Fact Sheet

The U.S. Environmental Protection Agency (EPA)

Proposes to Reissue a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) to:

American Water Military Services Joint Base Lewis McChord

Solo Point Wastewater Treatment Plant

Public Comment Start Date: December 11, 2025

Public Comment Expiration Date: February 24, 2026 (extended from January 27)

THE EPA PROPOSES TO REISSUE THE NPDES PERMIT

The EPA proposes to reissue the NPDES permit for the facility referenced above. The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant to waters of the United States. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged from the facility.

This Fact Sheet (FS) includes:

- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations and other conditions for the facility
- a map and description of the discharge location
- technical material supporting the conditions in the permit
- a listing of substantial changes relative to the previous permit (see Page 8).

CWA § 401 CERTIFICATION

The EPA is requesting that Washington Department of Ecology (Ecology) provide a CWA Certification of the permit for this facility under CWA Section 401. Ecology will public notice the EPA's request for certification pursuant to Section 401 of the Clean Water Act at: https://apps.ecology.wa.gov/aquatics/notices/. Instructions for comments regarding the 401 certification will be included in Ecology's public notice.

CLEAN WATER ACT §401(A)(2) REVIEW

CWA Section 401(a)(2) requires that, upon receipt of an application and 401 certification, the EPA as the permitting authority notify a neighboring State or Tribe with TAS when the

EPA determines that the discharge may affect the quality of the neighboring State/Tribe's waters.

As stated above, Ecology is the certifying authority and is accepting comment regarding the intent to certify this permit. After the EPA receives final certification from Ecology, the EPA will determine whether the discharge may affect the quality of a neighboring jurisdiction's waters (33 U.S.C. § 1341(a)(2)).

PUBLIC COMMENT

Persons wishing to comment on, or request a Public Hearing for, the draft permit may do so in writing by the expiration date of the Public Comment period. A request for a Public Hearing must state the nature of the issues to be raised as well as the requester's name, address and telephone number. All comments and requests for Public Hearings must be in writing and should be submitted to the EPA as described below.

By the expiration date of the public comment period, all written comments and requests must be submitted to EPAR10WD-NPDES@epa.gov with the subject line "Comments on Draft NPDES Permit (WA0021954)".

After the Public Notice expires, and all comments have been considered, the EPA will make a final decision regarding permit issuance. If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If substantive comments are received, the EPA will address the comments and issue the permit. The permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 CFR § 124.19.

DOCUMENTS ARE AVAILABLE FOR REVIEW

The draft NPDES permit, fact sheet and other information can be downloaded from the internet at https://www.epa.gov/npdes-permits/about-region-10s-npdes-permit-program.

The draft Administrative Record for this action contains any documents listed in the References section. The Administrative Record or documents from it are available electronically upon request by emailing EPAR10WD-NPDES@epa.gov.

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ACRONYMS

AML	Average Monthly Limit
AWL	Average Weekly Limit
BOD_5	Biochemical oxygen demand, five-day
BMP	Best Management Practices
°C	Degrees Celsius
CFR	Code of Federal Regulations
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FOTW	Federally owned treatment works
FR	Federal Register
Gpd	Gallons per day
HUC	Hydrologic Unit Code
ICIS	Integrated Compliance Information System
I/I	Infiltration and Inflow
lbs/day	Pounds per day
LC	Lethal Concentration
LTA	Long Term Average
mg/L	Milligrams per liter
mL	Milliliters
ML	Minimum Level
µg/L	Micrograms per liter
mgd	Million gallons per day
MDL	Maximum Daily Limit or Method Detection Limit
MF	Membrane Filtration
MPN	Most Probable Number
N	Nitrogen
NOAA	National Oceanic and Atmospheric Administration
NOEC	No Observable Effect Concentration
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and maintenance
POTW	Publicly owned treatment works

PSES	Pretreatment Standards for Existing Sources
PSNS	Pretreatment Standards for New Sources
QAP	Quality assurance plan
RL	Reporting Level
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
RWC	Receiving Water Concentration
SIC	Standard Industrial Classification
SS	Suspended Solids
SSO	Sanitary Sewer Overflow
s.u.	Standard Units
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TRC	Total Residual Chlorine
TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)
TSS	Total suspended solids
TU_a	Toxic Units, Acute
TU_c	Toxic Units, Chronic
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UV	Ultraviolet
WD	Water Division
WET	Whole Effluent Toxicity
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
WQS	Water Quality Standards
WWTP	Wastewater treatment plant

I. Background Information

A. General Information

This fact sheet provides information on the draft NPDES permit for the following entity:

Table 1: General Facility Information

NPDES Permit #:	WA0021954
Applicant:	American Water Military Services Joint Base Lewis McChord Solo Point Wastewater Treatment Plant
Type of Ownership	Federally owned treatment works (FOTW)
Physical Address:	Building 7530 Solo Point Road Fort Lewis, WA 98433
Mailing Address:	7520 Solo Point Road Fort Lewis, WA 98433
Facility Contact:	Jared Hayes Environmental Manager Jared.Hays@amwater.com 253-209-6235
Operator Name:	American Water Military Services
Receiving Water	Puget Sound (Solo Point)
Facility Outfall	47.13611°N 122.63806°W

B. Permit History

The most recent NPDES permit for the Solo Point Wastewater Treatment Plant (WWTP) was issued on February 15, 2012, became effective on April 1, 2012, and expired on April 1, 2017 (previous permit). An NPDES application for permit issuance was submitted by the permittee on September 30, 2016, with revisions received on March 29, 2017. The EPA determined that the application was timely and complete. Therefore, pursuant to Title 40 Code of Federal Regulations (CFR) 122.6, the permit has been administratively continued and remains fully effective and enforceable. As of 2020, the facility is owned and operated by American Water's Military Services Group (under a 50-year contract).

1. Changes Relative to Prior Permit

The draft permit proposes changes relative to the previous permit, as described below:

- The average monthly limit for flow and the mass limits for five-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS) are reduced by 4% because the maximum month design flow of the upgraded

facility (6.7 mgd) is slightly less than the design flow used to calculate such limits in the previous permit (7 mgd).

- Effluent monitoring frequencies for BOD_5 and TSS have been reduced because of overall good performance.
- The draft permit proposes a new technology-based effluent limit (TBEL) for total inorganic nitrogen (TIN).
- The draft permit proposes to increase effluent monitoring frequency for ammonia from monthly to twice per week and add twice per week influent monitoring.
- The draft permit proposes to increase effluent monitoring frequency for nitrate plus nitrite from monthly to twice per week and add monthly influent monitoring.
- The draft permit proposes monthly influent monitoring for total Kjeldahl nitrogen (TKN).
- The draft permit proposes new monitoring for carbonaceous BOD_5 ($CBOD_5$) and total organic carbon (TOC).
- Limits for total petroleum hydrocarbons (TPH) are now stated as both mass and concentration limits.
- The draft permit proposes twice-per-year effluent monitoring for 1,2,4 trichlorobenzene.
- Effluent limits for total residual chlorine have been removed and monitoring has been reduced from daily to monthly.
- The draft permit proposes new enterococci effluent limits.
- The draft permit proposes to discontinue monitoring for ethylene glycol.
- The draft permit proposes to require source identification and control for polybrominated diphenyl ethers (PBDE).
- Phosphorus monitoring frequency change
- The draft permit proposes to discontinue monitoring for propylene glycol.
- The draft permit proposes annual WET monitoring, increased from four times during the permit term.
- The draft permit proposes quarterly monitoring of Per- and Polyfluoroalkyl Substances (PFAS) in influent, effluent and sludge.
- The draft permit proposes annual monitoring required for renewal for pollutants that are not listed in Appendix J, Table 2 of 40 CFR 122 but for which there are applicable water quality-standards.

C. Tribal Consultation

The EPA consults on a government-to-government basis with federally recognized Tribal governments when the EPA actions and decisions may affect Tribal interests. Meaningful Tribal consultation is an integral component of the federal government's general trust relationship with federally recognized Tribes. The federal government recognizes the right of each Tribe to self-government, with sovereign powers over their members and their territory. Executive Order 13175 (November 2000) entitled "Consultation and Coordination with Indian Tribal Governments" requires federal agencies to have an accountable process to assure meaningful and timely input by Tribal officials in the development of regulatory policies on matters that have Tribal implications and to strengthen the government-to-government relationship with Indian Tribes. In December 2023, the EPA issued the "EPA Policy on Consultation with Indian Tribes" which updated national guidelines and institutional controls for consultation.

The Solo Point WWTP is located within the usual and accustomed areas of the Nisqually, Puyallup, and Yakama Tribes. The EPA has offered government-to-government consultation to all three of these Tribes. At their request, the EPA has included requirements in the permit to notify the Nisqually Tribe of instances of non-compliance.

II. Facility Information

A. Treatment Plant Description

1. Service Area

American Water Military Services Joint Base Lewis McChord owns and operates the Solo Point WWTP located in Fort Lewis, WA. The collection system has no combined sewers. The facility serves a resident population of 66,751 as of 2022.

According to the 2023 annual pretreatment report, there are a total of 64 industrial users (IUs) of the treatment works, of which 2 are non-categorical significant industrial users (SIUs) and one is a categorical industrial user (CIU).

2. Treatment Process

The maximum month design flow of the facility is 6.7 mgd. The actual flows reported from the facility between September 2016 and March 2025 range from 1.73 mgd to 6.4 mgd (average monthly flow). American Water Military Services completed an infiltration and inflow report for calendar year 2022 and found that inflow and infiltration were not excessive.

The influent to Solo Point WWTP is from a sanitary sewer collection system consisting of approximately 240 miles of gravity sewer in six basins covering a total area of approximately 90,000 acres. The wastewater is then screened and passes through an aerated grit chamber, primary sedimentation with scum and primary sludge removal, bioreactors for four-stage Bardenpho biological nutrient removal with optional supplemental carbon (methanol) addition for nitrogen removal,

secondary clarifiers with scum and recycled activated sludge (RAS) pumping, and ultraviolet (UV) disinfection. Solids are thickened using gravity belt thickeners, anaerobic digestion and dewatered using a belt filter press and then stored under cover until they are hauled for land application.

Major upgrades to the facility were completed in August 2016 to replace the trickling filter treatment system with a four-stage Bardenpho treatment system for biological removal and UV disinfection. The upgrades included a new headworks with influent pumping, screening and grit removal, new primary settling tanks, pressure membrane filtration, replacement of chlorine disinfection with a UV system, and a new solids management system. A pre-screen station was also installed in April 2023. The facility is not currently operating the tertiary membrane filtration system. The filters were initially installed to obtain Class IV treatment for reuse potential, however, there is insufficient infrastructure and demand for recycled water.

A schematic of the wastewater treatment process and a map showing the location of the treatment facility and discharge are included in Appendix A. The EPA has used post-upgrade data to determine reasonable potential to exceed water quality criteria (see Section IV.A.3 below).

The facility is considered a major facility.

B. Outfall Description

The outfall is a 24-inch diameter cast iron pipe terminating at a depth of 70 feet below mean lower low water (MLLW) and a distance of 600 feet offshore. The diffuser is approximately 140 feet in length and has 14 six-inch diameter ports, spaced 10 feet apart, at the end of the pipe. Each diffuser includes a 90-degree angle at the end to aid diffusion.

C. Effluent Characterization

To characterize the effluent, the EPA evaluated the facility's application form, discharge monitoring report (DMR) data, and additional data provided by the Solo Point WWTP. The EPA only considered effluent data after the major facility upgrades were completed in August 2016. The effluent quality is summarized in Table 2. Data are provided in Appendix B. Below is a description of each source of effluent data:

- Application resubmittal: Expanded effluent testing data are required in Form 2A Part D for major facilities. These data were included in the revised application submitted on March 29, 2017. Pollutants with results reported above the minimum level (ML) or with state water quality standards (WQS) are shown in Table 2. Only the mean and maximum were reported for the pollutants in the expanded effluent testing. Accordingly, no individual data points are provided in the Appendix.

- Pretreatment monitoring: Quarterly data were submitted per the pretreatment report requirements. These samples were processed by two different labs during different years. One of the labs did not report results if they fell under Ecology's Reporting Level (RL). The other lab reported all results over the method detection limit (MDL). Accordingly, in some cases a result of <1 ug/L (RL = 1 ug/L), for example, was reported on one day, while a smaller exact result (<RL but >MDL) was reported on another. Summary statistics below (except for count) exclude the non-detect and <RL values. An alternate maximum value was determined (shown in Appendix F), representing the maximum if any values reported as "<RL" were set to equal the RL. In order to be conservative, these values were used for reasonable potential analysis.
- DMRs: Data collected between September 2016 and March 2025.
- PBDE monitoring: The previous permit required quarterly PBDE monitoring in the first and last years of the permit term. Additional PBDE data were collected on February 19, 2018, after the facility upgrades were completed. The 2018 data only are considered for effluent characterization.

Table 2: Effluent Characterization

Parameter	Units	Minimum	Mean	Maximum	95th Percentile	Count	Source
1,2,4-trichlorobenzene	µg/L	—	1.08	2.5	—	6	Application resubmittal
2,4-dinitrophenol	µg/L	20	20	20	20	3	Application resubmittal
Acetone	µg/L	<2.5	—	8.54	—	3	Pretreatment monitoring
Antimony	µg/L	0.372	0.457	0.58	0.564	6	Pretreatment monitoring
Arsenic	µg/L	0.7	1.04	1.5	1.44	10	Pretreatment monitoring
BOD, 5-day, 20 deg. C (monthly average)	mg/L	1.8	7.0	25.0	17.0	102	DMRs
BOD, 5-day, 20 deg. C (weekly average)	mg/L	1.8	9.6	67.0	24.0	102	DMRs
BOD, 5-day, percent removal	%	80.7	95.5	99.0	89.0 (5th percentile)	102	DMRs
Cadmium	µg/L	0	0.049	0.17	1.34	10	Pretreatment monitoring
Chlorine, total residual (maximum daily)	mg/L	0	0.17	10.80	0.14	102	DMRs
Chlorine, total residual (monthly average)	mg/L	0.01	0.03	0.48	0.06	102	DMRs
Chloroform	µg/L	—	0.467	1	—	3	Application resubmittal
Chromium	µg/L	0.25	1.059	3	2.6	10	Pretreatment monitoring
Copper	µg/L	1.0	16.8	60	41.55	11	Pretreatment monitoring
Cyanide	All results non-detect						Pretreatment monitoring

Parameter	Units	Minimum	Mean	Maximum	95th Percentile	Count	Source
Ethylene Glycol (monthly max.)	mg/L	2.5	29.5	499	26.5	24	DMRs
Fecal Coliform (monthly geometric mean)	#/100 mL	1	5.7	63	25.9	102	DMRs
Fecal Coliform (weekly geometric mean)	#/100 mL	1	9.7	226.6	26.5	102	DMRs
Floating solids, waste or visible foam-visual (monthly max.)	No = 0 Yes = 1	0	0	0	—	102	DMRs
Flow (monthly average)	mgd	1.73	2.52	6.40	4.27	101	DMRs
Lead	µg/L	0.008	0.288	1.3	0.99	10	Pretreatment monitoring
Mercury	All results non-detect						Pretreatment monitoring
Molybdenum	µg/L	0.16	0.473	0.843	0.842	10	Pretreatment monitoring
Naphthalene	µg/L	—	1.083	2.5	—	6	Application resubmittal
Nickel	µg/L	1.0	1.53	2.5	2.22	10	Pretreatment monitoring
Nitrite + Nitrate total [as N] (monthly max.)	mg/L	0.064	6.28	40	29.99	102	DMRs
Nitrogen, ammonia total [as N] (monthly max.)	mg/L	0.027	3.87	25.5	16	101	DMRs
Nitrogen, Kjeldahl, total [as N] (monthly max.)	mg/L	0.5	4.9	26.3	17	102	DMRs
Total Inorganic Nitrogen (monthly max.)	mg/L	0.09	10.15	65.5	45.99	102	DMRs (calculated by EPA)
Oil and grease visual (monthly max.)	No = 0 Yes = 1	0	0	0	—	102	DMRs
PBDE-15	pg/L	18.1	18.1	18.1	—	1	PBDE monitoring
PBDE-28/33	pg/L	122	122	122	—	1	PBDE monitoring
PBDE-75/51	pg/L	10.5	10.5	10.5	—	1	PBDE monitoring
PBDE-47	pg/L	448	448	448	—	1	PBDE monitoring
PBDE-66	pg/L	32.7	32.7	32.7	—	1	PBDE monitoring
PBDE-100	pg/L	80.1	80.1	80.1	—	1	PBDE monitoring
PBDE-119/120	pg/L	3.35	3.35	3.35	—	1	PBDE monitoring
PBDE-99	pg/L	316	316	316	—	1	PBDE monitoring
PBDE-155	pg/L	1.60	1.60	1.60	—	1	PBDE monitoring
PBDE-128/154	pg/L	34.8	34.8	34.8	—	1	PBDE monitoring
PBDE-153	pg/L	23.5	23.5	23.5	—	1	PBDE monitoring
PBDE-209	pg/L	3890	3890	3890	—	1	PBDE monitoring
pH (instantaneous maximum)	s.u.	6.60	7.63	8.43	8.03	102	DMRs
pH (instantaneous minimum)	s.u.	4.80	6.90	7.73	6.2 (5th percentile)	102	DMRs
Phosphorus, total [as P] (monthly max.)	mg/L	0.026	2.60	7.40	4.5	102	DMRs
Propylene glycol (monthly max.)	mg/L	2	14.4	200	10	24	DMRs
Selenium	All results non-detect						Pretreatment monitoring
Silver	µg/L	0	0.02	0.12	0.096	10	Pretreatment monitoring
Solids, total suspended (monthly average)	mg/L	1.0	5.0	23.9	10.8	102	DMRs

Parameter	Units	Minimum	Mean	Maximum	95th Percentile	Count	Source
Solids, total suspended (weekly average)	mg/L	0.9	7.0	72	16.9	102	DMRs
Solids, suspended percent removal (monthly average)	%	83.3	96.6	100	91.0	102	DMRs
Temperature (monthly max.)	°C	11.4	17.3	24.5	22.7	102	DMRs
Total petroleum hydrocarbons (daily max.)	mg/L	0.00	2.48	10	10	37	DMRs
Zinc	µg/L	19	43	110	86	11	Pretreatment monitoring

D. Compliance History

A list of effluent violations between September 2016 and March 2025 is provided in Table 3. The facility is unable to provide an explanation for the significant chlorine daily maximum exceedance in 2016, as the current management did not take over operations until 2021. However, it is an outlier compared to the rest of the data.

Additional compliance information for this facility, including compliance with other environmental statutes, is available on Enforcement and Compliance History Online (ECHO). The ECHO web address for this facility is: https://echo.epa.gov/detailed-facility-report?fid=WA0021954&sys=ICP

Table 3: Effluent Violations (September 2016 – March 2025)

Monitoring Period End Date	Parameter Code	Parameter Description	Statistical Base Type	DMR Value	DMR Value Unit	Limit Value	Limit Value Unit	% Exceedance	Days with Exceedances
12/31/2016	400	pH	INST MIN	4.8	SU	6	SU	—	1
12/31/2016	50060	Chlorine, total residual	MO AVG	0.48	mg/L	0.36	mg/L	33	31
12/31/2016	50060	Chlorine, total residual	DAILY MX	10.8	mg/L	0.5	mg/L	2060	--
2/28/2018	81010	BOD, 5-day, percent removal	MO AV MN	83	%	85	%	13	28
3/31/2018	81010	BOD, 5-day, percent removal	MO AV MN	80.7	%	85	%	29	31
4/30/2018	81010	BOD, 5-day, percent removal	MO AV MN	81.7	%	85	%	22	30
11/30/2018	400	pH	INST MIN	5.33	SU	6	SU	—	1
1/31/2022	81011	Solids, suspended percent removal	MO AV MN	83.3	%	85	%	11	31
6/30/2024	00530	Solids, total suspended	WKLY AVG	72	mg/L	45	mg/L	60	7
7/31/2024	00530	Solids, total suspended	WKLY AVG	54.6	mg/L	45	mg/L	21	7
1/31/2025	00310	BOD, 5-day	WKLY AVG	67	mg/L	45	mg/L	49	7

The EPA conducted inspections of the facility on May 24, 2022, and September 30, 2024. The inspections encompassed the wastewater treatment process, records review,

operation and maintenance, and the collection system. Areas of concern noted during the 2022 inspection were the TSS percent removal exceedance in January 2022 (Table 3), the absence of reportable BOD or TSS sampling results on October 14, 2021, the absence of reportable fecal coliform sampling results on October 27, 2021, addition of dog food prior to the influent composite sampler in January 2022[1], late submittals of DMRs in July 2020, August 2019, and June 2019, and several bypass events, listed below:

- On May 28, 2019, approximately 70,000 gallons of treated wastewater was discharged without disinfection due to a SCADA control failure.
- On December 1, 2019, approximately 48,000 gallons of treated wastewater was discharged without disinfection due to an unknown failure with the UV system.
- On January 8, 2020, approximately 260,000 gallons of treated wastewater was discharged without disinfection due to a UV system failure. The UV system's open flow monitors were showing incorrect water levels.
- On October 25, 2021, due to a power outage and subsequent equipment failure of the Facility's backup generator, approximately 181,000 gallons of effluent was discharged without UV disinfection.
- On October 29, 2021, due to an equipment failure at the UV channel, approximately 130,000 gallons of effluent was discharged without UV disinfection.
- On January 8th-9th, 2022, approximately 3,000,000 gallons of effluent was discharged without disinfection due to an equipment controls failure.

Areas of concern noted during the 2024 inspection were the TSS exceedances in June and July 2024 (Table 3), the lack of records of the last testing and calibration of the influent and effluent mag-meters, and a single bypass event: on November 3, 2023, approximately 70,000 gallons of effluent was discharged without UV disinfection due to a SCADA control failure. The testing and calibration and issue leading to bypass have been addressed since the inspection.

III. Receiving Water

In drafting permit conditions, the EPA must analyze the effect of the facility's discharge on the receiving water. The details of that analysis are provided in the Water Quality-Based Effluent Limits (WQBEL) section in Part IV.A.3. This section summarizes characteristics of the receiving water that impact that analysis.

[1] The facility noted that dog food is occasionally added at different locations within the treatment process to supplement the microbiology by providing a carbon source in the bioreactor when the influent BOD loading is less than the minimum day design loading (caused by high flows and diluted influent). On one occasion in January 2022, the Operations Supervisor made an unauthorized addition of dog food prior to the influent composite sampler, which skews the representative influent samples. The Operations Supervisor was terminated, and the facility notified the EPA when they became aware of the incident.

This facility discharges to Puget Sound (Solo Point) near Fort Lewis, WA, south of Ketron Island.

A. Water Quality Standards

CWA § 301(b)(1)(C) requires the development of limitations in permits necessary to meet Water Quality Standards (WQS). 40 CFR 122.4(d) requires that the conditions in NPDES permits ensure compliance with the WQS of all affected States. A State's WQS are composed of use classifications, numeric and/or narrative water quality criteria and an anti-degradation policy. The use classification system designates the beneficial uses that each water body is expected to achieve, such as drinking water supply, contact recreation, and aquatic life. The numeric and narrative water quality criteria are the criteria deemed necessary to support the beneficial use classification of each water body. The anti-degradation policy represents a three-tiered approach to maintain and protect various levels of water quality and uses.

1. Designated Beneficial Uses

Ecology lists use designations for specific marine waters in WAC 173-201A-612. This facility discharges to Puget Sound through Admiralty Inlet and South Puget Sound, south and west to longitude 122°52'30"W (Brisco Point) and longitude 122°51'W (northern tip of Harstine Island) in the Chambers-Clover water resource inventory area (WRIA 12). At the point of discharge, Puget Sound is protected for the following designated uses:

- Extraordinary quality aquatic life use
- Primary contact recreation
- All harvest uses

B. Receiving Water Quality

The water quality for the receiving water is summarized in Table 4. Data were retrieved from Ecology's Environmental Information Management (EIM) database[2], the Water Quality Portal[3], and the Washington Department of Health (WA DOH) Commercial Shellfish Map Viewer[4]. The complete data can be found in Appendix C. 1,2,4-trichlorobenzene, 2-nitrophenol, and naphthalene were all non-detect and are not included in the Appendix.

Table 4: Receiving Water Quality Data

Parameter	Units	Minimum	Mean	Maximum	90th Percentile	Count
1,2,4-trichlorobenzene[1]	All results non-detect					6

[2] https://apps.ecology.wa.gov/eim/search/default.aspx
[3] https://www.waterqualitydata.us/
[4] https://fortress.wa.gov/doh/oswpviewer/index.html

Parameter	Units	Minimum	Mean	Maximum	90th Percentile	Count
2,4-dinitrophenol[2]	µg/L	0.00205	0.00755 (geo mean = 0.00556)	0.01454	0.01454	6
2-nitrophenol[1]	All results non-detect					6
Alkalinity, Total as $CaCO_3$[3]	mg/L	4	92	115	112.3	98
Ammonia[4]	µg/L	0.7	364.2	2819.5	918	17
Arsenic, dissolved[1]	µg/L	1.26	1.34	1.45	1.4	6
Cadmium, dissolved[1]	µg/L	0.068	0.073	0.081	0.078	5
Copper, dissolved[1]	µg/L	0.30	0.37	0.39	0.39	5
Enterococci[5]	MPN/100 mL	10	25 (geo mean = 14)	370	30	64
Fecal Coliform[6]	MPN/100 mL	1.7	2.1 (geo mean = 1.9)	13	2	98
Lead, dissolved[1]	µg/L	0.006	0.024	0.045	0.043	4
Naphthalene[1]	All results non-detect					6
pH (profile maximum)[7]	s.u.	7.21	7.77	8.49	8.03	128
pH (profile median)[7]	s.u.	7.17	7.69	8.34	7.94	117
pH (profile minimum)[7]	s.u.	6.75	7.65	8.30	7.37 (10th percentile)	128
Salinity (profile minimum)[7]	psu	23.04	28.81	30.28	27.67 (10th percentile)	194
Temperature, water (profile maximum)[7]	°C	7.63	11.24	15.14	14.2 (May-October = 14.53)	195
Temperature, water (profile median)[7]	°C	7.54	10.86	14.23	13.13	172
Temperature, water (profile minimum)[7]	°C	7.47	10.49	13.98	12.9	195
Zinc, dissolved[1]	µg/L	0.36	0.56 (geo mean = 0.54)	0.73	0.71	5

1. Puget Sound Toxics Loading Analysis: Characterization of Toxic Chemicals in Puget Sound and Major Tributaries, 2009-10; Monitoring Location: PSTLA-MARINE02; Ecology EIM.
2. UW Tacoma Center for Urban Waters; Monitoring Location: Saltar's Point; Water Quality Portal.
3. Colias Dataset; Monitoring Locations: NSQ405 and NSQ406; Ecology EIM.
4. National Coastal Assessment, Environmental Management and Assessment Program (EMAP)-West 1999-2006 Coastal Monitoring, National Coastal Assessment (NCA) 1997-2006 Overall; Western Environmental Monitoring and Assessment Program (WEMAP) Coastal 1997-2000; Monitoring Locations: NCCA10-2233, Carr Inlet, East Anderson Island/North Cormorant Passage; Water Quality Portal.
5. WA State BEACH (Beach Environmental Assessment, Communication, and Health) Program; Monitoring Locations: PIE055A, PIE055B, PIE055C; Ecology EIM.
6. Washington State Department of Health Commercial Shellfish Map Viewer; Monitoring Station: Ketron Island 803.
7. Long-term marine water column monitoring 1999-present; Monitoring Station: GOR001; Ecology EIM.

