

<b>DocumentID</b>	<b>Document Name</b>	<b>Status</b>
EPA QA/G-5S	Guidance for Choosing a Sample Design for Environmental Data Collection	Under peer Review
EPA QA/?	Data Quality Evaluation and Statistical Analysis	Complete
CEMP SOP: QA007	Data Management	Draft Under Construction
CEMP SOP: QA006	Management System Review	Draft Under Construction
CEMP SOP: QA005	Technical System Review	Draft Under Construction
EPA QA/?	Method Detection Limit	Complete
CEMP SOP: QA003	Sample Split (External & Internal)	Draft Under Construction
CEMP SOP: QA002	Performance Evaluations & Recertification	Draft Under Construction
NAFWS SOP: QA001	Training	Draft Under Construction
CEMP SOP: HK004	SOP Preperation Review and Approval	Draft Under Construction
NAFWS SOP: HK003	Waste Management	Draft Under Construction

<b>DocumentID</b>	<b>Document Name</b>	<b>Status</b>
CEMP SOP: HK002	Equipment and Labware Cleaning Procedures	Draft Under Construction
NAFWS SOP: HK001	Kit Management	Draft Under Construction

Parameter	Method	SM, EPA, USGS, ASTM or Other Method Reference	SOPID	Applicability	Surface Water	Stream	Lake	Drinking Water (tap)	Drinking Water (source)	Marine	Estuarine	Effluents	Type	LabID	Notes
Amphibians															
	Wood Frog Survey		BIOL005	baseline		x	x				x		Field		Protocols similar to North American Amphibian Monitoring Program and Frogwatch USA. Coordinated by UAA-Alaska Natural Heritage Program
Apparent Color															
	Platinum-Cobalt (Hach 8025)	Hach Water Analysis Handbook, 3rd Edition, 1997	AIG002	baseline	x	x	x			x	x		Lab	CIK	Analysis performed by Cook Inlet Keeper.
	Boger Color System	Campbell, G. & Wildberger, S. 1992. The Monitor's Handbook. LaMotte, Chestertown, MD	AIG003	baseline	x	x	x			x	x		Field		
Arsenic															
	HybriVet Systems Inc. -3AS6 ArsenicCheck	HybriVet Systems, Inc. PO Box 1210 Framingham, MA 01701	METALS001	screeener	x	x	x	x	x	x	x		Field		
Arsenic, dissolved															
	EPA 200.9 - GFAA	EPA 200.9 - GFAA	METALS003	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.

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Benzene	EPA 8021 by GCPID: 1-1,000,000,000	EPA 8021 by GCPID: 1-1,000,000,000	HYDRO001	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.
Biological Monitoring	Biological Assessment Educational		BIOL001	screeener	x	x							Field		Protocol developed by UAA-ENRI for the state of Alaska
	Biological Assessment Volunteer		BIOL002	screeener-baseline	x	x							Lab/Field	ENRI	Protocol developed by UAA-ENRI for the state of Alaska
	Biological Assessment Technical		BIOL003	baseline	x	x							Lab/Field	ENRI	Protocol developed by UAA-ENRI for the state of Alaska
Bromofluorobenzene (surrogate)	AK101 by GCFID and/or EPA 8021 by GCPID: N/A	AK101 by GCFID and/or EPA 8021 by	HYDRO002	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.
Cadmium, dissolved	EPA 200.9 - GFAA	EPA 200.9 - GFAA	METALS003	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.
Calcium, total	EPA 200.7 - ICP	EPA 200.7 - ICP	METALS002	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.

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Chlorophyll a															
	SM 10200 H	SM 10200 H	BIOL004	baseline			x						Lab	MSTL	Analysis performed by Mat-Su Test Lab of Alaska
Chromium, dissolved															
	EPA 200.9 - GFAA	EPA 200.9 - GFAA	METALS003	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.
Copper, dissolved															
	EPA 200.7 - ICP	EPA 200.7 - ICP	METALS002	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.
Cyanide															
	CHEMetrics Cyanide (free) Test Kit (Cat. No. K-3810)	CHEMetrics, Inc., 4295 Catlett Road, Calverton, VA 20138 <a href="http://www.chemetrics.com/analytes/cyanide.html">http://www.chemetrics.com/analytes/cyanide.html</a>	AIG044	screeener	x	x	x	x				x	Field		Chemetrix References Colorimetric method--S. Nagashima, Spectrophotometric Determination of Cyanide with Isonicotinic Acid, and Barbituric Acid, Environ. Anal. Chem., 1981, Vol. 10, pp. 99-106 for this test.
Diesel Range Organics (DRO)															
	AK102 by GCFID: 50-1,000,000	AK102 by GCFID: 50-1,000,000	HYDRO003	regulatory	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.

