 0931 Date Received: 08/26/2005

						Prep	Analysis
Method	Result	Units	PQL	Dilution	DLR	Date	Date
EPA 200.7	8.2	mg/L	0.1	1	0.1	08/29/2005	08/29/2005
EPA 200.7	0.050	mg/L	0.05	1	0.05	08/29/2005	08/29/2005
EPA 200.7	3.2	mg/L	0.1	1	0.1	08/29/2005	08/29/2005
EPA 200.7	ND	mg/L	0.01	1	0.01	08/29/2005	08/29/2005
EPA 200.8	8.0	µg/L	2	1	2	08/29/2005	08/29/2005
EPA 300.0	ND	mg/L	0.6	1	0.6	08/26/2005	08/26/2005
EPA 300.0	19	mg/L	2	1	2	08/26/2005	08/26/2005
SM 2120 B	ND	units	1	1	1	08/26/2005	08/26/2005 H
SM 2130 B	0.10	NTU	0.1	1	0.1	08/26/2005	08/26/2005 H
SM 2320 B	230	mg/L	1	1	1	08/26/2005	08/26/2005 H
SM 2320 B	230	mg/L	1	1	1	08/26/2005	08/26/2005 H
SM 2320 B	ND	mg/L	1	1	1	08/26/2005	08/26/2005 H
SM 2320 B	ND	mg/L	1	1	1	08/26/2005	08/26/2005 H
SM 4500-H+ B	8.1	Std.Unit	-	1	N/A	08/26/2005	08/26/2005 H
	Method EPA 200.7 EPA 200.7 EPA 200.7 EPA 200.7 EPA 200.8 EPA 300.0 EPA 300.0 SM 2120 B SM 2120 B SM 2130 B SM 2320 B SM 2320 B SM 2320 B SM 2320 B SM 2320 B	Method Result EPA 200.7 8.2 EPA 200.7 0.050 EPA 200.7 3.2 EPA 200.7 ND EPA 200.7 ND EPA 200.7 ND EPA 200.8 8.0 EPA 300.0 ND EPA 300.0 19 SM 2120 B ND SM 2320 B 230 SM 2320 B ND SM 2320 B ND SM 2320 B ND SM 4500-H+ B 8.1	Method Result Units EPA 200.7 8.2 mg/L EPA 200.7 0.050 mg/L EPA 200.7 3.2 mg/L EPA 200.7 3.2 mg/L EPA 200.7 ND mg/L EPA 200.7 ND mg/L EPA 200.7 ND mg/L EPA 200.8 8.0 μg/L EPA 300.0 ND mg/L EPA 300.0 19 mg/L SM 2120 B ND units SM 2130 B 0.10 NTU SM 2320 B 230 mg/L SM 2320 B ND mg/L SM 4500-H+ B 8.1 Std.Unit	Method Result Units PQL EPA 200.7 8.2 mg/L 0.1 EPA 200.7 0.050 mg/L 0.05 EPA 200.7 3.2 mg/L 0.1 EPA 200.7 3.2 mg/L 0.1 EPA 200.7 ND mg/L 0.01 EPA 200.7 ND mg/L 2 EPA 300.0 ND mg/L 2 SM 2120 B ND units 1 SM 2320 B 230 mg/L 1 SM 2320 B ND mg/L 1 SM 4500-H+ B 8.1 Std.Unit -	Method Result Units PQL Dilution EPA 200.7 8.2 mg/L 0.1 1 EPA 200.7 0.050 mg/L 0.05 1 EPA 200.7 3.2 mg/L 0.1 1 EPA 200.7 3.2 mg/L 0.1 1 EPA 200.7 ND mg/L 0.01 1 EPA 300.0 ND mg/L 2 1 EPA 300.0 19 mg/L 2 1 SM 2120 B ND units 1 1 SM 2320 B 230 mg/L 1 1 SM 2320 B ND mg/L 1 1 SM 2320 B ND mg/L 1 1 SM 4500-H+ B 8.1 Std.Unit -	Method Result Units PQL Dilution DLR EPA 200.7 8.2 mg/L 0.1 1 0.1 EPA 200.7 0.050 mg/L 0.05 1 0.05 EPA 200.7 3.2 mg/L 0.1 1 0.1 EPA 200.7 3.2 mg/L 0.1 1 0.1 EPA 200.7 ND mg/L 0.01 1 0.01 EPA 200.7 ND mg/L 2 1 2 EPA 300.0 ND mg/L 2 1 2 SM 2120 B ND units 1 1 1 SM 2320 B 230 mg/L 1 1 1 SM 2320 B ND mg/L 1	Method Result Units PQL Dilution DLR Date EPA 200.7 8.2 mg/L 0.1 0.1 0.05 0.8/29/2005 EPA 200.7 0.050 mg/L 0.05 1 0.05 0.8/29/2005 EPA 200.7 3.2 mg/L 0.1 1 0.01 0.8/29/2005 EPA 200.7 ND mg/L 0.01 1 0.01 0.8/29/2005 EPA 200.7 ND mg/L 0.01 1 0.01 0.8/29/2005 EPA 200.7 ND mg/L 2.1 0.01 0.8/29/2005 EPA 200.8 8.0 µg/L 2 1 0.8/26/2005 EPA 300.0 ND mg/L 2 1 0.8/26/2005 SM 2120 B ND units 1 1 0.8/26/2005 SM 2320 B 230 mg/L 1 1 0.8/26/2005 SM 2320 B ND mg/L 1 1 0.8/26/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082274

BSK Sample ID #: 626384

Project ID / Desc.: Pilot Study Isleton Ca Well 3A Submission Comments: Sample Type: Liquid Sample Description: Influent

Inorganics

Sample Comments:

Certificate of Analysis

NELAP Certificate #04227CA ELAP Certificate #1180



Report Issue Date: 08/29/2005

Date Sampled: 08/25/2005 Time Sampled: 0931 Date Received: 08/26/2005

Inorganics							Prep	Analysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date	Date
Calcium (Ca)	EPA 200.7	6.6	mg/L	0.1	1	0.1	08/29/2005	08/29/2005
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/29/2005	08/29/2005
Magnesium (Mg)	EPA 200.7	2.9	mg/L	0.1	1	0.1	08/29/2005	08/29/2005
Manganese (Mn)	EPA 200.7	0.040	mg/L	0.01	1	0.01	08/29/2005	08/29/2005
Arsenic (As)	EPA 200.8	23	μg/L	2	1	2	08/29/2005	08/29/2005
o-Phosphate as PO4	EPA 300.0	1.2	mg/L	0.6	1	0.6	08/26/2005	08/26/2005
Sulfate (SO4)	EPA 300.0	19	mg/L	2	1	2	08/26/2005	08/26/2005
Color (A.P.H.A)	SM 2120 B	15	units	1	1	1	08/26/2005	08/26/2005 F
Turbidity	SM 2130 B	0.90	NTU	0.1	1	0.1	08/26/2005	08/26/2005 F
Alkalinity (as CaCO3)	SM 2320 B	250	mg/L	1	1	1	08/26/2005	08/26/2005 F
Bicarbonate (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	08/26/2005	08/26/2005 F
Carbonate (as CaCO3)	SM 2320 B	11	mg/L	1	1	1	08/26/2005	08/26/2005 F
Hydroxide (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	08/26/2005	08/26/2005 F
pH	SM 4500-H+ B	8.5	Std.Unit	-	1	N/A	08/26/2005	08/26/2005 F

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates) PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082274

BSK Sample ID #: 626385

Project ID / Desc.: Pilot Study Isleton Ca Well 3A Submission Comments: Sample Type: Liquid Sample Description: Finishe

Sample Description: Fin Sample Comments:

Inorganics

morganics							Prep	Analysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date	Date
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/29/2005	08/29/2005
Arsenic (As)	EPA 200.8	7.0	μg/L	2	1	2	08/29/2005	08/29/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments

Certificate of Analysis

NELAP Certificate #04227CA ELAP Certificate #1180



Report Issue Date: 08/29/2005

 Date Sampled:
 08/25/2005

 Time Sampled:
 0931

 Date Received:
 08/26/2005

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082274

BSK Sample ID #: 626386

Project ID / Desc.: Pilot Study Isleton Ca Well 3A Submission Comments: Sample Type: Liquid Sample Description: Influent

Sample Comments:

Inorganics						Prep	Analysis	
Analyte	Method	Result	Units	PQL	Dilutio	on DLR	Date	Date
Arsenic (As)	EPA 200.8	25	μg/L	2	1	2	08/29/2005	08/29/2005

mg/L: milligrams/liter (ppm) mg/Kg: milligrams/kilogram (ppm) µg/L: micrograms/liter (ppb) µg/Kg: micrograms/kilogram (ppb) %Rec: percent recovered (surrogates)

PQL: practical quantitation limit DLR: detection limit for reporting : PQL x Dilution

ND: none detected at DLR

H: analyzed outside of hold time

P: preliminary result

S: suspect result. See Case Narrative for comments



ELAP Certificate #1180

Certificate of Analysis NELAP Certificate #04227CA



Report Issue Date: 08/29/2005

Date Sampled: 08/25/2005 Time Sampled: 0931

Date Received: 08/26/2005

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

\\9/20/2005

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468



Dear Shawn Sevey,

Thank you for selecting BSK Analytical Laboratories for your analytical testing needs. We have prepared this report in response to your request for analytical services. Please find enclosed the following sections for your complete laboratory report, each uniquely paginated:

CASE NARRATIVE: An overview of the work performed. CERTIFICATE OF ANALYSIS: Analytical results. REPORT OF SAMPLE INTEGRITY CHAIN OF CUSTODY FORM

Certification: I certify that this data package is in compliance with NELAC Standards for applicable analyses under NELAP Certificate #04227CA, and is in compliance with ELAP Standards for applicable certified analyses under ELAP Certificate #1180, except for the conditions listed.

If additional clarification of any information is required, please contact your Client Services Representative, Debra Skelton, at (800) 877-8310 or (559) 497-2888.

BSK ANALYTICAL LABORATORIES

Debra Skelton Client Services Representative

SAMPLE AND RECEIPT INFORMATION

The sample(s) was received, prepared, and analyzed within the method specified holding times unless otherwise noted on the Certificate of Analysis. Samples, when shipped, arrived within acceptable temperature requirements of 0° to 6° Celsius unless otherwise noted on the Report of Sample Integrity. Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.

QUALITY CONTROL

All analytical quality controls are within established method criteria except when noted in the Quality Control section or on the Certificate of Analysis. All positive results for EPA Methods 504.1, 502.2, and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed. QC samples may include analytes not requested in this submission.

SAMPLE RESULT INFORMATION

Samples are analyzed as received (wet weight basis) unless noted here. The results relate only to the items tested. Any exceptions to be considered when evaluating these results are also listed here, if applicable. Results contained in this package shall not be reproduced, except in full, without written approval of BSK Analytical Laboratories.

<u>ORDER</u>	<u>TEST</u>	<u>ANALYTE</u>	COMMENT
627585			Sample has a turbidity of greater than 1 NTU. Sample was digested using EPA method 200.2 prior to metals analysis
627588	EPA 300.0	o-Phosphate as PO4	Sample received out of holding time.
627588	SM 2120 B	Color (A.P.H.A)	Sample received out of holding time.
627588	SM 2130 B	Turbidity	Sample received out of holding time.
627588	SM 4500-H+ B	pH	Sample received out of holding time.
627589	EPA 300.0	o-Phosphate as PO4	Sample received out of holding time.
627589	SM 2120 B	Color (A.P.H.A)	Sample received out of holding time.
627589	SM 2130 B	Turbidity	Sample received out of holding time.
627589	SM 4500-H+ B	рН	Sample received out of holding time.

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082475 **BSK Sample ID #: 627585**

Project ID: ~

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180



Submission Comme	ans.									
Sample Type:	Liquid							Date	e Sampled: 08/26/20	05
Sample Description	: Finish-5							Time	e Sampled: 0907	
Sample Comments:								Date	Received: 08/30/20)05
	a and a finite structure of the set of the se						The set of the second sec	ware and and a second state in the later of the second state		
Inorganics								Drop	Analysis	
Inorganics Analyte		Method	Result	Units	PQL D	Dilution	DLR	Prep Date/Time	Analysis Date/Time	
Inorganics Analyte		Method	Result	Units	PQL D	Dilution	DLR	Prep Date/Time	Analysis Date/Time	
Inorganics Analyte Arsenic (As)		Method EPA 200.8	Result 12	Units μg/L	PQL D 2	Dilution	DLR 2	Prep Date/Time 08/31/05	Analysis Date/Time 09/12/05	

Project Desc: Isleton CA Well 3A

mg/L: Milligrams/Liter (ppm)	PQL: Practical Quantitation Limit	H: Analyzed outside of hold time
mg/Kg: Milligrams/Kilogram (ppm)	DLR: Detection Limit for Reporting	P: Preliminary result
μg/L: Micrograms/Liter (ppb)	: PQL x Dilution	S: Suspect result. See Case Narrative for comments.
µg/Kg: Micrograms/Kilogram (ppb)	ND: None Detected at DLR	E: Analysis performed by External laboratory.
%Rec: Percent Recovered (surrogates)	pCi/L: Picocurie per Liter	See External Laboratory Report attachments.
Report Authentication Code:		Page 1 of 9
1414 Stonisloug Street Engene	CA 02706 1622 DLaws 550 407 2000	

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005 BSK Sample ID #: 62755 Project ID:	Project Desc: Isleton CA Well 3A				a ICIASS ∓ Report Issue Date: 09/20/2003				
Submission Comments: Sample Type: Liquid Sample Description: Finish-10 Sample Comments:							Dat Tim Date	e Sampled: 08/26/2 e Sampled: 0912 e Received: 08/30/2	2005 2005
Inorganics Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Analysis Date/Time	
Arsenic (As) Iron (Fe)	EPA 200.8 EPA 200.7	10 0.29	μg/L mg/L	2 0.05	1 1	2 0.05	08/31/05 08/31/05	09/16/05 09/08/05	

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution μg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR E: Analysis performed by External laboratory. See External Laboratory Report attachments. %Rec: Percent Recovered (surrogates) pCi/L: Picocurie per Liter Report Authentication Code:

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Page 2 of 9

N ACCORD

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082475 **BSK Sample ID #: 627587**