1. Water Quality Limited Waters

The State of Washington's 2018 Integrated Report Section 5 (CWA § 303(d)) lists the grid cell of Puget Sound (Solo Point) to which the facility discharges as impaired by enterococci bacteria.

While the specific area of discharge is not impaired for dissolved oxygen (DO), low levels of DO have been measured throughout Puget Sound. Ecology has identified

nitrogen as a primary human source contributor to DO depletion and, with their Salish Sea Model, determined that all WWTPs discharging to Puget Sound may contribute to impairments elsewhere in the Sound.

IV. Effluent Limitations and Monitoring

Table 5, below, presents the effluent limits and monitoring requirements proposed in the draft permit. The existing effluent limits and monitoring requirements can be found in Appendix D.

The draft permit includes several changes to the effluent limitations and monitoring requirements. These are listed in Part I.B.1, above, with additional detail below.

Table 5: Draft Permit - Effluent Limits and Monitoring Requirements

Parameter	Units	Effluent Limits			Monitoring Requirements		
		Average Monthly	Average Weekly	Maximum Daily	Sample Location	Sample Frequency	Sample Type
Parameters with Effluent Limits							
Flow	MGD	6.7	—	Report[1]	Effluent	Continuous	Measure
Biochemical oxygen demand (BOD_5)	mg/L	30	45	—	Influent and effluent	5/week	24-hour composite
	lbs/day	1,676	2,515	—			
BOD_5 percent removal	%	85 (min.)	—	—	Percent Removal[2]	Monthly	Calculation
Total suspended solids (TSS)	mg/L	30	45	—	Influent and effluent	5/week	24-hour composite
	lbs/day	1,676	2,515	—			
TSS percent removal	%	85 (min.)	—	—	Percent Removal[2]	Monthly	Calculation
Enterococci	#/100 mL	Geometric mean: 30 No more than 3 samples exceeding 110			Effluent	Daily	Grab
Fecal coliform	#/100 mL	200	400	—	Effluent	Daily	Grab
pH	s.u.	6.0 – 8.5			Effluent	Daily	Grab
Total petroleum hydrocarbons	mg/L	—	—	10	Influent and effluent	Quarterly[3]	Grab[4]
	lbs/day	—	—	559			Calculation
	mg/kg dry weight			Report	Sludge	Once within 30 days of influent sample[3]	Grab[4]
Total inorganic nitrogen (TIN)	mg/L	3.0	Report	—	Effluent	2/week	Calculated[5]
	lbs/day	168	Report	—			
Report Parameters							
Temperature	°C	—	—	Report	Effluent	Daily	Grab
Total residual chlorine	mg/L	—	—	Report	Effluent	Monthly	Grab
Per- and Polyfluoroalkyl Substances (PFAS)[6]	ng/L	—	—	Report	Influent and effluent	Quarterly[3]	24-hour composite
	mg/kg dry weight	—	—	Report	Sludge	Quarterly, within 30 days of influent sample[3]	Grab

Parameter	Units	Effluent Limits			Monitoring Requirements		
		Average Monthly	Average Weekly	Maximum Daily	Sample Location	Sample Frequency	Sample Type
Polybrominated diphenyl ethers (PBDEs)	µg/L	—	—	Report	Influent and effluent	2/year	Grab
$CBOD_5$	mg/L	Report	--	Report	Influent and effluent	2/week	24-hour composite
Nitrate + Nitrite	mg/L as N	Report	--	Report	Influent	Monthly	24-hour composite
					Effluent	2/week	24-hour composite
Total ammonia	mg/L as N	Report	--	Report	Influent and effluent	2/week	24-hour composite
Total Kjeldahl nitrogen	mg/L as N	—	—	Report	Influent and effluent	Monthly	24-hour composite
Total organic carbon	mg/L as N	Report	--	Report	Effluent	Quarterly[3]	24-hour composite
Total phosphorus	mg/L	—	—	Report	Effluent	2/year	24-hour composite
Whole effluent toxicity (WET) testing (chronic)	TU_c	—	—	Report	Effluent	Annual	24-hour composite
1,2,4-trichlorobenzene	µg/L	—	—	Report	Effluent	2/year	24-hour composite
Effluent Testing for Pretreatment and Permit Renewal							
Metals (total recoverable), cyanide, and total phenols[7]	µg/L	—	—	Report	Influent and effluent	Quarterly[3]	See note 8
	mg/kg dry weight	—	—	Report	Sludge	Quarterly, within 30 days of influent sample[3]	Grab
Volatile organic, acid-extractable, and base-neutral compounds[7]	µg/L	—	—	Report	Influent and effluent	Annual	See note 8
	mg/kg dry weight	—	—	Report	Sludge	Annual, within 30 days of influent sample	Grab
Permit application additional effluent testing[9]	See Note 9				Effluent	Annual	See note 9
Sludge Monitoring for Land Application							
Abide by the limitations and monitoring requirements established by 40 CFR Part 503.							

1. Report daily flows on days when collecting total ammonia and nitrate plus nitrite samples (and calculating TIN)
2. The monthly average percent removal must be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month using the following equation: (average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration x 100. Influent and effluent samples must be taken over approximately the same time period.
3. Quarters are defined as: January 1 to March 31; April 1 to June 30; July 1 to September 30; and October 1 to December 31.
4. TPH samples must be taken as a grab sample set (one grab for NWTPH-Gx and one grab for NWTPH-Dx).
5. TIN (mg/L) as N = Total Ammonia (mg/L as N) + Nitrate plus Nitrite (mg/L as N).
6. See Permit Part I.B.7.
7. Pollutants in Table 2, Appendix J of 40 CFR Part 122. See Part II.C.7 of the Permit for specific instructions.

Parameter	Units	Effluent Limits			Monitoring Requirements		
		Average Monthly	Average Weekly	Maximum Daily	Sample Location	Sample Frequency	Sample Type
8. The required sample type is 24-hour composite, except for cyanide, volatile organics and phenols, which must be taken as a minimum of 2 grab samples and separately analyzed in place of each 24-hour composite. Cyanide grab samples shall consist of a minimum of two samples collected at intervals of 15 minutes or greater within a 24-hour period (with the maximum of the two values reported). 9. Additional Effluent Testing – see NPDES Permit Application Form 2A, Tables B and C, and Permit Part I.B.6 for the list of pollutants to be included in this testing. The Permittee must use sufficiently sensitive analytical methods in accordance with Permit Part I.B.3. Where applicable, effluent monitoring required by other conditions of this permit may be used to satisfy this requirement.							

A. Basis for Effluent Limits and Monitoring Requirements

In general, the CWA requires that the effluent limits for a particular pollutant be the more stringent of either TBELs or WQBELs. TBELs are set according to the level of treatment that is achievable using available technology. A WQBEL is designed to ensure that the WQS applicable to a waterbody are being met and may be more stringent than TBELs.

CWA § 308 and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality.

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples must be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) or as specified in the permit.

1. Pollutants of Concern

Pollutants of concern are those that either have TBELs or may need WQBELs. The EPA identifies pollutants of concern for the discharge based on those which:

- Have a TBEL
- Have an assigned wasteload allocation (WLA) from a Total Maximum Daily Load (TMDL)
- Had an effluent limit in the previous permit
- Are present in the effluent monitoring. Monitoring data are reported in the application and DMR and any special studies
- Are expected to be in the discharge based on the nature of the discharge

The wastewater treatment process for this facility includes both primary and secondary treatment and UV disinfection. While not currently in use, the facility also has tertiary membrane filtration. Pollutants expected in the discharge from a facility

with this type of treatment, include but are not limited to: BOD_5, TSS, *E. coli* bacteria, total residual chlorine, pH, ammonia, temperature, phosphorus, and DO.

Based on this analysis, pollutants of concern are as follows:

- 1,2,4-trichlorobenzene
- 2,4-dinitrophenol
- Acetone
- Ammonia
- Antimony
- Arsenic
- BOD_5
- Cadmium
- $CBOD_5$
- Chlorine
- Chloroform
- Chromium
- Copper
- Dissolved oxygen (DO)
- Enterococci bacteria
- Ethylene glycol
- Fecal coliform bacteria
- Lead
- Mercury
- Molybdenum
- Naphthalene
- Nickel
- Nitrate + Nitrite
- PBDEs
- PFAS
- pH
- Phosphorus
- Propylene glycol
- Silver
- Temperature
- TKN
- TOC
- Total petroleum hydrocarbons
- TSS
- Whole Effluent Toxicity
- Zinc

2. Technology-Based Effluent Limits (TBELs)

a. Federal Secondary Treatment Effluent Limits

The CWA requires publicly owned treatment works (POTWs) to meet performance-based requirements based on available wastewater treatment technology. CWA § 301 established a required performance level, referred to as "secondary treatment," which POTWs were required to meet by July 1, 1977. The EPA has developed and promulgated "secondary treatment" effluent limitations, which are found in 40 CFR 133.102. These TBELs apply to certain municipal WWTPs and identify the minimum level of effluent quality attainable by application of secondary treatment in terms of BOD_5, TSS, and pH. The

federally promulgated secondary treatment effluent limits are listed in Table 6. For additional information and background refer to Part 5.1 *Technology Based Effluent Limits for POTWs* in the EPA's NPDES Permit Writers' Manual (2010a).

The JBLM Solo Point WWTP is an FOTW, not a POTW. Where effluent guidelines have not been promulgated by the EPA, the CWA § 402(a)(1) and 40 CFR § 125.3 require the permit writer to establish technology based effluent limits on a case-by-case basis based on Best Professional Judgment (BPJ). Since the JBLM Solo Point WWTP's treatment process and wastewater sources are nearly identical to a POTW, the EPA has applied the POTW secondary treatment effluent limits to this permit, based on BPJ.

Table 6: Secondary Treatment Effluent Limits

Parameter	30-day average	7-day average
BOD_5	30 mg/L	45 mg/L
TSS	30 mg/L	45 mg/L
Removal for BOD_5 and TSS (concentration)	85% (minimum)	--
pH	within the limits of 6.0 - 9.0 s.u.	
Source: 40 CFR 133.102		

i. *Mass-Based Limits*

40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, except under certain conditions. 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. Since the JBLM Solo Point WWTP's treatment process and wastewater sources are nearly identical to a POTW, the EPA has used the design flow to calculate mass limits for this facility. The mass-based limits are expressed in pounds per day and are calculated as follows:

Mass based limit = concentration limit (mg/L) × design flow (mgd) × 8.34[5]

Since the design flow for this facility is 6.7 mgd, the technology-based mass limits for BOD_5 and TSS are calculated as follows:

Average Monthly Limit = 30 mg/L × 6.7 mgd × 8.34 = 1,676 lbs/day

Average Weekly Limit = 45 mg/L × 6.7 mgd × 8.34 = 2,515 lbs/day

ii. *Monitoring*

The draft permit proposes to reduce the monitoring frequency for BOD_5 and TSS from daily to five times per week.

The average effluent concentrations of BOD_5 and TSS are 22% and 15%, respectively, of the average monthly effluent limits (30 mg/L). Based on

[5] 8.34 is a conversion factor equal to the density of water in pounds per gallon.

these ratios of average discharges to average monthly limits, the EPA's Interim Guidance for Performance-Based Reduction of NPDES Permit Monitoring Frequencies (1996) states that monitoring frequencies could be reduced from daily, in the previous permit, to once per week. However, the recommended minimum monitoring frequency for BOD_5 and TSS in Chapter 13, Section 2.1.3 of Ecology's Water Quality Program Permit Writer's Manual (2018), for activated sludge POTWs with design flows greater than 5 mgd, is 5 times per week. The EPA proposes revised monitoring frequencies for BOD_5 and TSS consistent with the recommended minimum monitoring frequencies for POTWs of similar size to the JBLM Solo Point WWTP in Ecology's Permit Writer's Manual.

b. Nutrients

As established in Part IV.A.1, several forms of nitrogen and DO are pollutants of concern. TIN, the combination of ammonia and nitrate plus nitrite, is the primary bioavailable component for algal growth, which drives eutrophication and DO depletion in Puget Sound.

Under 40 CFR 125.3(c), technology-based treatment requirements may be imposed on a case-by-case basis where the EPA has not promulgated effluent limitations for the specific pollutant. The permit writer must apply the factors set forth in 40 CFR § 125.3(d)(3) which includes the consideration of appropriate technology for the category or class of point sources of which the applicant is a member, based upon all available information, and any unique factors relating to the applicant. In setting best professional judgement (BPJ) case-by-case limitations based on best available technology (BAT) pursuant to 40 CFR 125.3(c), the EPA considered the following factors:

(i) The age of equipment and facilities involved;

(ii) The process employed;

(iii) The engineering aspects of the application of various types of control techniques;

(iv) Process changes;

(v) The cost of achieving such effluent reduction; and

(vi) Non-water quality environmental impact (including energy requirements).

A discussion of each of the factors is presented below.

<u>The age of equipment and facilities involved</u>

As stated in Part II.A.2 above, substantial upgrades to the facility, including biological nutrient removal and tertiary membrane filtration, were completed in August 2016. These facilities are within their useful lives; thus the age of the equipment and facilities involved is not a barrier to meeting TBELs for TIN.

The process employed

As stated in Part II.A.2 above, the facility uses bioreactors for four-stage Bardenpho biological nutrient removal with optional supplemental carbon (methanol) addition for nitrogen removal, and tertiary membrane filtration. These processes are specifically designed to remove nitrogen from municipal wastewater. The supplemental application materials received on March 29, 2017, state that the facility's design nitrogen removal rate is 90%.

The engineering aspects of various types of control techniques

As stated above, the existing facility is engineered to remove 90% of the nitrogen from the influent. Section 8.4 of the EPA's *Nutrient Control Design Manual* (2010b) states that the four-stage Bardenpho process can achieve effluent total nitrogen concentrations between 3 and 5 mg/L. Note that this includes organic nitrogen, which is excluded from the proposed effluent limitation for TIN.

Process changes

As stated above, the existing treatment process is engineered to remove 90% of the nitrogen from the influent. No process changes will be necessary to achieve the proposed TIN limit.

The cost of achieving such effluent reduction

Because the existing treatment process is engineered to remove 90% of the nitrogen from the influent and no process changes will be necessary to achieve the proposed TIN limit, costs of achieving effluent reductions will be limited to potentially higher operating and chemical (e.g., methanol) costs relative to those necessary to comply with the previous permit. There will also be costs associated with more frequent monitoring of TIN (ammonia, nitrate plus nitrite) to determine compliance with the new TIN effluent limitations. Unlike POTWs, federal facilities obtain their funding through appropriations, not through ratepayer fees. Thus, FOTWs do not need to rely upon increasing ratepayer fees for increased monitoring or other operational costs.

Non-water quality environmental impact (including energy requirements)

The EPA does not anticipate any significant non-water quality environmental impacts as a result of the new TBEL for TIN. Energy considerations for nutrient removal are discussed in Sections 2.9.1 and 8.2.6 of the EPA's *Nutrient Control Design Manual* (2010b).

Establishment of TBEL for TIN

Based on the above discussion, the EPA concludes that a TBEL of 3 mg/L TIN (monthly average) is BAT for the Solo Point WWTP. Consistent with 40 CFR 122.45(f), a mass limit has also been calculated based on the design flow of the FOTW as follows:

Average Monthly Limit = 3 mg/L × 6.7 mgd × 8.34 = 168 lbs/day

i. *Monitoring*

As a result of their findings described in Part III.B.1, Ecology issued the Puget Sound Nutrient General Permit in 2021. On June 18, 2025 Ecology proposed for public comment revisions to the PSNGP, which was previously invalidated "insofar as it is mandatory", that make coverage under the permit optional. The original and draft modified PSNGP exclude coverage of federal facilities, which are permitted by the EPA. The EPA proposes nutrient monitoring at JBLM Solo Point that mirrors the monitoring requirements in the PSNGP. The draft permit includes twice weekly effluent monitoring for the components of TIN (ammonia, nitrate plus nitrite), twice weekly influent ammonia monitoring, and monthly influent nitrate plus nitrite monitoring. Since very little nitrate plus nitrite is found in wastewater influent, the draft permit proposes less frequent monitoring than for ammonia.

The four-stage Bardenpho process involves the oxidation of ammonia to nitrite and then nitrate (nitrification), and reduction of nitrate to nitrogen gas (denitrification), effectively removing nitrogen from the system. Microorganisms within the treatment process convert inorganic nitrogen into organic nitrogen, and the biomass is retained by settled solids. Excess biomass is removed through wasting sludge. TIN in the effluent represents the ammonia, nitrate, and nitrite that remains after treatment.

Total Kjeldahl Nitrogen (TKN) is an important parameter for understating nitrification efficiency and provides the facility with the ability to evaluate the biological treatment system. Comprised of ammonia plus total organic nitrogen, TKN allows the amount of organic nitrogen in a wastewater sample to be quantified. Generally, the secondary treatment process converts most of the dissolved organic nitrogen to ammonia where it is available to the biota of the treatment system. Settling removes most of the particulate organic carbon. This parameter is also valuable for use in Salish Sea Model scenarios. The EPA proposes monthly influent and effluent TKN monitoring.

Carbonaceous BOD ($CBOD_5$), a subset of BOD_5, measures the amount of DO required for biological oxidation of carbon compounds in a wastewater sample. Unlike BOD_5, the $CBOD_5$ analysis excludes the oxygen demand for nitrogen species and is more appropriate where plants have an incomplete conversion of ammonia to nitrate. When coupled with the BOD_5 monitoring requirement in permittee's individual NPDES permits, this parameter provides a more complete picture of the treatment performance and carbon removal. The permittee can use BOD_5 and $CBOD_5$ to track operation efficiencies by calculating percent removal using influent and effluent concentrations.

Total Organic Carbon (TOC) provides the EPA with the ability to quantify the amount of organic, carbon containing pollution discharged from the facility.

Ecology's Environmental Assessment Program has identified carbon as a secondary nutrient driving eutrophication in the Salish Sea. The EPA intends this once per month effluent monitoring to develop correlations with BOD_5/$CBOD_5$. Salish Sea Model scenarios utilize BOD as a surrogate for available carbon. Measurements of TOC will help to refine the relationship between BOD_5/$CBOD_5$ and available carbon.

c. Total Petroleum Hydrocarbons

Because at least one sizeable petroleum hydrocarbon slug made its way into the treatment plant in the past, and TPH continues to be detected in the effluent, the draft permit includes a TPH limit. The previous permit established a BPJ TBEL of 10 mg/L (maximum daily limit), based on the ability of simple oil/water separator technology to recover free product from water, as described in Ecology's Stormwater Management Manual for Western Washington (2024). The draft permit proposes to carry forward this TBEL. The EPA will reconsider the need for a limit at the next permit reissuance.

Federal regulations state that effluent limits shall have limitations, standards or prohibitions expressed in terms of mass, with certain exceptions – none of which are applicable to the TPH limit for the Solo Point WWTP (40 CFR 122.45(f)). Thus, the draft permit proposes a mass limit for TPH in addition to the concentration limit from the previous permit.

Maximum Daily Limit = 10 mg/L × 6.7 mgd × 8.34 = 559 lbs/day

3. Water Quality-Based Effluent Limits (WQBELs)

a. Statutory and Regulatory Basis

CWA § 301(b)(1)(C) requires the development of limitations in permits necessary to meet WQS. Discharges to State or Tribal waters must also comply with conditions imposed by the State or Tribe as part of its certification of NPDES permits under CWA § 401. 40 CFR 122.44(d)(1) implementing CWA § 301(b)(1)(C) requires that permits include limits for all pollutants or parameters which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State or Tribal WQS, including narrative criteria for water quality. Effluent limits must also meet the applicable water quality requirements of affected States other than the State in which the discharge originates, which may include downstream States (40 CFR 122.4(d), 122.44(d)(4), see also CWA § 401(a)(2)).

The regulations require the permitting authority to make this evaluation using procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that WQS are met and must be consistent with

any available wasteload allocation for the discharge in an approved TMDL. If there are no approved TMDLs that specify wasteload allocations for this discharge; all of the WQBELs are calculated directly from the applicable WQS.

b. Reasonable Potential Analysis and Need for WQBELs

The EPA uses the process described in the *Technical Support Document for Water Quality-based Toxics Control* (*TSD*) (USEPA, 1991) to determine reasonable potential. To determine if there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for a given pollutant, the EPA compares the maximum projected receiving water concentration to the water quality criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential, and a WQBEL must be included in the permit.

In some cases, a dilution allowance or mixing zone is permitted. A mixing zone is a limited area or volume of water where initial dilution of a discharge takes place and within which certain water quality criteria may be exceeded (USEPA, 2014). While the criteria may be exceeded within the mixing zone, the use and size of the mixing zone must be limited such that the waterbody as a whole will not be impaired, all designated uses are maintained and acutely toxic conditions are prevented.

The Washington WQS at WAC 173-201A-400 provides Washington's mixing zone policy for point source discharges. The EPA's proposed mixing zones based on this policy are the same as those authorized in the previous permit. All dilution factors were calculated with the effluent flow rate set equal to the design flow of 6.7 mgd. The proposed mixing zones and dilution factors are summarized in Table 7. If there is any subsequent change in the mixing zones that results in a change to the permit limits, the EPA will determine if an additional comment period is necessary.

Table 7: Mixing Zones

Criteria Type	Mixing Zone Radius (ft)	Dilution Factor
Acute Aquatic Life	27 feet along the major axis and 23 feet along the minor axis	45.5
Chronic Aquatic Life	270 feet along the major axis and 230 feet along the minor axis	88.0
Human Health Carcinogen		88.0

The RPA and WQBEL calculations were based on mixing zones shown in Table 7. If Ecology revises the allowable mixing zone in its CWA Section 401 certification of this permit, RPA and WQBEL calculations will be revised accordingly.

The pollutants of concern are listed in Part IV.A.1. The applicable WQS for pollutants of concern are shown in Table 8, below.[6]

Table 8: Applicable Water Quality Standards

Pollutant	Designated Use	Criteria
BOD	--	N/A
DO	Aquatic Life Uses (Extraordinary)	7.0 mg/L
TSS	--	N/A
pH	Aquatic Life Uses (Extraordinary)	7.0 – 8.5, within the above range of less than 0.2 units.
Temperature	Aquatic Life Uses (Extraordinary)	13 °C (1-day maximum)
1,2,4 trichlorobenzene	Harvesting (human health organisms only)	0.037 µg/L
2,4-dinitrophenol	Harvesting (human health organisms only)	100 µg/L
2-nitrophenol	N/A	N/A
Acetone	N/A	N/A
Ammonia	Aquatic Life Uses (Extraordinary)	8.09 mg/L acute; 1.22 mg/L chronic (calculated)
Antimony	Harvesting (human health organisms only)	90 µg/L
Arsenic	Harvesting (human health organisms only)	0.14 µg/L (inorganic arsenic)
	Aquatic Life Uses (Extraordinary)	69.0 µg/L acute; 36.0 µg/L chronic (dissolved)
Cadmium	Aquatic Life Uses (Extraordinary)	33.0 µg/L acute; 7.9 µg/L (dissolved)
Chlorine	Aquatic Life Uses (Extraordinary)	13.0 µg/L acute; 7.5 µg/L chronic (total residual)
Chloroform	Harvesting (human health organisms only)	600 µg/L
Chromium VI	Aquatic Life Uses (Extraordinary)	1,100 µg/L acute; 50 µg/L chronic (dissolved)
Copper	Aquatic Life Uses (Extraordinary)	4.8 µg/L acute; 3.1 µg/L chronic (dissolved)
Enterococci	Primary Contact Recreation	Must not exceed a geometric mean value of 30 CFU or MPN per 100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample values exist) obtained within the averaging period exceeding 110 CFU or MPN per 100 mL.
Ethylene Glycol	N/A	N/A
Fecal Coliform	Shellfish Harvesting	Must not exceed a geometric mean value of 14 CFU or MPN per 100 mL, and not have more than 10 percent of all samples (or any single sample when less than 10 sample points exist) obtained for calculating the geometric mean value exceeding 43 CFU or MPN per 100 mL.
Lead	Aquatic Life Uses (Extraordinary)	210 µg/L acute; 8.1 µg/L chronic (dissolved)
Mercury	Aquatic Life Uses (Extraordinary)	1.8 µg/L acute; 0.025 µg/L chronic
Methylmercury	Harvesting (human health organisms only)	0.03 mg/kg
Molybdenum	N/A	N/A
Naphthalene	Aquatic Life Uses (Extraordinary)	2,350 µg/L acute (from Quality Criteria for Water 1986)
Nickel	Harvesting (human health organisms only)	100 µg/L

[6] WAC 173-201A Part II, except aquatic life criteria for pollutants in 173-201A-240, which have not yet been approved by the EPA. Applicable aquatic life criteria are found here: https://www.epa.gov/system/files/documents/2025-03/wa_wqs_0011_122024.pdf.

Pollutant	Designated Use	Criteria
	Aquatic Life Uses (Extraordinary)	74 µg/L acute; 8.2 µg/L (dissolved)
PBDEs	N/A	N/A
Propylene Glycol	N/A	N/A
Silver	Aquatic Life Uses (Extraordinary)	1.9 µg/L acute (dissolved)
Zinc	Harvesting (human health organisms only)	1,000 µg/L
	Aquatic Life Uses (Extraordinary)	90.0 µg/L acute; 81.0 µg/L chronic (dissolved)
Toxics (Narrative)	N/A	Toxic, radioactive, or deleterious material concentrations must be below those which have the potential, either singularly or cumulatively, to adversely affect characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent upon those waters, or adversely affect public health.