Parameter	Method	SM, EPA, USGS, ASTM or Other Method Reference	SOPID	Applicability	Surface Water	Stream	Lake	Drinking Water (tap)	Drinking Water (source)	Marine	Estuarine	Effluents	Type	LabID	Notes
Dissolved Oxygen															
	Micro Winkler Azide Modification (LaMotte-5856)	SM 4500-O C.	AIG004	baseline-regulatory	x	x	x		x	x	x		Lab/Field		
	Membrane Electrode (LaMotte DO 4000)	SM 4500-O G.	AIG005	baseline-regulatory	x	x	x		x	x	x		Field		
	Membrane Electrode (YSI 55)	SM 4500-O G.	AIG006	baseline-regulatory	x	x	x		x	x	x		Field		
	Membrane Electrode (YSI 95)	SM 4500-O G.	AIG007	baseline-regulatory	x	x	x		x	x	x		Field		
	Membrane Electrode (Hydolab Datasonde 4a)	SM 4500-O G.	AIG008	baseline-regulatory	x	x	x		x	x	x		Field		
	Membrane Electrode (Hydolab Minisonde 4a)	SM 4500-O G.	AIG009	baseline-regulatory	x	x	x		x	x	x		Field		
	Membrane Electrode (Hydolab Quanta)	SM 4500-O G.	AIG010	baseline-regulatory	x	x	x		x	x	x		Field		
	Membrane Electrode (Hydolab H <sub>2</sub> O Multiprobe)	SM 4500-O G.	AIG011	baseline-regulatory	x	x	x		x	x	x		Field		
	Colorimetric (Chemetrics-K-7512)	CHEMetrics, Inc., 4295 Catlett Road, Calverton, VA 20138	AIG012	baseline	x	x	x		x	x	x		Lab/Field		Chemitrix references the Indigo Carmine--ASTM D 888-87, Colorimetric Indigo Carmine, Test Method A and Gilbert, T.W., Behymer, T.D., Castaneda, H.B., "Determination of Dissolved Oxygen in Natural and Wastewaters," American Laboratory, March 1982, pp. 119-134 for this test.







Parameter	Method	SM, EPA, USGS, ASTM or Other Method Reference	SOPID	Applicability	Surface Water	Stream	Lake	Drinking Water (tap)	Drinking Water (source)	Marine	Estuarine	Effluents	Type	LabID	Notes
	EPA 200.9 - GFAA	EPA 200.9 - GFAA	METALS003	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.
Magnesium, total															
	EPA 200.7 - ICP	EPA 200.7 - ICP	METALS002	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.
m,p-Xylene (total)															
	EPA 8021 by GCPID: 1-1,000,000,000	EPA 8021 by GCPID: 1-1,000,000,000	HYDRO001	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.
Nitrogen-Amonia															
	Nesslerization (Hach 8038)	USEPA Accepted Method. Hach Water Analysis Handbook, 3rd Edition, 1997.	AIG013	baseline-regulatory	x	x							Lab	CIK(KBK PC)	Adapted from Standard Methods for the Examination of Water and Wastewater. Analysis performed by Cook Inlet Keeper at Kachemak Bay Branch of the Kenai Peninsula College Laboratory.
Nitrogen-Nitrate															
	Cadmium Reduction (Hach 8192)	Hach Water Analysis Handbook, 3rd Edition, 1997.	AIG014		x	x	x	x	x	x	x		Lab	CIK	Analysis performed by Cook Inlet Keeper.

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	Cadmium Reduction (Chemtrix 6902)	CHEMetrics, Inc., 4295 Catlett Road, Calverton, VA 20138 <a href="http://www.chemetrics.com/analytes/nitrate.html">http://www.chemetrics.com/analytes/nitrate.html</a>	AIG015	screeener-baseline	x	x	x	x	x	x	x	x	Lab/Field		Chemetix references ASTM D 3867-90, SM 4500-NO3-E, EPA Method 353.3 metods for this test.
	Zinc-Reduction (LaMotte 335)	1992. The Monitor's Handbook. LaMotte	AIG016	screeener-baseline	x	x	x	x	x	x	x		Lab/Field		
Nitrates															
	SM 4500-NO3E-wet chemistry	SM 4500-NO3E	AIG017	regulatory	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.
o-Xylene															
	EPA 8021 by GCPID: 1-1,000,000,000	EPA 8021 by GCPID: 1-1,000,000,000	HYDRO001	regulatory	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.
Orthophosphate															
	Ascorbic Acid (Hach 8048)	USEPA Accepted Method. Hach Water Analysis Handbook, 3rd Edition, 1997.	AIG018	baseline-regulatory	x	x	x		x	x	x		Lab	CIK	Adapted from Standard Methods for the Examination of Water and Wastewater. Analysis performed by Cook Inlet Keeper.
	Ascorbic Acid (Hach PO-19)		AIG019	screeener-baseline	x	x	x		x	x	x		Lab/Field		



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	Camera		HABITAT005		x	x	x		x	x	x	x			
pH															
	pH Octet Comparator (LaMotte- 5858)	Campbell, G. & Wildberger, S. 1992. The Monitor's Handbook. LaMotte, Chestertown, MD.	AIG023	screener-baseline	x	x	x		x	x	x		Lab/Field		
	Hydolab Datasonde 4a	SM 4500-H+	AIG008	baseline-regulatory	x	x	x		x	x			Field		
	Hydolab Minisonde 4a	SM 4500-H+	AIG009	baseline-regulatory	x	x	x		x	x			Field		
	YSI 60	SM 4500-H+	AIG024	baseline-regulatory	x	x	x		x	x			Field		
	Hydolab Quanta	SM 4500-H+	AIG010	baseline-regulatory	x	x	x		x	x			Field		
	Hydolab H <sub>2</sub> O Multiprobe	SM 4500-H+	AIG011	baseline-regulatory	x	x	x		x	x			Field		
	Hanna 4 in 1 Water Test (HI 98204)	SM 4500-H+	AIG025	baseline-regulatory	x	x	x		x	x			Field		
	Hanna Combo (HI 98129 & HI 98130)	SM 4500-H+	AIG026	baseline-regulatory	x	x	x		x	x			Field		
	YSI 63	SM 4500-H+	AIG045	baseline-regulatory	x	x	x		x	x			Field		

