

Date: 9-13-2019 Program: WT Protocol: AQIFER Revision: 14

Objective: Monitor the water quality of water wells.

Reference Document(s):

Sample Purpose: Monitoring

Sample Collection Type/Details: Grab

Sample Collection Frequency: Approximately 150 annually.

Sample Point Nomenclature Convention: Prefix is WW: Examples: WWATI01, WWCOL02, WWBCIP01.

Sampling Personnel: Water Quality Specialist or other designated personnel.

Field Instruction: Flush tap for five (5) minutes. Record flush time in minutes. Record free and total chlorine residuals using colorimeter. Record 0.0 mg/L if sample is non-chlorinated. Record water quality field parameters and meter number in Lab Vantage. Preserve samples per Protocol Analytical Definition. Contact Central Control for well pump start time. Record well pump run time in hours.

Laboratory Instruction: Preserve metal sample with HNO₃ upon submittal.

External Laboratory Instructions: WQ to submit VOC and Metal samples to SLD.

Special Handling Instructions:

Chain of Custody: Required ☐ Yes ☒ No

QA/QC Data Requirements: QA/QC provided upon request.

Revision History		
Revision	Effective Date	Description of Changes
#13	7/25/2018	Update, change TOC from two vials to one 250 ml bottle.
#14	8/28/2019	Remove metals except for Lithium from WQL and assign them to SLD

ABCWUA Compliance Division Protocol Agreement

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Client Contact(s):

Priority	Contact	Title	Phone	Cell Phone	Email
1	Pete English	WQ Specialist	289-3353	803-6898	penglish@abcwua.org
2	Michael Richardson	WQ Supervisor	289-3383	553-5731	mrichardson@abcwua.org
3	Danielle Shurn	Program Manager/WQ	289-3382	803-1970	dshurn@abcwua.org

Reporting Criteria:

Reporting Format: LIMS view within four (4) weeks of sample submission.

Reporting Time Frame: Microbiological result as soon as possible. Others four (4) weeks maximum sample turnaround time.

Billing Method: 21160 No charge for invalid samples.

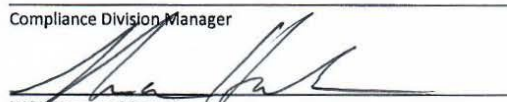
Protocol Agreement:

Protocol Agreement can only be approved or modified by 1) Compliance Division Manager, 2) Program Managers, or 3) Designated External Client Representative, and WQL Program Manager.

Michael Richardson Water Quality Supervisor 09/12/2019
Prepared by Title Date


Program Manager 9/13/19
Date

Designated External Client Representative Title Date

Compliance Division Manager Date

WQL Program Manager 9/13/19
Date

ABCWUA Compliance Division Protocol Agreement
Protocol Analyses Definition

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													Reg Limit		Flag Limit	
Primary Laboratory	External Laboratory	Sample Kit	Analyte	Method*	Preservation	Units	EPA D/Q Limit	EPA D/Q Limit Type	Lab MDL	Lab PQL	Hold Time	Analyte Cost	Low	High	Low	High
WQL	NA	1 liter wide mouth HDPE Bottle.	ALKALINITY	SM2320 B-2011	cool to < 6°C	mg/L			10		14 days	\$14.00			90	150
			BICARBONATE	SM2320 B-2011		mg/L				\$10.00			95	185		
			CARBONATE	SM2320 B-2011		mg/L				\$10.00			1	20		
			CHLORIDE	SM4110 B-2011		mg/L		0.006		28 days	\$12.00			2	125	
			FLUORIDE	SM4500 F, C-1997		mg/L	0.1	MDL	0.05		28 days	\$15.00			2	0.3 1.3
			NITRATE (AS N)	SM4110 B-2000		mg/L N	0.01	MDL	0.02		48 hrs.	\$16.00			10	0.5 2
			NITRITE (AS N)	SM4110 B-2000		mg/L N			0.01		48 hrs.	\$16.00				
			ORTHOPHOSPHATE (AS P)	SM4110 B-2011		mg/L P			0.04		48 hrs.	\$16.00				1
			SULFATE	SM4110 B-2011		mg/L			0.07		28 days	\$12.00			10	120
			TDS	SM2540-2011		mg/L					7 days	\$12.00			150	400
			TURBIDITY	SM2130 B-2011		NTU			0.08		48 hrs.	\$8.00			1	0.3
WQL	N/A	250 ml Metals HDPE Bottle.	LITHIUM	EPA 200.7-1994	Lab to Acidify w/ HNO ₃ to pH < 2	µg/L				6 months	\$10.00			10	115	
WQL	N/A	One (1) 125 mL sterile microbiological collection bottle as supplied by WQL.	HETEROTROPHIC PLATE COUNT	SM9215 E-2004	< 10°C, sodium thiosulfate	MPN/ML				30 hrs.	\$25.00				199	
		One 250 ml Amber glass bottle	TOTAL ORGANIC CARBON	SM5310 C-2011	cool to < 6°C / Lab to Acidify w/H ₃ PO ₄	mg/L			1		28 days	\$30.00				
													\$176.00			
FIELD ANALYSIS	FIELD	NA	FLDCL2 (FREE CHLORINE RESIDUAL)	SM4500 Cl, G-2000	-	mg/L	0.1				-	-				
			FLDTCL2 (TOTAL CHLORINE RESIDUAL)	SM4500 Cl, G-2000	-	mg/L	0.1				-	-				
			METER NUMBER													
			METER TYPE	COLORIMETER												
			FLDCOND (SPECIFIC CONDUCTANCE)	SM2510 B-1997	-	UMHOS/CM			0.1		-	-			200	650
			FLDDO (DISSOLVED OXYGEN)	SM4500 O, G-1997	-	mg/L			0.01		-	-				
			FLDEH (OXIDATION REDUCTION POTENTIAL)	SM2580 A-1997	-	MV			1		-	-			300	750
			FLDPH (pH)	SM4500 H+ B-2000	-	STD UNIT					-	-			7	9.5
			FLDTEMPC (TEMPERATURE)	SM2550-2000	-	DEG C			0.1		-	-			4	35
			METER NUMBER		-						-	-				
			METER TYPE	YSI							-	-				
			FLUSH (FLUSH TIME BEFORE SAMPLING)		-	MINUTES					-	-				
			PUMP RUN TIME	SCADA	-	HOURS					-	-				

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													Low	High	Low	High
SLD	Contract Lab	2-40 ml vials with no head space	VOC	EPA 524.2	< 4°C/ two (2) drops HCL to pH <2	µg/L					14 days					
SLD	Contract Lab	1 Liter Cubi-tainer	Metals		Lab to Acidify	µg/L					6 months					
													\$176.00			

* Any approved method in 40 CFR 136, 141, or 143 as applicable may be substituted.