The RPA results, WQBELs, and related monitoring requirements for specific parameters are summarized below. The calculations are provided in Appendix D.

i. *1,2,4-trichlorobenzene*

1,2,4-trichlorobenzene was measured at quantifiable concentrations in the effluent. Applicable water quality criteria are listed in Table 8. The EPA has determined that the discharge from the Solo Point WWTP does not have the reasonable potential to cause or contribute to excursions above the applicable water quality criteria for 1,2,4-trichlorobenzene, thus no effluent limits are proposed.

However, the maximum reported effluent concentration of 1,2,4-trichlorobenzene (Table 2) was substantially higher than the applicable water quality criterion (Table 8). The draft permit therefore proposes twice-per-year effluent monitoring of 1,2,4-trichlorobenzene. This will result in 10 samples for 1,2,4-trichlorobenzene within the 5-year permit term, enough data to determine a standard deviation and mean with sufficient confidence (*TSD*).

ii. *2,4-dinitrophenol*

2,4-dinitrophenol was measured at a detectable concentration in the effluent. Applicable water quality criteria are listed in Table 8. The EPA has determined that the discharge from the Solo Point WWTP does not have the reasonable potential to cause or contribute to excursions above the applicable water quality criteria for 2,4-dinitrophenol, thus no effluent limits are proposed. The draft permit proposes continued monitoring for 2,4-dinitrophenol for reapplication and pretreatment requirements.

iii. *Acetone*

Acetone was measured at quantifiable concentrations during effluent monitoring to fulfill pretreatment requirements of the previous permit.

However, acetone was not among the list of pollutants required to be monitored. The State of Washington does not have numeric water quality criteria for acetone, and no US state has numeric water quality criteria for acetone which are applicable to saltwater. The most stringent water quality criterion for acetone in any US state is a human health criterion of 3,500 µg/L established by the State of Pennsylvania. The maximum measured effluent concentration of acetone is 8.54 µg/L.

The maximum effluent concentration of acetone is 3 orders of magnitude lower than the most stringent numeric criterion established by any U.S. state for this compound. Therefore, the EPA concludes that the discharge of acetone from the Solo Point WWTP does not have the reasonable potential to cause or contribute to excursions above Washington's narrative criterion for toxic substances (WAC-173-201A-260(2)(a)). No limits are proposed and the EPA does not propose monitoring for acetone.

iv. *Ammonia*

Marine ammonia criteria are based on a formula which relies on the pH, temperature and the salinity of the receiving water, because the fraction of ammonia present as the toxic, un-ionized form increases with increasing pH and temperature and decreases with salinity. Therefore, the criteria become more stringent as pH and temperature increase and less stringent as salinity increases. Table 9, below, details the equations used to determine water quality criteria for ammonia. The calculated ammonia criteria include an acute criterion of 8.09 mg/L and a chronic criterion of 1.22 mg/L.

Table 9: Ammonia Criteria

Marine Un-ionized Ammonia Criteria Calculation

Calculation of seawater fraction of un-ionized ammonia from Hampson (1977). Un-ionized ammonia criteria for salt water are from EPA 440/5-88-004. Revised 19-Oct-93.

INPUT	
1. Receiving Water Temperature, deg C (90th percentile):	14.5
2. Receiving Water pH, (90th percentile):	8.0
3. Receiving Water Salinity, g/kg (10th percentile):	27.7
4. Pressure, atm (EPA criteria assumes 1 atm):	1.0
5. Unionized ammonia criteria (mg un-ionized NH_3 per liter) from EPA 440/5-88-004:	
Acute:	0.233
Chronic:	0.035
OUTPUT	
Using mixed temp and pH at mixing zone boundaries?	No
1. Molal Ionic Strength (not valid if >0.85):	0.567
2. pKa8 at 25 deg C (Whitfield model "B"):	9.311
3. Percent of Total Ammonia Present as Unionized:	2.4%
4. Total Ammonia Criteria (mg/L as NH_3):	
Acute:	9.84
Chronic:	1.48
RESULTS	
Total Ammonia Criteria (mg/L as N)	
Acute:	**8.09**
Chronic:	**1.22**

A reasonable potential calculation showed that the Solo Point WWTP discharge does not have reasonable potential to cause or contribute to an excursion of the water quality criteria for ammonia. Ammonia will be controlled indirectly by the proposed 3 mg/L TBEL for TIN, and twice weekly monitoring is proposed as part of monitoring for TIN (see Part 2.b.).

v. *Chlorine*

Applicable water quality criteria for chlorine are listed in Table 8. The facility now uses UV disinfection; however, chlorine is still measured at quantifiable concentrations in the effluent. According to the facility, the small measurable concentrations are likely a result of mild residual from the distribution water that enters the plant. As discussed in Part II.D, the single maximum daily effluent limit violation chlorine appears to be an outlier. A reasonable potential calculation showed that the discharge from the facility does not have the reasonable potential to cause or contribute to an excursion of the water quality criteria for chlorine. Therefore, the draft permit does not contain a WQBEL for chlorine. Since chlorine continues to be detected in the effluent, the draft permit proposes monthly monitoring for total residual chlorine.

vi. *Chloroform*

Chloroform was measured at a detectable level in the effluent. Applicable water quality criteria are listed in Table 8. The EPA has determined that the discharge from the Solo Point WWTP does not have the reasonable potential to cause or contribute to excursions above the applicable water quality criteria for chloroform, thus no effluent limits are proposed. The draft permit proposes continued monitoring for chloroform only in the requirements for reapplication.

vii. *DO, BOD_5, and Nitrogen*

Natural decomposition of organic material in wastewater effluent impacts DO in the receiving water at distances far outside of the regulated mixing zone. The BOD_5 concentration in an effluent sample indicates the amount of biodegradable material in the wastewater and estimates the magnitude of oxygen consumption the wastewater will generate in the receiving water. Discharges of BOD_5 in compliance with the TBELs are not expected to cause or contribute to an excursion of water quality criteria for DO.

Both Ecology and the EPA have recognized that there are nutrient-related DO impairments in Puget Sound. Ecology has identified nitrogen as a primary human source contributor to reduced DO concentrations. Total inorganic nitrogen (TIN) is the primary bioavailable component for algal growth which drives eutrophication and the existing DO impairments. In July 2017, Ecology launched the Puget Sound Nutrient Reduction Project to work on a collaborative plan to address human sources of nutrients in Puget Sound. In addition, Ecology refined the Salish Sea Model and concluded that all domestic WWTPs that discharge nitrogen to Puget Sound have reasonable potential to exceed the numeric DO criteria. The EPA has determined that the TBEL for TIN proposed in Part IV.A.2.b is sufficient to meet WQS.

viii. *Enterococci bacteria*

Applicable water quality criteria for enterococci are listed in Table 8.

There are no effluent data available for enterococci, as the WQS is new since the last issuance. The previous permit included effluent limits and monitoring requirements for fecal coliform (Table 2). However, the discharge has the reasonable potential to cause or contribute to excursions above WQS for enterococci because it is a discharge of treated sewage.

As stated above, the receiving water is listed as impaired due to elevated concentrations of enterococci. Therefore, there is no assimilative capacity to allow for a mixing zone for enterococci for this discharge and the applicable water quality criteria must be met at the point of discharge.

Regulations at 40 CFR 122.45(d)(2) require that effluent limitations for continuous discharges from POTWs be expressed as average monthly and average weekly limits, unless impracticable. Additionally, the terms "average monthly limit" and "average weekly limit" are defined in 40 CFR 122.2 as arithmetic (as opposed to geometric) averages. It is impracticable to properly implement a geometric mean criterion in a permit using monthly and weekly arithmetic average limits. The geometric mean of a given data set is equal to the arithmetic mean of that data set if and only if all of the values in that data set are equal. Otherwise, the geometric mean is always less than the arithmetic mean.

In order to ensure that the effluent limits are "derived from and comply with" the geometric mean water quality criterion, as required by 40 CFR 122.44(d)(1)(vii)(A), it is necessary to express the effluent limits as a monthly geometric mean limit of 30 CFU or MPN per 100 ml and a limit specifying that no more than 10 percent of samples may exceed 110 CFU or MPN per 100 ml.

ix. *Ethylene Glycol*

The previous permit required monitoring and reporting of ethylene glycol. The maximum effluent concentration of ethylene glycol is listed in Table 2. The State of Washington does not have numeric water quality criteria for ethylene glycol. The only numeric water quality criterion applicable to ethylene glycol in saltwater in the United States is a human health criterion for organisms only in Texas, which is 16,800 mg/L.

Since the maximum effluent concentration of ethylene glycol is 2 orders of magnitude lower than the only numeric criterion established by any U.S. state for this compound in saltwater, the EPA concludes that the discharge of ethylene glycol from the Solo Point WWTP does not have the reasonable potential to cause or contribute to excursions above Washington's narrative criterion for toxic substances (WAC-173-201A-260(2)(a)). No effluent limits are proposed and the EPA proposes to discontinue monitoring for ethylene glycol.

x. *Fecal Coliform*

Applicable water quality criteria for fecal coliform are listed in Table 9.

The State of Washington has promulgated a technology-based treatment standard for fecal coliform in WAC 173-221-040(2): "Fecal coliform limits shall not exceed a monthly geometric mean of 200 organisms/100 milliliters (mL), and a weekly geometric mean of 400 organisms per 100 mL." This standard was applied in the previous permit.

The 95th percentile weekly geometric mean effluent concentration is 26.5 MPN/100 mL and the weekly geometric mean treatment standard is 400 MPN/100 mL. The EPA has determined that even if the facility discharged at the treatment standard, the Solo Point WWTP would not have the reasonable potential to cause or contribute to excursions above the applicable water quality criteria for fecal coliform.

As discussed above, the draft permit proposes to maintain the state treatment standards for fecal coliform of 200 MPN/100 mL average monthly limit and 400 MPN/100 mL average weekly limit.

xi. *Metals with Numeric Water Quality Criteria*

Antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc (total recoverable) were measured at quantifiable concentrations in the effluent. Applicable water quality criteria are listed in Table 8.

Ambient water quality data are available for arsenic (dissolved and inorganic), cadmium, copper, lead, mercury, and zinc. The EPA has determined that the discharge from the Solo Point WWTP does not have the reasonable potential to cause or contribute to excursions above the applicable water quality criteria for these metals, thus no effluent limits are proposed.

Ambient water quality data are not available for antimony, inorganic arsenic, chromium (III or VI), silver, or nickel. Ecology's Permit Writer's Manual specifies that if reliable background data on chemical concentrations are not available, the permit writer should use zero as a default value. For inorganic arsenic RPA analysis, the EPA assumed all effluent arsenic to be inorganic. With these methods, the EPA determined that the discharge from the Solo Point WWTP does not have the reasonable potential to cause or contribute to excursions above the applicable water quality criteria for antimony, inorganic arsenic, chromium, silver or nickel.

Furthermore, the 95th percentile effluent concentrations for antimony, chromium, and nickel are significantly lower than the criteria (chromium (VI) criteria), and the 95th percentile effluent concentration for silver is roughly half of the acute criterion (therse is no chronic criterion). Accordingly, no effluent limits are proposed.

Continued monitoring is proposed for metals for reapplication and pretreatment requirements.

xii. *Molybdenum*

Molybdenum was measured at quantifiable concentrations in the effluent. There are no numeric state WQS for molybdenum that are applicable to marine waters.

The maximum reported effluent concentration of molybdenum is less than the lowest effect concentration in the Ecotox database for effects to mortality, reproduction or growth of saltwater organisms, which is 31.2 µg/L, reported by Tabouret, et al. (2012) for the growth of great scallops. Therefore, no effluent limits are proposed. The draft permit proposes continued monitoring for molybdenum as part of the pretreatment requirements.

xiii. *Naphthalene*

Naphthalene was measured at quantifiable concentrations in the effluent. Applicable water quality criteria are listed in Table 8. Based on available data, naphthalene was not measured at detectable concentrations in the receiving water, so a receiving water concentration of zero was used in the RPA. The EPA has determined that the discharge from the Solo Point WWTP does not have the reasonable potential to cause or contribute to excursions above the applicable water quality criteria for naphthalene, thus no effluent limits are proposed.

xiv. *PBDEs*

The previous permit required influent and effluent monitoring for PBDE congeners. Only one monitoring event used a sensitive analytical method (EPA Method 1614) and occurred after the facility's 2016 upgrade. Effluent data are listed in Table 2. The state of Washington does not have numeric water quality criteria for PBDE. However, PBDE-47, PBDE-99, PBDE-153 and PBDE-209 have demonstrated human health toxicity, indicated in the EPA's Integrated Risk Information System (IRIS).

Because the PBDE congeners detected in the effluent are toxic but lack applicable water quality criteria that would allow for the calculation of WQBELs, the EPA proposes BMP requirements for PBDE. Specifically, the draft permit requires the facility to identify and control sources of PBDE in industrial discharges to the treatment works.

To track the effectiveness of BMPs to reduce discharges of PBDE, the draft permit proposes twice-per year monitoring of PBDE in the influent and effluent. This will result in 10 samples for PBDE congeners within the 5-year permit term, enough data to determine a standard deviation and mean with sufficient confidence (*TSD*).

xv. *pH*

Applicable water quality criteria, listed in Table 8, require pH values of the receiving water to be within the range of 7.0 to 8.5 while the federal TBELs limit pH in the effluent to 6.0 to 9.0.

The previous permit limited pH in the effluent to a range of 6.0 to 8.5. The effluent pH range (5th percentile to 95th percentile) falls within the range of the previous limits, so the EPA assessed reasonable potential using the lower and upper end of that range. The pH reasonable potential calculations use effluent alkalinity, for which there is no data for the facility. The EPA used an alkalinity value that is an average from Washington major WWTPs.

The EPA determined that there is no reasonable potential to exceed the applicable water quality criteria if the permittee continues to comply with the previous permit's limit. Calculations are shown in Appendix D.

xvi. *Phosphorus*

The previous permit required monthly monitoring and reporting of phosphorus. The State of Washington does not have numeric water quality criteria for phosphorus.

As stated above, TIN has been selected as the nutrient indicator pollutant because TIN is the primary bioavailable component for algal growth in estuarine environments, which drives eutrophication and the existing DO impairments. Thus, the permit does not propose effluent limits for phosphorus. However, studies have suggested that phosphorus may also play a role in marine eutrophication (Conley, et al., 2009; Howarth & Marino, 2006).

POTWs with design flows greater than or equal to 0.1 mgd are required to report data for total phosphorus on the application for renewal of the NPDES permit. Since the JBLM Solo Point WWTP (an FOTW) has a treatment process and wastewater sources nearly identical to those of a POTW, the draft permit proposes twice-per-year effluent monitoring of total phosphorus. This will result in 10 samples for total phosphorus within the 5-year permit term, enough data to determine a standard deviation and mean with sufficient confidence (*TSD*).

xvii. *Propylene Glycol*

The previous permit required monitoring and reporting of propylene glycol. The maximum effluent concentration of propylene glycol is listed in Table 2. The State of Washington does not have numeric water quality criteria for propylene glycol, and no US state has numeric water quality criteria for propylene glycol which are applicable to saltwater.

The maximum effluent concentration is less than the no observed effect concentration in the Ecotox database for effects to mortality, reproduction or growth of saltwater organisms, which is 1000 mg/L, an LC0 (equivalent to an NOEC in this study) in this case reported by Adema (1987) for the leach *Chaetogammarus marinus*. Since the maximum effluent concentration of

propylene glycol is less than the lowest effect concentration in the Ecotox database for effects to mortality, reproduction or growth of saltwater organisms, EPA concludes that the discharge of propylene glycol from the Solo Point WWTP does not have the reasonable potential to cause or contribute to excursions above Washington's narrative criterion for toxic substances (WAC-173-201A-260(2)(a)). Therefore, no effluent limits are proposed and the EPA proposes to discontinue monitoring for propylene glycol.

xviii. *Temperature*

Effluent data for temperature are listed in Table 2, and applicable water quality criteria for temperature are listed in Table 8. The EPA has determined that the discharge of heat from the Solo Point WWTP causes a negligible change in the temperature of the receiving water and therefore does not have the reasonable potential to cause or contribute to excursions above WQS for temperature. Continued daily monitoring is included in the draft permit.

xix. *Total Petroleum Hydrocarbons*

The previous permit required monitoring and reporting of total petroleum hydrocarbons. The maximum effluent concentration of total petroleum hydrocarbons is listed in Table 2. The State of Washington does not have numeric water quality criteria for total petroleum hydrocarbons, and no US state has numeric water quality criteria for total petroleum hydrocarbons which are applicable to saltwater. However, the State of South Dakota does have a total petroleum hydrocarbons criterion of 10 mg/L for fish and wildlife propagation, recreation, and stock watering. This is identical to the TBEL for TPH proposed in the draft permit; therefore, a WQBEL is not proposed for TPH.

xx. *Whole Effluent Toxicity*

EPA and individual states implement three approaches to protect water quality. These approaches include chemical-specific control, toxicity testing control (i.e., whole effluent toxicity testing), and biological criteria/bioassessments (USEPA, 1991).

WET requirements in NPDES permits protect aquatic life from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests use small vertebrate and invertebrate species and/or plants to measure the aggregate toxicity of an effluent. The end point and results of WET tests are typically reported in acute and chronic toxic units, TUa and TUc, respectively. The TUa and TUc test results are treated the same as other reported permit

parameters and used in the same manner in the *TSD* calculations for determining reasonable potential and establishing WQBELs for WET.

As listed in Table 8, Washington WQS require that toxic, radioactive, or deleterious material concentrations must be below those which have the potential, either singularly or cumulatively, to adversely affect characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent upon those waters, or adversely affect public health. The previous permit required monitoring for whole effluent toxicity (WET). The monitoring results demonstrated no chronic or acute toxicity per the toxicity tests described in the previous permit. However, all of the monitoring occurred prior to the facility's upgrades in 2016. As such, the available WET data are not representative of the current treatment plant's effluent quality. Thus, the EPA has not used the WET data collected under the terms of the previous permit to conduct a RPA for WET.

The *TSD* provides guidance on determining reasonable potential to exceed criteria without effluent data in Section 3.2. Factors to consider include dilution, type of industry, existing data on toxic pollutants, history of compliance problems and toxic impact, and type of receiving water and designated use.

Given that substantial dilution is available (Table 7), that the facility does not have the reasonable potential to cause or contribute to excursions above water quality criteria for any toxic pollutants, there have been no violations of any effluent limits for toxic pollutants since late 2016, and monitoring demonstrated no toxicity prior to facility upgrades, the EPA concludes that the facility does not have the reasonable potential to cause or contribute to excursions above Washington's water quality criterion for toxicity.

Continued effluent monitoring for WET is nonetheless necessary to ensure that representative WET effluent data are available when the permit is reissued. The previous permit required both acute and chronic WET testing for reapplication, however, the draft permit proposes annual chronic WET monitoring. Chronic WET monitoring is required instead of acute because the chronic dilution factor is < 1:100 (Table 7). See the *TSD* at Section 3.3.3. The WET monitoring is required to occur on a rotating quarterly schedule.

c. Antibacksliding

CWA § 402(o) and 40 CFR §122.44(l) generally prohibit the renewal, reissuance or modification of an existing NPDES permit that contains effluent limits, permit conditions or standards that are less stringent than those established in the previous permit (i.e., anti-backsliding) but provides limited exceptions. For explanation of the antibacksliding exceptions refer to Chapter 7 of the EPA's Permit Writers' Manual *Final Effluent Limitations and Anti-backsliding* (2010a).

An anti-backsliding analysis was done for chlorine. The previous permit's chlorine effluent limits were WQBELs. As shown in Exhibit 7-2 of the EPA's Permit Writers' Manual (2010a) effluent limitations based on state standards may be revised based on Sections 303(d)(4) or 402(o)(2) of the CWA.

In this case, CWA Section 402(o)(2)(A) is applicable. After the previous permit was issued, the facility was upgraded with UV disinfection, so chlorine is no longer used to disinfect the effluent. This is a material and substantial alteration to the permitted facility. This alteration justifies the removal of the chlorine effluent limits because the source of chlorine in the discharge has been removed.

The removal of the chlorine limits also complies with antidegradation requirements, because, due to the absence of a source of chlorine in the discharge, the removal of chlorine limits will not result in increased discharges of chlorine, and therefore will not result in lower water quality.

4. Additional Effluent Monitoring

a. PFAS

Per- and polyfluoroalkyl substances (PFAS) are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Discharges of PFAS above certain levels may cause adverse effects to human health or aquatic life (USEPA, 2019; USEPA, 2022a). PFAS-related criteria for human health and aquatic life, however, have not yet been developed, thus WQS have not yet been established. As a result, developing numeric effluent limits at this time is infeasible.

In August 2020, JBLM finalized a Preliminary Assessment/Site Inspection report to assess if PFAS have been released to the environment on the base (JBLM, 2020). The Assessment identified 52 known/potential PFAS use, storage or disposal sites, including fire-fighting training, firefighting equipment testing/storage areas, emergency responses in hangars with aqueous film-forming foam (AFFF) fire suppression systems, AFFF storage areas, historical waterproofing operations, vehicle wash rack operations, laundry operations, and landfills. Of the identified areas, vehicle wash rack operations are included among the list of industrial users (IUs) of the treatment works at Solo Point, per past pretreatment reports.

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, consistent with the EPA's Memorandum entitled "Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs" (2022b), and because known IUs may discharge PFAS, the draft permit requires that the

permittee conduct quarterly influent, effluent, and sludge sampling for PFAS chemicals.

The draft permit also requires that the permittee inventory the IUs of the treatment works, to identify industrial users of the treatment works that may discharge PFAS chemicals to the collection system. The draft permit proposes to require that the permittee sample the IUs identified as potential PFAS sources at least once per year. The permittee must require IUs with detectable PFAS to implement BMPs to reduce or eliminate PFAS discharges to the facility.

The purpose of these monitoring and reporting requirements is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of WQBELs or local limits for IUs. The EPA is authorized to require this monitoring and reporting by CWA section 308(a). The permit conditions reflect the EPA's commitments in the PFAS Strategic Roadmap, which directs the Office of Water to leverage NPDES permits to reduce PFAS discharges to waterways "at the source and obtain more comprehensive information through monitoring on the sources of PFAS and quantity of PFAS discharged by these sources."

There is currently no analytical method approved in 40 CFR Part 136 for PFAS. As stated in 40 CFR 122.44(i)(1)(iv)(B), in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters. Therefore, the Permit specifies that until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using EPA Method 1633A.

b. Monitoring Requirements for Renewal

The permit also requires the permittee to perform effluent monitoring required by Tables B, C, D, and E of the NPDES Form 2A application, so that these data will be available when the permittee applies for a renewal of its NPDES permit. See also Appendix J to 40 CFR Part 122.

POTW applicants with a design flow of at least 1 mgd or that have or must develop a pretreatment program must sample and analyze for any pollutants with applicable WQS, in addition to the pollutants listed in Table B and Table C of NPDES Application Form 2A (40 CFR 122.21(j)(4)(iv)). Although the JBLM Solo Point WWTP is not a POTW, since its treatment process and wastewater sources are nearly identical to a POTW, the EPA will require the same monitoring.

The previous permit required monitoring for the pollutants listed in Appendix J, Table 2 of 40 CFR 122, but did not require monitoring for some pollutants not listed therein but for which there are applicable WQS. Such pollutants are listed in Table 11, below, and Table 2 of the draft permit. The permittee must sample

and analyze for the pollutants listed in Table 2 of the draft permit and report the results in Table D of Form 2A and on appropriate DMRs.

Table 10: Pollutants with applicable WQS not listed in Appendix J, Table 2 of 40 CFR 122

2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)	4,4'-DDD
4,4'-DDE	4,4'-DDT
Aldrin	Alpha-BHC
Alpha-endosulfan	Beta-BHC
Beta-endosulfan	Chlordane
Chlorpyrifos	Dieldrin
Endosulfan sulfate	Endrin
Endrin Aldehyde	Heptachlor
Heptachlor epoxide	Lindane
Total polychlorinated biphenyls (PCBs)	Toxaphene

B. Surface Water Monitoring

In general, surface water monitoring may be required for pollutants of concern to assess the assimilative capacity of the receiving water for the pollutant. In addition, surface water monitoring may be required for pollutants for which the water quality criteria are dependent and to collect data for TMDL development if the facility discharges to an impaired water body.

The draft permit requires ambient monitoring for five parameters (Part I.C of the permit). The permittee must conduct monthly monitoring for DO, ammonia, temperature, pH, and salinity within the receiving water from May through October (the critical season) each year, beginning the first May of the permit term. These data will be used to better characterize the immediate receiving water for parameters with no or old ambient data. Specifically, the EPA aims to understand the local DO conditions, calculate more accurate site-specific ammonia criteria, and conduct an RPA for ammonia during the next permit development process.

Surface water measurements must be at a consistent location in the receiving water, nearby, but outside of, the effluent chronic mixing zone (which is described in Table 7).

Table 12 summarizes the proposed surface water monitoring requirements for the draft permit. Surface water monitoring results must be submitted with the DMR.

Table 11. Surface Water Monitoring in Draft Permit

Parameter	Units	Monitoring Frequency	Sample Type
DO	mg/L	1/month, May to October	Grab
Ammonia (as N)	mg/L	1/month, May to October	Grab
Temperature	°C	1/month, May to October	Grab

pH	s.u.	1/month, May to October	Grab
Salinity	ppt	1/month, May to October	Grab

C. Electronic Submission of Discharge Monitoring Reports

The draft permit requires that the permittee submit DMR data electronically using NetDMR. NetDMR is a national web-based tool that allows DMR data to be submitted electronically via a secure Internet application.

The EPA currently conducts free training on the use of NetDMR. Further information about NetDMR, including upcoming trainings and contacts, is provided on the following website: https://netdmr.epa.gov.

D. Sludge (Biosolids) Requirements

EPA Region 10 separates wastewater and sludge permitting. The EPA has authority under the CWA to issue separate sludge-only permits for the purposes of regulating biosolids. The EPA may issue a sludge-only permit to each facility at a later date, as appropriate.

Until future issuance of a sludge-only permit, sludge management and disposal activities at each facility continue to be subject to the national sewage sludge standards at 40 CFR Part 503 and any requirements of the State's biosolids program. The Part 503 regulations are self-implementing, which means that facilities must comply with them whether or not a permit has been issued.

V. Other Permit Conditions

A. Quality Assurance Plan

American Water Military Services Joint Base Lewis McChord is required to update the Quality Assurance Plan (QAP) within 180 days of the effective date of the permit. The QAP must consist of standard operating procedures the permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The plan must be retained on site and made available to the EPA upon request.