Project ID: Submission Commenter

Project Desc: Isleton CA Well 3A

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180



Submission Commer	ns: Liquid						Dat	e Sampled: 08/26/2	0005
Sample Description:	Finish-15						Tim	e Sampled: 08/20/2	2005
Sample Comments:							Date	Received: 08/30/2	2005
Inorganics							n	Analysia	
Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Date/Time	
Arcenic (Ac)	EPA 200.8	80	ug/I	2	1	r	08/31/05	09/16/05	
	ETA 200.3	0.0	μg/L	2	1	2	08/31/05	00/00/05	
Iron (Fe)	EPA 200.7	0.15	mg/L	0.05	1	0.05	08/31/05	09/08/05	

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution μg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR E: Analysis performed by External laboratory. See External Laboratory Report attachments. %Rec: Percent Recovered (surrogates) pCi/L: Picocurie per Liter Report Authentication Code: Page 3 of 9

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082475

BSK Sample ID #: 627588 Project ID: Submission Comments:

Sample Type: Liquid Sample Description: Finish-30 Sample Comments:

Inorganics

Project Desc: Isleton CA Well 3A

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180



Date Sampled:08/26/2005Time Sampled:0932Date Received:08/30/2005

Inorganics							Pron	Analysis	
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date/Time	Date/Time	
Alkalinity (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	08/30/05	08/30/05	
Aluminum (Al)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/31/05	09/08/05	
Arsenic (As)	EPA 200.8	7.0	μg/L	2	1	2	08/31/05	09/16/05	
Bicarbonate (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	08/30/05	08/30/05	
Calcium (Ca)	EPA 200.7	6.6	mg/L	0.1	1	0.1	08/31/05	09/08/05	
Carbonate (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	08/30/05	08/30/05	
Color (A.P.H.A)	SM 2120 B	ND	units	1	1	1	08/30/05 16:56	08/30/05 16:56	Н
Hardness (as CaCO3)	SM 2340 B	28	mg/L	1.0	1	1.0	09/16/05	09/16/05	
Hydroxide (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	08/30/05	08/30/05	
Iron (Fe)	EPA 200.7	0.11	mg/L	0.05	1	0.05	08/31/05	09/08/05	
Magnesium (Mg)	EPA 200.7	2.9	mg/L	0.1	1	0.1	08/31/05	09/08/05	
Manganese (Mn)	EPA 200.7	ND	mg/L	0.01	1	0.01	08/31/05	09/08/05	
o-Phosphate as PO4	EPA 300.0	ND	mg/L	0.6	1	0.6	08/31/05 00:12	08/31/05 00:12	Н
pН	SM 4500-H+ B	8.1	Std.Unit	t -	1	N/A	08/30/05 19:09	08/30/05 19:09	Н
Sulfate (SO4)	EPA 300.0	19	mg/L	2	1	2	08/31/05	08/31/05	
Turbidity	SM 2130 B	0.10	NTU	0.1	1	0.1	08/30/05 16:56	08/30/05 16:56	Н

mg/L: Milligrams/Liter (ppm)	PQL: Practical Quantitation Limit	H: Analyzed outside of hold time
mg/Kg: Milligrams/Kilogram (ppm)	DLR: Detection Limit for Reporting	P: Preliminary result
μg/L: Micrograms/Liter (ppb)	: PQL x Dilution	S: Suspect result. See Case Narrative for comments.
μg/Kg: Micrograms/Kilogram (ppb)	ND: None Detected at DLR	E: Analysis performed by External laboratory.
%Rec: Percent Recovered (surrogates)	pCi/L: Picocurie per Liter	See External Laboratory Report attachments.
Report Authentication Code:	n anna an an anna anna anna anna anna	Page 4 of 9

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082475 BSK Sample ID #: 627589

Project ID: Submission Comments: Liquid Sample Ty San San

Ind

		(N. 4.3.30 D		/T			
Analyte		Method	Result	Units	PQL	Dilution	DLR
Inorganics							
Sample Comments:							
Sample Description:	Influent						
Sample Type:	Liquid						

Alkalinity (as CaCO3)	SM 2320 B	250	mg/L	1	1	1	08/30/05	08/30/05	
Aluminum (Al)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/31/05	09/08/05	
Arsenic (As)	EPA 200.8	24	μg/L	2	1	2	08/31/05	09/16/05	
Bicarbonate (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	08/30/05	08/30/05	
Calcium (Ca)	EPA 200.7	6.5	mg/L	0.1	1	0.1	08/31/05	09/08/05	
Carbonate (as CaCO3)	SM 2320 B	11	mg/L	1	1	1	08/30/05	08/30/05	
Color (A.P.H.A)	SM 2120 B	15	units	1	1	1	08/30/05 16:58	08/30/05 16:58	Н
Hardness (as CaCO3)	SM 2340 B	28	mg/L	1.0	1	1.0	09/16/05	09/16/05	
Hydroxide (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	08/30/05	08/30/05	
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/31/05	09/08/05	
Magnesium (Mg)	EPA 200.7	2.8	mg/L	0.1	1	0.1	08/31/05	09/08/05	
Manganese (Mn)	EPA 200.7	0.050	mg/L	0.01	1	0.01	08/31/05	09/08/05	
o-Phosphate as PO4	EPA 300.0	1.2	mg/L	0.6	1	0.6	08/31/0500:21	08/31/05 00:21	Н
рН	SM 4500-H+ B	8.5	Std.Unit	-	1	N/A	08/30/05 19:18	08/30/05 19:18	Н
Sulfate (SO4)	EPA 300.0	19	mg/L	2	1	2	08/31/05	08/31/05	
Turbidity	SM 2130 B	0.60	NTU	0.1	1	0.1	08/30/05 16:58	08/30/05 16:58	Н

Project Desc: Isleton CA Well 3A

mg/L: Milligrams/Liter (ppm) mg/Kg: Milligrams/Kilogram (ppm)	PQL: Practical Quantitation Limit DLR: Detection Limit for Reporting	H: Analyzed outsic P: Preliminary resu	de of hold time alt
μg/L: Micrograms/Liter (ppb)	: PQL x Dilution	S: Suspect result.	See Case Narrative for comments.
µg/Kg: Micrograms/Kilogram (ppb)	ND: None Detected at DLR	E: Analysis perform	med by External laboratory.
%Rec: Percent Recovered (surrogates)	pCi/L: Picocurie per Liter	See External La	boratory Report attachments.
Report Authentication Code:	n an		Page 5 of 9
1414 Stanislaus Street Fresno	, CA 93706-1623 Phone 559-497-2888,	In CA 800-877-8310	Fax 559-485-6935

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180



Report Issue Date: 09/20/2005

Date Sampled:	08/26/2005
Time Sampled:	0932
Date Received:	08/30/2005

Analysis Date/Ťime

Prep Date/Time

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082475 BSK Sample ID #: 627590

Project ID:

Certificate of Analysis
NELAP Certificate #04227CA
ELAP Certificate #1180



Report Issue Date: 09/20/2005

Sample Type: Liquid Date Samp	
Sample Type. Exquite Date Samp	pled: 08/26/2005
Sample Description: Finish Time Samp	pled: 1200
Sample Comments: Date Recei	ived: 08/30/2005
Inorganics	
noi ganco	Analysis
Analyte Method Result Units PQL Dilution DLR Date/Time D	Analysis Date/Time
Analyte Method Result Units PQL Dilution DLR Date/Time D Arsenic (As) EPA 200.8 6.0 µg/L 2 1 2 08/31/05 09/	Analysis Date/Time

Project Desc: Isleton CA Well 3A

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution μg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR E: Analysis performed by External laboratory. See External Laboratory Report attachments. %Rec: Percent Recovered (surrogates) pCi/L: Picocurie per Liter Report Authentication Code:

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

Certificate of Analysis NELAP Certificate #04227CA

ELAP Certificate #1180

IN ACCORD

BSK Sample ID #: 62759	1	Durient Dure	1-1-4	CA 11/-1	1 7 4		Report	Issue Date: 09/20/20	005
Project ID:		Project Desc	Isleton	CA we	1 3 A				
Submission Comments:									
Sample Type: Liquid							Date	e Sampled: 08/26/200)5
Sample Description: Influent							Time	e Sampled: 1200	
Sample Comments:							Date	Received: 08/30/200)5
Inorganics							D	Analysia	
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date/Time	Date/Time	
Arsenic (As)	EPA 200.8	22	цg/L	2	1	2	08/31/05	09/16/05	

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution µg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. ND: None Detected at DLR µg/Kg: Micrograms/Kilogram (ppb) E: Analysis performed by External laboratory. %Rec: Percent Recovered (surrogates) See External Laboratory Report attachments. pCi/L: Picocurie per Liter Report Authentication Code:

Page 7 of 9

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082475 BSK Sample ID #: 627592

Project ID:

Project Desc: Isleton CA Well 3A

Certificate of Analysis NELAP Certificate #04227CA

ELAP Certificate #1180



Report Issue Date: 09/20/2005

Submission Commer	nts:								
Sample Type:	Liquid							Date	e Sampled: 08/26/2005
Sample Description:	Finish							Time	e Sampled: 1400
Sample Comments:								Date	Received: 08/30/2005
Inorganics									
5000 800000								Duran	Analysis
Analyte		Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Analysis Date/Time
Analyte		Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Analysis Date/Time
Analyte Arsenic (As)		Method EPA 200.8	Result 6.0	Units μg/L	PQL 2	Dilution	DLR 2	Prep Date/Time 08/31/05	Analysis Date/Time 09/16/05

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution µg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR E: Analysis performed by External laboratory. %Rec: Percent Recovered (surrogates) See External Laboratory Report attachments. pCi/L: Picocurie per Liter Report Authentication Code:

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180

Sacramento, CA	95851-0468							STED IN ACCORDANCE	
BSK Submission #: 2	2005082475						A C C A	nelac	
BSK Sample ID #: 6	27593						Report	Issue Date: 09/20/20	005
Project ID:		Project Desc	Isleton	CA Wel	1 3A				
Submission Comments:									
Sample Type: Liquid							Date	e Sampled: 08/26/200)5
Sample Description: Inflluent							Time	e Sampled: 1400	
Sample Comments:							Date	Received: 08/30/200)5
Inorganics							Duran	Analysis	
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date/Time	Date/Time	
Arsenic (As)	EPA 200.8	23	μg/L	2	1	2	09/03/05	09/16/05	

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution µg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR E: Analysis performed by External laboratory. %Rec: Percent Recovered (surrogates) See External Laboratory Report attachments. pCi/L: Picocurie per Liter Report Authentication Code:

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Sample Integrity P	g of	2	C]	20050824	475	08	30/200)5
Date Received 083005			1	CAL AM \$ 830053	SAC		: Standa	rd
Section 1- Sampled Same Day Sample Transport: Has chilling process begun? Y	Walk In SJ N Samj	DIE Receive	courier	Transport ed to Touch	ed In:	Ice Cho mbient	est Bo	x Hand
Section 2- Sampled Previous Sample Transport: CAO U No. Coolers/Ice Chests: Was Temperature In Range : Y Describe type of packing materials	JPS SJVC L Ter N St. Bubble Wrap	Walk-In mperature(s) Received	BSK-Cou : <u><u><u><u></u></u> : <u><u><u></u></u> : <u><u></u> : <u></u> : <u></u> : <u></u> :</u></u></u></u>	nrier GSO - 0-3° Wet Bh Peennuts Pa	Fed I	Exp. Other	Other:	
Were ice chest custody seals prese	nt?YX	Inta	ict: Y	N				
Section 3- COC Info. Was COC Received Date Sampled Time Sampled Sample ID Special Storage/Handling Ins. Section 4- Bottles / Analysis Did all bottles arrive unbroken and	Completed Yes No	Info From Container	Analysis I Any hold t Client Na Address Felephone	Requested imes less than 7 me e # Yes	72hr	Com Yes	N/A	Comment
Were bottle custody seals present? Were bottle custody seals intact? Did all bottle labels agree with CO Were correct containers used for th Were correct preservations used fo Was a sufficient amount of sample Were bubbles present in VOA Via Were Ascorbic Acid Bottles received	C?: ne tests requeste r the tests reque sent for tests in ls?: (Volatile M yed with the VO	d?: ested?: ndicated?: Iethods Or As	ıly)				1	
Section 5- Comments / Discrepanci Sample(s) Split/Preserve: Yes No Was Client Service Rep. notified of o Explanations / Comments	es Container: liscrepancies:	Yes No	N/A	Preservation:_ CSR:		Notii	fied By:	_Init.:
Report Comment Entered:				Â		hels ch	ecked hv	X

Sample	Integrity
--------	-----------

Sample Integrity Pg V of V			20	05082	475	08/30/2005	
BSK Bottles	(Yes)	No	CA	LAM	SAC 7	TAT: Standard	
(A) = 1(a - (B)) = 22a - (C) = A = 1 + a - (A -	C		830				
$\frac{802}{(A)}$ $\frac{1602}{(B)}$ $\frac{3202}{(C)}$ Amber Glass (AG)	10			I IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	6 4] 8 / 8 /11/ 8 8] 8 18 		-
Container(s) Received	1-3	4-5	6-9	r			
Bacti Na ₂ S ₂ O ₃							
			····	ļ			
None (p) White Cap		IC_					
None (p) But Cap	10		1.10				
HNO ₃ (p) Red Cap	1H_	IB	1H	<i>_</i>			
$H_2SO_4(p)$ renoveab							
NaOH (p) order out							
Direction 200 ml (c)					<u>\</u>		
Dissolved Oxygen 300mi (g)							
250ml (AG) None					<u>├</u>		
250ml (AG) H-SO, TOC COD ^{Yellow Label}		1					
$250 \text{ml} (AG) \text{N}_2 \text{S}_2 \text{O}_2 515 547 \text{Blue Label}$		I					
$250\text{ml}(AG) \text{Na}_{2}S_{2}O_{2} + \text{MCAA} 531.1 \text{Orange Label}$							
250ml (AG) NH ₂ Cl 552 ^{Purple Label}							
250ml (AG) EDA DBPs ^{Brown Label}							
250ml (AG) Other:							
					/		
500ml (AG) None							
500ml (AG) H ₂ SO ₄ TPH-Diesel ^{Yellow Label}						· · · · · · · · · · · · · · · · · · ·	
500ml (AG) Other:					r		
1 Liter (AG) None							
1 Liter (AG) H_2SO_4 O&G ^{Yellow Label}							
1 Liter (AG) Na_2SO_3 525 ^{N-Green Label}							
1 Liter (AG) $Na_2S_2O_3$ 548 ^{Blue Label}							
1 Liter (P) $Na_2S_2O_3 + H_2SO_4$ 549					7	N/N RD	
1 Liter (AG) NaOH+ZnAc Sulfide						10,2000	
1 Liter (AG) Other:					<u> </u>		
					<u> </u>	<u> </u>	
40ml VOA Vial Clear – HCL							
$\frac{40\text{m}}{\text{VOA}} \frac{\text{Vial Amber} - \text{Na}_2\text{S}_2\text{O}_3}{\frac{40\text{m}}{\text{VOA}} \frac{\text{Vial Class}}{\text{Vial Class}} - \text{Na}_2\text{S}_2\text{O}_3}$							
40ml VOA Vial Clear No S O 504 505				·····			
$\frac{40\text{m}}{\sqrt{0}\text{A}} \frac{\sqrt{1}}{\sqrt{1}} \frac{1}{\sqrt{1}} \frac{1}{\sqrt{1}} \frac{1}{\sqrt{2}} \frac{1}{2$							
						\land	
Other:							
Asbestos 1-Liter Plastic/Foil							
Radiological GA / GB (¹ / ₂ Gal Plastic)							
Radiological 226 / 228 (32 oz plastic N-BSK)			·				
Radon 200ml Clear (g)							
Low Level Hg/Metals Double Baggie							
THM-FP 4-40ml VOA None							
250 Clear Glass Jar							
500 Clear Glass Jar							
1 Liter Clear Glass Jar					<u> </u>		
Plastic Bag	<u> </u>				ļ		
Soil Tube Brass / Steel / Plastic	<u> </u>	<u> </u>					
Tedlar Bags					<u> </u>		