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Polynuclear Aromatic Hydrocarbons															
	Hydrocarbons in Semi-Permeable Membrane Devices and Low Density		HYDRO006		x	x							Lab	ABL	Analysis performed by NMFS-Auk Bay Laboratory
Residual Range Organics (RRO)															
	AK103 by GCFID: 500-1,000,000	AK103 by GCFID: 500-1,000,000	HYDRO005	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.
Salinity															
	Hydrometer (LaMotte 3-0011)	1993. Volunteer Estuary Monitoring: A Methods Manual. EPA-842-B-93-004. USEPA, Washington, D.C.	AIG027	baseline	x					x	x		Field		
	Deep Six Hydrometer		AIG028	screener-baseline	x					x	x		Lab/Field		
	YSI 63	SM 2520B	AIG045	baseline-regulatory	x					x	x		Field		
Sample Collector															
	Collection and Preservation of Samples	SM 1060 A & B	SACOL001		x	x	x		x	x	x		Field		
	Collection of Water Sample Using White 2.5 Gallon Bucket		SACOL002		x	x			x	x	x		Field		

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	Sample Protocol Instructions / Quality Control Requirements Northern Testing Laboratories, Inc.		SACOL003		x	x		x	x	x					
	LDPE and SPMD Deployment and Retrieval		SACOL004		x	x									
Settable Solids															
	Imhoff Cone	SM 2540 F -	AIG029	regulatory	x	x	x	x			x	x	Lab		
Specific Conductance															
	Hach CO150 Conductivity Meter	SM 2510 B	AIG030	baseline-regulatory	x	x	x	x	x	x			Field		
	Hanna 4 in 1 Water Test (HI 98204)	SM 2510 B	AIG025	baseline-regulatory	x	x	x	x	x	x			Field		
	Hanna Combo (HI 98129 & HI 98130)	SM 2510 B	AIG026	baseline-regulatory	x	x	x	x	x	x			Field		
	Hydrolab Datasonde 4a	SM 2510 B	AIG008	baseline-regulatory	x	x	x	x	x	x			Field		
	Hydrolab Minisonde 4a	SM 2510 B	AIG009	baseline-regulatory	x	x	x	x	x	x			Field		
	Hydrolab Quanta	SM 2510 B	AIG010	baseline-regulatory	x	x	x	x	x	x			Field		
	Hydrolab H <sub>2</sub> O Multiprobe	SM 2510 B	AIG011	baseline-regulatory	x	x	x	x	x	x			Field		

Parameter	Method	SM, EPA, USGS, ASTM or Other Method Reference	SOPID	Applicability	Applicability										Type	LabID	Notes
					Surface Water	Stream	Lake	Drinking Water (tap)	Drinking Water (source)	Marine	Estuarine	Effluents					
	YSI 30	SM 2510 B	AIG031	baseline-regulatory	x	x	x		x	x	x				Field		
	YSI 63	SM 2510 B	AIG045	baseline-regulatory	x	x	x		x	x	x				Field		
Suspended Solids																	
	Photometric (Hach 8006)	Analysis Handbook, 3rd Edition, 1997.	AIG032	baseline	x	x	x		x	x	x			Lab	CIK		Analysis performed by Cook Inlet Keeper
Stream Discharge																	
	Price AA Current Meter and Pygmy Current Meter	Current-Meter Method (USGS)	AIG033	baseline	x	x									Field		
	Global Flow Probe FP-101 & FP-201	Global Water Instrumentation, 11257 Coloma Rd. Gold River, CA 95670	AIG034	baseline	x	x									Field		
Stream Stage																	
	Guage Reading	USGS	AIG035	baseline	x	x									Field		
Temperature																	
	Thermometer		AIG001	baseline	x	x	x		x	x	x			Field			Alcohol-filled Thermometer

Parameter	Method	SM, EPA, USGS, ASTM or Other Method Reference	SOPID	Applicability	Surface Water	Stream	Lake	Drinking Water (tap)	Drinking Water (source)	Marine	Estuarine	Effluents	Type	LabID	Notes
	Thermometer		AIG036	baseline	x	x	x	x	x	x			Field		Alcohol-filled Thermometer
	Thermometer		AIG046	baseline	x	x	x	x	x	x			Field		Alcohol-filled Thermometer
	Hydrolab Datasonde 4a	SM 2550 B	AIG008	baseline	x	x	x	x	x	x			Field		
	Hydrolab Minisonde 4a	SM 2550 B	AIG009	baseline	x	x	x	x	x	x			Field		
	Hydrolab Quanta	SM 2550 B	AIG010	baseline	x	x	x	x	x	x			Field		
	Hydrolab H <sub>2</sub> O Multiprobe	SM 2550 B	AIG011	baseline	x	x	x	x	x	x			Field		
	StowAway Tidbit Temperature Logger (Onset Computer Corp.)	SM 2550 B	AIG037	baseline-regulatory	x	x	x	x	x	x			Field		
	Hobo Water Temp Pro (H2O-001)	SM 2550 B	AIG039	baseline-regulatory	x	x	x	x	x	x			Field		
	YSI 63	SM 2550 B	AIG045	baseline-regulatory	x	x	x	x	x	x			Field		