B. Operation and Maintenance Plan

The permit requires American Water Military Services Joint Base Lewis McChord to properly operate and maintain all facilities and systems of treatment and control. Proper operation and maintenance is essential to meeting discharge limits, monitoring requirements, and all other permit requirements at all times. The permittee is required to develop and implement an operation and maintenance plan for their facility within 180 days of the effective date of the permit. The plan must be retained on site and made available to the EPA upon request.

C. Sanitary Sewer Overflows (SSOs) and Proper Operation and Maintenance of the Collection System

SSOs are not authorized under this permit. The permit contains language to address SSO reporting and public notice and operation and maintenance of the collection system. The permit requires that the permittee identify SSO occurrences and their causes. In addition, the permit establishes reporting, record keeping and third-party notification of SSOs. Finally, the permit requires proper operation and maintenance of the collection system.

The following specific permit conditions apply:

Immediate Reporting – The permittee is required to notify the EPA of an SSO within 24 hours of the time the permittee becomes aware of the overflow. (See 40 CFR 122.41(l)(6))

Written Reports – The permittee is required to provide the EPA a written report within five days of the time it became aware of any overflow that is subject to the immediate reporting provision. (See 40 CFR 122.41(l)(6)(i)).

Third Party Notice – The permit requires that the permittee establish a process to notify specified third parties of SSOs that may endanger health due to a likelihood of human exposure; or unanticipated bypass and upset that exceeds any effluent limitation in the permit or that may endanger health due to a likelihood of human exposure. The permittee is required to develop, in consultation with appropriate authorities at the local, county, tribal and/or state level, a plan that describes how, under various overflow (and unanticipated bypass and upset) scenarios, the public, as well as other entities, would be notified of overflows that may endanger health. The plan should identify all overflows that would be reported and to whom, and the specific information that would be reported. The plan should include a description of lines of communication and the identities of responsible officials. (See 40 CFR 122.41(l)(6)).

Record Keeping – The permittee is required to keep records of SSOs. The permittee must retain the reports submitted to the EPA and other appropriate reports that could include work orders associated with investigation of system problems related to a SSO, that describes the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the SSO. (See 40 CFR 122.41(j)).

Proper Operation and Maintenance – The permit requires proper operation and maintenance of the collection system. (See 40 CFR 122.41(d) and (e)). SSOs may be indicative of improper operation and maintenance of the collection system. The permittee may consider the development and implementation of a capacity, management, operation and maintenance (CMOM) program.

The permittee may refer to the Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (EPA 305-B-05-002). This guide identifies some of the criteria used by EPA inspectors to evaluate a collection system's management, operation and maintenance program activities.

Owners/operators can review their own systems against the checklist (Chapter 3) to reduce the occurrence of sewer overflows and improve or maintain compliance.

D. Pretreatment Requirements

The proposed permit requires the implementation of a pretreatment program at JBLM Solo Point. The objectives of the pretreatment program are: 1) to prevent the introduction of pollutants to the treatment system that will interfere with the plant's operation, that could pass untreated through the system and contribute to water quality problems, or otherwise be incompatible with the treatment plant, and 2) to improve opportunities to reclaim and recycle domestic and industrial wastewater and sludges.

During April and May of 2006, records indicate that at least one sizeable petroleum hydrocarbon slug made its way into the treatment plant, impacting the quality of the biosolids. The facility subsequently developed a Memorandum of Understanding with Ecology whereby a pretreatment program would be established at JBLM Solo Point. As noted in the Army Corps of Engineers' Protocol for the Preparation of Installation Pretreatment Programs, Army installations are not required to have pretreatment programs pending further interpretation of the Federal Facility Compliance Act (FFCA). However, JBLM Solo Point has taken the initiative to develop, with assistance from Ecology, a pretreatment program consistent with guidelines for POTWs in 40 CFR Part 403 in order to obtain and maintain compliance with the requirements of Section 108 of the FFCA (FFCA-108).

Under the federal Solid Waste Disposal Act (SWDA), there is an exclusion from the definition of solid waste and therefore the definition of hazardous waste (HW) for mixtures of domestic sewage and other wastes that discharge to a POTW. The EPA further expanded this exclusion (40 CFR 261.4) to include industrial wastewater point source discharges permitted under Section 402 of the Clean Water Act (CWA). FFCA-108 grants conditional HW exclusion for mixtures of HW and domestic sewage discharged to a FOTW when one of several conditions is met, including the condition that the discharge is subject to a pretreatment standard issued under the CWA and it is in compliance with the standard (1992). JBLM Solo Point has modeled its pretreatment program procedures on 40 CFR Part 403, thus meeting the criteria of a pretreatment program as required by the FFCA for the conditional HW exclusion.

In addition to obtaining the conditional HW exclusion for mixtures of HW and domestic sewage discharged to the FOTW, implementing the pretreatment program will help protect the quality of biosolids at the FOTW. Protecting the biosolids with a pretreatment program can decrease sludge disposal costs, achieve a higher classification of biosolids, or simply help to maintain compliance with limits set according to the biosolids rule (40 CFR Part 503).

Furthermore, Army Regulation 200-1 requires that discharges to Army treatment plants comply with pretreatment standards (2007).

Army Regulation 200-1. Chapter 4, Section 4-1.e.(4): Wastewater Program Requirements:

(a) Obtain and comply with NPDES and/or State discharge permits, to include all required plans. (LD: 40 CFR 122);

(b) Ensure that discharges from industrial activities to FOTWs and POTWs comply with the substantive pretreatment requirements applicable to POTWs under the CWA. (LD: 40 CFR 403);

(c) Develop pretreatment programs as required to ensure FOTWs meet NPDES permit requirements and to improve opportunities for reuse of wastewater effluent and sewage sludge. (LD: 40 CFR 403).

The draft permit requires the permittee to implement a pretreatment program in accordance with the general pretreatment regulations at 40 CFR Part 403.

Ongoing pretreatment monitoring of influent, effluent, and sludge is required for parameters confirmed present following priority pollutant effluent scans, as well as TPH and other parameters of particular interest.

Background on the pretreatment program may be found in the *Introduction to the National Pretreatment Program* (USEPA, 2011).

E. Standard Permit Provisions

Permit Parts III, IV, and V contain standard regulatory language that must be included in all NPDES permits. The standard regulatory language covers requirements such as monitoring, recording, and reporting requirements, compliance responsibilities, and other general requirements.

VI. Other Legal Requirements

A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species. The EPA completed consultation with the Services in 2010 during the previous issuance of the permit.

USFWS concurred with the EPA's determination that the permitted activities "may affect, not likely to adversely affect" bull trout (*Salvelinus confluentus)* and their critical habitat.

NMFS did not concur with EPA's determination that the permitted activities "may affect, not likely to adversely affect" threatened Puget Sound Chinook salmon (*Oncorhynchus tshawytscha*) and their critical habitat, threatened Puget Sound steelhead (*O. mykiss*), and endangered Southern Resident killer whales (*Orcinus orca*) and their critical habitat. In their Biological Opinion (BiOp), NMFS concluded that the proposed action "may

affect, likely to adversely affect" these species and critical habitats. NMFS also concluded that, given the action would occur after the effective listing date for several species of rockfish, the permitted activities "may affect, likely to adversely affect" threatened Puget Sound/Georgia Basin yelloweye rockfish (*Sebastes ruberrimus*), Puget Sound/Georgia Basin canary rockfish (*S. pinniger*), and endangered Puget Sound/Georgia Basin Bocaccio (*S. paucispinis*).

The BiOp included an Incidental Take Statement (ITS), with the following Reasonable and Prudent Measure (RPM) and Terms and Conditions (T&Cs) to implement the RPM.

- RPM 1: Minimize incidental take from exposure to constituents found in the Solo Point Wastewater Treatment Plant effluent being discharged into Puget Sound.
    - T&C 1: Provide NMFS with the PBDE and other effluent constituent monitoring reports, including average flow rates, to ensure that the expected PBDE concentrations in the effluent and consequential PBDE loading into Puget Sound falls within the range and extent of take specified in the ITS.
    - T&C 2: Implement all conservation measures that are part of the proposed action in a timely manner, as specified by the timeline for completion in the conservation measures included in the proposed action.

Based on monitoring provided by the facility, PBDE in the effluent and flow rates are within the range specified by the ITS (0.165 kg/yr and 7 mgd, respectively).

The EPA is currently evaluating updates to the conclusions of the previous consultation and will complete consultation with the Services prior to taking final action on the draft permit.

B. Essential Fish Habitat

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires the EPA to consult with NMFS when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH). A review of the EFH documents shows that the receiving water is EFH for coastal pelagic species and groundfish.

The EFH regulations define an adverse effect as any impact which reduces quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site specific, or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. In its Biological Opinion issued during consultation on the previous permit, NMFS concluded that the permitted activities would have adverse effects to EFH designated for Puget Sound Chinook salmon, Puget Sound/Georgia Basin yelloweye rockfish, canary rockfish, and bocaccio rockfish and provided the EPA with EFH

conservation recommendations. Upgrades to the facility, the proposed permit, and the EPA's consultation procedures in Puget Sound have made progress toward achieving several of the recommendations. Specifically, the facility has transitioned from chlorine to UV disinfection, which fulfills the first recommendation; the proposed permit includes TIN limits that will require the facility to "utilize state of the art treatment that would remove nitrogen, phosphorus, PBDEs and [pharmaceuticals and personal care products] to the greatest extent possible", fulfilling the second recommendation.

The EPA is currently evaluating updates to the conclusions of the previous EFH assessment and will complete consultation with NMFS prior to taking final action on the draft permit.

C. CWA § 401 Certification

CWA § 401 requires the EPA to seek certification before issuing a final permit. As a result of the certification, Ecology may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with WQS, or treatment standards established pursuant to any State law or regulation. Since this facility discharges to waters of the state of Washington, Ecology is the certifying authority. The EPA will seek State certification and include any resulting permit conditions (if applicable) in the final documents.

D. Antidegradation

The EPA is required under Section 301(b)(1)(C) of the Clean Water Act (CWA) and implementing regulations (40 CFR 122.4(d) and 122.44(d)) to establish conditions in NPDES permits that ensure protection of state WQS, including antidegradation requirements. The EPA has prepared an antidegradation analysis consistent with Ecology's antidegradation implementation procedures. The EPA referred to Washington's antidegradation policy (WAC 173-201A-300)

There are three tiers of antidegradation protection, as described below:

- Tier I ensures existing and designated uses are maintained and protected and applies to all waters and all sources of pollution.
- Tier II ensures that waters of a higher quality than the criteria assigned are not degraded unless such lowering of water quality is necessary and in the overriding public interest. Tier II applies only to a specific list of polluting activities.
- Tier III prevents the degradation of waters formally listed as "outstanding resource waters," and applies to all sources of pollution.

<u>Tier I</u>

The receiving water for the Solo Point WWTP is Puget Sound (Solo Point) thus the anti-degradation analysis was completed for this receiving water body. Accordingly, the EPA will use the designated criteria for this water body in the draft permit. The discharges authorized by this draft permit will not cause a loss of beneficial uses.

The effluent limits in the draft permit ensure compliance with applicable numeric and narrative water quality criteria. The numeric and narrative water quality criteria are set at levels that ensure protection of the designated uses. As there is no information indicating the presence of existing beneficial uses other than those that are designated, the draft permit ensures a level of water quality necessary to protect the designated uses and, in compliance with WAC 173-201A-310 and 40 CFR 131.12(a)(1), also ensures that the level of water quality necessary to protect existing uses is maintained and protected.

If the EPA receives information during the public comment period demonstrating that there are existing uses for which the receiving water is not designated, the EPA will consider this information before issuing a final permit and will establish additional or more stringent permit conditions if necessary to ensure protection of existing uses.

Tier II

Tier II antidegradation applies to expanded actions. The Washington Tier II Guidance defines an "expanded action" as:

- A physical expansion of the facility (production or wastewater system expansions with a potential to allow an increase the volume of wastewater or the amount of pollution) or activity.
- An increase (either monthly average or annual average) to an existing permitted concentration or permitted effluent mass limit (loading) to a water body greater than 10%.
- The act of re-rating the capacity of an existing plant greater than 10%.

Although the facility has been upgraded since the previous permit was issued, it has not been expanded and there are no limits in the draft permit that are less stringent than those in the previous permit. Chlorine limits have been deleted, but as explained above, there is no longer a source of chlorine in the discharge and the deletion of the limits will not result in an increased discharge. Thus, the reissuance of this permit is not an expanded action and a Tier II antidegradation review is not necessary.

Tier III

A Tier III antidegradation analysis is not necessary because the receiving water has not been designated as an Outstanding Resource Water (WAC 173-201A-330).

E. Permit Expiration

The permit will expire five years from the effective date.

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Appendix A. Facility Information

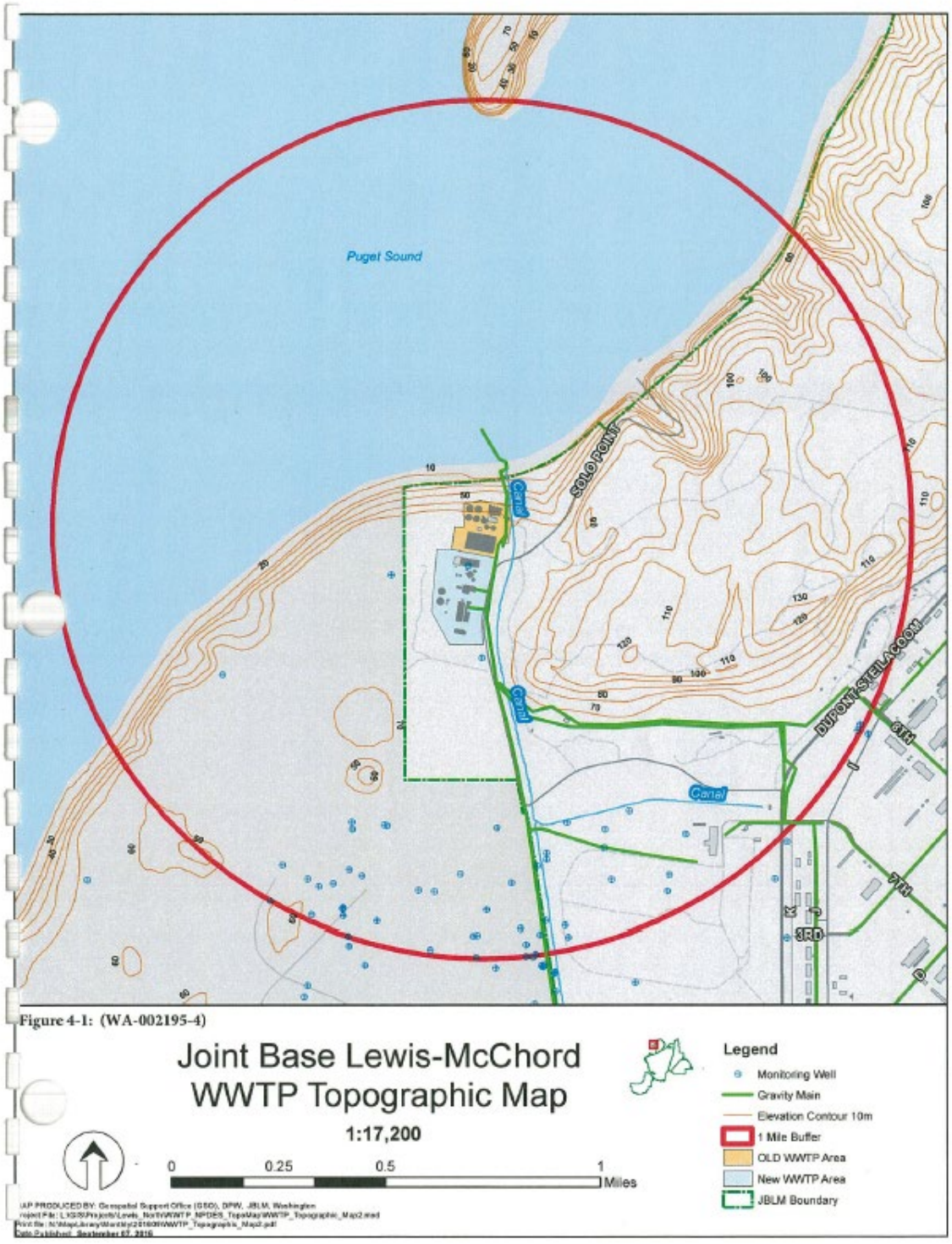

Figure A - 1: Facility Location and Topography

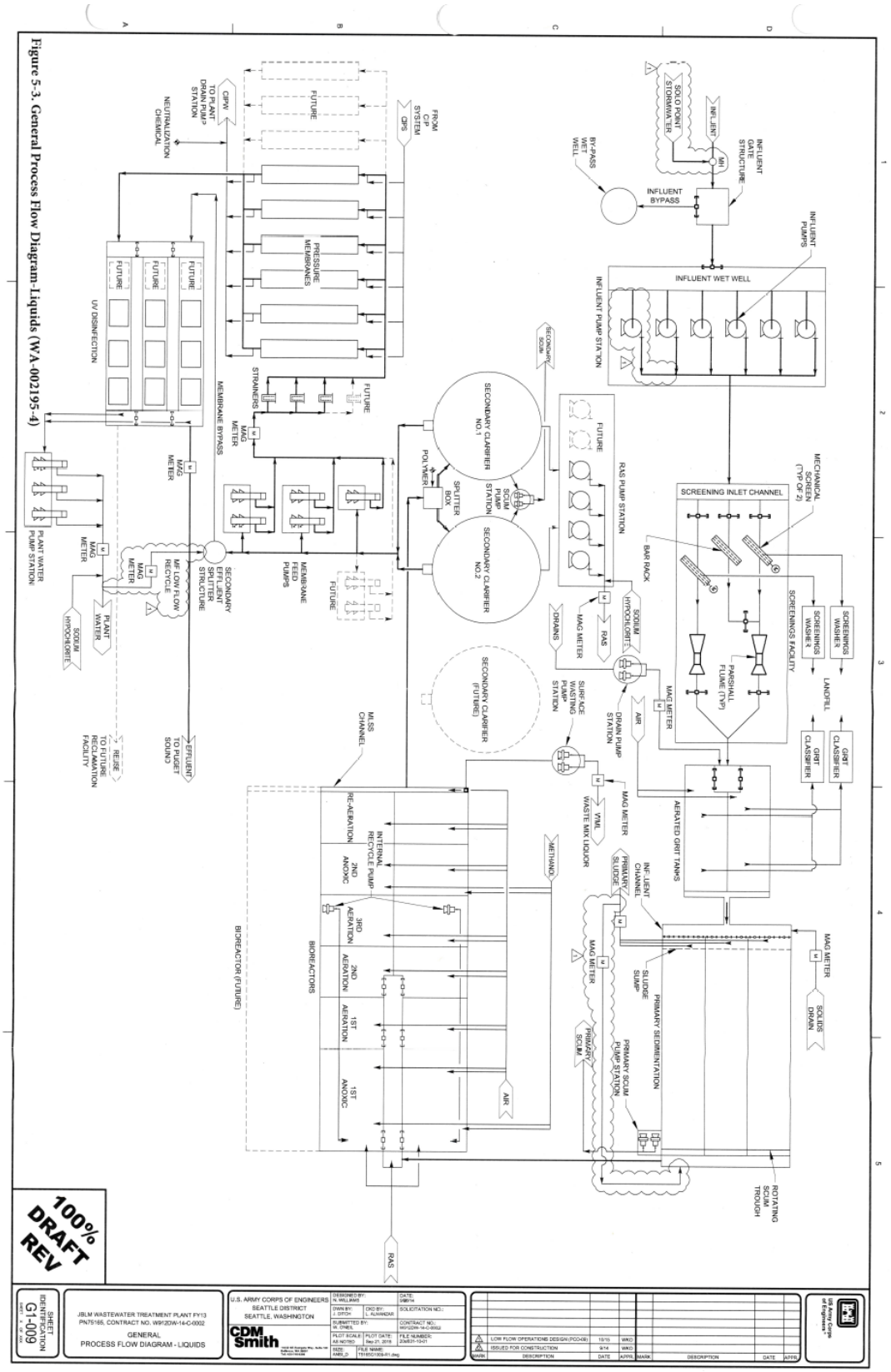

Figure A - 2: Liquids Process Flow Diagram

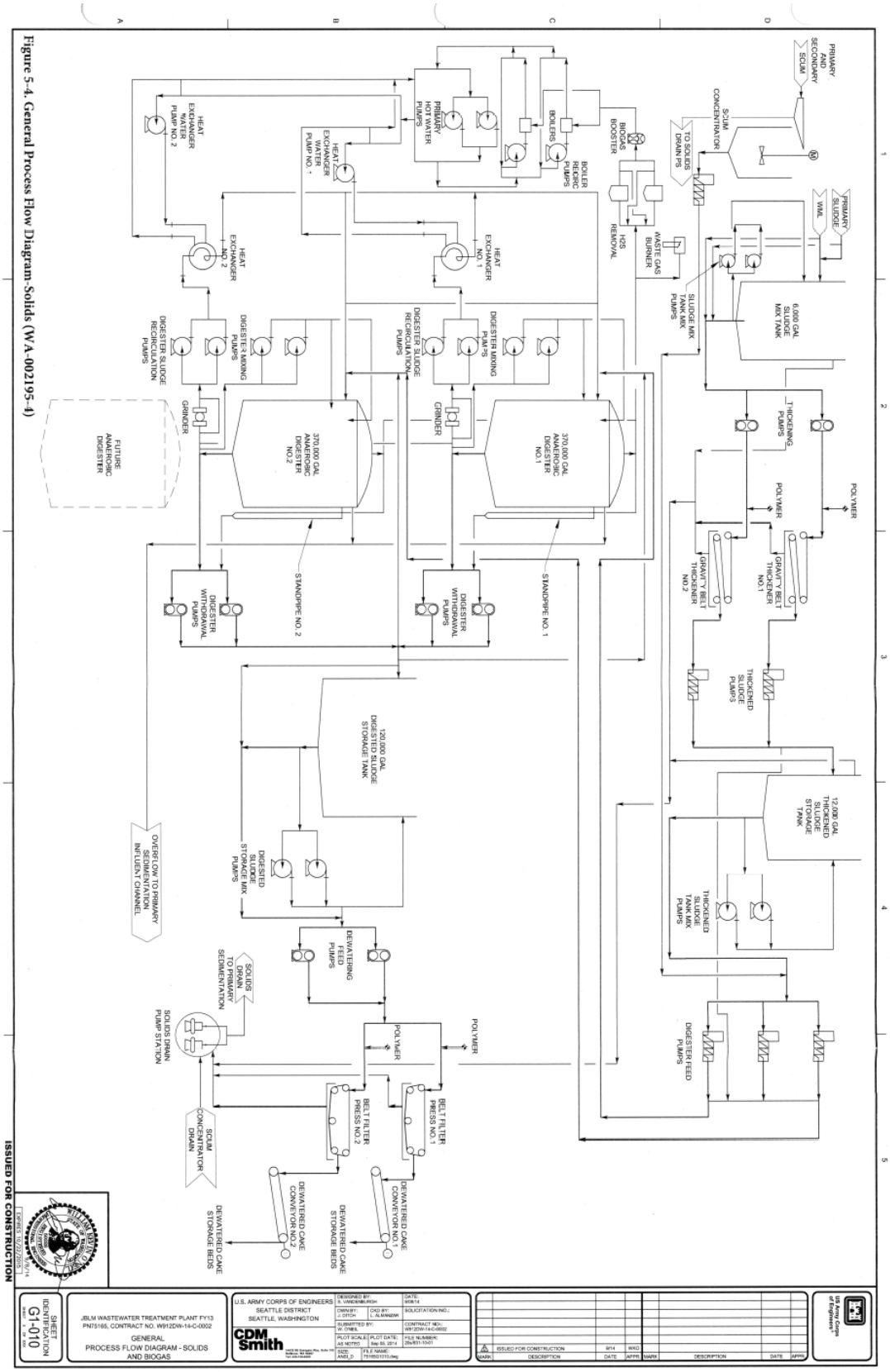

Figure A - 3: Solids Process Flow Diagram

Appendix B. Effluent Water Quality Data

Table B - 1: Metals Effluent Data (Total Recoverable)

Date	Antimony (µg/L)	Arsenic (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Cyanide (µg/L)	Copper (µg/L)	Lead (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Zinc (µg/L)
1/20/2017						<5								
1/20/2017						<5								
1/23/2017	0.372	0.866	<0.2	0.051	0.343		16.1	0.266	<0.02	0.843	1.47	<0.5	<0.2	49.9
2/19/2018						<60	17.1					<0.8		29
2/19/2018						<60								
10/20/2021	<1	<1	<1	<1	<1	<50	<1	<0.5	<0.2	<1	<1	<1	<1	<2
1/12/2022	<1	<1	<1	<1	3		12	<0.5	<0.2	<1	1	<1	<1	20
4/7/2022	<1	<1	<1	<1	2	<50	19	<0.5	<0.2	<1	1	<1	<1	40
7/6/2022	0.58	1.5	<0.11	0.17	2	<20	60	1.3	<0.15	0.84	2.5	<2.1	0.12	110
10/6/2022	0.42	1.1	<0.11	0.044	0.6	<20	18	0.099	<0.15	0.44	1.8	<2.1	<0.4	40
1/5/2023		0.89		0.039	0.53	0	11	0.1	0	0.38	1		0	35
4/4/2023		0.93		0	0.39	0	11	0.13	0	0.16	1.6		0	37
7/3/2023		0.7		0	0.25	0	11	0.008	0	0.23	1.7		0	19
10/11/2023		1.3		0.041	0.42		9.3	0.11	0	0.42	1.7		0	36
Minimum	0.372	0.7	-	0	0.25	0	9.3	0.008	0	0.160	1		0	19
Median	0.42	0.93	-	0.041	0.53	0	14.1	0.110	0	0.420	1.6		0	36.5
Average	0.457	1.04	-	0.049	1.059	0	18.5	0.288	0	0.473	1.53		0.02	41.6
Maximum	0.58	1.5	-	0.17	3	0	60	1.3	0	0.843	2.5		0.12	110
Maximum*	1	1.5	1	1	3	60	60	1.3	0.2	1	2.5	2.1	1	110
95th percentile	0.564	1.44	-	0.134	2.6	0	41.55	0.990	0	0.842	2.22		0.096	82.955
Count	6	10	6	10	10	9	11	10	10	10	10	7	10	11
Count**	3	7	0	7	9	3	10	7	4	7	9	0	5	10