R BUDGAD	AINALI SIS KEQUESTED	21,		127/	Hose Holse	HA MA	¥07 , ₩ , ₩	25 25 57 17 17	X	× × ×	× ×		XXXXXX	A A A A A	+ +	X	x P	X		To a Company Company	Company	Company		Check/Cash/Card PIA # Init.	ed at 11/2% per month, 18% per annum. BSK & Associates shall be entitled to recover on delin- er the Client or authorized agent of the Client, and the Client agrees to be resonable for pay-
$08/30/2005 \frac{1}{Pere} = 0.08/30/2005$	1111d11.		Carbon Copies: (Check Box) CDHS Freshof o	EPA Merred Co	Tulare Co	Regulatory Compliance	Electronic Data Transfer: Y N System #	BW = Bottled Water	Comments / Station Code					IL VENT CHLORINATED		SLUEND CHLORINATED		EL VENT CHRORMATES		Received by (Signature and Print Name)	Received by (Signature and Print Name)	Received by (Signature and Print-Name)	Payment Received at Delivery:	Date: Amount:	ubject to monthly service/re-billing charges and interest calculati The Client/Company expressly acknowledges that they are eith
aista 2005082475 A.9 CAL AM SAC 288 830053		L-568-446	rroject #	Rush Request (Circle One)	7Day 5Day 2Day 1Day	QC Required (Circle One)	STD Level II Level III	tter CWW = Chlorinated Waste Water	ation <u>Matrix</u>	PJGS FW	90	183	98	89 1.NF	90 FW	21 INI	ge on	- 003 · 101		Pate Time Rev. +Timon 8/24/05 14:04	Date Time	Date	Date	1 argay only	unt balances are deemed delinguent. Delinguent balances are s it, settement, compromise, or otherwise. The person signing for
YTICAL 1414 Stan ATORIES (559) 497- FAX (559	Keport Attn:	SHAWIN SEVEY 11 Deviced Nome	Isuetranic CA NEWS.	Quote # PO #		Sampler Signature	Fan Jashell	Water CFW = Chlorinated Finished Wa	atter FW = FIIIIsted water WW = Was	FINISH - 5 (DG	11- 12 M	1-1-11-15- 15-	FIM154-30	T/NFLUENT	FINISH	INFL VENT	FUNISH	INFLUENT Y		Vame) Company	Vame) Company	Name) Compañy	sd Name)	Murally 75%	An full within 30 days from when invoiced. If not so paid, accord in noticed by judgement is mourted prior for in litigation whether concluded by judgement
BSK ANAL LABOR	Client Name	Addresses	4701 RELAT DRIVE	City State Zip	SACRANENTO CA	Sampler Name Printed	Red Eastin	Matrix Types: RSW = Raw Surface	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1 1 2/20 10:01	2 1 1 19:12	3 1 12:17	₹ V 3 /9:32 ,	5 3 1 19:32 : Date of	112:02 +	7 1 12:28	⁵¹ <i>S</i> / 1/μ; α	9 1 1 114:00		Relinquished by: (Signature and Printed P	Relinquished by: (Signature and Printed I	Keiinquished by: (Signature and Printed I	Mceived upr lab hy: Signature and Printe	A WINNIN &	Notice: Payment or services rendered as noted herein are di quent occannis, costs of collections, including attorneys, fees

09/20/2005

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468



Dear Shawn Sevey,

Thank you for selecting BSK Analytical Laboratories for your analytical testing needs. We have prepared this report in response to your request for analytical services. Please find enclosed the following sections for your complete laboratory report, each uniquely paginated:

CASE NARRATIVE: An overview of the work performed. CERTIFICATE OF ANALYSIS: Analytical results. REPORT OF SAMPLE INTEGRITY CHAIN OF CUSTODY FORM

Certification: I certify that this data package is in compliance with NELAC Standards for applicable analyses under NELAP Certificate #04227CA, and is in compliance with ELAP Standards for applicable certified analyses under ELAP Certificate #1180, except for the conditions listed.

If additional clarification of any information is required, please contact your Client Services Representative, Debra Skelton, at (800) 877-8310 or (559) 497-2888.

BSK ANALYTICAL LABORATORIES

Debra Skelton Client Services Representative

SAMPLE AND RECEIPT INFORMATION

The sample(s) was received, prepared, and analyzed within the method specified holding times unless otherwise noted on the Certificate of Analysis. Samples, when shipped, arrived within acceptable temperature requirements of 0° to 6° Celsius unless otherwise noted on the Report of Sample Integrity. Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.

QUALITY CONTROL

All analytical quality controls are within established method criteria except when noted in the Quality Control section or on the Certificate of Analysis. All positive results for EPA Methods 504.1, 502.2, and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed. QC samples may include analytes not requested in this submission.

SAMPLE RESULT INFORMATION

Samples are analyzed as received (wet weight basis) unless noted here. The results relate only to the items tested. Any exceptions to be considered when evaluating these results are also listed here, if applicable. Results contained in this package shall not be reproduced, except in full, without written approval of BSK Analytical Laboratories.

ORDER TEST

ANALYTE

<u>COMMENT</u>

Shawn Sevey California American Water - Sac.

PO Box 15468 ACCORD Sacramento, CA 95851-0468 BSK Submission #: 2005082477 Report Issue Date: 09/20/2005 **BSK Sample ID #: 627610** Project Desc: Isleton Project ID: Submission Comments: Sample Type: Liquid Date Sampled: 08/27/2005 Sample Description: Influent Time Sampled: 1330 Sample Comments: Date Received: 08/30/2005 Inorganics Prep Date/Time Analysis Analyte Method Result Units **PQL** Dilution DLR Date/Ťime Arsenic (As) EPA 200.8 24 μg/L. 2 1 2 09/03/05 09/16/05

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution µg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR E: Analysis performed by External laboratory. %Rec: Percent Recovered (surrogates) See External Laboratory Report attachments. pCi/L: Picocurie per Liter Report Authentication Code:

Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Page 1 of 2

ELAP Certificate #1180

Certificate of Analysis NELAP Certificate #04227CA

1414 Stanislaus Street Fresno, CA 93706-1623

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005	082477						ACC	1 ICIAL I	I I
BSK Sample ID #: 62761	1						Report	Issue Date: 09/20)/2005
Project ID:		Project Desc	: Isleton						
Submission Comments:									
Sample Type: Liquid							Date	e Sampled: 08/27/2	2005
Sample Description: Finished							Tim	e Sampled: 1330	
Sample Comments:							Date	Received: 08/30/2	2005
Inorganics							5	A]	124230.000704.00
Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Date/Time	
Arsenic (As)	EPA 200.8	6.0	μg/L	2	1	2	09/03/05	09/16/05	
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	09/03/05	09/13/05	

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit mg/Kg: Milligrams/Kilogram (ppm) **DLR: Detection Limit for Reporting** : PQL x Dilution µg/L: Micrograms/Liter (ppb) µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR %Rec: Percent Recovered (surrogates) pCi/L: Picocurie per Liter Report Authentication Code:

1414 Stanislaus Street Fresno, CA 93706-1623

H: Analyzed outside of hold time

P: Preliminary result

Phone 559-497-2888, In CA 800-877-8310

S: Suspect result. See Case Narrative for comments.

Fax 559-485-6935

E: Analysis performed by External laboratory. See External Laboratory Report attachments.

Page 2 of 2

Certificate of Analysis

NELAP Certificate #04227CA **ELAP Certificate #1180**

IN ACCORD

Sample Type:LiquidSample Description:FinishedSample Comments:							Date Time Date	e Sampled: 08/2' e Sampled: 1330 e Received: 08/36
Inorganics Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Analysis Date/Time
Arsenic (As)	EPA 200.8	6.0	μg/L	2	1	2	09/03/05	09/16/05
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	09/03/05	09/13/05

Sample Integrity P	g of	(2005 CAL A	082477 AM SAC	08/30/2005	,
Date Received 083005		830059 	 		
Section 1- Sampled Same Day Sample Transport Has chilling process begun? Y	Walk In Style I N Samples Rece	BSK-Courier T	ransported In: Fouch /	Ice Chest Bo Ambient / C	x Hand
Section 2- Sampled Previously Sample Transport: CAO No. Coolers/Ice Chests: Was Temperature In Range : Describe type of packing material	JPS SJVC Walk-In <u> </u>	n BSK-Courier e(s): <u>Metab</u> ed On Ice: <u>We</u> r Packing Peanu	GSO Fed D <u>* Blue</u> 1ts Paper	Exp. Other:	
Were ice chest custody seals pres	ent? Y N	Intact: Y 1	N		
Section 3- COC Info.	Completed Info From	1		Completed Yes No	Info From Container
Was COC Received Date Sampled Time Sampled Sample ID Special Storage/Handling Ins.		Analysis Reque Any hold times le Client Name Address Telephone #	sted ess than 72hr Yes	No N/A	Comment
Did all bottles arrive unbroken and Were bottle custody seals present? Were bottle custody seals intact? Did all bottle labels agree with CC Were correct containers used for t Were correct preservations used for Was a sufficient amount of sampl Were bubbles present in VOA Via Were Ascorbic Acid Bottles recei	l intact?: DC?: he tests requested?: or the tests requested?: e sent for tests indicated' ils?: (Volatile Methods ved with the VOAs	?: Only)			
Section 5- Comments / Discrepance Sample(s) Split/Preserve: Yes N Was Client Service Rep. notified of Explanations / Comments	Container:	Prese	rvation: SR:	Notified By:	_Init.:
Report Comment Entered:	DRMS/SMPINTG05	Labeled by:		abels checked by	



		No Rush	ter Shau	Val	A	8200	29	
BSK ANALYTICAI LABORATORIE 1414 Stanislaus Street, Fresno, CA 93706-162 (559) 497-2888, (800) 877-8310, fax (559) 485-6931	E BSK Submission:		ViibidīuT ,	<u> </u>	200 CAI 8300	05082477 , AM SAC 59	08/30/20 TAT: Stand	1ar
client Cal American Water	Report Attention Shaw Sevey	Phone (916) 568-4216	ssəu	ete			ʻ£bi	#2 #2 ***
Address 4701 Beloit Drive	Project, Quote or PO #	FAX	Haro sA ,	eyds			a-2)	
city, state, zip Sacramento, Ca 95630	Copy to:	SISELETON	, Mn MM ,	oud			riority	
Lab Use Only Sampling Info	Sampled by Cerl CASE ILL Samula Description / I contion	Other (046)+568+13018t-+1: Codo	otal v /l, Fe)olor 04'	57		d ysn	
X h. 3 3/27/05	FILTER INFLUENT		J × J ×		1		ы	
200 Elector	FINISHED			:				
1 V 1 8127/05 13:30	111220000	102 1/010		 	P.			T
2 4 1 8/27/05 13:30	F, IVISHED	11 10			X			·
								·
	Filter influent Temp= 22 ℃ (/						
	Filter Influent cl2= $\partial S_{Mq}/\omega$							·
	Filter Influent PH= $\mathcal{S}_{\mathcal{S}}$							
	Finished Temp= Z^{5} C							
	Finished cl2= @. Z.Mg/L		Ζ					
	Finished PH= 7.72°			A				
					/			
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								7
QC Report Type: Level [] 2 [] 3 [] 4	Formal CC	DC Required: [] Addition	al Services autho	orized by:				
Signature 2		rint Name	ပိ	mpany		Date	Time	
Received / Reliquished by Received / Reliquished by Received / Relignished hur / //	Ser Cresk	14 11 110	VEERFORT	× 7	RRY IN	12/20/2	13.49	
Received Rejudished by M. A. M. M.		and Hamilton			JAC.	Kmax	1249	
M.N.V.	within 30 days from the invoice date. If not so paid, account	tbalances are deemed deliquent. Deliquent		offies, in official o	C. ved Date		D WAYD	
definition of comparison of collections, including attantees and in deliquent accounts, costs of collections, including attantey's fees person signing for the Gient/Company expressly acknowledges the	interest cardinated at 1.3.6 per month, 10.6 per annum. to 20.6 per annum. Done is incurred prior to or in litigation whether concluded by judgme that they are either the Client or authorized agent of the Com	a Associates sitellupe entired to recover on ent, settlement, compromise or otherwise. The tpany.	with	n delivery	Ref #		nitials	
)								