Parameter	Method	SM, EPA, USGS, ASTM or Other Method Reference	SOPID	Applicability	Surface Water	Stream	Lake	Drinking Water (tap)	Drinking Water (source)	Marine	Estuarine	Effluents	Type	LabID	Notes
Toluene															
	EPA 8021 by GCPID: 1-1,000,000,000	EPA 8021 by GCPID: 1-1,000,000,000	HYDRO001	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.
Total Coliform															
	Coliscan Easygel (Total Coliform)	Micrology Laboratories, LLC. 1996. LaMotte Company PO Box 329 802 Washington Avenue Chestertown, MD 21620	MICRO001	screeener-baseline	x	x	x	x	x	x	x		Lab/Field	CIK	In December 1999, Coliscan® Easygel® was approved by the U.S. EPA Region 4 for use in the bacteriological monitoring of surface waters as part of the program developed by the Alabama Water Watch under the direction of Dr. William G. Deutsch of the Dept. of Fisheries of Auburn University.
	Total Coliform (LaMotte-TC-5)	LaMotte Company PO Box 329 802 Washington Avenue Chestertown, MD 21620	MICRO004	screeener-baseline	x	x	x	x	x	x	x		Lab/Field		The test method and results closely parrallel the Standard Total Coliform Multiple-Tube Presumptive Test (MPN) as outlined in <i>Standdard Methods for the Examination of Water and Wastewater</i> .
	Quanti_Tray/ MMO-MUG MPN		MICRO005	screeener	x	x	x	x	x	x	x		Lab	NTL	Adapted from SM 9223B
Total Dissolved Solids															
	Hach Conductivity Meter		AIG030	baseline	x	x	x		x	x	x		Field		
	Hanna Combo (HI 98129 & HI 98130)		AIG026	baseline	x	x	x		x	x	x		Field		

Parameter	Method	SM, EPA, USGS, ASTM or Other Method Reference	SOPID	Applicability	Applicability										Type	LabID	Notes
					Surface Water	Stream	Lake	Drinking Water (tap)	Drinking Water (source)	Marine	Estuarine	Effluents					
Turbidity	Sechhi Disk (LaMotte 0171)	U.S. EPA. 1991. Volunteer Lake Monitoring: A Methods Manual	AIG040	baseline			x			x	x		Field				
	Nephelometric (Engineered Systems Designed 800)	SM 2130 B	AIG041	baseline-regulatory	x	x	x	x	x	x	x		Lab				
	Nephelometric (LaMotte 2020)	SM 2130 B	AIG042	baseline-regulatory	x	x	x	x	x	x	x		Lab				
	Nephelometric (Hydrolab Datasonde 4a)		AIG008	baseline-regulatory	x	x	x		x	x	x		Field				
	Nephelometric (Hydrolab Minisonde 4a)		AIG009	baseline-regulatory	x	x	x		x	x	x		Field				
	Jackson Turbidity Units (LaMotte 7519)	(c) Campbell, G. & Wildberger, S. 1992. The Monitor's Handbook. LaMotte,	AIG043	screeener-baseline	x	x	x		x	x	x		Field				
	Zinc, dissolved	EPA 200.7 - ICP	EPA 200.7 - ICP	METALS002	baseline	x	x							Lab	NTL	Analysis performed by Northern Testing Laboratories Inc.	

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Temperature	AIG001	Air	Thermometer	-40 to 120	° F	1 ° C	± 1° F	± 1 ° F	NIST Certified Thermometer
Apparent Color	AIG002	Water	Platinum-Cobalt (Hach 8025)	0 -500	Platinum-Cobalt unit	1 Platinum-Cobalt unit	NA	NA	Standard Solutions Method
Apparent Color	AIG003	Water	Boger Color System	147 Standard Colors	Color Index Number	1 to 2 Color Numbers	NA	NA	Checked against Hach Spectrophotometer
Dissolved Oxygen	AIG004	Water	Micro Winkler Azide Modification (LaMotte-5856)	0.0 to 20.0	mg/l	0.1 mg/l	± 0.6 mg/l	± 0.3 mg/l	Standard Solutions Method
Dissolved Oxygen	AIG005	Water	Membrane Electrode (LaMotte DO 4000)	0 to 19.99	mg/l	0.01 mg/l	± 0.01 mg/l	± 0.10 mg/l	Saturated Air Calibration
Dissolved Oxygen	AIG006	Water	Membrane Electrode (YSI 55)	0 to 20	mg/l	0.01 mg/l	NA	± 0.3 mg/l	air-calibration method
Dissolved Oxygen	AIG007	Water	Membrane Electrode (YSI 95)	0 to 50	mg/l	0.01 mg/l	NA	± 0.2 mg/L or ± 2% whichever is greater	
Dissolved Oxygen	AIG008	Water	Membrane Electrode (Hydrolab Datasonde 4a)	0 to 50	mg/l	0.01 mg/l	NA	± 0.2 mg/l	
pH	AIG008	Water	Hydrolab Datasonde 4a	0.0 to 14.0	Standard pH units	0.01 units	± 0.2 units	± 0.2 units	Two Buffer Calibration

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Specific Conductance	AIG008	Water	Hydrolab Datasonde 4a	0 to 100	micro-siemens/cm ( $\mu\text{S}/\text{cm}$ ) (converted to 25 °C)	4 digits	$\pm 0.001$ units	$\pm 2\%$ Full Scale	Standard Solutions Method
Temperature	AIG008	Water	Hydrolab Datasonde 4a	-5° to 50°C	°C	0.01°C	NA	$\pm 0.10^\circ\text{C}$	NIST Certified Thermometer
Turbidity	AIG008	Water	Shuttered (Hydrolab Datasonde 4a)	0 to 100	Nephelometric Turbidity Units (NTU)	0.1 NTU	$\pm 0.1$ NTU	$\pm 5\%$ of range	Standard Solutions Method
Dissolved Oxygen	AIG009	Water	Membrane Electrode (Hydrolab Minisonde 4a)	0 to 50	mg/l	0.01 mg/l	NA	$\pm 0.2$ mg/l	
pH	AIG009	Water	Hydrolab Minisonde 4a	0.0 to 14.0	Standard pH units	0.01 units	$\pm 0.2$ units	$\pm 0.2$ units	Two Buffer Calibration
Specific Conductance	AIG009	Water	Hydrolab Minisonde 4a	0 to 100	micro-siemens/cm ( $\mu\text{S}/\text{cm}$ ) (converted to 25 °C)	4 digits	$\pm 0.001$ units	$\pm 2\%$ Full Scale	Standard Solutions Method
Temperature	AIG009	Water	Hydrolab Minisonde 4a	-5° to 50°C	°C	0.01°C	NA	$\pm 0.10^\circ\text{C}$	NIST Certified Thermometer