* This maximum value represents the maximum if the "<RL" were set to equal the RL. These values were used for reasonable potential analysis.
**Count excluding results below the RL/MDL

Table B - 2: Acetone Effluent Data

Date	Acetone (µg/L)
12/7/2021	8.54
11/7/2023	<2.5
2/12/2024	<2.5

Table B - 3: BOD_5 Effluent Data

	BOD, 5-day, 20 deg. C		
Date	**Monthly Average (mg/L)**	**Weekly Average (mg/L)**	**Monthly Average Minimum Percent Removal**
9/30/2016	5	6	98
10/31/2016	6	8	97
11/30/2016	9	11	95
12/31/2016	13	20	93
1/31/2017	11	15	95
2/28/2017	16	28	91
3/31/2017			
4/30/2017	5	10	95
5/31/2017	7	11	94
6/30/2017	9	13	94
7/31/2017	6	12	97
8/31/2017	4	5	98
9/30/2017	3	4	99
10/31/2017	5	6	98
11/30/2017	7	10	96
12/31/2017	11	22	94
1/31/2018	8	22	92
2/28/2018	17	29	83
3/31/2018	25	26	80.7
4/30/2018	22.8	24	81.7
5/31/2018	17.9	16.4	88.9
6/30/2018	13.2	17	92.3
7/31/2018	10.2	9.7	94.3
8/31/2018	2.8	2.9	98.4
9/30/2018	1.8	1.8	99
10/31/2018	2.5	2.5	98.6
11/30/2018	2.5	2.3	98.7
12/31/2018	7.6	7.1	95.7
1/31/2019	6.7	6.8	96.2
2/28/2019	5.8	6.2	96.1
3/31/2019	7.4	7	96.2

	BOD, 5-day, 20 deg. C		
Date	**Monthly Average (mg/L)**	**Weekly Average (mg/L)**	**Monthly Average Minimum Percent Removal**
4/30/2019	16.1	16.3	92.4
5/31/2019	17.2	19	92.6
6/30/2019	3.5	3.7	98.5
7/31/2019	2.7	2.6	98.7
8/31/2019	4.3	4	98
9/30/2019	6.9	6.6	96.8
10/31/2019	9.1	9.4	95.4
11/30/2019	4.3	4.6	97.7
12/31/2019	5.3	5.3	97.3
1/31/2020	4.6	4.4	97.2
2/29/2020	3.8	4.2	96.5
3/31/2020	4.1	3.9	91.6
4/30/2020	7.3	7	93
5/31/2020	4.2	4.7	96.5
6/30/2020	3.4	3.5	97.7
7/31/2020	2.6	2.7	98.1
8/31/2020	2.5	2.4	98.1
9/30/2020	2.5	2.4	98.1
10/31/2020	2.3	2.1	98.3
11/30/2020	2.7	2.8	98.1
12/31/2020	2.9	2.9	97.1
1/31/2021	3.1	3.1	95
2/28/2021	3.4	3.3	93.6
3/31/2021	7.9	6.3	93.5
4/30/2021	4.2	5.9	97.3
5/31/2021	4.5	4.7	97.5
6/30/2021	4	4.1	97.8
7/31/2021	4.9	5.3	97.3
8/31/2021	2.7	2.6	98.4
9/30/2021	3.3	3.1	98.2
10/31/2021	2.9	3.4	98.5
11/30/2021	2.6	2.7	98.2

	BOD, 5-day, 20 deg. C		
Date	**Monthly Average (mg/L)**	**Weekly Average (mg/L)**	**Monthly Average Minimum Percent Removal**
12/31/2021	8.3	19.2	92.4
1/31/2022	9.1	18.7	85.4
2/28/2022	12.2	18	90.3
3/31/2022	5.7	6.5	94.1
4/30/2022	3.6	5.4	97.2
5/31/2022	2.9	2.9	97.9
6/30/2022	5	5.6	96.7
7/31/2022	5	11	97.4
8/31/2022	2.7	2.8	98.7
9/30/2022	3.7	3.8	98.4
10/31/2022	3.9	5.7	98.6
11/30/2022	3.2	3.6	98.6
12/31/2022	3.4	4.4	98.7
1/31/2023	3.9	4.6	97.8
2/28/2023	3.9	3.7	98.6
3/31/2023	3.4	3.6	98.7
4/30/2023	6.7	16	97.7
5/31/2023	3.4	4.8	98.7
6/30/2023	3.9	5.4	98.5
7/31/2023	5.1	7.8	98.3
8/31/2023	6.7	8.9	97.7
9/30/2023	5.4	6.6	98.3
10/31/2023	5.3	5.9	98.3
11/30/2023	8.8	11	96.4
12/31/2023	9.4	12.9	93
1/31/2024	10.4	13	92.3
2/29/2024	13.2	16.1	89.6
3/31/2024	15.1	16.7	89
4/30/2024	13.6	14.6	91.3
5/31/2024	10.7	13.7	92.6
6/30/2024	8.3	15.6	94.4
7/31/2024	11.5	23	93.1

	BOD, 5-day, 20 deg. C		
Date	**Monthly Average (mg/L)**	**Weekly Average (mg/L)**	**Monthly Average Minimum Percent Removal**
8/31/2024	8.7	10	95.1
9/30/2024	4.6	5.4	97.5
10/31/2024	3.5	4.5	98.1
11/30/2024	10.7	27.2	95
12/31/2024	4.1	4.9	97.8
1/31/2025	20	67	89.6
2/28/2025	9.2	14	96.2
3/31/2025	13	14.3	90
Minimum	1.8	1.8	80.7
Mean	7.0	9.6	95.5
95th Percentile	17.0	24.0	98.7
Maximum	25	67	99
Count	102	102	102

Table B - 4: Chlorine Effluent Data

	Chlorine, total residual	
Date	**Daily Maximum (mg/L)**	**Monthly Average (mg/L)**
9/30/2016	0.05	0.02
10/31/2016	0.05	0.02
11/30/2016	0.05	0.02
12/31/2016	10.8	0.48
1/31/2017	0.08	0.02
2/28/2017	0.05	0.02
3/31/2017		
4/30/2017	0.08	0.02
5/31/2017	0.05	0.02
6/30/2017	0.04	0.02
7/31/2017	0.03	0.01
8/31/2017	0.04	0.03
9/30/2017	0.08	0.05
10/31/2017	0.13	0.08

	Chlorine, total residual	
Date	Daily Maximum (mg/L)	Monthly Average (mg/L)
11/30/2017	0.13	0.08
12/31/2017	0.1	0.05
1/31/2018	0.07	0.04
2/28/2018	0.14	0.05
3/31/2018	0.19	0.04
4/30/2018	0.11	0.04
5/31/2018	0.07	0.04
6/30/2018	0.09	0.04
7/31/2018	0.14	0.07
8/31/2018	0.09	0.04
9/30/2018	0.07	0.04
10/31/2018	0.07	0.04
11/30/2018	0.23	0.04
12/31/2018	0.13	0.04
1/31/2019	0.06	0.03
2/28/2019	0.09	0.04
3/31/2019	0.11	0.03
4/30/2019	0.1	0.03
5/31/2019	0.07	0.04
6/30/2019	0.08	0.05
7/31/2019	0.09	0.06
8/31/2019	0.13	0.06
9/30/2019	0.08	0.05
10/31/2019	0.04	0.03
11/30/2019	0.05	0.03
12/31/2019	0.05	0.03
1/31/2020	0.04	0.02
2/29/2020	0.04	0.02
3/31/2020	0.04	0.02
4/30/2020	0.05	0.03
5/31/2020	0.03	0.02
6/30/2020	0.04	0.02
7/31/2020	0.04	0.02

	Chlorine, total residual	
Date	Daily Maximum (mg/L)	Monthly Average (mg/L)
8/31/2020	0.05	0.02
9/30/2020	0.05	0.03
10/31/2020	0.04	0.03
11/30/2020	0.04	0.03
12/31/2020	0.05	0.03
1/31/2021	0.04	0.02
2/28/2021	0.04	0.02
3/31/2021	0.04	0.03
4/30/2021	0.05	0.02
5/31/2021	0.04	0.02
6/30/2021	0.03	0.03
7/31/2021	0.03	0.04
8/31/2021	0.05	0.03
9/30/2021	0.04	0.03
10/31/2021	0.05	0.04
11/30/2021	0.04	0.03
12/31/2021	0.04	0.02
1/31/2022	0.05	0.02
2/28/2022	0.03	0.02
3/31/2022	0.04	0.02
4/30/2022	0.03	0.02
5/31/2022	0.04	0.02
6/30/2022	0.04	0.03
7/31/2022	0.03	0.02
8/31/2022	0.03	0.02
9/30/2022	0.04	0.02
10/31/2022	0.04	0.02
11/30/2022	0.03	0.02
12/31/2022	0.03	0.02
1/31/2023	0	0.02
2/28/2023	0.03	0.02
3/31/2023	0.05	0.02
4/30/2023	0.09	0.02

	Chlorine, total residual	
Date	**Daily Maximum (mg/L)**	**Monthly Average (mg/L)**
5/31/2023	0.04	0.03
6/30/2023	0.07	0.02
7/31/2023	0.03	0.02
8/31/2023	0.1	0.03
9/30/2023	0.2	0.05
10/31/2023	0.07	0.03
11/30/2023	0.04	0.03
12/31/2023	0.09	0.03
1/31/2024	0.06	0.03
2/29/2024	0.05	0.03
3/31/2024	0.03	0.02
4/30/2024	0.03	0.03
5/31/2024	0.05	0.02
6/30/2024	0.08	0.03
7/31/2024	0.12	0.03
8/31/2024	0.06	0.03
9/30/2024	0.04	0.02
10/31/2024	0.04	0.03
11/30/2024	0.07	0.03
12/31/2024	0.05	0.03
1/31/2025	0.04	0.03
2/28/2025	0.05	0.03
3/31/2025	0.04	0.02
Minimum	0	0.01
Mean	0.17	0.03
95th Percentile	0.14	0.06
Maximum	10.80	0.48
Count	102	102

Table B - 5: Ethylene Glycol Effluent Data

	Ethylene glycol
Date	Monthly Maximum (mg/L)
12/31/2016	10
1/31/2017	10
2/28/2017	499
12/31/2017	29
1/31/2018	10
2/28/2018	10
12/31/2018	10
1/31/2019	10
2/28/2019	10
12/31/2019	5
1/31/2020	5
2/29/2020	5
12/31/2020	3.2
1/31/2021	2.5
2/28/2021	2.5
12/31/2022	5
1/31/2023	5
2/28/2023	5
12/31/2023	12
1/31/2024	12
2/29/2024	12
12/31/2024	12
1/31/2025	12
2/28/2025	12
Minimum	2.5
Mean	29.5
95th Percentile	26.5
Maximum	499
Count	24

Table B - 6: Fecal Coliform Effluent Data

	Fecal coliform, MPN, EC med, 44.5 C	
Date	Monthly Geometric Mean (#/100 mL)	Weekly Geometric Mean (#/100 mL)
9/30/2016	2	7
10/31/2016	1	2
11/30/2016	1	4
12/31/2016	3	22
1/31/2017	2	4
2/28/2017	1	2
3/31/2017		
4/30/2017	2	4
5/31/2017	2	4
6/30/2017	2	4

	Fecal coliform, MPN, EC med, 44.5 C	
Date	Monthly Geometric Mean (#/100 mL)	Weekly Geometric Mean (#/100 mL)
7/31/2017	2	2
8/31/2017	2	5
9/30/2017	1	2
10/31/2017	2	3
11/30/2017	1	1
12/31/2017	2	2
1/31/2018	2	2
2/28/2018	1	2
3/31/2018	1	1.5
4/30/2018	2	1.82
5/31/2018	2	1.58
6/30/2018	2	1.78
7/31/2018	63	4.8
8/31/2018	1	1.37
9/30/2018	2	1.63
10/31/2018	3	2.96
11/30/2018	2	1.74
12/31/2018	3	3
1/31/2019	4	4.39
2/28/2019	1	1.69
3/31/2019	2	1.96
4/30/2019	3	2.64
5/31/2019	2	2.39
6/30/2019	51	7.66
7/31/2019	2	1.98
8/31/2019	9	8.03
9/30/2019	7	7.77
10/31/2019	10	9.35
11/30/2019	6	6.38
12/31/2019	5	5.88
1/31/2020	1	1.45
2/29/2020	2	1.64
3/31/2020	2	1.67
4/30/2020	3	2.96
5/31/2020	1	1.68
6/30/2020	1	1.35
7/31/2020	2	1.72
8/31/2020	5	3.83
9/30/2020	8	9.53
10/31/2020	3	3.55
11/30/2020	2	2.33
12/31/2020	1	1.41
1/31/2021	2	2.04
2/28/2021	1	1.29
3/31/2021	1	1
4/30/2021	2	1.6

	Fecal coliform, MPN, EC med, 44.5 C	
Date	Monthly Geometric Mean (#/100 mL)	Weekly Geometric Mean (#/100 mL)
5/31/2021	2	1.77
6/30/2021	2	1.46
7/31/2021	2	2.22
8/31/2021	2	1.58
9/30/2021	3	2.67
10/31/2021	6.3	10.1
11/30/2021	2.5	4
12/31/2021	4.2	13.1
1/31/2022	2.7	2.6
2/28/2022	2.2	2.2
3/31/2022	2.4	3
4/30/2022	2	2
5/31/2022	2	2
6/30/2022	2.9	5.6
7/31/2022	3.5	4.9
8/31/2022	2.7	4
9/30/2022	3.1	4.5
10/31/2022	2.6	2.7
11/30/2022	2.1	3
12/31/2022	2	2
1/31/2023	2.1	2.2
2/28/2023	2.1	2.2
3/31/2023	2	2
4/30/2023	2.1	2
5/31/2023	4.2	15.9
6/30/2023	5.1	8.3
7/31/2023	24.9	148.7
8/31/2023	46.5	65.9
9/30/2023	23	28.2
10/31/2023	27.8	26.7
11/30/2023	5.4	9.3
12/31/2023	5.6	12.1
1/31/2024	9.9	17.3
2/29/2024	2.6	4.6
3/31/2024	6.9	13.2
4/30/2024	2.5	2.9
5/31/2024	10.1	9.1
6/30/2024	26	62.4
7/31/2024	26.2	226.6
8/31/2024	2.9	5.7
9/30/2024	3.5	4.2
10/31/2024	7	17.3
11/30/2024	5.8	7.3
12/31/2024	6.7	7.3
1/31/2025	12.5	4.7
2/28/2025	3.9	10

	Fecal coliform, MPN, EC med, 44.5 C	
Date	**Monthly Geometric Mean (#/100 mL)**	**Weekly Geometric Mean (#/100 mL)**
3/31/2025	2.2	2.4
Minimum	1	1
Mean	5.7	9.7
95th Percentile	25.9	26.5
Maximum	63	226.6
Count	102	102

Table B - 7: Monthly Maximum Floating Solids or Visible Foam Effluent Data

	Floating solids, waste or visible foam-visual
Date	**Monthly Maximum (No=0; Yes=1)**
9/30/2016	0
10/31/2016	0
11/30/2016	0
12/31/2016	0
1/31/2017	0
2/28/2017	0
3/31/2017	
4/30/2017	0
5/31/2017	0
6/30/2017	0
7/31/2017	0
8/31/2017	0
9/30/2017	0
10/31/2017	0
11/30/2017	0
12/31/2017	0
1/31/2018	0
2/28/2018	0
3/31/2018	0
4/30/2018	0
5/31/2018	0
6/30/2018	0
7/31/2018	0
8/31/2018	0
9/30/2018	0
10/31/2018	0
11/30/2018	0
12/31/2018	0
1/31/2019	0
2/28/2019	0
3/31/2019	0
4/30/2019	0
5/31/2019	0

	Floating solids, waste or visible foam-visual
Date	**Monthly Maximum (No=0; Yes=1)**
6/30/2019	0
7/31/2019	0
8/31/2019	0
9/30/2019	0
10/31/2019	0
11/30/2019	0
12/31/2019	0
1/31/2020	0
2/29/2020	0
3/31/2020	0
4/30/2020	0
5/31/2020	0
6/30/2020	0
7/31/2020	0
8/31/2020	0
9/30/2020	0
10/31/2020	0
11/30/2020	0
12/31/2020	0
1/31/2021	0
2/28/2021	0
3/31/2021	0
4/30/2021	0
5/31/2021	0
6/30/2021	0
7/31/2021	0
8/31/2021	0
9/30/2021	0
10/31/2021	0
11/30/2021	0
12/31/2021	0
1/31/2022	0
2/28/2022	0
3/31/2022	0
4/30/2022	0
5/31/2022	0
6/30/2022	0
7/31/2022	0
8/31/2022	0
9/30/2022	0
10/31/2022	0
11/30/2022	0
12/31/2022	0
1/31/2023	0
2/28/2023	0

	Floating solids, waste or visible foam-visual
Date	**Monthly Maximum (No=0; Yes=1)**
3/31/2023	0
4/30/2023	0
5/31/2023	0
6/30/2023	0
7/31/2023	0
8/31/2023	0
9/30/2023	0
10/31/2023	0
11/30/2023	0
12/31/2023	0
1/31/2024	0
2/29/2024	0
3/31/2024	0
4/30/2024	0
5/31/2024	0
6/30/2024	0
7/31/2024	0
8/31/2024	0
9/30/2024	0
10/31/2024	0
11/30/2024	0
12/31/2024	0
1/31/2025	0
2/28/2025	0
3/31/2025	0
Minimum	0
Mean	0
Maximum	0
Count	102

Table B - 8: Effluent Flow Data

	Flow, in conduit or thru treatment plant
Date	**Monthly Average (MGD)**
9/30/2016	2.1
10/31/2016	2.2
11/30/2016	2.7
12/31/2016	2.7
1/31/2017	2.5
2/28/2017	4
3/31/2017	
4/30/2017	5.5
5/31/2017	4.5
6/30/2017	3.3

	Flow, in conduit or thru treatment plant
Date	**Monthly Average (MGD)**
7/31/2017	2.4
8/31/2017	2.2
9/30/2017	2
10/31/2017	2.1
11/30/2017	2.4
12/31/2017	2.8
1/31/2018	4.1
2/28/2018	4.3
3/31/2018	3.28
4/30/2018	3.61
5/31/2018	2.98
6/30/2018	2.35
7/31/2018	2.09
8/31/2018	2.09
9/30/2018	1.96
10/31/2018	1.97
11/30/2018	1.93
12/31/2018	1.94
1/31/2019	2.15
2/28/2019	2.47
3/31/2019	2.2
4/30/2019	1.97
5/31/2019	1.87
6/30/2019	
7/31/2019	2.01
8/31/2019	2.03
9/30/2019	1.89
10/31/2019	2.02
11/30/2019	1.88
12/31/2019	1.98
1/31/2020	2.85
2/29/2020	3.84
3/31/2020	2.46
4/30/2020	2.1
5/31/2020	1.91
6/30/2020	2.1
7/31/2020	1.9
8/31/2020	1.96
9/30/2020	2
10/31/2020	1.9
11/30/2020	1.93
12/31/2020	1.91
1/31/2021	4.27
2/28/2021	3.93
3/31/2021	3.31
4/30/2021	2.52

	Flow, in conduit or thru treatment plant
Date	**Monthly Average (MGD)**
5/31/2021	2.13
6/30/2021	2.12
7/31/2021	1.93
8/31/2021	1.91
9/30/2021	1.98
10/31/2021	1.9
11/30/2021	2.9
12/31/2021	3.6
1/31/2022	6.4
2/28/2022	3.5
3/31/2022	4.8
4/30/2022	3.5
5/31/2022	3
6/30/2022	2.78
7/31/2022	2.1
8/31/2022	2
9/30/2022	1.8
10/31/2022	1.74
11/30/2022	1.8
12/31/2022	1.89
1/31/2023	2.17
2/28/2023	1.85
3/31/2023	1.86
4/30/2023	1.92
5/31/2023	1.86
6/30/2023	1.85
7/31/2023	1.86
8/31/2023	2.1
9/30/2023	1.76
10/31/2023	1.73
11/30/2023	1.84
12/31/2023	2.54
1/31/2024	3.17
2/29/2024	3.6
3/31/2024	3.28
4/30/2024	2.56
5/31/2024	2.4
6/30/2024	2.49
7/31/2024	2.33
8/31/2024	2.43
9/30/2024	2.16
10/31/2024	2.06
11/30/2024	1.99
12/31/2024	2.17
1/31/2025	2.35
2/28/2025	2.26

	Flow, in conduit or thru treatment plant
Date	**Monthly Average (MGD)**
3/31/2025	2.94
Minimum	1.73
Mean	2.52
95th Percentile	4.27
Maximum	6.40
Count	101

Table B - 9: Petroleum Hydrocarbons Effluent Data

	Hydrocarbons, petroleum
Date	**Daily Maximum (mg/L)**
9/30/2016	
10/31/2016	
11/30/2016	0
12/31/2016	0
1/31/2017	0
2/28/2017	10
3/31/2017	
4/30/2017	
5/31/2017	10
6/30/2017	
7/31/2017	0.535
8/31/2017	
9/30/2017	
10/31/2017	
11/30/2017	0.847
12/31/2017	
1/31/2018	
2/28/2018	
3/31/2018	1
4/30/2018	
5/31/2018	8.83
6/30/2018	
7/31/2018	
8/31/2018	10
9/30/2018	
10/31/2018	
11/30/2018	0.2
12/31/2018	
1/31/2019	
2/28/2019	10
3/31/2019	
4/30/2019	10
5/31/2019	
6/30/2019	
7/31/2019	

	Hydrocarbons, petroleum
Date	**Daily Maximum (mg/L)**
8/31/2019	0.2
9/30/2019	
10/31/2019	
11/30/2019	1.89
12/31/2019	
1/31/2020	
2/29/2020	10
3/31/2020	
4/30/2020	
5/31/2020	0.52
6/30/2020	
7/31/2020	
8/31/2020	0.5
9/30/2020	
10/31/2020	
11/30/2020	0.55
12/31/2020	
1/31/2021	
2/28/2021	10
3/31/2021	
4/30/2021	
5/31/2021	0.42
6/30/2021	
7/31/2021	
8/31/2021	0.69
9/30/2021	
10/31/2021	
11/30/2021	0.1
12/31/2021	
1/31/2022	
2/28/2022	0.3
3/31/2022	
4/30/2022	
5/31/2022	0.3
6/30/2022	
7/31/2022	
8/31/2022	0.3
9/30/2022	
10/31/2022	0.3
11/30/2022	
12/31/2022	
1/31/2023	0.39
2/28/2023	
3/31/2023	
4/30/2023	0.29
5/31/2023	
6/30/2023	

	Hydrocarbons, petroleum
Date	Daily Maximum (mg/L)
7/31/2023	0.37
8/31/2023	
9/30/2023	
10/31/2023	0.28
11/30/2023	
12/31/2023	
1/31/2024	0.46
2/29/2024	
3/31/2024	
4/30/2024	0.52
5/31/2024	0.52
6/30/2024	
7/31/2024	0.48
8/31/2024	
9/30/2024	
10/31/2024	0.62
11/30/2024	
12/31/2024	
1/31/2025	0.33
2/28/2025	
3/31/2025	
Minimum	0
Mean	2.48
95th Percentile	10
Maximum	10
Count	37

Table B - 10: Nitrogen Effluent Data

	Nitrite + Nitrate total [as N]	Nitrogen, ammonia total [as N]	Total Inorganic Nitrogen (TIN)*	Nitrogen, Kjeldahl, total [as N]
Date	Monthly Maximum (mg/L)	Monthly Maximum (mg/L)	Monthly Maximum (mg/L)	Monthly Maximum (mg/L)
9/30/2016	3.25	5.16	8.41	7.3
10/31/2016	2.06	2.32	4.38	5.1
11/30/2016	3.26	6.77	10.03	9.5
12/31/2016	1.26	12.6	13.86	12.2
1/31/2017	1.16	0.943	2.103	2.2
2/28/2017	0.652	6.62	7.272	8.4
3/31/2017			0	
4/30/2017	1.82	0.04	1.86	1.1
5/31/2017	2.96	3.6	6.56	5
6/30/2017	1.2	11.9	13.1	12
7/31/2017	6.13	1.88	8.01	3.8
8/31/2017	0.534	0.04	0.574	1
9/30/2017	0.803	0.044	0.847	0.9
10/31/2017	3.05	4.22	7.27	6.1

	Nitrite + Nitrate total [as N]	Nitrogen, ammonia total [as N]	Total Inorganic Nitrogen (TIN)*	Nitrogen, Kjeldahl, total [as N]
Date	Monthly Maximum (mg/L)	Monthly Maximum (mg/L)	Monthly Maximum (mg/L)	Monthly Maximum (mg/L)
11/30/2017	1.12	11.7	12.82	13.9
12/31/2017	0.15	7.2	7.35	9.7
1/31/2018	1.2	7.4	8.6	7.9
2/28/2018	0.29	9.2	9.49	11
3/31/2018	0.62	25	25.62	26
4/30/2018	0.101	17.1	17.201	17.7
5/31/2018	0.388	25.5	25.888	26.3
6/30/2018	2.2	0.046	2.246	1.3
7/31/2018	0.105	0.055	0.16	1
8/31/2018	0.331	0.052	0.383	0.5
9/30/2018	3.69	0.174	3.864	1.3
10/31/2018	1.84	0.47	2.31	1.5
11/30/2018	4.56	0.506	5.066	1.3
12/31/2018	20.9	1.4	22.3	2.6
1/31/2019	20.7	0.748	21.448	0.5
2/28/2019	19.1	0.054	19.154	0.5
3/31/2019	26.3	0.085	26.385	0.5
4/30/2019	1.09	11.8	12.89	14.8
5/31/2019	0.979	19.4	20.379	19.3
6/30/2019	1.63	0.802	2.432	2.3
7/31/2019	0.682	0.122	0.804	0.5
8/31/2019	0.99	1.61	2.6	2.8
9/30/2019	1.43	0.287	1.717	2
10/31/2019	32	2	34	1
11/30/2019	32	2	34	1
12/31/2019	40	0.53	40.53	1
1/31/2020	31	0.12	31.12	1
2/29/2020	19	0.1	19.1	1
3/31/2020	27	0.043	27.043	1
4/30/2020	3.6	12	15.6	12
5/31/2020	1.2	0.05	1.25	1.1
6/30/2020	1.5	0.048	1.548	0.84
7/31/2020	0.84	0.043	0.883	1
8/31/2020	1.6	0.091	1.691	13
9/30/2020	2.2	0.094	2.294	1
10/31/2020	2.4	0.036	2.436	1.4
11/30/2020	30	0.058	30.058	1
12/31/2020	19	0.027	19.027	1
1/31/2021	19	0.05	19.05	1
2/28/2021	20	0.05	20.05	1
3/31/2021	0.68	0.2	0.88	1
4/30/2021	0.17	1.4	1.57	2.4
5/31/2021	0.38	0.59	0.97	1.1
6/30/2021	0.56	1	1.56	2.3
7/31/2021	0.66	6.7	7.36	8.7
8/31/2021	0.064	0.26	0.324	0.87