09/20/2005

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468



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BSK ANALYTICAL LABORATORIES

Debra Skelton Client Services Representative

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SAMPLE RESULT INFORMATION

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<u>ORDER</u>	TEST	ANALYTE	<u>COMMENT</u>
627509	EPA 300.0	o-Phosphate as PO4	Sample received out of holding time.
627509	SM 2120 B	Color (A.P.H.A)	Sample received out of holding time.
627509	SM 2130 B	Turbidity	Sample received out of holding time.
627509	SM 4500-H+ B	pH	Sample received out of holding time.
627510	EPA 300.0	o-Phosphate as PO4	Sample received out of holding time.
627510	SM 2120 B	Color (A.P.H.A)	Sample received out of holding time.
627510	SM 2130 B	Turbidity	Sample received out of holding time.
627510	SM 4500-H+ B	рН	Sample received out of holding time.
Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082464

BSK Sample ID #: 627509 Project ID: Submission Comments: Sample Type: Liquid Sample Description: Filter Influent Sample Comments:

Inorganics

Turbidity

Project Desc: Isleton

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180



Date Sampled:	08/27/2005
Time Sampled:	1540
Date Received:	08/30/2005

Analysis

08/31/0516:36 08/31/0516:36

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Analyte	Method	Result	Units	PQL	Dilution	DLR	Date/Time	Date/Ťime
	CM 2220 D	•	17	1			00/01/05	00/01/05
Alkalinity (as CaCO3)	SIM 2320 B	260	mg/L	1	1	1	08/31/05	08/31/05
Aluminum (Al)	EPA 200.7	ND	mg/L	0.05	1	0.05	09/03/05	09/12/05
Arsenic (As)	EPA 200.8	22	μg/L	2	1	2	09/03/05	09/16/05
Bicarbonate (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	08/31/05	08/31/05
Calcium (Ca)	EPA 200.7	6.5	mg/L	0.1	1	0.1	09/03/05	09/12/05
Carbonate (as CaCO3)	SM 2320 B	18	mg/L	1	1	1	08/31/05	08/31/05
Color (A.P.H.A)	SM 2120 B	20	units	1	1	1	08/31/05 16:36	08/31/05 16:36
Hardness (as CaCO3)	SM 2340 B	28	mg/L	1.0	1	1.0	09/16/05	09/16/05
Hydroxide (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	08/31/05	08/31/05
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	09/03/05	09/12/05
Magnesium (Mg)	EPA 200.7	2.8	mg/L	0.1	1	0.1	09/03/05	09/12/05
Manganese (Mn)	EPA 200.7	0.050	mg/L	0.01	1	0.01	09/03/05	09/12/05
o-Phosphate as PO4	EPA 300.0	1.2	mg/L	0.6	1	0.6	08/31/05 13:48	08/31/05 13:48
pH	SM 4500-H+ B	8.5	Std.Unit	-	1	N/A	08/31/05 20:00	08/31/05 20:00
Sulfate (SO4)	EPA 300.0	19	mg/L	2	1	2	08/31/05	08/31/05

NTU

0.1

1

SM 2130 B

0.60

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution µg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR E: Analysis performed by External laboratory. %Rec: Percent Recovered (surrogates) See External Laboratory Report attachments. pCi/L: Picocurie per Liter Report Authentication Code: Page 1 of 2

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082464

BSK Sample ID #: 627510

Project ID: Submission Comments: Sample Type: Liquid Sample Description: Finished Sample Comments: Project Desc: Isleton

Certificate of Analysis NELAP Certificate #04227CA

ELAP Certificate #1180



Report Issue Date: 09/20/2005

Date Sampled:08/27/2005Time Sampled:1540Date Received:08/30/2005

Inorganics

Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Analysis Date/Time	
Alkalinity (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	08/31/05	08/31/05	
Aluminum (Al)	EPA 200.7	ND	mg/L	0.05	1	0.05	09/03/05	09/12/05	
Arsenic (As)	EPA 200.8	5.0	μg/L	2	1	2	09/03/05	09/16/05	
Bicarbonate (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	08/31/05	08/31/05	
Calcium (Ca)	EPA 200.7	6.3	mg/L	0.1	1	0.1	09/03/05	09/12/05	
Carbonate (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	08/31/05	08/31/05	
Color (A.P.H.A)	SM 2120 B	ND	units	1	1	1	08/31/05 16:38	08/31/05 16:38	Н
Hardness (as CaCO3)	SM 2340 B	27	mg/L	1.0	1	1.0	09/16/05	09/16/05	
Hydroxide (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	08/31/05	08/31/05	
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	09/03/05	09/12/05	
Magnesium (Mg)	EPA 200.7	2.8	mg/L	0.1	1	0.1	09/03/05	09/12/05	
Manganese (Mn)	EPA 200.7	ND	mg/L	0.01	1	0.01	09/03/05	09/12/05	
o-Phosphate as PO4	EPA 300.0	ND	mg/L	0.6	1	0.6	08/31/05 13:58	08/31/05 13:58	Н
pH	SM 4500-H+ B	8.2	Std.Unit	- 1	1	N/A	08/31/05 20:09	08/31/05 20:09	Н
Sulfate (SO4)	EPA 300.0	19	mg/L	2	1	2	08/31/05	08/31/05	
Turbidity	SM 2130 B	0.20	NTU	0.1	1	0.1	08/31/05 16:38	08/31/05 16:38	Н

mg/L: Milligrams/Liter (ppm) mg/Kg: Milligrams/Kilogram (ppm)	PQL: Practical Quantitation Limit DLR: Detection Limit for Reporting	H: Analyzed outside of hold time P: Preliminary result
µg/L: Micrograms/Liter (ppb)	: PQL x Dilution	S: Suspect result. See Case Narrative for comments.
µg/Kg: Micrograms/Kilogram (ppb)	ND: None Detected at DLR	E: Analysis performed by External laboratory.
%Rec: Percent Recovered (surrogates)	pCi/L: Picocurie per Liter	See External Laboratory Report attachments.
Report Authentication Code:) (1991) A ANN ANN ANN ANN ANN ANN ANN ANN ANN	Page 2 of 2

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Sample Integrity P		2005	082464	08/30/2005	
Sample Integrity 1	6. <u> </u>	CAL A	M SAC	TAT: Standard	
Date Received 083005		830056			
Section 1- Sampled Same Day Sample Transport	Walk In SJVC	SK-Courier	Tansported In:	Ice Chest Bo Ambient / (Dx Hand
Has chilling Nocess begun: 1					
Section 2- Sampled Previous Sample Transport: (CAO)	UPS SJVC Walk-In U Temperature	BSK-Courier	GSO Fed	Exp. Other:	
No. Coolers/Ice Cliests.	N Receive	d On Ice:	et Blue		
Was Temperature In Kange				- · · ·	
Describe type of packing material	s: Bubble Wrap Foam	Packing Peam	uts Paper	Other	
Were ice chest custody seals pres				·····	L
Section 3- COC Info.	Completed Info From		General and the method of the second seco	Completed	Info From
	Yes No Container	Analysis Reque	oted	Yes No	Container
Was COC Received		Any hold times 1	ess than 72hr		
Date Sampled		Client Name			`
Time Sampled					
Sample ID		Address			
Special Storage/Handling Ins.		Telephone #			
Section 4 Dottles / Analysis			Yes	No N/A	Comment
Did all bottles arrive unbroken and	lintact?:	1			
Did all bottles allive unbroken and	muoti				
Were bottle custody seals present				/	
Were bottle custody sears intact	$\overline{)}$				
Did all bottle labels agree with CC	N.C.	· · · · · · · · · · · · · · · · · · ·			
Were correct containers used for the	ne tests requesteur.				1
Were correct preservations used to	or the tests requested?				
Was a sufficient amount of sample	e sent for tests indicated?	: 			
Were bubbles present in VOA Via	ils?: (Volatile Methods (Unly)		· / /	
Were Ascorbic Acid Bottles recei	ved with the VOAs		<u> </u>		
Section 5- Comments / Discrepance	les			i	
Sample(s) Split/Preserve: Yes	Container:	Prese	ervation:		_ Init.:
Was Client Service Rep. notified of Explanations / Comments	discrepancies: Yes N	No N/A C	SR:	Notified By:	
	میں میں اور			1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1	
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Report Comment Ratered		^			A
Report Comment Enterou.		//	/	× .	A
F./SHARE/OC/DOCCONTROL/FO)RMS/SMPINTG05	Labeled by:	↓ L:	abels checked by	: <u>-0</u>

Sample Integrity Pg 1/2 of 1/2		.		20050	82464	08/30/2005
BSK Bottles	(Yes)	No	(CAL AI	M SAC	TAT: Standard
8oz (A) 16oz (B) 32oz (C) Amber Glass (AG)	\smile		1	830056		A MARINA ARMAN MANANA MANANA AMIN'NA AM
Container(s) Received	141	1	T			
Bacti Na S. O.						
None (n) ^{White Cap}	10					
None (p) ^{Blue Cap}		$\overline{}$				
HNO ₂ (p) Red Cap	1B					
H_2SO_4 (p) Yellow Cap						
NaOH (p) Green Cap			\vdash			
Other:	-		``````````````````````````````````````			
Dissolved Oxygen 300ml (g)						
	++			+		
250ml (AG) None			·	+		
250ml (AG) H ₂ SO ₄ TOC,COD ^{Yellow Label}						
250ml (AG) Na ₂ S ₂ O ₃ 515,547 ^{Blue Label}	•					
250ml (AG) Na ₂ S ₂ O ₃ + MCAA 531.1 ^{Orange Label}					· · · · · · · · · · · · · · · · · · ·	······································
250ml (AG) NH ₄ Cl 552 ^{Purple Label}					-	
250ml (AG) EDA DBPs Brown Label				1-1-		
250ml (AG) Other:				<u> </u>		
	-					
500ml (AG) None				1		
500ml (AG) H ₂ SO ₄ TPH-Diesel ^{Yellow Label}				1		
500ml (AG) Other:				1	has	
				1		
1 Liter (AG) None					ΠN	
1 Liter (AG) H_2SO_4 O&G ^{Yellow Label}					V	
1 Liter (AG) Na_2SO_3 525 ^{N-Green Label}				1	5.0	
1 Liter (AG) $Na_2S_2O_3$ 548 ^{Blue Label}				1	$\Lambda \nu$	
1 Liter (P) $Na_2S_2O_3 + H_2SO_4$ 549						
1 Liter (AG) NaOH+ZnAc Sulfide						
1 Liter (AG) Other:						
40ml VOA Vial Clear – HCL						
40 ml VOA Vial Amber – $Na_2S_2O_3$					Ν	
40ml VOA Vial Clear – None					\square	
40ml VOA Vial Clear - $Na_2S_2O_3$ 504, 505						
40ml VOA Vial Other						
Other:					\\	
Asbestos_1-Liter Plastic/Foil						and an and the fighter of the start of the
Radiological GA / GB (½ Gal Plastic)						
Radiological 226 / 228 (32 oz plastic N-BSK)			ļ			
Radon 200ml Clear (g)			ļ			/
Low Level Hg/Metals Double Baggie			l	ļ	/	
THM-FP 4-40ml VOA None	-		ļ	ļ	/	
	<u> </u>			<u> </u>		
250 Clear Glass Jar	_					
500 Clear Glass Jar				<u> </u>		
I Liter Clear Glass Jar			ļ			
Plastic Bag						
Soil Tube Brass / Steel / Plastic		······································				
Tedlar Bags						

No RUSH PER Shawn & No RUSH PER Shawn & No RUSH PER Shawn & COLD AN SAC 08/30/2005 Mo RUSH PER Shawn & No RUSH PER Shawn & Mo RUSH PER Shawn & CAL AM SAC TAT: Standard Mo S30056 S30056 MMMMMMMMMMMMM	Water Partine Standard Partine Standard Partine Standard Partine Standard 106 Factor Partine Pactor Partine <	evel []2 []3 []4 Formal COC Required: [] Additional Services authorized by: evel []2 []3 []4 Formal COC Required: [] Additional Services authorized by: Signature Frint Name Or Print Name Company Date Time Signature
BSK ANALYT I ABORATC 1414 Stanislaus Street, Fresno, CA 9 (559) 497-2888, (800) 877-5310, fax (555	Client Cal American Water Address 4701 Beloit Drive City, State, Zp Sampling Inf S# T #C Date T S# T #C Date T S# C Date T S# C Date C	CC Report Type: Level [] 2 [] 3 CC Report Type: Level [] 2 [] 3 Received / Rejugnashed by Received / Received by Recei

09/20/2005

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468



Dear Shawn Sevey,

Thank you for selecting BSK Analytical Laboratories for your analytical testing needs. We have prepared this report in response to your request for analytical services. Please find enclosed the following sections for your complete laboratory report, each uniquely paginated:

CASE NARRATIVE: An overview of the work performed. CERTIFICATE OF ANALYSIS: Analytical results. REPORT OF SAMPLE INTEGRITY CHAIN OF CUSTODY FORM

Certification: I certify that this data package is in compliance with NELAC Standards for applicable analyses under NELAP Certificate #04227CA, and is in compliance with ELAP Standards for applicable certified analyses under ELAP Certificate #1180, except for the conditions listed.

If additional clarification of any information is required, please contact your Client Services Representative, Debra Skelton, at (800) 877-8310 or (559) 497-2888.

BSK ANALYTICAL LABORATORIES

Debra Skelton Client Services Representative

SAMPLE AND RECEIPT INFORMATION

The sample(s) was received, prepared, and analyzed within the method specified holding times unless otherwise noted on the Certificate of Analysis. Samples, when shipped, arrived within acceptable temperature requirements of 0° to 6° Celsius unless otherwise noted on the Report of Sample Integrity. Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.

QUALITY CONTROL

All analytical quality controls are within established method criteria except when noted in the Quality Control section or on the Certificate of Analysis. All positive results for EPA Methods 504.1, 502.2, and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed. OC samples may include analytes not requested in this submission.

SAMPLE RESULT INFORMATION

Samples are analyzed as received (wet weight basis) unless noted here. The results relate only to the items tested. Any exceptions to be considered when evaluating these results are also listed here, if applicable. Results contained in this package shall not be reproduced, except in full, without written approval of BSK Analytical Laboratories.