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Turbidity	AIG009	Water	Nephelometric (Hydrolab Minisonde 4a)	0 to 100	Nephelometric Turbidity Units (NTU)	0.1 NTU	± 0.1 NTU	±5% of range	Standard Solutions Method
Dissolved Oxygen	AIG010	Water	Membrane Electrode (Hydrolab Quanta)	0 to 20	mg/l	0.01 mg/l	NA	± 0.2 mg/l	
pH	AIG010	Water	Hydrolab Quanta	2 to 12	Standard pH units	0.01 units	NA	± 0.2 units	Two Buffer Calibration
Specific Conductance	AIG010	Water	Hydrolab Quanta	0 to 100	milli-siemens/cm (mS/cm)	4 digits	NA	± 1% of reading ±1 count	Standard Solutions Method
Temperature	AIG010	Water	Hydrolab Quanta	-5 to 50	° C	0.01° C	NA	± 0.2 ° C	NIST Certified Thermometer
Dissolved Oxygen	AIG011	Water	Membrane Electrode (Hydrolab H2O Multiprobe)	0 to 20	mg/l	0.01 mg/l	NA	± 0.2 mg/l	
pH	AIG011	Water	Hydrolab H2O Multiprobe	2 to 12	Standard pH units	0.01 units	NA	± 0.2 units	Two Buffer Calibration
Specific Conductance	AIG011	Water	Hydrolab H2O Multiprobe	0 to 100	milli-siemens/cm (mS/cm)	4 digits	NA	± 1% of reading	Standard Solutions Method

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Temperature	AIG011	Water	Hydrolab H2O Multiprobe	-5 to 50	° C	0.01° C	NA	± 0.15 ° C	NIST Certified Thermometer
Dissolved Oxygen	AIG012	Water	Colorimetric (Chemetrics-K-7512)	1 to 12	ppm(mg/l)	1 ppm	± 0.25 ppm in the 1-6 ppm range; ± 0.5 ppm in the 6-12 ppm range	± 0.5 ppm in the 1-6 ppm range; ± 1.0 ppm in the 6-12 ppm range	Standard Solutions Method
Amonia-Nitrogen	AIG013	Water	Nesslerization (Hach 8038)	0 to 2.50	mg/l	0.06 mg/l	± 0.015 mg/l	± 0.015mg/l	Standard Solutions Method
Nitrate-Nitrogen	AIG014	Water	Cadmium Reduction (Hach 8192)	0 to 0.40	mg/l	0.01mg/l	± 0.010 mg/l	± 0.010mg/l	Standard Solutions Method
Nitrate-Nitrogen	AIG015	Water	Cadmium Reduction (Chemtrix 6902)	0 to 1 & 1 to 5	ppm(mg/l)	0.1 ppm	±0.05 ppm in the 0-0.4 ppm range; ±0.1 ppm in the 0.4-1 ppm range; ±0.25 ppm in the 1-5 ppm range	±0.1 ppm in the 0-0.4 ppm range; ±0.2 ppm in the 0.4-1 ppm range; ±0.5 ppm in the 1-5 ppm range	Standard Solutions Method
Nitrate-Nitrogen	AIG016	Water	Zinc-Reduction (LaMotte 3354)	0 to 20	ppm (mg/l)	0.1 ppm	± 0.5 ppm	± 0.5 ppm	Standard Solutions Method
Nitrate-Nitrogen	AIG017	Water	SM 4500-NO3E-wet chemistry	NA	mg/l	0.1 to 1.0	≤ 20 RPD	± 10 % LFB	5-point curve

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Ortho-Phosphate	AIG018	Water	Ascorbic Acid (Hach 8048)	0 to 2.50	mg/l	0.01 mg/l	± 0.02 mg/l	± 0.02 mg/l	Standard Solutions Method
Ortho-Phosphate	AIG019	Water	Ascorbic Acid (Hach PO-19)	0.0 to 1.0 0.0 to 5.0 0.0 to 50.0	mg/l	0.02 mg/l 0.1 mg/l 1.0 mg/l	± 5% mg/l	± 5% mg/l	Standard Solutions Method
Ortho-Phosphate	AIG020	Water	Ascorbic Acid (LaMotte 3121)	0.0 to 4.0	ppm (mg/l)	0.2ppm	± 0.5 ppm	± 0.5 ppm	Standard Solutions Method
Ortho-Phosphate	AIG021	Water	SM 4500-P-E -wet chemistry	NA	mg/l	0.01	≤ 20 RPD	± 10 % LFB	6-point curve
Total Phosphorus	AIG022	Water	Acid Persulfate Digestion (Hach 8190)	0 to 2.50	mg/l	0.01 mg/l	± 0.02 mg/l	± 0.02 mg/l	Standard Solutions Method
pH	AIG023	Water	pH Octet Comparator (LaMotte- 5858)	3.0 to 10.0	Standard pH units	0.25 units	± 0.6 units	± 0.4 units	Standard Solutions Method
pH	AIG024	Water	YSI 60	0.0 to 14.0	Standard pH units	0.01 units	± 0.1 units	± 0.1 units	Two Buffer Calibration
ORP	AIG025	Water	Hanna 4 in 1 Water Test (HI 98204)	-1000 to 1000	mV	1 mV	± 5 mV	± 5 mV	Standard Solutions Method
pH	AIG025	Water	Hanna 4 in 1 Water Test (HI 98204)	0.0 to 14.0	Standard pH units	0.1 units	± 0.2 units	± 0.2 units	Two Buffer Calibration