	Nitrite + Nitrate total [as N]	Nitrogen, ammonia total [as N]	Total Inorganic Nitrogen (TIN)*	Nitrogen, Kjeldahl, total [as N]
Date	Monthly Maximum (mg/L)	Monthly Maximum (mg/L)	Monthly Maximum (mg/L)	Monthly Maximum (mg/L)
9/30/2021	0.71	0.3	1.01	1.5
10/31/2021	29.7	1	30.7	1.1
11/30/2021	33.17	1	34.17	1
12/31/2021	21.2	1.2	22.4	2.6
1/31/2022	3.15	2.3	5.45	3.2
2/28/2022	0.66	11	11.66	12.5
3/31/2022	5.6	1	6.6	1.4
4/30/2022	11.3	1	12.3	1.2
5/31/2022	3.1	1.3	4.4	2.2
6/30/2022	3.1	1.1	4.2	3.8
7/31/2022	1.5		1.5	2.3
8/31/2022	2.6	0.26	2.86	1.9
9/30/2022	1.9	1.8	3.7	3
10/31/2022	2.1	1.3	3.4	3
11/30/2022	0.12	7.1	7.22	8.1
12/31/2022	4.7	0.32	5.02	1.2
1/31/2023	3.3	5.4	8.7	5.5
2/28/2023	5.4	0.17	5.57	0.81
3/31/2023	4.4	0.029	4.429	0.8
4/30/2023	5.1	0.38	5.48	1.2
5/31/2023	0.27	0.038	0.308	0.74
6/30/2023	1.1	0.23	1.33	1.5
7/31/2023	0.24	0.085	0.325	1.2
8/31/2023	1.8	0.36	2.16	1.7
9/30/2023	4.2	1.9	6.1	2.9
10/31/2023	1.6	0.95	2.55	2.5
11/30/2023	1.6	2.7	4.3	4.5
12/31/2023	0.43	13	13.43	14
1/31/2024	0.73	15	15.73	16
2/29/2024	1.1	2.6	3.7	3.5
3/31/2024	0.078	5.3	5.378	5.9
4/30/2024	0.63	10	10.63	9.8
5/31/2024	1.1	16	17.1	17
6/30/2024	0.94	7.5	8.44	8.9
7/31/2024	1.1	16	17.1	18
8/31/2024	4	12	16	12
9/30/2024	6.5	0.2	6.7	0.69
10/31/2024	8.9	0.96	9.86	1.2
11/30/2024	10	0.28	10.28	0.69
12/31/2024	17	1.2	18.2	0.69
1/31/2025	6.2	0.04	6.24	0.6
2/28/2025	2.4	10	12.4	10
3/31/2025	2.9	12	14.9	10
Minimum	0.064	0.027	0.09	0.5
Mean	6.28	3.87	10.15	4.9

	Nitrite + Nitrate total [as N]	Nitrogen, ammonia total [as N]	Total Inorganic Nitrogen (TIN)*	Nitrogen, Kjeldahl, total [as N]
Date	**Monthly Maximum (mg/L)**	**Monthly Maximum (mg/L)**	**Monthly Maximum (mg/L)**	**Monthly Maximum (mg/L)**
95th Percentile	29.99	16	45.99	17
Maximum	40	25.5	65.5	26.3
Count	102	101	203	102
* calculated, TIN = Total Ammonia (as N) + Nitrate plus Nitrite (as N)				

Table B - 11: Visual Oil and Grease Effluent Data

	Oil and grease visual
Date	**Monthly Maximum (No=0; Yes=1)**
9/30/2016	0
10/31/2016	0
11/30/2016	0
12/31/2016	0
1/31/2017	0
2/28/2017	0
3/31/2017	
4/30/2017	0
5/31/2017	0
6/30/2017	0
7/31/2017	0
8/31/2017	0
9/30/2017	0
10/31/2017	0
11/30/2017	0
12/31/2017	0
1/31/2018	0
2/28/2018	0
3/31/2018	0
4/30/2018	0
5/31/2018	0
6/30/2018	0
7/31/2018	0
8/31/2018	0
9/30/2018	0
10/31/2018	0
11/30/2018	0
12/31/2018	0
1/31/2019	0
2/28/2019	0
3/31/2019	0
4/30/2019	0
5/31/2019	0
6/30/2019	0
7/31/2019	0

	Oil and grease visual
Date	Monthly Maximum (No=0; Yes=1)
8/31/2019	0
9/30/2019	0
10/31/2019	0
11/30/2019	0
12/31/2019	0
1/31/2020	0
2/29/2020	0
3/31/2020	0
4/30/2020	0
5/31/2020	0
6/30/2020	0
7/31/2020	0
8/31/2020	0
9/30/2020	0
10/31/2020	0
11/30/2020	0
12/31/2020	0
1/31/2021	0
2/28/2021	0
3/31/2021	0
4/30/2021	0
5/31/2021	0
6/30/2021	0
7/31/2021	0
8/31/2021	0
9/30/2021	0
10/31/2021	0
11/30/2021	0
12/31/2021	0
1/31/2022	0
2/28/2022	0
3/31/2022	0
4/30/2022	0
5/31/2022	0
6/30/2022	0
7/31/2022	0
8/31/2022	0
9/30/2022	0
10/31/2022	0
11/30/2022	0
12/31/2022	0
1/31/2023	0
2/28/2023	0
3/31/2023	0
4/30/2023	0
5/31/2023	0

	Oil and grease visual
Date	Monthly Maximum (No=0; Yes=1)
6/30/2023	0
7/31/2023	0
8/31/2023	0
9/30/2023	0
10/31/2023	0
11/30/2023	0
12/31/2023	0
1/31/2024	0
2/29/2024	0
3/31/2024	0
4/30/2024	0
5/31/2024	0
6/30/2024	0
7/31/2024	0
8/31/2024	0
9/30/2024	0
10/31/2024	0
11/30/2024	0
12/31/2024	0
1/31/2025	0
2/28/2025	0
3/31/2025	0
Minimum	0
Mean	0
Maximum	0
Count	102

Table B - 12: pH Effluent Data

	pH	
Date	Instantaneous Maximum (s.u.)	Instantaneous Minimum (s.u.)
9/30/2016	7.1	6.4
10/31/2016	7.1	6.5
11/30/2016	7	6.4
12/31/2016	7.2	4.8
1/31/2017	7	6.4
2/28/2017	6.8	6.2
3/31/2017		
4/30/2017	6.6	6.2
5/31/2017	6.9	6.3
6/30/2017	7.6	6.2
7/31/2017	7.7	7.2
8/31/2017	7.6	7.3
9/30/2017	7.7	7.3
10/31/2017	8	6.3

	pH	
Date	Instantaneous Maximum (s.u.)	Instantaneous Minimum (s.u.)
11/30/2017	7.2	6
12/31/2017	7	6.4
1/31/2018	7.1	6.6
2/28/2018	7.3	6.4
3/31/2018	7.44	6.99
4/30/2018	7.25	6.65
5/31/2018	7.78	6.86
6/30/2018	8.06	7.03
7/31/2018	8.08	7.1
8/31/2018	7.99	7.46
9/30/2018	8.03	6.69
10/31/2018	8.18	7.73
11/30/2018	8.12	5.33
12/31/2018	7.4	6.05
1/31/2019	7.6	6
2/28/2019	7.37	6.55
3/31/2019	7.51	6.78
4/30/2019	7.73	7.25
5/31/2019	7.84	7.41
6/30/2019	7.85	7.44
7/31/2019	7.84	7.37
8/31/2019	7.87	7.02
9/30/2019	7.95	7.46
10/31/2019	7.62	6.52
11/30/2019	7.47	7.1
12/31/2019	7.96	6.88
1/31/2020	7.7	6.94
2/29/2020	7.39	6.74
3/31/2020	7.7	7.04
4/30/2020	7.9	7.45
5/31/2020	7.95	7.46
6/30/2020	7.82	7.31
7/31/2020	7.96	7.2
8/31/2020	7.9	7.38
9/30/2020	7.81	7.36
10/31/2020	7.87	7.46
11/30/2020	7.68	7.17
12/31/2020	7.73	7.17
1/31/2021	7.44	6.79
2/28/2021	7.39	6.96
3/31/2021	7.57	7.02
4/30/2021	7.67	7.36
5/31/2021	7.83	7.36
6/30/2021	8.03	7.35
7/31/2021	7.76	7.19
8/31/2021	7.73	7.24

	pH	
Date	**Instantaneous Maximum (s.u.)**	**Instantaneous Minimum (s.u.)**
9/30/2021	7.77	6.99
10/31/2021	7.6	6.4
11/30/2021	7.3	6.3
12/31/2021	7.6	6.6
1/31/2022	7.5	6.6
2/28/2022	7.5	6.7
3/31/2022	7.2	6.6
4/30/2022	7.3	6.6
5/31/2022	7.4	6.7
6/30/2022	7.8	6.7
7/31/2022	7.6	6.9
8/31/2022	7.6	6.8
9/30/2022	7.6	7.2
10/31/2022	7.64	6.88
11/30/2022	7.71	7.18
12/31/2022	7.55	6.96
1/31/2023	7.66	7.08
2/28/2023	7.64	6.95
3/31/2023	7.52	6.98
4/30/2023	7.57	7.04
5/31/2023	7.6	7.06
6/30/2023	7.67	7.27
7/31/2023	7.75	7.2
8/31/2023	8.43	7.02
9/30/2023	7.74	7.02
10/31/2023	7.73	7.11
11/30/2023	7.77	7.44
12/31/2023	7.83	7.2
1/31/2024	7.83	7
2/29/2024	7.69	7.16
3/31/2024	7.69	7.24
4/30/2024	7.75	7.08
5/31/2024	7.67	7.14
6/30/2024	7.52	6.48
7/31/2024	7.67	6.91
8/31/2024	7.59	6.88
9/30/2024	7.87	7.18
10/31/2024	7.76	7.4
11/30/2024	7.97	7.26
12/31/2024	7.59	7.23
1/31/2025	7.54	6.95
2/28/2025	7.83	7.05
3/31/2025	7.7	7.08
Minimum	6.6	4.8
Mean	7.63	6.90
95th Percentile	8.03	6.2 (5^{th} Percentile)

	pH	
Date	Instantaneous Maximum (s.u.)	Instantaneous Minimum (s.u.)
Maximum	8.43	7.73
Count	102	102

Table B - 13: Total Phosphorus Effluent Data

	Phosphorus, total [as P]
Date	Monthly Maximum (mg/L)
9/30/2016	0.884
10/31/2016	3.8
11/30/2016	2.95
12/31/2016	1.94
1/31/2017	1.96
2/28/2017	0.604
3/31/2017	
4/30/2017	1
5/31/2017	2.03
6/30/2017	1.9
7/31/2017	0.034
8/31/2017	1.89
9/30/2017	2.72
10/31/2017	3.26
11/30/2017	2.29
12/31/2017	2.1
1/31/2018	0.99
2/28/2018	1.11
3/31/2018	0.25
4/30/2018	0.592
5/31/2018	1.64
6/30/2018	3.48
7/31/2018	1.92
8/31/2018	3.27
9/30/2018	3.95
10/31/2018	2.6
11/30/2018	4.28
12/31/2018	3.48
1/31/2019	4.8
2/28/2019	2.44
3/31/2019	4.32
4/30/2019	4.31
5/31/2019	1.67
6/30/2019	3.88
7/31/2019	0.488
8/31/2019	0.026
9/30/2019	2.34
10/31/2019	3.6
11/30/2019	3.6

	Phosphorus, total [as P]
Date	Monthly Maximum (mg/L)
12/31/2019	3.4
1/31/2020	2.6
2/29/2020	2
3/31/2020	2.8
4/30/2020	3.3
5/31/2020	1.9
6/30/2020	3.3
7/31/2020	2.5
8/31/2020	2.9
9/30/2020	3.1
10/31/2020	3
11/30/2020	3.4
12/31/2020	2.4
1/31/2021	1.9
2/28/2021	1.7
3/31/2021	2.4
4/30/2021	1.4
5/31/2021	1.9
6/30/2021	1.2
7/31/2021	1.9
8/31/2021	3.3
9/30/2021	2
10/31/2021	4.2
11/30/2021	3.99
12/31/2021	2.9
1/31/2022	0.96
2/28/2022	1.39
3/31/2022	1.9
4/30/2022	3
5/31/2022	2.5
6/30/2022	1.5
7/31/2022	1.6
8/31/2022	4
9/30/2022	4
10/31/2022	2.7
11/30/2022	3.7
12/31/2022	2.7
1/31/2023	7.4
2/28/2023	3.9
3/31/2023	3.9
4/30/2023	3.4
5/31/2023	0.96
6/30/2023	4.5
7/31/2023	1.7
8/31/2023	5.8
9/30/2023	4.4
10/31/2023	3.6

	Phosphorus, total [as P]
Date	**Monthly Maximum (mg/L)**
11/30/2023	4.2
12/31/2023	1.4
1/31/2024	2.8
2/29/2024	0.85
3/31/2024	0.85
4/30/2024	1.5
5/31/2024	0.15
6/30/2024	1.9
7/31/2024	4.9
8/31/2024	3.6
9/30/2024	2.5
10/31/2024	3.2
11/30/2024	3.6
12/31/2024	4.5
1/31/2025	2.5
2/28/2025	2.1
3/31/2025	1.1
Minimum	0.026
Mean	2.6
95th Percentile	4.5
Maximum	7.4
Count	102

Table B - 14: Propylene Glycol Effluent Data

	Propylene glycol, total
Date	**Monthly Maximum (mg/L)**
12/31/2016	10
1/31/2017	10
2/28/2017	10
12/31/2017	200
1/31/2018	10
2/28/2018	10
12/31/2018	10
1/31/2019	10
2/28/2019	10
12/31/2019	5
1/31/2020	5
2/29/2020	5
12/31/2020	2
1/31/2021	2
2/28/2021	2
12/31/2022	5
1/31/2023	5
2/28/2023	5
12/31/2023	5
1/31/2024	5

	Propylene glycol, total
Date	Monthly Maximum (mg/L)
2/29/2024	5
12/31/2024	5
1/31/2025	5
2/28/2025	5
Minimum	2
Mean	14.4
95th Percentile	10
Maximum	200
Count	24

Table B - 15: TSS Effluent Data

	Solids, total suspended		
Date	Monthly Average (mg/L)	Weekly Average (mg/L)	Monthly Average Minimum Percent Removal
9/30/2016	4	6	98
10/31/2016	5	9	98
11/30/2016	9	10	95
12/31/2016	14	23	91
1/31/2017	9	14	96
2/28/2017	8	13	94
3/31/2017			
4/30/2017	2	3	98
5/31/2017	2	3	98
6/30/2017	5	6	97
7/31/2017	5	6	98
8/31/2017	3	4	99
9/30/2017	1	2	100
10/31/2017	6	10	97
11/30/2017	6	7	97
12/31/2017	6	9	96
1/31/2018	5	10	96
2/28/2018	7	9	93
3/31/2018	3.7	4.5	97.3
4/30/2018	4.8	4.4	96.3
5/31/2018	3	3	98.1
6/30/2018	4	3.9	97.8
7/31/2018	18.2	17	91.3
8/31/2018	1.2	1.3	99.4
9/30/2018	1	0.9	99.5
10/31/2018	1.1	1.2	99.5
11/30/2018	1.5	0.9	99.2
12/31/2018	9.7	9	94.3
1/31/2019	8.4	8.3	95.8
2/28/2019	10.8	10.7	92.3
3/31/2019	7.1	7.4	96.2
4/30/2019	11.9	12.1	94.6
5/31/2019	4.3	4.8	98.2

	Solids, total suspended		
Date	**Monthly Average (mg/L)**	**Weekly Average (mg/L)**	**Monthly Average Minimum Percent Removal**
6/30/2019	2.7	2.7	98.7
7/31/2019	2.2	1.9	98.8
8/31/2019	4.1	3.9	97.8
9/30/2019	5.5	5.5	97.3
10/31/2019	9.7	10	94
11/30/2019	4.6	4.8	97.3
12/31/2019	5.2	5.4	97.2
1/31/2020	8	7.2	94
2/29/2020	5.6	6.7	93.8
3/31/2020	3.1	3.3	95.2
4/30/2020	2.9	2.7	97.1
5/31/2020	3.2	3.3	97.6
6/30/2020	3.1	3.1	96.4
7/31/2020	2.4	2.3	97.9
8/31/2020	2.8	2.8	96.8
9/30/2020	2.3	2.3	96
10/31/2020	2	1.9	98.3
11/30/2020	2.8	2.8	97.1
12/31/2020	2.8	2.7	97.5
1/31/2021	3.8	3.7	92.4
2/28/2021	4.7	4.7	90.9
3/31/2021	4	4.1	96.4
4/30/2021	2.4	2.4	98.4
5/31/2021	2.9	2.9	98.3
6/30/2021	2.5	2.5	98.6
7/31/2021	2.9	3	98.4
8/31/2021	1.9	2	98.9
9/30/2021	1.9	1.9	99
10/31/2021	2.5	3.1	98.7
11/30/2021	3.5	4.5	97.6
12/31/2021	10	13.3	90.9
1/31/2022	10.8	18.8	83.3
2/28/2022	3.6	5.2	96.8
3/31/2022	4.8	5.5	94.7
4/30/2022	3.1	4.6	97.4
5/31/2022	2.7	2.8	97.9
6/30/2022	4.9	5.7	96.6
7/31/2022	3.2	4.9	98.3
8/31/2022	3.9	5	97.9
9/30/2022	2.9	3.5	98.5
10/31/2022	3.8	5.7	98.2
11/30/2022	3	4.5	98.3
12/31/2022	3.1	6.1	98.4
1/31/2023	1.8	1.9	98.7
2/28/2023	3	2.1	99
3/31/2023	2.2	2.3	98.9
4/30/2023	2.9	3.3	98.5

	Solids, total suspended		
Date	**Monthly Average (mg/L)**	**Weekly Average (mg/L)**	**Monthly Average Minimum Percent Removal**
5/31/2023	2.3	3.2	98.8
6/30/2023	3.2	3.8	98.4
7/31/2023	4.6	6.5	97.6
8/31/2023	5.3	6.2	97.1
9/30/2023	3	4.7	98.6
10/31/2023	3.3	4.3	98.4
11/30/2023	6.2	7.6	96.9
12/31/2023	6.5	8.8	95.8
1/31/2024	5.1	5.7	96.7
2/29/2024	4.2	5.6	97
3/31/2024	7.9	11.4	94.7
4/30/2024	5.9	9.8	96.4
5/31/2024	5	7.8	96.6
6/30/2024	23.9	72	85.8
7/31/2024	17.1	54.6	90.2
8/31/2024	3.9	4.6	97.8
9/30/2024	4.3	4.8	97.5
10/31/2024	4.6	5.2	97.7
11/30/2024	8.7	20.2	95.6
12/31/2024	4.6	6.9	97.5
1/31/2025	3.7	4.6	97.7
2/28/2025	5	5.7	97.8
3/31/2025	3.7	6.2	96.8
Minimum	1	0.9	83.3
Mean	5.0	7.0	96.6
95th Percentile	10.8	16.9	99
Maximum	23.9	72	100
Count	102	102	102

Table B - 16: Temperature Effluent Data

	Temperature, water
Date	**Monthly Maximum (deg. C)**
9/30/2016	23
10/31/2016	22
11/30/2016	21
12/31/2016	19
1/31/2017	14
2/28/2017	15
3/31/2017	
4/30/2017	15
5/31/2017	17
6/30/2017	20
7/31/2017	21
8/31/2017	23
9/30/2017	22

	Temperature, water
Date	Monthly Maximum (deg. C)
10/31/2017	20
11/30/2017	17
12/31/2017	17
1/31/2018	14
2/28/2018	13
3/31/2018	12.7
4/30/2018	14.1
5/31/2018	19
6/30/2018	18.7
7/31/2018	21.5
8/31/2018	21.2
9/30/2018	19.9
10/31/2018	19.2
11/30/2018	17.4
12/31/2018	14.2
1/31/2019	13.7
2/28/2019	13.1
3/31/2019	15.1
4/30/2019	16.3
5/31/2019	19.3
6/30/2019	20.7
7/31/2019	21.5
8/31/2019	21.6
9/30/2019	22
10/31/2019	15.8
11/30/2019	15.9
12/31/2019	12.4
1/31/2020	13.2
2/29/2020	12.6
3/31/2020	13.8
4/30/2020	16.4
5/31/2020	18.8
6/30/2020	19.3
7/31/2020	21.3
8/31/2020	22.1
9/30/2020	20.9
10/31/2020	18.9
11/30/2020	17.5
12/31/2020	14.3
1/31/2021	12.6
2/28/2021	12.1
3/31/2021	11.4
4/30/2021	16.1
5/31/2021	17.8
6/30/2021	22.9
7/31/2021	22.8
8/31/2021	24.5

	Temperature, water
Date	**Monthly Maximum (deg. C)**
9/30/2021	20.9
10/31/2021	18.6
11/30/2021	15.8
12/31/2021	14.4
1/31/2022	12.1
2/28/2022	13
3/31/2022	12.9
4/30/2022	13.5
5/31/2022	15.7
6/30/2022	19.6
7/31/2022	22.4
8/31/2022	21.4
9/30/2022	21.1
10/31/2022	17.5
11/30/2022	13.1
12/31/2022	12.3
1/31/2023	12.6
2/28/2023	12.1
3/31/2023	13.1
4/30/2023	15.1
5/31/2023	18.9
6/30/2023	19.4
7/31/2023	21.5
8/31/2023	22.7
9/30/2023	20.3
10/31/2023	19.3
11/30/2023	16.3
12/31/2023	14.3
1/31/2024	13.1
2/29/2024	13.4
3/31/2024	13.6
4/30/2024	15.3
5/31/2024	16.8
6/30/2024	18.9
7/31/2024	19.9
8/31/2024	21.6
9/30/2024	21.3
10/31/2024	17.9
11/30/2024	16.1
12/31/2024	14.4
1/31/2025	13.5
2/28/2025	13.5
3/31/2025	13
Minimum	11.4
Mean	17.3
95th Percentile	22.7
Maximum	24.5

	Temperature, water
Date	**Monthly Maximum (deg. C)**
Count	102

Appendix C. Receiving Water Quality Data

Table C - 1: 2,4 Dinotrophenol Ambient Data

Activity Start Date	Characteristic Name	Result Sample Fraction Text	Result Measure Value	Result Measure Unit Code	Result Analytical Method Name
10/30/2018	2,4-Dinitrophenol	Total	3.30	ng/L	Non-targeted screening by LC-HRMS
8/22/2018	2,4-Dinitrophenol	Total	2.45	ng/L	Non-targeted screening by LC-HRMS
4/17/2018	2,4-Dinitrophenol	Total	14.54	ng/L	Non-targeted screening by LC-HRMS
4/17/2018	2,4-Dinitrophenol	Total	14.54	ng/L	Non-targeted screening by LC-HRMS
6/18/2018	2,4-Dinitrophenol	Total	2.05	ng/L	Non-targeted screening by LC-HRMS
5/9/2018	2,4-Dinitrophenol	Total	8.40	ng/L	Non-targeted screening by LC-HRMS
		Minimum	2.05	ng/L	
		Average	7.55	ng/L	
		Geo Mean	5.56	ng/L	
		Maximum	14.54	ng/L	
		90th Percentile	5.88	ng/L	
		Count	6		

Table C - 2: Ambient Alkalinity Data

Field Collection Start Date	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Value Units	Fraction Analyzed
7/4/1932	Water Surface	0	0	m	Alkalinity, Total as CaCO3	92	mg/L	Dissolved
7/4/1932	Water Surface	0	0	m	Alkalinity, Total as CaCO3	95	mg/L	Dissolved
7/4/1932	Water Surface	10	10	m	Alkalinity, Total as CaCO3	96	mg/L	Dissolved
7/4/1932	Water Surface	10	10	m	Alkalinity, Total as CaCO3	96	mg/L	Dissolved
7/4/1932	Water Surface	25	25	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
7/4/1932	Water Surface	25	25	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
7/4/1932	Water Surface	50	50	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
7/4/1932	Water Surface	50	50	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
7/4/1932	Water Surface	100	100	m	Alkalinity, Total as CaCO3	98	mg/L	Dissolved
7/4/1932	Water Surface	150	150	m	Alkalinity, Total as CaCO3	98	mg/L	Dissolved
7/8/1935	Water Surface	0	0	m	Alkalinity, Total as CaCO3	92	mg/L	Dissolved
7/8/1935	Water Surface	10	10	m	Alkalinity, Total as CaCO3	76	mg/L	Dissolved
7/8/1935	Water Surface	25	25	m	Alkalinity, Total as CaCO3	91	mg/L	Dissolved