<u>ORDER</u> <u>TEST</u>

ANALYTE

<u>COMMENT</u>

Shawn Sevey California American Water - Sac. PO Box 15468

Sacramento, CA 95851-0468 ACCOA BSK Submission #: 2005082476 Report Issue Date: 09/20/2005 **BSK Sample ID #: 627602** Project Desc: Isleton Project ID: Submission Comments: Sample Type: Liquid Date Sampled: 08/28/2005 Sample Description: Filter Influent Time Sampled: 1430 Sample Comments: Date Received: 08/30/2005 Inorganics Analysis Prep Analyte Method Result Units **PQL** Dilution DLR Date/Time Date/Time Arsenic (As) EPA 200.8 23 μg/L 2 1 2 09/03/05 09/16/05

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result µg/L: Micrograms/Liter (ppb) : PQL x Dilution S: Suspect result. See Case Narrative for comments. µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR E: Analysis performed by External laboratory. %Rec: Percent Recovered (surrogates) See External Laboratory Report attachments. pCi/L: Picocurie per Liter Report Authentication Code: Page 1 of 2

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082476										
BSK Sample ID #: 627603	3						Report	Issue Date: 09/20	//2005	
Project ID:		Project Desc	: Isleton							
Submission Comments:										
Sample Type: Liquid							Date	e Sampled: 08/28/2	2005	
Sample Description: Finished							Tim	e Sampled: 1430		
Sample Comments:							Date	Received: 08/30/2	2005	
Inorganics								A		
Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Analysis Date/Time		
Arsonia (As)	EPA 200.8	60	u a/I	n	1	2	00/03/05	00/16/05		
Alsenic (AS)	LIA 200.8	0.0	µg/L	2	1	2	09/03/05	09/10/05		
iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	09/03/05	09/09/05		

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) **DLR: Detection Limit for Reporting** P: Preliminary result : PQL x Dilution S: Suspect result. See Case Narrative for comments. µg/L: Micrograms/Liter (ppb) µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR E: Analysis performed by External laboratory. %Rec: Percent Recovered (surrogates) See External Laboratory Report attachments. pCi/L: Picocurie per Liter Report Authentication Code:

ELAP Certificate #1180 ACCOR

Certificate of Analysis NELAP Certificate #04227CA

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Sample Integrity Pg of	2005082476 08/30/2005					
Date Received 083005						
Section 1- Sampled Same Day Sample Transport: Walk In Strend B Has chilling process begun? Y N Samples Received	SK-Courier Transported In: Ice Chest Box Hand ved: Chilled to Touch / Ambient / On Ice					
Section 2- Sampled Previously Sample Transport: UPS SJVC Walk-In No. Coolers/Ice Chests: Image: Image:	BSK-Courier GSO Fed Exp. Other: (s): MUtally d On Ice: <u>Wet Blue</u> Packing Peanuts Paper Other:					
Were ice chest custody seals present? Y X II	nitact: Y N					
Section 3- COC Info. Completed Info From Yes No Container	Completed Info From Yes No Container					
Was COC Received Date Sampled Time Sampled Sample ID Special Storage/Handling Ins.	Analysis Requested Any hold times less than 72hr Client Name Address Telephone #					
Section 4- Bottles / Analysis Did all bottles arrive unbroken and intact?: Were bottle custody seals present? Were bottle custody seals intact? Did all bottle labels agree with COC?: Were correct containers used for the tests requested?: Were correct preservations used for the tests requested?: Was a sufficient amount of sample sent for tests indicated? Were bubbles present in VOA Vials?: (Volatile Methods of Were Ascorbic Acid Bottles received with the VOAs	Yes No N/A Comment					
Weiter Reserver 2 Container: Sample(s) Split/Preserve: Yes No Container: Preservation: Init.: Was Client Service Rep. notified of discrepancies: Yes No CSR: Notified By:						
Explanations / Comments	Labeled by:					

Sample Integrity Pg 10 of 12 BSK Bottles	Yes	No	200 CAL	5082476 AM SAC	08/30/2005
8oz (A) 16oz (B) 32oz (C) Amber Glass (AG)	\smile		83005	8	
Container(a) Received	1-7				
Container(s) Received		_/			
Bacti Na ₂ S ₂ O ₃					
White Cap	ASTA				
None (p) white Cap	11 11				
None (p) Blac Cap	n	<u> </u>			
HNO ₃ (p) Kellow Cap	IF				
H_2SO_4 (p) renow cap			L		
NaOH (p) Green Cap			<u>\</u>		
Other:			└──		
Dissolved Oxygen 300ml (g)			├		
			<u> </u>		
250ml (AG) None					
$250\text{ml}(\text{AG}) \text{H}_2\text{SO}_4 \text{TOC,COD}$ where $250\text{ml}(\text{AG}) \text{H}_2\text{SO}_4 \text{TOC,COD}$					
$250 \text{ml} (\text{AG}) \text{Na}_2 \text{S}_2 \text{O}_3 515,547$ bits Later			<i> </i>		
$250 \text{ml} (\text{AG}) \text{Na}_2 \text{S}_2 \text{O}_3 + \text{MCAA} 531.1$			/		
$250 \text{ml} (\text{AG}) \text{NH}_4 \text{Cl} 552^{-1} \text{mpc} \text{East}$			/		
250ml (AG) EDA DBPs blown Later			/		
250ml (AG) Other:					
			/	1	
500ml (AG) None					
500ml (AG) H ₂ SO ₄ TPH-Diesel ¹⁰⁰⁰ Laber				MIN	
500ml (AG) Other:			3	/\///_)	
			\	$() \mathcal{N} -$	
I Liter (AG) None			↓ 		
$\frac{1 \text{ Liter (AG) } H_2 \text{ SO}_4 \qquad \text{O&G}}{1 \text{ Liter (AG) } M_2 \text{ GO}_4 \qquad \text{SO}_5 \text{ N-Green Label}}$			$+$ \cdot $ \cdot$	$-\Lambda X (A)$	15
$\frac{1 \text{ Liter (AG) Na_2SO_3}}{1 \text{ Liter (AG) N_2SO_3}} \frac{525}{540 \text{ Blue Label}}$				00000	
$\frac{1 \text{ Liter (AG) Na}_2 S_2 U_3 \qquad 548}{1 \text{ Liter (D) N}_2 S_2 U_3 \qquad 548}$			<u>├</u>		
$\frac{1 \text{ Liter (P) Na}_2 S_2 O_3 + H_2 S O_4}{1 \text{ Liter (A C) NL OIL} 7 \text{ A}_2 S O_4} = \frac{349}{2549}$			<u>├</u>		
I Liter (AG) NaOH+ZhAc Sulfide			$+ - + \mathbf{i}$		
1 Liter (AG) Other:			`	∖	
40-1 VOA Viel Clear HCI				<u> </u>	
40ml VOA Vial Amber No S O				<u> </u>	
$\frac{40\text{m}}{40\text{m}} \sqrt{0} \text{A} \sqrt{1} \text{a} \frac{1}{10000000000000000000000000000000000$					
40ml VOA Vial Clean No S O 504 505					
$40\text{m} \text{ VOA Vial Clear - Na}_{252}O_3 504, 505$					
Other					
Ashestos 1-Liter Plastic/Foil	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·		e en
Radiological GA / GB (¹ / ₂ Gal Plastic)					
Radiological 226 / 228 (32 oz plastic N-BSK)				/	
Radiological 220 / 220 (32 02 plastic TV-DDR)				/	
Low Level Hg/Metals Double Baggie					
THM-FP 4-40ml VOA None			-		
250 Clear Glass Jar				<u> </u>	
500 Clear Glass Jar					
1 Liter Clear Glass Jar					
Plastic Bag					
Soil Tube Brass / Steel / Plastic					
Tedlar Bags					

	2. Day	THT & No RU	ist Per wat Shu	Nai	84068
BCI ANALYTICA	A L	~	200	5082476	08/30/2005dy
1414 Stanislaus Street, Fresno, CA 93706-1 (559) 497-2888, (800) 877-8310, fax (559) 485-6	E.S. BON SUDMISSION: 1623 5935		Turbidit 83005	AM SAC 8	TAT: Standard
Client Cal American Water	Report Attention Shaw Sevey	Phone (916) 568-4216			ς 'Λι
Address 4701 Beloit Drive	Project, Quote ar PO #	FAX	rbısF 2A Jshqı		(S-Ds
city, State. Zip Sacramento, Ca 95630	Copy to:	NSEL TON	Juos Juos Juk'		riority
Lab Use Only Sampling Info	Sampled by:	Other	191- 191- 191- 191-	2	d ys
S# T #C Date Time	Sample Description / Location	(0660)ifi60t42018tation Code	کو 22 ک 2	1	iny
1 L 1 \$25/05 14:30	FILTER INFLUENT	InA-1.(00U	XXXXX		
1 A A 25/02 14:30	FINISHED	40 T W	×	- \	
	Filter influent Temp=	5.2 2°C			
	Filter Influent cl2=	1. 0 mg/L			
	Filter Influent PH=	によ の			
	Finished Temp=	23°C			
	Finished cl2=	0, 9 mg/L			
	Finished PH=	757			
GC Report Type: Level [] 2 [] 3 [] 4	Formal CC	0C Required: [] Addition	al Services authorized by:		
Signature		rint Name	Company		Date Time
Raceived V. Residentisted by a full	Red Gr	surver (hu	USIR AND 4 TER	enter 8	26/05 14:00
Received Relifquished by	The Ba	15 to 12 1/2 BS	K-Sac	I.	126/01-1400
AN RECEIVED / REGINATION / / /	MACAN	m	BSK Laboratories, Inc.	88	9012 074B
Vadices Paymeht lot setuine& ender a as Neter neren are balances are subsetrorrominity services ire-billing charges a	due within 30 days from the invoice date. الألمط في paid, عدصّما and interest calculated at 1.5% per month, 18% per annum. BSK	& Associates shall be entitled to recover on	Payments Received	Date	Amount
deliquent accounts/ costs of collections, including attorney's person signing for the Client/Company expressly acknowled.	fees incurred prior to or in itigation whether concluded by judgm iges that they are either the Client or authorized agent of the Con	ent, settlement, compromise or otherwise. The pany.	with delivery	Ref #	Initials

09/20/2005

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468



Dear Shawn Sevey,

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BSK ANALYTICAL LABORATORIES

Debra Skelton Client Services Representative

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<u>ORDER</u>	TEST	<u>ANALYTE</u>	COMMENT
627483	EPA 300.0	o-Phosphate as PO4	Sample analyzed outside holding time.
627483	SM 2120 B	Color (A.P.H.A)	Sample analyzed outside holding time.
627483	SM 2130 B	Turbidity	Sample analyzed outside holding time.
627483	SM 4500-H+ B	рН	Sample analyzed outside holding time.
627484	EPA 300.0	o-Phosphate as PO4	Sample analyzed outside holding time.
627484	SM 2120 B	Color (A.P.H.A)	Sample analyzed outside holding time.
627484	SM 2130 B	Turbidity	Sample analyzed outside holding time.
627484	SM 4500-H+ B	рН	Sample analyzed outside holding time.

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082454 **BSK Sample ID #: 627483**

Project ID: Submission Comments: Sample Type: Liquid Sample Description: Filter Influent Sample Comments:

Inorganics

Project Desc: Isleton

Certificate of Analysis NELAP Certificate #04227CA **ELAP Certificate #1180**



Report Issue Date: 09/20/2005

Date Sampled: 08/28/2005 Time Sampled: 1130 Date Received: 08/30/2005

morganics							Duon	Analysis	
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date/Time	Date/Time	
Alkalinity (as CaCQ3)	SM 2320 B	250	ma/I	1	1	1	00/06/05	00/06/05	
	5MI 2520 D	250	ing/L	1	1	1	09/00/03	09/00/05	
Aluminum (AI)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/31/05	09/08/05	
Arsenic (As)	EPA 200.8	23	μg/L	2	1	2	08/31/05	09/16/05	
Bicarbonate (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	09/06/05	09/06/05	
Calcium (Ca)	EPA 200.7	6.5	mg/L	0.1	1	0.1	08/31/05	09/08/05	
Carbonate (as CaCO3)	SM 2320 B	10	mg/L	1	1	1	09/06/05	09/06/05	
Color (A.P.H.A)	SM 2120 B	20	units	1	1	1	08/31/05 16:30	08/31/05 16:30	Н
Hardness (as CaCO3)	SM 2340 B	28	mg/L	1.0	1	1.0	09/16/05	09/16/05	
Hydroxide (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	09/06/05	09/06/05	
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/31/05	09/08/05	
Magnesium (Mg)	EPA 200.7	2.8	mg/L	0.1	1	0.1	08/31/05	09/08/05	
Manganese (Mn)	EPA 200.7	0.050	mg/L	0.01	1	0.01	08/31/05	09/08/05	
o-Phosphate as PO4	EPA 300.0	1.2	mg/L	0.6	1	0.6	08/31/05 14:35	08/31/05 14:35	Н
рН	SM 4500-H+ B	8.4	Std.Unit	t -	1	N/A	08/31/05 10:15	08/31/05 10:15	Н
Sulfate (SO4)	EPA 300.0	19	mg/L	2	1	2	08/31/05	08/31/05	
Turbidity	SM 2130 B	0.50	NTU	0.1	1	0.1	08/31/05 16:30	08/31/05 16:30	Н

mg/L: Milligrams/Liter (ppm) mg/Kg: Milligrams/Kilogram (ppm)	PQL: Practical Quantitation Limit DLR: Detection Limit for Reporting	H: Analyzed outside of hold time P: Preliminary result
µg/L: Micrograms/Liter (ppb)	: PQL x Dilution	S: Suspect result. See Case Narrative for comments.
µg/Kg: Micrograms/Kilogram (ppb)	ND: None Detected at DLR	E: Analysis performed by External laboratory.
%Rec: Percent Recovered (surrogates)	pCi/L: Picocurie per Liter	See External Laboratory Report attachments.
Report Authentication Code:	STATUTE COM CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR	Page 1 of 2

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005082454

BSK Sample ID #: 627484

Project ID: Submission Comments: Liquid Sample Type: Sample Description: Finished Sample Comments:

Project Desc: Isleton

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180



Report Issue Date: 09/20/2005

Date Sampled: 08/28/2005 Time Sampled: 1130 Date Received: 08/30/2005

Inorganics

Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Analysis Date/Time	
Alkalinity (as CaCO3)	SM 2320 B	230	mg/L	1	1	1	09/06/05	09/06/05	
Aluminum (Al)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/31/05	09/08/05	
Arsenic (As)	EPA 200.8	5.0	μg/L	2	1	2	08/31/05	09/16/05	
Bicarbonate (as CaCO3)	SM 2320 B	230	mg/L	1	1	1	09/06/05	09/06/05	
Calcium (Ca)	EPA 200.7	6.4	mg/L	0.1	1	0.1	08/31/05	09/08/05	
Carbonate (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	09/06/05	09/06/05	
Color (A.P.H.A)	SM 2120 B	ND	units	1	1	1	08/31/05 16:34	08/31/05 16:34	Н
Hardness (as CaCO3)	SM 2340 B	28	mg/L	1.0	1	1.0	09/16/05	09/16/05	
Hydroxide (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	09/06/05	09/06/05	
Iron (Fe)	EPA 200.7	ND	mg/L	0.05	1	0.05	08/31/05	09/08/05	
Magnesium (Mg)	EPA 200.7	2.8	mg/L	0.1	1	0.1	08/31/05	09/08/05	
Manganese (Mn)	EPA 200.7	ND	mg/L	0.01	1	0.01	08/31/05	09/08/05	
o-Phosphate as PO4	EPA 300.0	ND	mg/L	0.6	1	0.6	08/31/05 14:44	08/31/05 14:44	Н
pH	SM 4500-H+ B	8.0	Std.Unit	-	1	N/A	08/31/05 10:19	08/31/05 10:19	Н
Sulfate (SO4)	EPA 300.0	19	mg/L	2	1	2	08/31/05	08/31/05	
Turbidity	SM 2130 B	ND	NTU	0.1	1	0.1	08/31/05 16:34	08/31/05 16:34	Н

mg/L: Milligrams/Liter (ppm)	PQL: Practical Quantitation Limit	H: Analyzed outside of hold time
mg/Kg: Milligrams/Kilogram (ppm)	DLR: Detection Limit for Reporting	P: Preliminary result
μg/L: Micrograms/Liter (ppb)	: PQL x Dilution	S: Suspect result. See Case Narrative for comments.
μg/Kg: Micrograms/Kilogram (ppb)	ND: None Detected at DLR	E: Analysis performed by External laboratory.
%Rec: Percent Recovered (surrogates)	pCi/L: Picocurie per Liter	See External Laboratory Report attachments.
Report Authentication Code:		Page 2 of 2

1414 Stanislaus Street Fresno, CA 93706-1623 Fax 559-485-6935 Phone 559-497-2888, In CA 800-877-8310

Sample Integrity Pg of	2005 CAL	5082454 AM SAG	08/3	30/200	<u> </u>
Date Received 083005	830057 / 		TAT: S	Standard	5 I
Section 1- Sampled Same Day Sample Transport: Walk In SJVO Has chilling process begun? Y N Sample: Recei	SK-Courier Th ved: Chilled to T	ansported I	n: Ice Che Ambient	/ C	x Hand In Ice
Section 2- Sampled Previous Sample Transport: CAO UPS SJVC Was Temperature In Range Image: Your N Received Describe type of packing materials: Bubble Wrap Foam	BSK-Courier (s): <u><u><u></u><u><u></u><u><u></u><u><u></u><u><u></u></u><u><u><u></u><u></u><u></u><u><u></u><u></u><u></u><u></u> d On Ice: <u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u></u></u></u></u></u></u></u></u>	GSO Fe 2 3 ° Blue ts Paper	ed Exp. (Other:	
Were ice chest custody seals present? Y M In	itact: Y N	1			
Section 3- COC Info. Completed Info From			Comp Yes	leted No	Info From Container
Was COC Received Image: Contained Date Sampled Image: Contained	Analysis Reques Any hold times le Client Name	sted ss than 72hr			
Sample ID Special Storage/Handling Ins.	Address Telephone #			1	
Section 4- Bottles / AnalysisDid all bottles arrive unbroken and intact?:Were bottle custody seals present?Were bottle custody seals intact?Did all bottle labels agree with COC?:Were correct containers used for the tests requested?:Were correct preservations used for the tests requested?:Was a sufficient amount of sample sent for tests indicated?Were bubbles present in VOA Vials?: (Volatile Methods Of Were Ascorbic Acid Bottles received with the VOAsSection 5- Comments / Discrepancies	Dnly)	Yes	N0		
Sample(s) Split/Preserve: Yes No Container: Was Client Service Rep. notified of discrepancies: Yes N Explanations / Comments		NR:	Notifi	led By:	_Imit.:
Report Comment Entered: F·/SHARE/OC/DOCCONTROL/FORMS/SMPINTG05	Labeled by:		Labels che	cked by	X



2005082454 08/30/2005 CAL AM SAC TAT: Standard

8oz (A) 16oz (B) 32oz (C) Amber Glass (AG)							
Container(s) Received	147	1					
Bacti Na-S-O							
			-				
None (n) White Cap	10						
None (n) ^{Blue Cap}							
HNO_1 (p) $^{Red Cap}$	B						
$H_2SO_4(p)$ Yellow Cap	- 12						
NaOH(p) Green Cap	_				<u> </u>		·····
Other:			<u> </u> `				
Dissolved Oxygen 300ml (g)							
			-				
250ml (AG) None			_				
250ml (AG) H ₂ SO ₄ TOC,COD ^{Yellow Label}							
250ml (AG) Na ₂ S ₂ O ₃ 515,547 ^{Blue Label}	•						
250ml (AG) Na ₂ S ₂ O ₃ + MCAA 531.1 ^{Orange Label}							
250ml (AG) NH ₄ Cl 552 ^{Purple Label}							
250ml (AG) EDA DBPs Brown Label							
250ml (AG) Other:		· · · · · ·	-				
		· · · · ·					
500ml (AG) None							
500ml (AG) H ₂ SO ₄ TPH-Diesel ^{Yellow Label}							
500ml (AG) Other:				1	610		
1 Liter (AG) None							
1 Liter (AG) H_2SO_4 O&G ^{Yellow Label}					0.		
1 Liter (AG) Na_2SO_3 525 ^{N-Green Label}					-5-0	5017	
1 Liter (AG) $Na_2S_2O_3$ 548 ^{Blue Label}					α''	1116	
1 Liter (P) $Na_2S_2O_3 + H_2SO_4 = 549$					0.0		
1 Liter (AG) NaOH+ZnAc Sulfide							
1 Liter (AG) Other:							
40ml VOA Vial Clear – HCL							
40ml VOA Vial Amber – Na ₂ S ₂ O ₃					Δ		
40ml VOA Vial Clear – None							
40ml VOA Vial Clear - $Na_2S_2O_3$ 504, 505							
40ml VOA Vial Other				ļ			
Other:					``	<u> </u>	
						1	
Asbestos 1-Liter Plastic/Foil							
Radiological GA / GB (½ Gal Plastic)							
Radiological 226 / 228 (32 oz plastic N-BSK)						·/	
Radon 200ml Clear (g)						/	
Low Level Hg/Metals Double Baggie							
THM-FP 4-40ml VOA None					/		
250 Close Class Jan							
200 Clear Class Jar					├		
1 Liter Clear Glass Jar							
Plastic Dear Glass Jar							
Soil Tube Bross / Steel / Disstic					+		
Tedlar Bags							
	1	1	1	1	1	1	1

09/20/2005

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468



Dear Shawn Sevey,

Thank you for selecting BSK Analytical Laboratories for your analytical testing needs. We have prepared this report in response to your request for analytical services. Please find enclosed the following sections for your complete laboratory report, each uniquely paginated:

CASE NARRATIVE: An overview of the work performed. CERTIFICATE OF ANALYSIS: Analytical results. REPORT OF SAMPLE INTEGRITY CHAIN OF CUSTODY FORM

Certification: I certify that this data package is in compliance with NELAC Standards for applicable analyses under NELAP Certificate #04227CA, and is in compliance with ELAP Standards for applicable certified analyses under ELAP Certificate #1180, except for the conditions listed.

If additional clarification of any information is required, please contact your Client Services Representative, Debra Skelton, at (800) 877-8310 or (559) 497-2888.

BSK ANALYTICAL LABORATORIES

Debra Skelton Client Services Representative

SAMPLE AND RECEIPT INFORMATION

The sample(s) was received, prepared, and analyzed within the method specified holding times unless otherwise noted on the Certificate of Analysis. Samples, when shipped, arrived within acceptable temperature requirements of 0° to 6° Celsius unless otherwise noted on the Report of Sample Integrity. Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.

QUALITY CONTROL

All analytical quality controls are within established method criteria except when noted in the Quality Control section or on the Certificate of Analysis. All positive results for EPA Methods 504.1, 502.2, and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed. QC samples may include analytes not requested in this submission.

SAMPLE RESULT INFORMATION

Samples are analyzed as received (wet weight basis) unless noted here. The results relate only to the items tested. Any exceptions to be considered when evaluating these results are also listed here, if applicable. Results contained in this package shall not be reproduced, except in full, without written approval of BSK Analytical Laboratories.

<u>ORDER</u>	<u>TEST</u>	<u>ANALYTE</u>	COMMENT
628948			Sample has a turbidity of greater than 1 NTU. Sample was digested using EPA method 200.2 prior to metals analysis
628952	EPA 300.0	o-Phosphate as PO4	Sample analyzed outside holding time.
628952	SM 2120 B	Color (A.P.H.A)	Sample analyzed outside holding time.
628952	SM 2130 B	Turbidity	Sample analyzed outside holding time.
628952	SM 4500-H+ B	рН	Sample analyzed outside holding time.
628953	EPA 300.0	o-Phosphate as PO4	Sample analyzed outside holding time.
628953	SM 2120 B	Color (A.P.H.A)	Sample analyzed outside holding time.
628953	SM 2130 B	Turbidity	Sample analyzed outside holding time.
628953	SM 4500-H+ B	pH	Sample analyzed outside holding time.

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submis	sion #: 200	5090048						
BSK Sample	ID #: 6289	48						
Project ID:	Project Desc:							
Submission Com	ments:							
Sample Type:	Liquid							
Sample Description	on: Finish 5							
Sample Comment	is:							
Inorganics								
Analyte		Method	Result	Units	PQL	Dilution	DLR	
Arsenic (As)		EPA 200.8	12	μg/L	2	1	2	

Certificate of Analysis NELAP Certificate #04227CA **ELAP Certificate #1180**



Sample Type: Liqu	iid						Date	e Sampled: 08/30/2005
Sample Description: Fini	sh 5						Tim	e Sampled: 0835
Sample Comments:							Date	Received: 09/01/2005
Inorganics							Dron	Analysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date/Time	Date/Time
Arsenic (As)	EPA 200.8	12	μg/L	2	1	2	09/03/05	09/09/05
Iron (Fe)	EPA 200.7	1.5	mg/L	0.05	1	0.05	09/03/05	09/08/05

mg/L: Milligrams/Liter (ppm) mg/Kg: Milligrams/Kilogram (ppm)	PQL: Practical Quantitation Limit DLR: Detection Limit for Reporting	H: Analyzed outside of hold time P: Preliminary result			
μg/L: Micrograms/Liter (ppb)	: PQL x Dilution	S: Suspect result. See Case Narrative for comments.			
μg/Kg: Micrograms/Kilogram (ppb)	ND: None Detected at DLR	E: Analysis performed by External laboratory.			
%Rec: Percent Recovered (surrogates)	pCi/L: Picocurie per Liter	See External Laboratory Report attachments.			
Report Authentication Code:	a na ka	Page 1 of 12			
1 41 4 Ctore 1-1-1- Ctore to English	CA 02706 1622 Dhama 550 407 2000	In CA 900 977 9210 East 550 495 6025			

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submiss	ion #: 2005090048	
BSK Sample I	(D #: 628949	
Project ID:		Project Desc:
Submission Comme	ents:	
Sample Type:	Liquid	
Sample Description	: Finish 10	
Sample Comments:		
Inorganics		

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180



Submission Comments:							_		_
Sample Type: Lic	quid						Date	e Sampled: 08/30/200	5
Sample Description: Fin	nish 10						Time	e Sampled: 0840	
Sample Comments:							Date	Received: 09/01/200	5
Inorganics							Dren	Analysis	
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date/Time	Date/Time	
Arsenic (As)	EPA 200.8	7.0	μg/L	2	1	2	09/03/05	09/16/05	
		,							

mg/L: Milligrams/Liter (ppm) mg/Kg: Milligrams/Kilogram (ppm)	PQL: Practical Quantitation Limit DLR: Detection Limit for Reporting	H: Analyzed outside of hold time P: Preliminary result
μg/L: Micrograms/Liter (ppb)	: PQL x Dilution	S: Suspect result. See Case Narrative for comments
µg/Kg: Micrograms/Kilogram (ppb)	ND: None Detected at DLR	E: Analysis performed by External laboratory.
%Rec: Percent Recovered (surrogates)	pCi/L: Picocurie per Liter	See External Laboratory Report attachments.
Report Authentication Code:	a na ha a china ana ana ana ana ana ana ana ana ana	Page 2 of 12
1414 Staniclaus Street France	CA 03706 1623 Phone 550 407 2888	In CA 200 277 2310 Fox 550 425 6035

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005090048										
BSK Sample ID #: 62895 Project ID:	Project Desc	:			Report issue Date. 05/20/2					
Submission Comments:Sample Type:LiquidSample Description:Finish 15Sample Comments:							Dat Tim Date	e Sampled: 08/30/2 e Sampled: 0845 e Received: 09/01/2	2005 2005	
Inorganics Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Analysis Date/Time		
Arsenic (As) Iron (Fe)	EPA 200.8 EPA 200.7	7.0 0.18	μg/L mg/L	2 0.05	1	2 0.05	09/03/05 09/03/05	09/16/05 09/13/05		

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution µg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR E: Analysis performed by External laboratory. See External Laboratory Report attachments. %Rec: Percent Recovered (surrogates) pCi/L: Picocurie per Liter Report Authentication Code:

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

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ACCO

NELAP Certificate #04227CA ELAP Certificate #1180

Certificate of Analysis

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submiss	ion #: 2005	6090048							
BSK Sample ID #: 628951									
Project ID:			Project Desc	:					
Submission Comm	ents:								
Sample Type:	Liquid							D	
Sample Description	: Finish 30							Ti	
Sample Comments:								Da	
Inorganics								Dren	
Analyte		Method	Result	Units	PQL	Dilution	DLR	Date/Time	
Arsenic (As)		EPA 200.8	7.0	μg/L	2	1	2	09/03/05	
Iron (Fe)		EPA 200.7	0.19	mg/L	0.05	1	0.05	09/03/05	

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180



Date Sampled: 08/30/2005 Time Sampled: 0900 Date Received: 09/01/2005

> Analysis Date/Ťime

09/16/05 09/13/05

414 Stanislaus Street Fresno, CA 93706-1623 Phone 5	59-497-2888, In CA 800-877-8310 Fax 559-485-6935
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mg/L: Milligrams/Liter (ppm) mg/Kg: Milligrams/Kilogram (ppm) µg/L: Micrograms/Liter (ppb) µg/Kg: Micrograms/Kilogram (ppb) %Rec: Percent Recovered (surrogates)

1

PQL: Practical Quantitation Limit DLR: Detection Limit for Reporting : PQL x Dilution ND: None Detected at DLR

pCi/L: Picocurie per Liter

Report Authentication Code:

H: Analyzed outside of hold time

P: Preliminary result

S: Suspect result. See Case Narrative for comments.