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Specific Conductance	AIG025	Water	Hanna 4 in 1 Water Test (HI 98204)	0 to 1999	micro-siemens/cm ( $\mu\text{S}/\text{cm}$ )	1 $\mu\text{S}/\text{cm}$	$\pm 2\%$ Full Scale	$\pm 2\%$ Full Scale	Standard Solutions Method
pH	AIG026	Water	Hanna Combo (HI 98129 & HI 98130)	0.00 to 14.00	Standard pH units	0.01 units	$\pm 0.02$ units	$\pm 0.01$ units	Two Buffer Calibration
Specific Conductance	AIG026	Water	Hanna Combo (HI 98129)	0 to 3999	micro-siemens/cm ( $\mu\text{S}/\text{cm}$ )	1 $\mu\text{S}/\text{cm}$	$\pm 2\%$ Full Scale	$\pm 2\%$ Full Scale	Standard Solutions Method
Specific Conductance	AIG026	Water	Hanna Combo (HI 98130)	0.00 to 20.00	milli-siemens/cm ( $\text{mS}/\text{cm}$ )	0.01 $\text{mS}/\text{cm}$	$\pm 2\%$ Full Scale	$\pm 2\%$ Full Scale	Standard Solutions Method
Temperature	AIG026	Water	Hanna Combo (HI 98129 & HI 98130)	0.0 to 60.0 °C 32.0 to 140.0 °F	°C °F	0.1°C 0.1°F	NA	$\pm 0.5$ °C $\pm 1$ °F	NIST Certified Thermometer
Total Dissolved Solids	AIG026	Water	Hanna Combo (HI 98129)	0 to 2000	ppm	1 ppm	$\pm 2\%$ Full Scale	$\pm 2\%$ Full Scale	Standard Solutions Method
Total Dissolved Solids	AIG026	Water	Hanna Combo (HI 98130)	0.00 to 10.00	ppt	0.01 ppt	$\pm 2\%$ Full Scale	$\pm 2\%$ Full Scale	Standard Solutions Method
Salinity	AIG027	Water	Hydrometer (LaMotte 3-0011)	0 to 42 ppt (1.0000 to 1.0700 SG)	parts per thousand (ppt)	0.1 ppt (0.0005 specific gravity)	$\pm 1.0$ ppt	$\pm 0.82$ ppt	Standard Solutions Method



Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Salinity	AIG028	Water	Deep Six Hydrometer	15 to 41ppt 1.010 to 1.030 specific gravity	parts per thousand (ppt)	1 ppt (0.001 specific gravity)	± 1.0 ppt	± 0.001 specific gravity	Standard Solutions Method
Settable Solids	AIG029	Water	Imhoff Cone	0.1 to 1.0	ml/L	0.1 ml/L	NA	NA	NA
Specific Conductance	AIG030	Water	Hach CO150 Conductivity Meter	0 to 19,900	micro-siemens/cm (µS/cm)	0.1 µS/cm	± 0.5% Full Scale	± 0.5% Full Scale	Cell Constant Adjustment Calibration Method
Temperature	AIG030	Water	Hach CO150 Conductivity Meter	-10 to 110	° C	0.1° C	NA	± 0.10 ° C	NIST Certified Thermometer
Total Dissolved Solids	AIG030	Water	Hach CO150 Conductivity Meter	0 to 19,900	micro-siemens/cm (µS/cm)	3 significant digits	± 1 % Full Scale	± 1 % Full Scale	Cell Constant Adjustment Calibration Method
Specific Conductance	AIG031	Water	YSI 30	0 to 200	micro-siemens/cm (µS/cm) (converted to 25 ° C)	4 digits	± 0.001 units	± 0.5% Full Scale	Standard Solutions Method
Suspended Solids	AIG032	Water	Photometric (Hach 8006)	0 to 750	mg/l	1 mg/l	NA	NA	NA
Flow	AIG033	Water	Price AA Current Meter	0.25 to 8.0	ft <sup>3</sup> /sec	NA	NA	NA	Spin Test

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Flow	AIG033	Water	Pygmy Current Meter	0.25 to 3.0	ft <sup>3</sup> /sec	NA	NA	NA	Spin Test
Flow	AIG034	Water	Global Flow Probe FP-101 & FP-201	0.3 to 25 (feet per second) 0.1 to 8 (meters per second)	fps mps	0.1 fps 0.1 mps	NA	0.1 fps	Computer calibration & Mechanical friction calibration of propeller bushing
Stage	AIG035	Water	Guage Reading	NA	Water level in feet	NA	NA	NA	Measurement
Temperature	AIG036	Water	Thermometer	-5.0 to 50.0	° C	0.5° C	± 1.0 ° C	± 0.5 ° C	NIST Certified Thermometer
Temperature	AIG037	Water	StowAway Tidbit Temperature Logger (TBI32-20+50)	-20 to 50	° C	0.3 ° C at + 21.1 ° C	NA	± 0.4 ° C at 21.1° C	NIST Certified Thermometer
pH	AIG038	Water	Hach sensION1 pH Meter	0.0 to 14.0	Standard pH units	0.01 units	± 0.05 units	± 0.05 units	Two Buffer Calibration
Temperature	AIG039	Water	Hobo Water Temp Pro (H2O-001)	0 to 50	° C	0.02 ° C at + 25 ° C	NA	± 0.2 ° C at 0 to 50 ° C	NIST Certified Thermometer
Turbidity	AIG040	Water	Sechhi Disk (LaMotte 0171)	0 to 30	meters (m)	0.5 m	NA	NA	Line Markings Checked With Tape