Field Collection Start Date	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Value Units	Fraction Analyzed
7/8/1935	Water Surface	50	50	m	Alkalinity, Total as CaCO3	91	mg/L	Dissolved
7/8/1935	Water Surface	100	100	m	Alkalinity, Total as CaCO3	84	mg/L	Dissolved
7/8/1935	Water Surface	150	150	m	Alkalinity, Total as CaCO3	89	mg/L	Dissolved
1/25/1936	Water Surface	0	0	m	Alkalinity, Total as CaCO3	86	mg/L	Dissolved
1/25/1936	Water Surface	0	0	m	Alkalinity, Total as CaCO3	78	mg/L	Dissolved
1/25/1936	Water Surface	10	10	m	Alkalinity, Total as CaCO3	86	mg/L	Dissolved
1/25/1936	Water Surface	10	10	m	Alkalinity, Total as CaCO3	80	mg/L	Dissolved
1/25/1936	Water Surface	25	25	m	Alkalinity, Total as CaCO3	88	mg/L	Dissolved
1/25/1936	Water Surface	25	25	m	Alkalinity, Total as CaCO3	82	mg/L	Dissolved
1/25/1936	Water Surface	50	50	m	Alkalinity, Total as CaCO3	89	mg/L	Dissolved
1/25/1936	Water Surface	50	50	m	Alkalinity, Total as CaCO3	84	mg/L	Dissolved
1/25/1936	Water Surface	70	70	m	Alkalinity, Total as CaCO3	88	mg/L	Dissolved
1/25/1936	Water Surface	100	100	m	Alkalinity, Total as CaCO3	82	mg/L	Dissolved
1/25/1936	Water Surface	160	160	m	Alkalinity, Total as CaCO3	84	mg/L	Dissolved
6/28/1936	Water Surface	0	0	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
6/28/1936	Water Surface	10	10	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
6/28/1936	Water Surface	25	25	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
6/28/1936	Water Surface	50	50	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
6/28/1936	Water Surface	100	100	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
6/28/1936	Water Surface	160	160	m	Alkalinity, Total as CaCO3	98	mg/L	Dissolved
6/29/1936	Water Surface	0	0	m	Alkalinity, Total as CaCO3	88	mg/L	Dissolved
6/29/1936	Water Surface	10	10	m	Alkalinity, Total as CaCO3	94	mg/L	Dissolved
6/29/1936	Water Surface	25	25	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
6/29/1936	Water Surface	50	50	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
6/29/1936	Water Surface	60	60	m	Alkalinity, Total as CaCO3	98	mg/L	Dissolved
4/18/1937	Water Surface	0	0	m	Alkalinity, Total as CaCO3	73	mg/L	Dissolved
4/18/1937	Water Surface	0	0	m	Alkalinity, Total as CaCO3	87	mg/L	Dissolved
4/18/1937	Water Surface	10	10	m	Alkalinity, Total as CaCO3	84	mg/L	Dissolved
4/18/1937	Water Surface	10	10	m	Alkalinity, Total as CaCO3	89	mg/L	Dissolved
4/18/1937	Water Surface	20	20	m	Alkalinity, Total as CaCO3	84	mg/L	Dissolved
4/18/1937	Water Surface	20	20	m	Alkalinity, Total as CaCO3	89	mg/L	Dissolved
4/18/1937	Water Surface	30	30	m	Alkalinity, Total as CaCO3	90	mg/L	Dissolved
4/18/1937	Water Surface	30	30	m	Alkalinity, Total as CaCO3	90	mg/L	Dissolved
4/18/1937	Water Surface	50	50	m	Alkalinity, Total as CaCO3	84	mg/L	Dissolved
4/18/1937	Water Surface	50	50	m	Alkalinity, Total as CaCO3	90	mg/L	Dissolved
4/18/1937	Water Surface	75	75	m	Alkalinity, Total as CaCO3	87	mg/L	Dissolved
4/18/1937	Water Surface	100	100	m	Alkalinity, Total as CaCO3	86	mg/L	Dissolved

Field Collection Start Date	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Value Units	Fraction Analyzed
4/18/1937	Water Surface	150	150	m	Alkalinity, Total as CaCO3	89	mg/L	Dissolved
7/14/1938	Water Surface	0	0	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
7/14/1938	Water Surface	10	10	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
7/14/1938	Water Surface	20	20	m	Alkalinity, Total as CaCO3	98	mg/L	Dissolved
7/14/1938	Water Surface	30	30	m	Alkalinity, Total as CaCO3	99	mg/L	Dissolved
7/14/1938	Water Surface	50	50	m	Alkalinity, Total as CaCO3	99	mg/L	Dissolved
7/14/1938	Water Surface	75	75	m	Alkalinity, Total as CaCO3	100	mg/L	Dissolved
7/14/1938	Water Surface	100	100	m	Alkalinity, Total as CaCO3	98	mg/L	Dissolved
7/14/1938	Water Surface	150	150	m	Alkalinity, Total as CaCO3	100	mg/L	Dissolved
7/15/1938	Water Surface	0	0	m	Alkalinity, Total as CaCO3	97	mg/L	Dissolved
7/15/1938	Water Surface	10	10	m	Alkalinity, Total as CaCO3	102	mg/L	Dissolved
7/15/1938	Water Surface	20	20	m	Alkalinity, Total as CaCO3	101	mg/L	Dissolved
7/15/1938	Water Surface	30	30	m	Alkalinity, Total as CaCO3	101	mg/L	Dissolved
7/15/1938	Water Surface	50	50	m	Alkalinity, Total as CaCO3	103	mg/L	Dissolved
4/1/1939	Water Surface	0	0	m	Alkalinity, Total as CaCO3	76	mg/L	Dissolved
4/1/1939	Water Surface	10	10	m	Alkalinity, Total as CaCO3	99	mg/L	Dissolved
4/1/1939	Water Surface	20	20	m	Alkalinity, Total as CaCO3	99	mg/L	Dissolved
4/1/1939	Water Surface	30	30	m	Alkalinity, Total as CaCO3	99	mg/L	Dissolved
4/1/1939	Water Surface	50	50	m	Alkalinity, Total as CaCO3	95	mg/L	Dissolved
4/1/1939	Water Surface	67	67	m	Alkalinity, Total as CaCO3	99	mg/L	Dissolved
2/17/1940	Water Surface	0	0	m	Alkalinity, Total as CaCO3	101	mg/L	Dissolved
2/17/1940	Water Surface	10	10	m	Alkalinity, Total as CaCO3	109	mg/L	Dissolved
2/17/1940	Water Surface	20	20	m	Alkalinity, Total as CaCO3	109	mg/L	Dissolved
2/17/1940	Water Surface	30	30	m	Alkalinity, Total as CaCO3	110	mg/L	Dissolved
2/17/1940	Water Surface	50	50	m	Alkalinity, Total as CaCO3	109	mg/L	Dissolved
2/17/1940	Water Surface	65	65	m	Alkalinity, Total as CaCO3	109	mg/L	Dissolved
7/9/1940	Water Surface	0	0	m	Alkalinity, Total as CaCO3	115	mg/L	Dissolved
7/9/1940	Water Surface	10	10	m	Alkalinity, Total as CaCO3	108	mg/L	Dissolved
7/9/1940	Water Surface	20	20	m	Alkalinity, Total as CaCO3	110	mg/L	Dissolved
7/9/1940	Water Surface	30	30	m	Alkalinity, Total as CaCO3	107	mg/L	Dissolved
7/9/1940	Water Surface	50	50	m	Alkalinity, Total as CaCO3	110	mg/L	Dissolved
7/9/1940	Water Surface	61	61	m	Alkalinity, Total as CaCO3	114	mg/L	Dissolved
8/15/1941	Water Surface	0	0	m	Alkalinity, Total as CaCO3	113	mg/L	Dissolved
8/15/1941	Water Surface	20	20	m	Alkalinity, Total as CaCO3	112	mg/L	Dissolved
8/15/1941	Water Surface	50	50	m	Alkalinity, Total as CaCO3	112	mg/L	Dissolved
8/16/1941	Water Surface	0	0	m	Alkalinity, Total as CaCO3	113	mg/L	Dissolved
8/16/1941	Water Surface	10	10	m	Alkalinity, Total as CaCO3	113	mg/L	Dissolved

Field Collection Start Date	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Value Units	Fraction Analyzed
8/16/1941	Water Surface	20	20	m	Alkalinity, Total as CaCO3	113	mg/L	Dissolved
8/16/1941	Water Surface	30	30	m	Alkalinity, Total as CaCO3	113	mg/L	Dissolved
8/16/1941	Water Surface	50	50	m	Alkalinity, Total as CaCO3	113	mg/L	Dissolved
8/16/1941	Water Surface	75	75	m	Alkalinity, Total as CaCO3	113	mg/L	Dissolved
8/16/1941	Water Surface	100	100	m	Alkalinity, Total as CaCO3	113	mg/L	Dissolved
8/16/1941	Water Surface	150	150	m	Alkalinity, Total as CaCO3	112	mg/L	Dissolved
2/10/1958	Water Surface	0	0	m	Alkalinity, Total as CaCO3	6	mg/L	Dissolved
2/10/1958	Water Surface	10	10	m	Alkalinity, Total as CaCO3	4	mg/L	Dissolved
2/10/1958	Water Surface	20	20	m	Alkalinity, Total as CaCO3	5	mg/L	Dissolved
2/10/1958	Water Surface	40	40	m	Alkalinity, Total as CaCO3	4	mg/L	Dissolved
2/10/1958	Water Surface	55	55	m	Alkalinity, Total as CaCO3	4	mg/L	Dissolved
					Minimum	4	mg/L	
					Average	92	mg/L	
					Maximum	115	mg/L	
					90th Percentile	112.3	mg/L	
					Count	98		

Table C - 3: Ambient Ammonia Data

Activity Start Date	Depth Name	Depth	Depth Units	Monitoring Location Name	Characteristic Name	Result Fraction	Result Value	Result Value Units	Result (ug/L)
8/20/2010				NCCA10-2233	Ammonia	Filtered, field	0.015	mg/L	15
7/20/2004	Surface	0	m	Carr Inlet	Ammonia-nitrogen	Dissolved	0.02089	mg/L	20.89
7/20/2004	Surface	0	m	Carr Inlet	Ammonia-nitrogen	Dissolved	0.0007	mg/L	0.7
7/20/2004	Surface	0	m	Carr Inlet	Ammonia-nitrogen	Dissolved	0.0239	mg/L	23.9
6/6/1999				East Anderson Island/North Cormorant Passage	Ammonia	Total	246.6	ug/L	246.6
6/6/1999				East Anderson Island/North Cormorant Passage	Ammonia	Total	18.906	ug/L	18.91
11/10/1999				East Anderson Island/North Cormorant Passage	Ammonia	Total	1100	ug/L	1100
6/6/1999				East Anderson Island/North Cormorant Passage	Ammonia	Total	748.02	ug/L	748.02
6/6/1999				East Anderson Island/North Cormorant Passage	Ammonia	Total	797.34	ug/L	797.34
6/6/1999				East Anderson Island/North Cormorant Passage	Ammonia	Total	20.55	ug/L	20.55
6/6/1999				East Anderson Island/North Cormorant Passage	Ammonia	Total	246.6	ug/L	246.6
6/6/1999				East Anderson Island/North Cormorant Passage	Ammonia	Total	2819.46	ug/L	2819.46
6/6/1999				East Anderson Island/North Cormorant Passage	Ammonia	Total	23.016	ug/L	23.016
11/10/1999				East Anderson Island/North Cormorant Passage	Ammonia	Total	7.73266	ug/L	7.73
6/16/2000	Bottom	125	m	East Anderson Island/North Cormorant Passage	Ammonia-nitrogen	Dissolved	0.03629	mg/L	36.29

Activity Start Date	Depth Name	Depth	Depth Units	Monitoring Location Name	Characteristic Name	Result Fraction	Result Value	Result Value Units	Result (ug/L)
6/16/2000	Bottom	125	m	East Anderson Island/North Cormorant Passage	Ammonia-nitrogen	Dissolved	0.0339	mg/L	33.9
6/16/2000	Bottom	125	m	East Anderson Island/North Cormorant Passage	Ammonia-nitrogen	Dissolved	0.0318	mg/L	31.8
								Minimum	0.7
								Average	364.2
								90th Percentile	918
								Maximum	2819.5
								Count	17

Table C - 4: Ambient Arsenic Data

Field Collection Start Date	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Sample ID	Result Parameter Name	Result Value	Result Value Units	Fraction Analyzed
7/9/2009	Water surface	15	15	m	0906045-13	Arsenic	1.35	ug/L	Dissolved
7/9/2009	Water surface	90	90	m	0906045-14	Arsenic	1.34	ug/L	Dissolved
10/1/2009	Water surface	15	15	m	0910041-13	Arsenic	1.26	ug/L	Dissolved
10/1/2009	Water surface	85	85	m	0910041-14	Arsenic	1.29	ug/L	Dissolved
1/11/2010	Water surface	10	10	m	1001013-13	Arsenic	1.35	ug/L	Dissolved
1/11/2010	Water surface	90	90	m	1001013-14	Arsenic	1.45	ug/L	Dissolved
						Minimum	1.26	ug/L	
						Average	1.34	ug/L	
						Maximum	1.45	ug/L	
						90^{th} Percentile	1.4	ug/L	
						Count	6		

Table C - 5: Ambient Cadmium Data

Field Collection Start Date	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Sample ID	Result Parameter Name	Result Value	Result Value Units	Fraction Analyzed
10/1/2009	Water surface	15	15	m	0910041-13	Cadmium	0.069	ug/L	Dissolved
1/11/2010	Water surface	90	90	m	1001013-14	Cadmium	0.072	ug/L	Dissolved
7/9/2009	Water surface	15	15	m	0906045-13	Cadmium	0.068	ug/L	Dissolved
7/9/2009	Water surface	90	90	m	0906045-14	Cadmium	0.073	ug/L	Dissolved
1/11/2010	Water surface	10	10	m	1001013-13	Cadmium	0.081	ug/L	Dissolved
						Minimum	0.068	ug/L	

Field Collection Start Date	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Sample ID	Result Parameter Name	Result Value	Result Value Units	Fraction Analyzed
						Average	0.073	ug/L	
						Maximum	0.081	ug/L	
						90th Percentile	0.078	ug/L	
						Count	5		

Table C - 6: Ambient Copper Data

Field Collection Start Date	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Sample ID	Result Parameter Name	Result Value	Result Value Units	Fraction Analyzed
10/1/2009	Water surface	15	15	m	0910041-13	Copper	0.3	ug/L	Dissolved
7/9/2009	Water surface	15	15	m	0906045-13	Copper	0.39	ug/L	Dissolved
1/11/2010	Water surface	10	10	m	1001013-13	Copper	0.39	ug/L	Dissolved
7/9/2009	Water surface	90	90	m	0906045-14	Copper	0.37	ug/L	Dissolved
1/11/2010	Water surface	90	90	m	1001013-14	Copper	0.38	ug/L	Dissolved
						Minimum	0.3	ug/L	
						Average	0.366	ug/L	
						Maximum	0.39	ug/L	
						90th Percentile	0.39	ug/L	
						Count	5		

Table C - 7: Ambient Enterococci Data

Field Collection Start Date	Sample ID	Result Parameter Name	Result Value*	Result Value Units
5/26/2009	17919	Enterococci	10	MPN/100mL
5/26/2009	17920	Enterococci	10	MPN/100mL
5/26/2009	17921	Enterococci	10	MPN/100mL
7/20/2009	19716	Enterococci	29	MPN/100mL
7/20/2009	19717	Enterococci	22	MPN/100mL
7/20/2009	19719	Enterococci	10	MPN/100mL
7/20/2009	19718	Enterococci	12	MPN/100mL
5/19/2015	65436	Enterococci	10	MPN/100mL
5/19/2015	65437	Enterococci	10	MPN/100mL

Field Collection Start Date	Sample ID	Result Parameter Name	Result Value*	Result Value Units
5/19/2015	65438	Enterococci	20	MPN/100mL
5/19/2015	65439	Enterococci	10	MPN/100mL
5/26/2015	65529	Enterococci	10	MPN/100mL
5/26/2015	65530	Enterococci	10	MPN/100mL
5/26/2015	65531	Enterococci	10	MPN/100mL
6/1/2015	65722	Enterococci	10	MPN/100mL
6/1/2015	65725	Enterococci	10	MPN/100mL
6/1/2015	65723	Enterococci	10	MPN/100mL
6/1/2015	65724	Enterococci	20	MPN/100mL
6/8/2015	65941	Enterococci	10	MPN/100mL
6/8/2015	65942	Enterococci	20	MPN/100mL
6/8/2015	65943	Enterococci	10	MPN/100mL
6/15/2015	66216	Enterococci	10	MPN/100mL
6/15/2015	66217	Enterococci	10	MPN/100mL
6/15/2015	66218	Enterococci	10	MPN/100mL
6/22/2015	66444	Enterococci	20	MPN/100mL
6/22/2015	66445	Enterococci	20	MPN/100mL
6/22/2015	66446	Enterococci	31	MPN/100mL
6/29/2015	66661	Enterococci	10	MPN/100mL
6/29/2015	66658	Enterococci	10	MPN/100mL
6/29/2015	66659	Enterococci	10	MPN/100mL
6/29/2015	66660	Enterococci	10	MPN/100mL
7/7/2015	67073	Enterococci	370	MPN/100mL
7/7/2015	67074	Enterococci	160	MPN/100mL
7/7/2015	67075	Enterococci	10	MPN/100mL
7/9/2015	67086	Enterococci	20	MPN/100mL
7/9/2015	67087	Enterococci	10	MPN/100mL
7/9/2015	67088	Enterococci	10	MPN/100mL
7/13/2015	67232	Enterococci	10	MPN/100mL
7/13/2015	67229	Enterococci	10	MPN/100mL
7/13/2015	67230	Enterococci	10	MPN/100mL
7/13/2015	67231	Enterococci	10	MPN/100mL
7/20/2015	67448	Enterococci	10	MPN/100mL
7/20/2015	67449	Enterococci	120	MPN/100mL
7/20/2015	67450	Enterococci	10	MPN/100mL
7/27/2015	67696	Enterococci	10	MPN/100mL
7/27/2015	67697	Enterococci	110	MPN/100mL
7/27/2015	67699	Enterococci	10	MPN/100mL

Field Collection Start Date	Sample ID	Result Parameter Name	Result Value*	Result Value Units
7/27/2015	67698	Enterococci	10	MPN/100mL
8/3/2015	67917	Enterococci	52	MPN/100mL
8/3/2015	67918	Enterococci	10	MPN/100mL
8/3/2015	67919	Enterococci	10	MPN/100mL
8/10/2015	68115	Enterococci	10	MPN/100mL
8/10/2015	68116	Enterococci	10	MPN/100mL
8/10/2015	68118	Enterococci	10	MPN/100mL
8/10/2015	68117	Enterococci	10	MPN/100mL
8/17/2015	68385	Enterococci	10	MPN/100mL
8/17/2015	68386	Enterococci	10	MPN/100mL
8/17/2015	68387	Enterococci	10	MPN/100mL
8/24/2015	68553	Enterococci	10	MPN/100mL
8/24/2015	68554	Enterococci	10	MPN/100mL
8/24/2015	68555	Enterococci	10	MPN/100mL
8/31/2015	68788	Enterococci	20	MPN/100mL
8/31/2015	68789	Enterococci	63	MPN/100mL
8/31/2015	68790	Enterococci	10	MPN/100mL
		Minimum	10	MPN/100mL
		Average	25	MPN/100mL
		Geo Mean	14	MPN/100mL
		Maximum	370	MPN/100mL
		90th Percentile	30	MPN/100mL
		Count	64	

*The detection limit is 10 MPN/100 mL. If the analyte was not detected above the detection limit, the result was set to 10.

Table C - 8: Ambient Fecal Coliform

Station	Date	Tide	Fecal Coliform Value (MPN/100 mL)*
803	11/1/2011	Flood	1.7
803	12/13/2011	Ebb	1.7
803	1/31/2012	Ebb	1.7
803	2/15/2012	Ebb	1.7
803	3/1/2012	Ebb	4.5
803	3/27/2012	Ebb	1.7
803	4/9/2012	Ebb	1.7
803	5/30/2012	Flood	1.7

Station	Date	Tide	Fecal Coliform Value (MPN/100 mL)*
803	6/28/2012	Flood	1.7
803	7/11/2012	Flood	1.7
803	8/7/2012	Ebb	1.7
803	8/13/2012	Flood	1.7
803	9/20/2012	Ebb	1.7
803	10/18/2012	Ebb	1.7
803	11/6/2012	Flood	1.7
803	11/20/2012	Ebb	13
803	12/4/2012	Ebb	4.5
803	½/2013	Ebb	1.7
803	1/14/2013	Ebb	1.7
803	2/20/2013	Flood	1.7
803	¾/2013	Ebb	1.7
803	5/7/2013	Flood	1.7
803	6/11/2013	Ebb	1.7
803	7/2/2013	Flood	1.7
803	9/3/2013	Flood	1.7
803	11/5/2013	Ebb	1.7
803	2/4/2014	Ebb	1.7
803	3/25/2014	Flood	1.7
803	4/17/2014	Ebb	1.7
803	5/6/2014	Ebb	1.7
803	6/3/2014	Ebb	1.7
803	7/1/2014	Ebb	1.7
803	8/5/2014	Flood	1.7
803	12/1/2014	Flood	1.7
803	2/25/2015	Ebb	1.7
803	3/10/2015	Ebb	1.7
803	5/6/2015	Ebb	2
803	7/6/2015	Ebb	1.7
803	9/3/2015	Ebb	1.7
803	11/2/2015	Ebb	2
803	2/17/2016	Flood	1.7
803	4/28/2016	Ebb	1.7
803	6/9/2016	Ebb	1.8
803	8/9/2016	Ebb	1.7
803	10/4/2016	Ebb	1.7
803	12/5/2016	Ebb	1.7
803	1/3/2017	Ebb	1.7

Station	Date	Tide	Fecal Coliform Value (MPN/100 mL)*
803	3/6/2017	Ebb	1.7
803	5/17/2017	Ebb	1.8
803	7/12/2017	Ebb	1.7
803	9/13/2017	Flood	1.7
803	11/6/2017	Ebb	1.7
803	12/12/2017	Flood	2
803	1/23/2018	Ebb	1.7
803	3/6/2018	Ebb	1.7
803	5/3/2018	Ebb	1.7
803	8/1/2018	Ebb	1.7
803	9/13/2018	Ebb	1.7
803	11/14/2018	Ebb	1.7
803	2/28/2019	Flood	1.7
803	4/25/2019	Ebb	1.7
803	6/25/2019	Flood	1.7
803	8/6/2019	Ebb	1.7
803	10/16/2019	Ebb	1.7
803	12/18/2019	Ebb	2
803	2/18/2020	Flood	2
803	3/30/2020	Ebb	1.7
803	5/5/2020	Flood	1.7
803	7/14/2020	Flood	2
803	8/11/2020	Flood	7.8
803	10/19/2020	Ebb	2
803	12/3/2020	Ebb	1.7
803	1/6/2021	Flood	1.8
803	3/3/2021	Ebb	1.8
803	5/17/2021	Ebb	2
803	7/6/2021	Flood	1.7
803	9/23/2021	Ebb	7.8
803	11/29/2021	Flood	2
803	3/24/2022	Ebb	1.7
803	4/20/2022	Ebb	1.7
803	6/13/2022	Flood	1.7
803	8/22/2022	Flood	4
803	10/19/2022	Flood	1.7
803	12/6/2022	Flood	1.7
803	1/10/2023	Ebb	1.7
803	3/28/2023	Flood	1.7

Station	Date	Tide	Fecal Coliform Value (MPN/100 mL)*
803	5/10/2023	Ebb	1.7
803	7/18/2023	Ebb	1.7
803	9/5/2023	Flood	1.7
803	11/30/2023	Ebb	1.7
803	2/15/2024	Ebb	1.7
803	4/11/2024	Ebb	1.7
803	6/4/2024	Flood	1.7
803	8/15/2024	Flood	1.7
803	10/8/2024	Ebb	1.7
803	12/10/2024	Flood	1.8
803	1/28/2025	Ebb	2
803	3/19/2025	Ebb	1.7
		Minimum	1.7
		Average	2.1
		Geo Mean	1.9
		90th Percentile	2
		Maximum	13
		Count	98

*The detection limit is 1.7 MPN/100 mL. If the analyte was not detected above the detection limit, the result was set to 1.7.