E: Analysis performed by External laboratory. See External Laboratory Report attachments.

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Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005090048 BSK Sample ID #: 628952 Project ID:

Submission Comments: Sample Type: Liquid Sample Description: Finish Sample Comments:

Inorganics

Project Desc:

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180



Date Sampled:08/30/2005Time Sampled:1000Date Received:09/01/2005

morganics							Pren	Analysis	
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date/Time	Date/Time	
						_			
Alkalinity (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	09/01/05	09/01/05	
Aluminum (Al)	EPA 200.7	ND	mg/L	0.05	1	0.05	09/03/05	09/13/05	
Arsenic (As)	EPA 200.8	7.0	μg/L	2	1	2	09/03/05	09/16/05	
Bicarbonate (as CaCO3)	SM 2320 B	240	mg/L	1	1	1	09/01/05	09/01/05	
Calcium (Ca)	EPA 200.7	5.6	mg/L	0.1	1	0.1	09/03/05	09/13/05	
Carbonate (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	09/01/05	09/01/05	
Color (A.P.H.A)	SM 2120 B	5.0	units	1	1	1	09/01/05 16:53	09/01/05 16:53	Н
Hardness (as CaCO3)	SM 2340 B	25	mg/L	1.0	1	1.0	09/20/05	09/20/05	
Hydroxide (as CaCO3)	SM 2320 B	ND	mg/L	1	1	1	09/01/05	09/01/05	
Iron (Fe)	EPA 200.7	0.080	mg/L	0.05	1	0.05	09/03/05	09/13/05	
Magnesium (Mg)	EPA 200.7	2.6	mg/L	0.1	1	0.1	09/03/05	09/13/05	
Manganese (Mn)	EPA 200.7	ND	mg/L	0.01	1	0.01	09/03/05	09/13/05	
o-Phosphate as PO4	EPA 300.0	ND	mg/L	0.6	1	0.6	09/01/05 17:20	09/01/05 17:20	Н
pH	SM 4500-H+ B	8.1	Std.Unit	: .	1	N/A	09/01/05 19:07	09/01/05 19:07	Н
Sulfate (SO4)	EPA 300.0	19	mg/L	2	1	2	09/01/05	09/01/05	
Turbidity	SM 2130 B	0.40	NTU	0.1	1	0.1	09/01/05 16:53	09/01/05 16:53	Н

mg/L: Milligrams/Liter (ppm) mg/Kg: Milligrams/Kilogram (ppm)	PQL: Practical Quantitation Limit DLR: Detection Limit for Reporting	H: Analyzed outside of hold time P: Preliminary result	
μg/L: Micrograms/Liter (ppb)	: PQL x Dilution	S: Suspect result. See Case Narrative for comments.	
µg/Kg: Micrograms/Kilogram (ppb)	ND: None Detected at DLR	E: Analysis performed by External laboratory.	
%Rec: Percent Recovered (surrogates)	pCi/L: Picocurie per Liter	See External Laboratory Report attachments.	
Report Authentication Code:	n an	Page 5 of 12	

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005090048 BSK Sample ID #: 628953

Project ID: Submission Comments: Sample Type: Liquid Sample Description: Influent Sample Comments:

Project Desc:

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180



Date Sampled:	08/30/2005
Time Sampled:	1000
Date Received:	09/01/2005

Inorganics

Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Analysis Date/Time	
SM 2320 B	250	mg/I	1	1	1	09/01/05	09/01/05	
EPA 200.7	ND	mg/L	0.05	1	0.05	09/06/05	09/13/05	
EPA 200.8	22	μg/L	2	1	2	09/06/05	09/16/05	
SM 2320 B	240	mg/L	1	1	1	09/01/05	09/01/05	
EPA 200.7	6.1	mg/L	0.1	1	0.1	09/06/05	09/13/05	
SM 2320 B	12	mg/L	1	1	1	09/01/05	09/01/05	
SM 2120 B	15	units	1	1	1	09/01/05 16:56	09/01/05 16:56	Н
SM 2340 B	26	mg/L	1.0	1	1.0	09/20/05	09/20/05	
SM 2320 B	ND	mg/L	1	1	1	09/01/05	09/01/05	
EPA 200.7	ND	mg/L	0.05	1	0.05	09/06/05	09/13/05	
EPA 200.7	2.7	mg/L	0.1	1	0.1	09/06/05	09/13/05	
EPA 200.7	0.040	mg/L	0.01	1	0.01	09/06/05	09/13/05	
EPA 300.0	1.2	mg/L	0.6	1	0.6	09/01/05 17:30	09/01/05 17:30	Н
SM 4500-H+ B	8.5	Std.Unit	-	1	N/A	09/01/05 19:16	09/01/05 19:16	Н
EPA 300.0	18	mg/L	2	1	2	09/01/05	09/01/05	
SM 2130 B	0.80	NTU	0.1	1	0.1	09/01/05 16:56	09/01/05 16:56	Н
	Method SM 2320 B EPA 200.7 EPA 200.8 SM 2320 B EPA 200.7 SM 2320 B SM 2120 B SM 2120 B SM 2340 B SM 2340 B EPA 200.7 EPA 200.7 EPA 200.7 EPA 200.7 EPA 200.7 EPA 300.0 SM 4500-H+ B EPA 300.0 SM 2130 B	Method Result SM 2320 B 250 EPA 200.7 ND EPA 200.8 22 SM 2320 B 240 EPA 200.7 6.1 SM 2320 B 12 SM 2320 B 12 SM 2320 B 15 SM 2320 B 26 SM 2320 B ND EPA 200.7 ND EPA 200.7 ND EPA 200.7 0.040 EPA 200.7 0.040 EPA 200.7 1.2 SM 4500-H+ B 8.5 EPA 300.0 18 SM 2130 B 0.80	Method Result Units SM 2320 B 250 mg/L EPA 200.7 ND mg/L EPA 200.8 22 µg/L SM 2320 B 240 mg/L EPA 200.7 6.1 mg/L SM 2320 B 12 mg/L SM 2320 B 12 mg/L SM 2320 B 15 units SM 2320 B 26 mg/L SM 2320 B ND mg/L SM 2320 B ND mg/L SM 2320 B ND mg/L EPA 200.7 ND mg/L EPA 200.7 2.7 mg/L EPA 200.7 0.040 mg/L EPA 200.7 0.040 mg/L EPA 300.0 1.2 mg/L SM 4500-H+ B 8.5 Std.Unit EPA 300.0 18 mg/L	Method Result Units PQL SM 2320 B 250 mg/L 1 EPA 200.7 ND mg/L 2 EPA 200.8 22 µg/L 2 SM 2320 B 240 mg/L 1 EPA 200.7 6.1 mg/L 1 EPA 200.7 6.1 mg/L 1 SM 2320 B 12 mg/L 1 SM 2320 B 26 mg/L 1 SM 2320 B ND mg/L 1 SM 2320 B ND mg/L 1 SM 2320 B ND mg/L 1 EPA 200.7 ND mg/L 0.05 EPA 200.7 0.040 mg/L 0.1 EPA 300.0 1.2 mg/L 0.6 SM 4500-H+ B 8.5 Std.Um/L 1	MethodResultUnitsPQLDilutionSM 2320 B250mg/L11EPA 200.7NDmg/L0.051EPA 200.822µg/L21SM 2320 B240mg/L11EPA 200.76.1mg/L0.11SM 2320 B12mg/L11SM 2320 B12mg/L11SM 2320 B12mg/L11SM 2320 B15units11SM 2340 B26mg/L1.01SM 2320 BNDmg/L1.01EPA 200.7NDmg/L0.051EPA 200.72.7mg/L0.11EPA 200.70.040mg/L0.011EPA 300.01.2mg/L0.051SM 4500-H+ B8.5Std.Unit-1EPA 300.018mg/L21SM 2130 B0.80NTU0.11	Method Result Units PQL Diluion DLR SM 2320 B 250 mg/L 1 1 1 EPA 200.7 ND mg/L 0.05 10 0.05 EPA 200.8 22 µg/L 2 1 2 SM 2320 B 240 mg/L 1 1 1 EPA 200.7 6.1 mg/L 0.1 1 0.1 SM 2320 B 240 mg/L 1 1 1 EPA 200.7 6.1 mg/L 0.1 1 0.1 SM 2320 B 12 mg/L 1 1 1 SM 2320 B 15 units 1 1 1 SM 2320 B D6 mg/L 1.0 1 0.0 SM 2320 B ND mg/L 1.0 1 0.0 SM 2320 B ND mg/L 1.0 1 0.05 EPA 200.7 ND mg/L 0.05 1	MethodResultUnitsPQLDilutionDLRPrep Date/TimeSM 2320 B250mg/L11109/01/05EPA 200.7NDmg/L0.0510.0509/06/05SM 2320 B240mg/L21209/01/05EPA 200.76.1mg/L1109/01/05SM 2320 B12mg/L1109/01/05SM 2320 B12mg/L1109/01/05SM 2320 B12mg/L1109/01/05SM 2320 B15units1109/01/05SM 2320 B16mg/L1109/01/05SM 2320 B15units1109/01/05SM 2320 B7mg/L1.0109/01/05SM 2320 BNDmg/L1.0109/01/05SM 2320 BNDmg/L1.0109/01/05SM 2320 BNDmg/L1.010.05SM 2320 BNDmg/L0.0509/06/05EPA 200.7NDmg/L0.0509/06/05EPA 200.70.040mg/L0.010.0109/06/05EPA 200.70.040mg/L0.010.0609/01/0517:30SM 4500-H+ B8.5Std.Unit-1N/A09/01/0519:16EPA 300.018mg/L21209/01/05SM 2130 B0.80NTU0.11	Method Result Units PQL Dilution DLR Prep Date/Time Analysis Date/Time SM 2320 B 250 mg/L 1 1 09/01/05 09/01/05 EPA 200.7 ND mg/L 2 1 0.05 09/06/05 09/13/05 EPA 200.8 22 µg/L 2 1 2 09/06/05 09/16/05 SM 2320 B 240 mg/L 1 1 0.05 09/01/05 09/01/05 EPA 200.7 6.1 mg/L 1 1 0.1 09/01/05 09/01/05 SM 2320 B 12 mg/L 1 1 0.1 09/01/05 09/01/05 SM 2320 B 12 mg/L 1 1 09/01/05 09/01/05 16:56 SM 2320 B 15 units 1 1 0 09/01/05 09/01/05 SM 2320 B ND mg/L 1.0 1 0.05 09/01/05 09/01/05 SM 2320 B

mg/L: Milligrams/Liter (ppm) **PQL:** Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution µg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. E: Analysis performed by External laboratory. µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR See External Laboratory Report attachments. %Rec: Percent Recovered (surrogates) pCi/L: Picocurie per Liter Report Authentication Code: Page 6 of 12

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 20050900	DA CAC ITH									
BSK Sample ID #: 628954							Report Issue Date: 09/20/200			
Project ID:	Pı	roject Desc:								
Submission Comments:										
Sample Type: Liquid Sample Description: Finish						Date Sampled: 08/30/2005				
						Time	e Sampled: 1200			
Sample Comments:							Date	Received: 09/01/2005		
Inorganics							Drop	Analysis		
Analyte M	lethod	Result	Units	PQL	Dilution	DLR	Date/Time	Date/Time		
Arsenic (As) El	PA 200.8	8.0	μg/L	2	1	2	09/06/05	09/16/05		
Iron (Fe) El	PA 200.7	ND	mg/L	0.05	1	0.05	09/06/05	09/13/05		

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution µg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR E: Analysis performed by External laboratory. See External Laboratory Report attachments. %Rec: Percent Recovered (surrogates) pCi/L: Picocurie per Liter Report Authentication Code: Page 7 of 12

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935



Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 2005090048							ACCA			
BSK Sample ID #: 628	955						Report	Issue Date: 09/20/2005		
Project ID:		Project Desc	:							
Submission Comments:										
Sample Type: Liquid							Date	e Sampled: 08/30/2005		
Sample Description: Influent							Time	e Sampled: 0835		
Sample Comments:							Date	Received: 09/01/2005		
Inorganics							Ducn	Analysis		
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date/Time	Date/Time		
Arsenic (As)	EPA 200.8	22	μg/L	2	1	2	09/06/05	09/16/05		

mg/L: Milligrams/Liter (ppm) **PQL: Practical Quantitation Limit** H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution µg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. ND: None Detected at DLR µg/Kg: Micrograms/Kilogram (ppb) E: Analysis performed by External laboratory. See External Laboratory Report attachments. %Rec: Percent Recovered (surrogates) pCi/L: Picocurie per Liter Report Authentication Code:

Certificate of Analysis NELAP Certificate #04227CA **ELAP Certificate #1180**



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BSK Submi	ssion #: 2005090	048
BSK Sample	e ID #: 628956	
Project ID:		Project Desc:
Submission Com	ments:	
Sample Type:	Liquid	
Sample Descripti	on: Finish	
Sample Commen	ts:	
Inorganics		
	_	