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Turbidity	AIG041	Water	Nephelometric (Engineered Systems Designed 800)	0.0 to 19.99 0.0 to 199.9	NTU	0.01 NTU	0.02 NTU	± 2% or 0.05 NTU	Standard Solutions Method
Turbidity	AIG042	Water	Nephelometric (LaMotte 2020)	0.00 to 1100	Nephelometric Turbidity Units (NTU)	NTU Report to Nearest 0 to 1.0 then 0.05 NTU 10 to 40 then 1 NTU 40 to 100 then 5 NTU 100 to 400 then 10 NTU 400 to 1000 then 50 NTU 1000 then 100 NTU	+2% for readings below 100 NTU ±3% above 100 NTU	+2% for readings below 100 NTU ±3% above 100 NTU	Standard Solutions (NTU)
Turbidity	AIG043	Water	Jackson Turbidity Units (LaMotte 7519)	0 to 200	Jackson Turbidity Units (JTU)	5 JTU	± 5 JTU	± 5 JTU at 0-200 JTU	Standard Solutions Method
Cyanide, free	AIG044	Water	CHEMetrics Cyanide (free) Test Kit (Cat. No. K-3810)	0 to 0.1 0.1 to 1	ppm(mg/l)	0.005 ppm	±0.0025 ppm in the 0-0.04 ppm range; ±0.005 ppm in the 0.04-0.1 ppm range; ±0.025 ppm in the 0.1-1.0 ppm range	±0.005 ppm in the 0-0.04 ppm range; ±0.01 ppm in the 0.04-0.1 ppm range; ±0.05 ppm in the 0.1-1.0 ppm range	Standard Solutions Method
pH	AIG045	Water	YSI 63	0 to 14	pH units	0.01	NA	0.1 unit within 10 <sup>o</sup> C of calibration,	Two Buffer Calibration

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Salinity	AIG045	Water	YSI 63	0 to 80	ppt	0.1	NA	±2% or ±0.1 ppt	Standard Solutions Method
Specific Conductance	AIG045	Water	YSI 63	0 to 499.9 S/cm 0 to 4999 S/cm 0 to 49.99 mS/cm 0 to 200.0 mS/cm	S/cm mS/cm	0.1 S/cm 1 S/cm 0.01 mS/cm 0.1 mS/cm	NA	±0.5% FS of reading +0.001 mS/cm	Standard Solutions Method
Temperature	AIG045	Water	YSI 63	-5 to +75	°C	0.1	NA	±0.15°C ±1lsd	NIST Certified Thermometer
Temperature	AIG046	Water	Thermometer	0 to 50.0	°C	1.0°C	NA	NA	NIST Certified Thermometer
Biological Assessment	BIOL001	Macroinvertebrates, Stream Habitat, & Water	Biological Assessment Educational	NA	NA	NA	NA	NA	NA
Biological Assessment	BIOL002	Macroinvertebrates, Stream Habitat, & Water	Biological Assessment Volunteer	NA	NA	NA	NA	NA	NA

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Biological Assessment	BIOL003	Macroinvertebrates, Stream Habitat, & Water	Biological Assessment Technical	NA	NA	NA	NA	NA	NA
Chlorophyll a	BIOL004	Water	SM 10200 M			0.1 mg/m <sup>3</sup>			
Amphibians	BIOL005	Biological	Wood Frog Survey	NA	NA	NA	NA	NA	NA
Habitat	HABITAT001	Stream Habitat	Habitat Assessment	NA	NA	NA	NA	NA	NA
Habitat	HABITAT002	Stream Habitat	Site Characterization	NA	NA	NA	NA	NA	NA
Habitat	HABITAT003	Stream Habitat	Stream Habitat Inventory	NA	NA	NA	NA	NA	NA
Impervious Cover	HABITAT004	Watershed Habitat	Delineation and Impervious Surface Analysis Direct Measure Using GIS	NA	NA	NA	NA	NA	Ground Truthing
Habitat	HABITAT005	Stream Habitat	Photo Documentation Camera	NA	NA	NA	NA	NA	NA

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Benzene	HYDRO001	Water	EPA 8021 by GCPID: 1-1,000,000,000	1-1,000,000,000	µg/L	0.24 µg/L	20%	Calibration: ± 15% Controls: 30%	Internal Standard Analysis
Ethylbenzene	HYDRO001	Water	EPA 8021 by GCPID: 1-1,000,000,000	1-1,000,000,000	µg/L	0.21 µg/L	20%	Calibration: ± 15% Recovery: 30%	Internal Standard Analysis
m,p-Xylene (total)	HYDRO001	Water	EPA 8021 by GCPID: 1-1,000,000,000	1-1,000,000,000	µg/L	0.46 µg/L	20%	Calibration: ± 15% Recovery: 30%	Internal Standard Analysis
o-Xylene	HYDRO001	Water	EPA 8021 by GCPID: 1-1,000,000,000	1-1,000,000,000	µg/L	0.24 µg/L	20%	Calibration: ± 15% Recovery: 30%	Internal Standard Analysis
Toluene	HYDRO001	Water	EPA 8021 by GCPID: 1-1,000,000,000	1-1,000,000,000	µg/L	0.26 µg/L	20%	Calibration: ± 15% Recovery: 30%	Internal Standard Analysis
Bromofluorobenzene	HYDRO002	Water	AK101 by GCFID and/or EPA 8021 by GCPID: N/A	NA	% Recovery	NA	20%	Calibration: ± 15% Recovery: 30%	Internal Standard Analysis
Diesel Range Organics	HYDRO003	Water	AK102 by GCFID: 50-1,000,000	50-1,000,000	mg/L	0.04 mg/L	20%	Calibration: ± 25% Recovery: 25%	External Standard Analysis

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Gasoline Range Organics	HYDRO004	Water	AK101 by GCFID: 25-1,000,000,000	25-1,000,000,000	µg/L	2.68 µg/L	20%	Calibration: ± 25% Recovery: 60-120%	Internal Standard Analysis
Residual Range Organics	HYDRO005	Water	AK103 by GCFID: 500-1,000,000	500-1,000,000	µg/L	0.60 µg/L	20%	Calibration: 75-100% Recovery: 60-120%	External Standard Analysis
Polynuclear Aromatic Hydrocarbons	HYDRO006	Water	Polynuclear Aromatic Hydrocarbons in Semi-Permeable Membrane Devices and Low Density Polyethylene strips	See SOP for this method	See SOP for this method	See SOP for this method	See SOP for this method	See SOP for this method	See SOP for this method
Arsenic	METALS001	Water	HybriVet Systems Inc. -3AS6 ArsenicCheck	Absence below 10ppb Presence above 10 ppb	Presence / Absence	NA	NA	NA	Standard Solutions Method
Calcium, total	METALS002	Water	EPA 200.7 - ICP	NA	mg/l	0.041	≤ 20 RPD	± 30 % LCS	4-point curve
Copper, dissolved	METALS002	Water	EPA 200.7 - ICP	NA	mg/l	0.0098	≤ 20 RPD	± 15 % LFB	4-point curve
Iron, total	METALS002	Water	EPA 200.7 - ICP	NA	mg/l	0.028	≤ 20 RPD	± 30 % LCS	4-point curve

Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Magnesium, total	METALS002	Water	EPA 200.7 - ICP	NA	mg/l	0.044	≤ 20 RPD	± 30 % LCS	4-point curve
Zinc, dissolved	METALS002	Water	EPA 200.7 - ICP	NA	mg/l	0.0087	≤ 20 RPD	± 15 % LFB	4-point curve
Arsenic, dissolved	METALS003	Water	EPA 200.9 - GFAA	NA	mg/l	0.0031	≤ 20 RPD	± 15 % LFB	5-point curve
Cadmium, dissolved	METALS003	Water	EPA 200.9 - GFAA	NA	mg/l	0.00014	≤ 20 RPD	± 15 % LFB	5-point curve
Chromium, dissolved	METALS003	Water	EPA 200.9 - GFAA	NA	mg/l	0.00049	≤ 20 RPD	± 15 % LFB	5-point curve
Lead, dissolved	METALS003	Water	EPA 200.9 - GFAA	NA	mg/l	0.0011	≤ 20 RPD	± 15 % LFB	5-point curve
Lead	METALS004	Water	HybriVet Systems Inc. LeadCheck Aqua II	Absence below 15 ppb Presence above 15ppb	Presence / Absence	NA	NA	NA	Standard Solutions Method
<i>E. Coli</i>	MICRO001	Water	Coliscan Easygel ( <i>E. coli</i> )	0 to 60	colony forming units (cfu) per 100 ml	1 cfu/100ml	control checks of sterility , temperature	control checks of sterility , temperature	control checks of sterility , temperature
<i>E. coli</i>	MICRO005	Water	Quanti_Tray/ MMO-MUG MPN	NA	# colonies/100 ml	NA	NA	NA	NA



Parameter	SOPID	Matrix	Method	Range	Units	Method Detection Limit (Sensitivity)	Precision	Accuracy	Calibration Method
Fecal coliform	MICRO002	Water	SM 9222D - membrane filtration	NA	cfu/100 ml	depends on dilution: filter 100 ml, <1/0; filter 50 ml, <2	control checks of sterility , temperature	control checks of sterility , temperature	control checks of sterility , temperature
Total Coliform	MICRO001	Water	Total Coliform (Coliscan Easygel)	0 to 60	colony forming units (cfu) per 100 ml	1 cfu/100ml	control checks of sterility , temperature	control checks of sterility , temperature	control checks of sterility , temperature
Total Coliform	MICRO004	Water	Total Coliform (LaMotte-TC-5)	Presence / Absence	Presence / Absence	NA	NA	NA	control checks of sterility , temperature
Total Coliform	MICRO005	Water	Quanti_Tray/ MMO-MUG MPN	NA	# colonies/100 ml	NA	NA	NA	NA
Sample Collection	SACOL001	Water	Collection and Preservation of Samples	NA	NA	NA	NA	NA	NA
Sample Collection	SACOL002	Water	Collection and Preservation of Samples	NA	NA	NA	NA	NA	NA
Sample Collection	SACOL003	Water	Instructions / Quality Control Requirements	NA	NA	NA	NA	NA	NA
Sample Collection	SACOL004	Water	LDPE and SPMD Deployment and Retrieval	NA	NA	NA	NA	NA	NA