Submission Comme	ents.									
Sample Type:	Liquid							Date	e Sampled: 08/30/20	05
Sample Description	1: Finish							Time	e Sampled: 0835	
Sample Comments:	:							Date	Received: 09/01/20	05
Inorganics	an an a share an an an an a share a shere a sh									
morganics								Dron	Analysis	
Analyte		Method	Result	Units	PQL D	lution	DLR	Prep Date/Time	Analysis Date/Time	
Analyte		Method	Result	Units	PQL D	vilution	DLR	Prep Date/Time	Analysis Date/Time	
Analyte Arsenic (As)	ana ana ang ang ang ang ang ang ang ang	Method EPA 200.8	Result 8.0	Units µg/L	PQL D 2	pilution	DLR 2	Prep Date/Time	Analysis Date/Time 09/16/05	

mg/L: Milligrams/Liter (ppm) mg/Kg: Milligrams/Kilogram (ppm)	PQL: Practical Quantitation Limit DLR: Detection Limit for Reporting	H: Analyzed outside P: Preliminary resul	e of hold time t
μg/L: Micrograms/Liter (ppb)	: PQL x Dilution	S: Suspect result. S	ee Case Narrative for comments.
µg/Kg: Micrograms/Kilogram (ppb)	ND: None Detected at DLR	E: Analysis perform	ed by External laboratory.
%Rec: Percent Recovered (surrogates)	pCi/L: Picocurie per Liter	See External Lab	oratory Report attachments.
Report Authentication Code:	INNE DA NA DI LINE ALIM EDINE ELME ELME DI ÂLEME		Page 9 of 12
1414 Stanislaus Street Fresno,	CA 93706-1623 Phone 559-497-2888, I	In CA 800-877-8310	Fax 559-485-6935

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Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Analysis Date/Time
Inorganics							Date	Received. 09/01/2005
Sample Description: Influent							Time	e Sampled: 0835
Sample Type: Liquid							Date	e Sampled: 08/30/2005
Submission Comments:								
Project ID:		Project Desc	:					
BSK Sample ID #: 62895	7						Report	Issue Date: 09/20/2005
BSK Submission #: 2005	090048						A C C A	Nelac

mg/L: Milligrams/Liter (ppm) PQL: Practical Quantitation Limit H: Analyzed outside of hold time mg/Kg: Milligrams/Kilogram (ppm) DLR: Detection Limit for Reporting P: Preliminary result : PQL x Dilution µg/L: Micrograms/Liter (ppb) S: Suspect result. See Case Narrative for comments. µg/Kg: Micrograms/Kilogram (ppb) ND: None Detected at DLR E: Analysis performed by External laboratory. See External Laboratory Report attachments. %Rec: Percent Recovered (surrogates) pCi/L: Picocurie per Liter Report Authentication Code: Page 10 of 12

1414 Stanislaus Street Fresno, CA 93706-1623 Phone 559-497-2888, In CA 800-877-8310 Fax 559-485-6935



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BSK Submis	sion #: 2005090048	
BSK Sample	e ID #: 628958	
Project ID:		Project Desc:
Submission Com	ments:	
Sample Type:	Liquid	
Sample Descripti	on: Finish	
Sample Commen	ts:	
Inorganics		



Submission Comm	ients:									
Sample Type:	Liquid							Date	e Sampled: 08/30/20	05
Sample Description	n: Finish							Time	e Sampled: 0835	
Sample Comments	:							Date	Received: 09/01/20	05
Tuononios										
inorganics								Duon	Analysis	
Analyte		Method	Result	Units	PQL D	Dilution	DLR	Prep Date/Time	Analysis Date/Time	
Analyte		Method	Result	Units	PQL D	Dilution	DLR	Prep Date/Time	Analysis Date/Time	
Analyte Arsenic (As)		Method EPA 200.8	Result 9.0	Units µg/L	PQL D 2	Dilution	DLR 2	Prep Date/Time 09/06/05	Analysis Date/Time	

mg/L: Milligrams/Liter (ppm) mg/Kg: Milligrams/Kilogram (ppm)	PQL: Practical Quantitation Limit DLR: Detection Limit for Reporting	H: Analyzed outside of hold time P: Preliminary result
µg/L: Micrograms/Liter (ppb)	: PQL x Dilution	S: Suspect result. See Case Narrative for comments.
µg/Kg: Micrograms/Kilogram (ppb)	ND: None Detected at DLR	E: Analysis performed by External laboratory.
%Rec: Percent Recovered (surrogates)	pCi/L: Picocurie per Liter	See External Laboratory Report attachments.
Report Authentication Code:	ana na ta ana ana ana ana ana ana ana an	Page 11 of 12
1414 Stanislaus Street Fresno,	CA 93706-1623 Phone 559-497-2888,	In CA 800-877-8310 Fax 559-485-6935

Shawn Sevey California American Water - Sac. PO Box 15468 Sacramento, CA 95851-0468

BSK Submission #: 200	5090048						ACC -	
BSK Sample ID #: 6291	07						Report	Issue Date: 09/20/2005
Project ID:		Project Desc	:					
Submission Comments:								
Sample Type: Liquid							Dat	e Sampled: 08/30/2005
Sample Description: Influent							Tim	e Sampled: 1630
Sample Comments:							Date	e Received: 09/01/2005
Inorganics	an a			enne ha da an an an ann an an an an an an an an a			D	Anolysis
Analyte	Method	Result	Units	PQL	Dilution	DLR	Date/Time	Date/Time
Arsenic (As)	EPA 200.8	22	μg/L	2	1	2	09/06/05	09/16/05

Certificate of Analysis NELAP Certificate #04227CA ELAP Certificate #1180

IN ACCORD



Sample Integrity	Pg of	C C	200509	0048	09/0	1/200	5
Date Received 4 (, (05			91030		TAT: S		a
Section 1- Sampled Same Day Sample Transport	rt: WalkIn SJV	C BSK-Cou	rier Trans	ported In:	Ice Ches	t Boz	K Hand
Has chilling process begun? Y	N Sampl	es Received: (Chilled to Touc	h / A	Ambient	/ 0	n Ice
Section 2- Sampled Previously Sample Transport: CAO	UPS SJVC V	Walk-In BSK	Courier GS	O Fed	Exp. O	ther:	
No. Coolers/Ice Chests:	Tem	perature(s):	2.	\frown			
Was Temperature In Range : (Y)	<u>) N</u>	Received On Ice	:Weit	Blue			
Describe type of packing materia	als: Bubble Wrap	Foam Pac	king Peanuts	Paper	Other:_		
Were ice chest custody seals pre	esent? Y) Intact:	Y N	·····			L.C. From
Section 3- COC Info.	Completed I Yes No (nfo From Container	rig Dequested		Yes	No	Container
Was COC Received		Analy	sis Requested	han 72hr	-		
Date Sampled		Client	Name				- <u> </u>
Time Sampled							
Sample ID		Telen	hone #				
Special Storage/Handling Ins.		T cicp.				1	
Section 4- Bottles / Analysis Did all bottles arrive unbroken an Were bottle custody seals presen Were bottle custody seals intact? Did all bottle labels agree with C Were correct containers used for Were correct preservations used Was a sufficient amount of samp Were bubbles present in VOA V Were A scorbic Acid Bottles reco	nd intact?: t? COC?: the tests requested for the tests request ole sent for tests ind 'ials?: (Volatile Me eived with the VOA	i?: sted?: licated?: ethods Only) As					
Section 5- Comments / Discrepan	icies	· · · · · · · · · · · · · · · · · · ·					Init '
Sample(s) Split/Preserve: Yes	No Container:		Preservat	ion:			
Was Client Service Rep. notified o Explanations / Comments	f discrepancies: Y	es No N	A CSR:		Notifi	ed By:	<u>h</u>
			والمرافقة والمراجعة و				
			المربية (ماريان مربية المربية (مربية المربية	· · · ·			
	· · ·						
Report Comment Entered:			,				Lut
F·/SHARF/OC/DOCCONTROL/	FORMS/SMPINTG()5 Labeled	by: 54	<u> </u>	abels che	cked by	: AM

Sample Integrity	Pg_Yof_}	\bigcirc		
	BSK Bottles	Yes	No	
8oz (A) 16oz (B) 32oz (C)	Amber Glass (AG)	\bigcirc		

09/01/2005

CAL AM SAC TAT: Standard

91030

Container(s) Received	1-4	5-6	7-12				
Bacti Na ₂ S ₂ O ₃							
None (p) White Cap		IC					
None (p) Blue Cap			·				
HNO_3 (p) $^{Red Cap}$	15	16	16				
H ₂ SO ₄ (p) ^{Yellow Cap}							
NaOH (p) Green Cap							
Other:							
Dissolved Oxygen 300ml (g)							
				ſ			
250ml (AG) None							
250ml (AG) H ₂ SO ₄ TOC,COD ^{Yellow Label}							
250 ml (AG) Na ₂ S ₂ O ₃ 515.547 ^{Blue Label}							
250 ml (AG) Na ₂ S ₂ O ₃ + MCAA 531.1 Orange Label							
250ml (AG) NH ₄ Cl 552 ^{Purple Label}							
250ml (AG) EDA DBPs Brown Label							
250ml (AG) Other:	-				1		
			-		1		
500m1(AG) None					1		
500ml (AG) H-SO, TPH-Diesel Yellow Label							
500ml (AG) 0ther:			1				
1 Liter (AC) None							
1 Liter (AG) ILCO Core Yellow Label							
$\frac{1 \text{ Liter (AG) } H_2 \text{SO}_4}{1 \text{ Liter (AG) } N_2 \text{ GO}_4} = \frac{1 \text{ CaG}_4}{525 \text{ N-Green Label}}$							
$\frac{1 \text{ Liter (AG) Na_2SO_3}}{525}$							
$\frac{1 \text{ Liter (AG) Na_2S_2O_3 548 bit Later}}{1 \text{ Liter (AG) Na_2S_2O_3 548 bit Later}}$							
$\frac{1 \text{ Liter (P) Na_2S_2O_3 + H_2SO_4 549}}{1 \text{ Liter (P) Na_2S_2O_3 + H_2SO_4 549}}$							
1 Liter (AG) NaOH+ZnAc Sulfide							
1 Liter (AG) Other:							
40ml VOA Vial Clear – HCL						·	
$40ml VOA Vial Amber - Na_2S_2O_3$							
40ml VOA Vial Clear – None							
40ml VOA Vial Clear - $Na_2S_2O_3$ 504, 505			_				
40ml VOA Vial Other					L		
					ļ		
Other:					<u> </u>		
					<u> </u>		
Asbestos 1-Liter Plastic/Foil							
Radiological GA / GB (½ Gal Plastic)							
Radiological 226 / 228 (32 oz plastic N-BSK)							
Radon 200ml Clear (g)							[]
Low Level Hg/Metals Double Baggie						\land	91
THM-FP 4-40ml VOA None						$\left \right\rangle$	1
				1			
250 Clear Glass Jar			-	1		\backslash	
500 Clear Glass Jar							
1 Liter Clear Glass Jar						<u> </u>	
1 Liter Ordar Ordass Jan Diagtic Rag							
Coil Tube Dress / Stool / Disstic	· · · · · · · · · · · · · · · · · · ·			<u> </u>		· · · ·	
Te the Deer							
1 cular Bags							
					L	1	1

BSK ANAI	YTICAL RATORIES	1414 Stanislaus Fresno, CA 9370 (550) 407_2888 (Street 6-1623 800) 877-8310	TE	MP:	2005090048 CAL AM SAC	09/01/2005 TAT: Standard
		FAX (559) 485-6	935	www.	bsklabs.com	91030	
Client Name	Report Attn:	Phone #	[FA]	X #	E-mail:		
CAL AMERICAN WIE						411	
Address	Project Name	Proje	sct #		Carbon Copies: (Check Box) CDHS FresnoCo	(ยายา ก)	201
City State Zip	Quote # PO	# Rus	h Request (Circl	le One)	EPA Merced Co	15531	o) [3
		7Da	y 5Day 21	Day 1Day	Iulare Co Other:	নবস	71 V /4
Sampler Name Printed	Sampler Signature	1 / OCI	Required (Circle O	ne)	Regulatory Compliance	¥!-/ *	659
	Kindpresh	STD	Level II	Level III	Electronic Data Italister: I IN System #	W 	·U ' 1
Matrix Types: RSW = Raw Surf RGW = Raw Ground	ace Water CFW = Chlorinate Water FW = Finished Water	d Finished Water CW WW = Waste Water	W = Chlorinated SW = Storm Wz	Waste Water I ater DW = Drij	3W = Bottled Water aking Water SO = Solid	18 1010 1 2 1 2 1	FOS
Sample # Date / Time # Btls Sampled	Sample Des	cription/Location		Matrix	Comments / Station Code		
1 2/30 18:35-	FINISH-S	629	Spl 1	M-5		X	
1 1 1840	01 - 10		49			XX	
5 4.8/ 18	<u>بر</u> راج بر	/	Ċ				
	R I WC		16			X	
2 3 1/16:m	HSINISH		R			AX A A	
1 100;00	INFLUENT		53	CUUL	PRINATED	C X N X X	5
з рөрен	FINISH		24	FW		K X i	
a 6 1 1 1,2:20	INFLUENT		R	CHA	CEINATED		
Q 1 1 114:00	FIMISH		26	EN -		A A	
No 1 1 14:00	INFLUENT	'V	4	C/4	DRINATED	9	
VN 1 1/6:34	7.21514	\rightarrow	5 6 , b	Ted -		t X	
Relinguished by: (Signatur and	d Name)/ N ビュレビア Com	pany work	JUNDate	Time CA	accerived by Signature and Print Name)	X Jon Company	¢
Entration BEN		477	\$/3)	(C())	In V Star	Bartelink (SS)	C 590
Keunquished by: (Signature and Printe	d Name)		Date	IIme	Keceived by bignature and Print Name)	Company	
Relinquished by: (Signature and Printe	d Name)	pany	Date	Time	Received by (Signature and Print Name)	Company	
			Date	Time	Dormant Dereitied of Delition.		
Keceived for Jab by: (Signature and Pr			/ 5	0) y ()	r aynreur received at Denivery. Date: Amount:	Check/Cash/Card PIA #	μ
Notice: Payment for services rendered as noted herein a quent accounts, costs of collections, irduiding Momevs, ment for analytical services requested on this Chair of G	e due in toll within 30 days from when invoiced fees notified prior to or in lingation whether co usrody. Any-modifications of the analysis requ	 If not so paid, account balances, nncluded by judgement, settlement, ested, either type or quantities, will 	are deemed delinquent. De compromise, or otherwise. be noted and agreed upon	I hinduent balances are sulting tor 1 The person signing for 1 this Chain of Custody. T	pject to monthly service/re-billing charges and interest calculate the Client/Company expressly acknowledges that they are eith the turn around time for any samples received after 3:00 pm wi	d at 11% per month, 18% per annum. BSK & Assoc ar the Client or authorized agent of the Client, and the I begin the next business day.	ates shall be entitled to recover on delin- Client agrees to be responsible for pay-