Table C - 9: Ambient Lead

Field Collection Start Date	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Sample ID	Result Parameter Name	Result Value	Result Value Units	Fraction Analyzed
10/1/2009	Water surface	15	15	m	0910041-13	Lead	0.039	ug/L	Dissolved
10/1/2009	Water surface	85	85	m	0910041-14	Lead	0.045	ug/L	Dissolved
1/11/2010	Water surface	10	10	m	1001013-13	Lead	0.006	ug/L	Dissolved
1/11/2010	Water surface	90	90	m	1001013-14	Lead	0.007	ug/L	Dissolved
						Minimum	0.006	ug/L	
						Average	0.024	ug/L	
						Maximum	0.045	ug/L	
						Standard Deviation	0.043	ug/L	
						Count	4		

Table C - 10: Ambient Profile Maximum pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	1/5/99 10:31 PM	Water Surface	0.5	111	m	pH (profile maximum)	7.93651	pH
GOR001	2/26/99 9:37 PM	Water Surface	0.5	84.5	m	pH (profile maximum)	7.86442	pH
GOR001	3/18/99 9:49 PM	Water Surface	0.5	106.5	m	pH (profile maximum)	7.79414	pH
GOR001	4/13/99 10:08 PM	Water Surface	0.5	108	m	pH (profile maximum)	7.86566	pH
GOR001	6/7/99 10:39 PM	Water Surface	0.5	104	m	pH (profile maximum)	7.90406	pH
GOR001	3/21/00 10:51 PM	Water Surface	0.5	97.5	m	pH (profile maximum)	7.89993	pH
GOR001	4/11/00 10:13 PM	Water Surface	0.5	108	m	pH (profile maximum)	7.99855	pH
GOR001	5/2/00 10:29 PM	Water Surface	0.5	80	m	pH (profile maximum)	8.14204	pH
GOR001	6/13/00 10:47 PM	Water Surface	0.5	92.5	m	pH (profile maximum)	7.9947	pH
GOR001	3/17/03 10:15 PM	Water Surface	1.5	167.5	m	pH (profile maximum)	7.77134	pH
GOR001	5/13/03 9:54 PM	Water Surface	1.5	26	m	pH (profile maximum)	8.023	pH
GOR001	6/19/03 10:35 PM	Water Surface	2	169.5	m	pH (profile maximum)	8.19785	pH
GOR001	1/27/04 7:34 PM	Water Surface	1.5	169	m	pH (profile maximum)	7.70702	pH
GOR001	2/27/04 8:38 PM	Water Surface	1	165.5	m	pH (profile maximum)	7.74277	pH
GOR001	3/22/04 9:34 PM	Water Surface	1.5	165.5	m	pH (profile maximum)	7.81299	pH
GOR001	4/26/04 9:51 PM	Water Surface	1.5	164	m	pH (profile maximum)	8.15956	pH
GOR001	5/25/04 9:01 PM	Water Surface	1	164.5	m	pH (profile maximum)	8.0017	pH
GOR001	6/8/04 10:01 PM	Water Surface	1	166.5	m	pH (profile maximum)	8.06793	pH
GOR001	7/19/04 10:25 PM	Water Surface	1	128	m	pH (profile maximum)	8.23848	pH
GOR001	8/30/04 9:05 PM	Water Surface	1.5	165	m	pH (profile maximum)	8.00208	pH
GOR001	9/22/04 10:32 PM	Water Surface	1.5	166.5	m	pH (profile maximum)	8.17139	pH
GOR001	11/10/04 8:36 PM	Water Surface	1	168	m	pH (profile maximum)	7.99655	pH
GOR001	1/10/05 8:02 PM	Water Surface	1	167.5	m	pH (profile maximum)	7.82623	pH
GOR001	2/14/05 7:59 PM	Water Surface	1.5	142.5	m	pH (profile maximum)	7.78701	pH
GOR001	3/15/05 7:08 PM	Water Surface	1.5	164.5	m	pH (profile maximum)	7.84138	pH
GOR001	4/5/05 9:16 PM	Water Surface	1.5	167	m	pH (profile maximum)	7.82407	pH
GOR001	5/3/05 9:48 PM	Water Surface	1.5	167	m	pH (profile maximum)	7.94171	pH
GOR001	6/6/05 7:54 PM	Water Surface	1.5	163	m	pH (profile maximum)	7.88756	pH
GOR001	7/27/05 8:11 PM	Water Surface	1.5	166.5	m	pH (profile maximum)	8.04027	pH
GOR001	8/16/05 8:54 PM	Water Surface	1	166.5	m	pH (profile maximum)	8.1163	pH
GOR001	9/7/05 9:53 PM	Water Surface	1.5	164	m	pH (profile maximum)	7.96886	pH
GOR001	10/12/05 7:03 PM	Water Surface	1.5	45.5	m	pH (profile maximum)	7.73183	pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	11/7/05 8:09 PM	Water Surface	1	167	m	pH (profile maximum)	7.62284	pH
GOR001	12/5/05 7:27 PM	Water Surface	1	168	m	pH (profile maximum)	7.55036	pH
GOR001	1/12/06 7:55 PM	Water Surface	1	167.5	m	pH (profile maximum)	7.4318	pH
GOR001	2/8/06 6:58 PM	Water Surface	1	166.5	m	pH (profile maximum)	7.34834	pH
GOR001	3/14/06 7:59 PM	Water Surface	1	166.5	m	pH (profile maximum)	7.38935	pH
GOR001	4/11/06 8:56 PM	Water Surface	1	166	m	pH (profile maximum)	7.61251	pH
GOR001	5/1/06 6:50 PM	Water Surface	1	164.5	m	pH (profile maximum)	7.84996	pH
GOR001	6/12/06 7:21 PM	Water Surface	0.5	162	m	pH (profile maximum)	7.76	pH
GOR001	7/10/06 10:00 PM	Water Surface	1	166	m	pH (profile maximum)	7.92581	pH
GOR001	8/8/06 7:44 PM	Water Surface	1	164	m	pH (profile maximum)	7.76336	pH
GOR001	9/6/06 7:52 PM	Water Surface	0.5	164.5	m	pH (profile maximum)	7.83831	pH
GOR001	10/10/06 8:00 PM	Water Surface	0.5	121	m	pH (profile maximum)	7.84743	pH
GOR001	11/14/06 7:36 PM	Water Surface	1	167	m	pH (profile maximum)	7.61017	pH
GOR001	12/18/06 7:49 PM	Water Surface	1	167.5	m	pH (profile maximum)	7.52881	pH
GOR001	2/8/07 10:18 PM	Water Surface	0.5	165	m	pH (profile maximum)	7.41727	pH
GOR001	3/28/07 9:41 PM	Water Surface	0.5	167.5	m	pH (profile maximum)	7.68705	pH
GOR001	4/18/07 9:02 PM	Water Surface	0.5	163	m	pH (profile maximum)	7.83358	pH
GOR001	5/7/07 10:26 PM	Water Surface	0.5	163.5	m	pH (profile maximum)	7.89983	pH
GOR001	6/18/07 9:24 PM	Water Surface	0.5	163.5	m	pH (profile maximum)	8.02452	pH
GOR001	7/17/07 10:21 PM	Water Surface	0.5	164	m	pH (profile maximum)	7.95884	pH
GOR001	8/29/07 8:41 PM	Water Surface	1	165	m	pH (profile maximum)	7.68806	pH
GOR001	9/25/07 10:35 PM	Water Surface	0.5	135	m	pH (profile maximum)	7.74355	pH
GOR001	8/19/08 6:20 PM	Water Surface	0.5	167	m	pH (profile maximum)	7.74369	pH
GOR001	9/22/08 6:21 PM	Water Surface	0.5	166.5	m	pH (profile maximum)	7.72572	pH
GOR001	10/14/08 7:06 PM	Water Surface	1	167.5	m	pH (profile maximum)	7.76164	pH
GOR001	3/30/09 10:22 PM	Water Surface	1	163	m	pH (profile maximum)	7.59843	pH
GOR001	4/13/09 8:45 PM	Water Surface	1.5	164	m	pH (profile maximum)	7.6525	pH
GOR001	5/13/09 7:00 PM	Water Surface	1	164.5	m	pH (profile maximum)	7.66779	pH
GOR001	6/3/09 7:22 PM	Water Surface	1	167	m	pH (profile maximum)	7.961	pH
GOR001	7/21/09 6:06 PM	Water Surface	1	162	m	pH (profile maximum)	8.081	pH
GOR001	8/11/09 6:05 PM	Water Surface	0.5	167.5	m	pH (profile maximum)	7.71993	pH
GOR001	9/10/09 6:04 PM	Water Surface	0.5	167.5	m	pH (profile maximum)	7.79254	pH
GOR001	10/21/09 6:31 PM	Water Surface	0.5	148	m	pH (profile maximum)	7.86097	pH
GOR001	11/30/09 8:55 PM	Water Surface	0.5	167	m	pH (profile maximum)	7.62647	pH
GOR001	12/22/09 7:40 PM	Water Surface	0.5	165.5	m	pH (profile maximum)	7.52432	pH
GOR001	1/14/10 9:57 PM	Water Surface	0.5	170.5	m	pH (profile maximum)	7.51118	pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	2/10/10 11:26 PM	Water Surface	1	167.5	m	pH (profile maximum)	7.59767	pH
GOR001	3/2/10 6:46 PM	Water Surface	0.5	164.5	m	pH (profile maximum)	7.52206	pH
GOR001	4/5/10 6:05 PM	Water Surface	0.5	167	m	pH (profile maximum)	7.67914	pH
GOR001	5/5/10 5:16 PM	Water Surface	1	166.5	m	pH (profile maximum)	7.82604	pH
GOR001	6/1/10 5:47 PM	Water Surface	0.5	167	m	pH (profile maximum)	7.73313	pH
GOR001	7/6/10 6:26 PM	Water Surface	0.5	165.5	m	pH (profile maximum)	7.92189	pH
GOR001	9/13/10 6:11 PM	Water Surface	0.5	164.5	m	pH (profile maximum)	7.69134	pH
GOR001	10/4/10 7:30 PM	Water Surface	0.5	166	m	pH (profile maximum)	7.64581	pH
GOR001	11/2/10 5:20 PM	Water Surface	1	166	m	pH (profile maximum)	7.56133	pH
GOR001	12/7/10 6:19 PM	Water Surface	0.5	167.5	m	pH (profile maximum)	7.42254	pH
GOR001	1/10/11 10:05 PM	Water Surface	1	165.5	m	pH (profile maximum)	7.41088	pH
GOR001	2/2/11 8:27 PM	Water Surface	1.5	165.5	m	pH (profile maximum)	7.60995	pH
GOR001	4/12/11 6:39 PM	Water Surface	1	169	m	pH (profile maximum)	7.50192	pH
GOR001	5/4/11 6:30 PM	Water Surface	1	163.5	m	pH (profile maximum)	7.69411	pH
GOR001	6/6/11 6:44 PM	Water Surface	1	167	m	pH (profile maximum)	7.53075	pH
GOR001	7/6/11 5:47 PM	Water Surface	1	167.5	m	pH (profile maximum)	7.91352	pH
GOR001	8/8/11 6:36 PM	Water Surface	1	166.5	m	pH (profile maximum)	8.12078	pH
GOR001	9/12/11 7:30 PM	Water Surface	1	164	m	pH (profile maximum)	8.00033	pH
GOR001	10/12/11 6:25 PM	Water Surface	1	165	m	pH (profile maximum)	7.88327	pH
GOR001	11/3/11 6:32 PM	Water Surface	1	169	m	pH (profile maximum)	7.81604	pH
GOR001	12/8/11 6:20 PM	Water Surface	1	166	m	pH (profile maximum)	7.59824	pH
GOR001	7/17/12 4:54 PM	Water Surface	1	164.5	m	pH (profile maximum)	7.87129	pH
GOR001	8/13/12 4:57 PM	Water Surface	1	162.5	m	pH (profile maximum)	8.21834	pH
GOR001	4/2/13 7:01 PM	Water Surface	1	168.5	m	pH (profile maximum)	7.5331	pH
GOR001	5/6/13 6:35 PM	Water Surface	1.5	163.5	m	pH (profile maximum)	7.94161	pH
GOR001	6/5/13 5:54 PM	Water Surface	1.5	163.5	m	pH (profile maximum)	7.89471	pH
GOR001	7/9/13 6:25 PM	Water Surface	1.5	164.5	m	pH (profile maximum)	7.90545	pH
GOR001	8/13/13 6:06 PM	Water Surface	1	167.5	m	pH (profile maximum)	8.02617	pH
GOR001	11/20/13 6:56 PM	Water Surface	2	166	m	pH (profile maximum)	7.4859	pH
GOR001	12/31/13 6:50 PM	Water Surface	2	166	m	pH (profile maximum)	7.32133	pH
GOR001	1/14/14 7:02 PM	Water Surface	1	166.5	m	pH (profile maximum)	7.2583	pH
GOR001	2/4/14 6:53 PM	Water Surface	1.5	167.5	m	pH (profile maximum)	7.25028	pH
GOR001	3/10/14 5:36 PM	Water Surface	1	149.5	m	pH (profile maximum)	7.2089	pH
GOR001	4/1/14 6:38 PM	Water Surface	1	164.5	m	pH (profile maximum)	7.40764	pH
GOR001	5/6/14 4:46 PM	Water Surface	2	167.5	m	pH (profile maximum)	7.7408	pH
GOR001	6/3/14 5:46 PM	Water Surface	1	165.5	m	pH (profile maximum)	7.78902	pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	8/12/14 5:30 PM	Water Surface	2	167.5	m	pH (profile maximum)	7.94639	pH
GOR001	9/8/14 9:38 PM	Water Surface	2	166	m	pH (profile maximum)	7.89347	pH
GOR001	10/14/14 5:59 PM	Water Surface	2	167.5	m	pH (profile maximum)	7.73417	pH
GOR001	11/10/14 7:21 PM	Water Surface	1	166	m	pH (profile maximum)	7.68133	pH
GOR001	3/17/15 5:51 PM	Water Surface	1	166.5	m	pH (profile maximum)	7.97188	pH
GOR001	4/8/15 5:58 PM	Water Surface	1	166	m	pH (profile maximum)	8.03176	pH
GOR001	5/4/15 6:22 PM	Water Surface	1.5	160.5	m	pH (profile maximum)	7.88368	pH
GOR001	6/4/15 5:52 PM	Water Surface	1	165.5	m	pH (profile maximum)	7.7293	pH
GOR001	7/1/15 5:47 PM	Water Surface	1	160	m	pH (profile maximum)	7.70657	pH
GOR001	8/4/15 10:59 AM	Water Surface	1	170.5	m	pH (profile maximum)	7.7997	pH
GOR001	9/15/15 11:29 AM	Water Surface	1	149.5	m	pH (profile maximum)	7.9003	pH
GOR001	10/6/15 5:52 PM	Water Surface	1	169	m	pH (profile maximum)	7.55727	pH
GOR001	11/9/15 7:18 PM	Water Surface	1	169	m	pH (profile maximum)	7.40869	pH
GOR001	12/14/15 6:41 PM	Water Surface	1	172	m	pH (profile maximum)	7.4414	pH
GOR001	1/19/16 7:02 PM	Water Surface	1	168.5	m	pH (profile maximum)	7.60127	pH
GOR001	2/17/16 7:02 PM	Water Surface	1	167.5	m	pH (profile maximum)	7.60531	pH
GOR001	3/18/16 4:25 PM	Water Surface	1	165.5	m	pH (profile maximum)	7.64649	pH
GOR001	4/7/16 6:09 PM	Water Surface	1	164.5	m	pH (profile maximum)	7.79073	pH
GOR001	5/10/16 8:36 PM	Water Surface	1	150.5	m	pH (profile maximum)	8.25358	pH
GOR001	6/8/16 10:15 PM	Water Surface	1	152.5	m	pH (profile maximum)	8.49321	pH
GOR001	9/22/16 5:55 PM	Water Surface	1	147.5	m	pH (profile maximum)	7.37257	pH
GOR001	10/10/16 9:00 PM	Water Surface	1	167	m	pH (profile maximum)	7.52769	pH
GOR001	11/9/16 8:34 PM	Water Surface	1	170	m	pH (profile maximum)	7.48158	pH
GOR001	12/7/16 10:11 PM	Water Surface	1.5	172	m	pH (profile maximum)	7.55105	pH
						Minimum	7.21	
						Average	7.77	
						90th Percentile	8.03	
						Maximum	8.49	
						Count	128	

Table C - 11: Ambient Profile Median pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	5/6/2014 16:46	Water Surface	2	167.5	m	pH (profile median)	7.56981	pH
GOR001	11/10/2014 19:14	Water Surface	1	166	m	pH (profile median)	7.66181	pH
GOR001	4/1/2014 18:38	Water Surface	1	164.5	m	pH (profile median)	7.32018	pH
GOR001	1/14/2014 19:00	Water Surface	1	166.5	m	pH (profile median)	7.24668	pH
GOR001	7/9/2013 18:25	Water Surface	1.5	164.5	m	pH (profile median)	7.77121	pH
GOR001	2/4/2014 18:53	Water Surface	1.5	167.5	m	pH (profile median)	7.24056	pH
GOR001	8/12/2014 17:30	Water Surface	2	167.5	m	pH (profile median)	7.90274	pH
GOR001	10/14/2014 17:59	Water Surface	2	167.5	m	pH (profile median)	7.70885	pH
GOR001	6/3/2014 17:46	Water Surface	1	165.5	m	pH (profile median)	7.67359	pH
GOR001	5/6/2013 18:35	Water Surface	1.5	163.5	m	pH (profile median)	7.70768	pH
GOR001	6/5/2013 17:54	Water Surface	1.5	163.5	m	pH (profile median)	7.74755	pH
GOR001	9/8/2014 21:38	Water Surface	2	166	m	pH (profile median)	7.87488	pH
GOR001	12/14/2015 18:41	Water Surface	1	172	m	pH (profile median)	7.43181	pH
GOR001	5/4/2015 18:22	Water Surface	1.5	160.5	m	pH (profile median)	7.79228	pH
GOR001	4/8/2015 17:58	Water Surface	1	166	m	pH (profile median)	7.96178	pH
GOR001	10/10/2016 21:00	Water Surface	1	167	m	pH (profile median)	7.39559	pH
GOR001	8/13/2013 18:06	Water Surface	1	167.5	m	pH (profile median)	7.84433	pH
GOR001	3/10/2014 17:36	Water Surface	1	149.5	m	pH (profile median)	7.17162	pH
GOR001	4/2/2013 19:01	Water Surface	1	168.5	m	pH (profile median)	7.42114	pH
GOR001	10/12/2011 18:22	Water Surface	1	165	m	pH (profile median)	7.76758	pH
GOR001	11/9/2016 20:34	Water Surface	1	170	m	pH (profile median)	7.38472	pH
GOR001	9/22/2016 17:55	Water Surface	1	147.5	m	pH (profile median)	7.29541	pH
GOR001	3/17/2015 17:51	Water Surface	1	166.5	m	pH (profile median)	7.91382	pH
GOR001	7/1/2015 17:47	Water Surface	1	160	m	pH (profile median)	7.59953	pH
GOR001	5/10/2016 20:36	Water Surface	1	150.5	m	pH (profile median)	8.17302	pH
GOR001	6/8/2016 22:15	Water Surface	1	152.5	m	pH (profile median)	8.3405	pH
GOR001	12/7/2016 22:11	Water Surface	1.5	172	m	pH (profile median)	7.54014	pH
GOR001	3/18/2016 16:16	Water Surface	1	165.5	m	pH (profile median)	7.63711	pH
GOR001	11/9/2015 19:17	Water Surface	1	169	m	pH (profile median)	7.39896	pH
GOR001	10/6/2015 17:52	Water Surface	1	169	m	pH (profile median)	7.49482	pH
GOR001	1/19/2016 19:02	Water Surface	1	168.5	m	pH (profile median)	7.48886	pH
GOR001	9/15/2015 11:29	Water Surface	1	149.5	m	pH (profile median)	7.85176	pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	12/31/2013 18:49	Water Surface	2	166	m	pH (profile median)	7.31282	pH
GOR001	9/12/2011 19:30	Water Surface	1	164	m	pH (profile median)	7.85491	pH
GOR001	5/4/2011 18:30	Water Surface	1	163.5	m	pH (profile median)	7.50874	pH
GOR001	4/12/2011 18:39	Water Surface	1	169	m	pH (profile median)	7.37563	pH
GOR001	1/10/2011 22:05	Water Surface	1	165.5	m	pH (profile median)	7.38332	pH
GOR001	7/6/2011 17:47	Water Surface	1	167.5	m	pH (profile median)	7.81454	pH
GOR001	2/2/2011 20:25	Water Surface	1.5	165.5	m	pH (profile median)	7.60601	pH
GOR001	7/17/2012 16:54	Water Surface	1	164.5	m	pH (profile median)	7.78881	pH
GOR001	8/4/2015 10:59	Water Surface	1	170.5	m	pH (profile median)	7.7417	pH
GOR001	6/4/2015 17:52	Water Surface	1	165.5	m	pH (profile median)	7.6505	pH
GOR001	2/17/2016 19:02	Water Surface	1	167.5	m	pH (profile median)	7.4963	pH
GOR001	4/7/2016 18:08	Water Surface	1	164.5	m	pH (profile median)	7.75947	pH
GOR001	12/8/2011 18:19	Water Surface	1	166	m	pH (profile median)	7.5861	pH
GOR001	6/6/2011 18:44	Water Surface	1	167	m	pH (profile median)	7.40696	pH
GOR001	11/3/2011 18:32	Water Surface	1	169	m	pH (profile median)	7.75278	pH
GOR001	8/8/2011 18:36	Water Surface	1	166.5	m	pH (profile median)	8.01983	pH
GOR001	8/13/2012 16:57	Water Surface	1	162.5	m	pH (profile median)	7.86836	pH
GOR001	10/12/2005 19:02	Water Surface	1.5	45.5	m	pH (profile median)	7.72992	pH
GOR001	11/7/2005 20:04	Water Surface	1	167	m	pH (profile median)	7.61464	pH
GOR001	2/8/2006 18:58	Water Surface	1	166.5	m	pH (profile median)	7.31911	pH
GOR001	1/10/2005 19:53	Water Surface	1	167.5	m	pH (profile median)	7.81511	pH
GOR001	7/10/2006 22:00	Water Surface	1	166	m	pH (profile median)	7.82767	pH
GOR001	12/5/2005 19:18	Water Surface	1	168	m	pH (profile median)	7.53799	pH
GOR001	8/16/2005 20:54	Water Surface	1	166.5	m	pH (profile median)	7.94091	pH
GOR001	5/1/2006 18:50	Water Surface	1	164.5	m	pH (profile median)	7.74148	pH
GOR001	6/12/2006 19:20	Water Surface	0.5	162	m	pH (profile median)	7.72394	pH
GOR001	2/14/2005 19:52	Water Surface	1.5	142.5	m	pH (profile median)	7.77295	pH
GOR001	5/3/2005 21:48	Water Surface	1.5	167	m	pH (profile median)	7.88158	pH
GOR001	4/11/2006 20:56	Water Surface	1	166	m	pH (profile median)	7.55697	pH
GOR001	9/7/2005 21:53	Water Surface	1.5	164	m	pH (profile median)	7.89022	pH
GOR001	5/13/2009 19:00	Water Surface	1	164.5	m	pH (profile median)	7.63505	pH
GOR001	9/25/2007 22:33	Water Surface	0.5	135	m	pH (profile median)	7.6075	pH
GOR001	9/22/2008 18:21	Water Surface	0.5	166.5	m	pH (profile median)	7.66966	pH
GOR001	9/10/2009 18:04	Water Surface	0.5	167.5	m	pH (profile median)	7.72897	pH
GOR001	7/17/2007 22:21	Water Surface	0.5	164	m	pH (profile median)	7.91016	pH
GOR001	4/18/2007 21:01	Water Surface	0.5	163	m	pH (profile median)	7.71141	pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	10/14/2008 19:06	Water Surface	1	167.5	m	pH (profile median)	7.71507	pH
GOR001	8/29/2007 20:40	Water Surface	1	165	m	pH (profile median)	7.50426	pH
GOR001	5/7/2007 22:26	Water Surface	0.5	163.5	m	pH (profile median)	7.67632	pH
GOR001	4/13/2009 20:44	Water Surface	1.5	164	m	pH (profile median)	7.61775	pH
GOR001	8/11/2009 18:05	Water Surface	0.5	167.5	m	pH (profile median)	7.59037	pH
GOR001	3/28/2007 21:41	Water Surface	0.5	167.5	m	pH (profile median)	7.63951	pH
GOR001	11/30/2009 20:55	Water Surface	0.5	167	m	pH (profile median)	7.60256	pH
GOR001	10/21/2009 18:31	Water Surface	0.5	148	m	pH (profile median)	7.82938	pH
GOR001	12/22/2009 19:40	Water Surface	0.5	165.5	m	pH (profile median)	7.50848	pH
GOR001	6/18/2007 21:24	Water Surface	0.5	163.5	m	pH (profile median)	7.93597	pH
GOR001	8/19/2008 18:20	Water Surface	0.5	167	m	pH (profile median)	7.63996	pH
GOR001	1/27/2004 19:34	Water Surface	1.5	169	m	pH (profile median)	7.68251	pH
GOR001	6/19/2003 22:35	Water Surface	2	169.5	m	pH (profile median)	8.12239	pH
GOR001	3/22/2004 21:32	Water Surface	1.5	165.5	m	pH (profile median)	7.7986	pH
GOR001	5/25/2004 21:01	Water Surface	1	164.5	m	pH (profile median)	7.90989	pH
GOR001	7/19/2004 22:25	Water Surface	1	128	m	pH (profile median)	8.03067	pH
GOR001	8/30/2004 21:05	Water Surface	1.5	165	m	pH (profile median)	7.92923	pH
GOR001	6/8/2004 22:01	Water Surface	1	166.5	m	pH (profile median)	7.96068	pH
GOR001	5/13/2003 21:54	Water Surface	1.5	26	m	pH (profile median)	7.98329	pH
GOR001	9/22/2004 22:32	Water Surface	1.5	166.5	m	pH (profile median)	8.03109	pH
GOR001	5/2/2000 22:28	Water Surface	0.5	80	m	pH (profile median)	8.07567	pH
GOR001	6/13/2000 22:47	Water Surface	0.5	92.5	m	pH (profile median)	7.95855	pH
GOR001	4/11/2000 22:13	Water Surface	0.5	108	m	pH (profile median)	7.94333	pH
GOR001	4/5/2010 18:05	Water Surface	0.5	167	m	pH (profile median)	7.60739	pH
GOR001	11/2/2010 17:20	Water Surface	1	166	m	pH (profile median)	7.48876	pH
GOR001	9/13/2010 18:11	Water Surface	0.5	164.5	m	pH (profile median)	7.64606	pH
GOR001	2/10/2010 23:26	Water Surface	1	167.5	m	pH (profile median)	7.47337	pH
GOR001	3/2/2010 18:46	Water Surface	0.5	164.5	m	pH (profile median)	7.50349	pH
GOR001	7/6/2010 18:26	Water Surface	0.5	165.5	m	pH (profile median)	7.77406	pH
GOR001	5/5/2010 17:16	Water Surface	1	166.5	m	pH (profile median)	7.71045	pH
GOR001	6/1/2010 17:47	Water Surface	0.5	167	m	pH (profile median)	7.70102	pH
GOR001	12/7/2010 18:19	Water Surface	0.5	167.5	m	pH (profile median)	7.4069	pH
GOR001	1/14/2010 21:57	Water Surface	0.5	170.5	m	pH (profile median)	7.45264	pH
GOR001	10/4/2010 19:30	Water Surface	0.5	166	m	pH (profile median)	7.59996	pH
GOR001	6/6/2005 19:54	Water Surface	1.5	163	m	pH (profile median)	7.85445	pH
GOR001	3/14/2006 19:59	Water Surface	1	166.5	m	pH (profile median)	7.38245	pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	8/8/2006 19:44	Water Surface	1	164	m	pH (profile median)	7.61443	pH
GOR001	3/15/2005 19:06	Water Surface	1.5	164.5	m	pH (profile median)	7.8364	pH
GOR001	4/5/2005 21:16	Water Surface	1.5	167	m	pH (profile median)	7.79699	pH
GOR001	9/6/2006 19:52	Water Surface	0.5	164.5	m	pH (profile median)	7.73712	pH
GOR001	12/18/2006 19:49	Water Surface	1	167.5	m	pH (profile median)	7.49219	pH
GOR001	10/10/2006 20:00	Water Surface	0.5	121	m	pH (profile median)	7.78223	pH
GOR001	11/14/2006 19:36	Water Surface	1	167	m	pH (profile median)	7.55561	pH
GOR001	7/27/2005 20:11	Water Surface	1.5	166.5	m	pH (profile median)	7.92595	pH
GOR001	3/21/2000 22:47	Water Surface	0.5	97.5	m	pH (profile median)	7.8818	pH
GOR001	1/5/1999 22:26	Water Surface	0.5	111	m	pH (profile median)	7.93256	pH
GOR001	4/13/1999 22:08	Water Surface	0.5	108	m	pH (profile median)	7.79643	pH
GOR001	2/26/1999 21:37	Water Surface	0.5	84.5	m	pH (profile median)	7.85203	pH
GOR001	6/7/1999 22:39	Water Surface	0.5	104	m	pH (profile median)	7.87077	pH
						Minimum	7.17	
						Average	7.69	
						90th Percentile	7.94	
						Maximum	8.34	
						Count	117	

Table C - 12: Ambient Profile Minimum pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	1/5/99 10:26 PM	Water Surface	0.5	111	m	pH (profile minimum)	7.93054	pH
GOR001	2/26/99 9:37 PM	Water Surface	0.5	84.5	m	pH (profile minimum)	7.84497	pH
GOR001	3/18/99 9:53 PM	Water Surface	0.5	106.5	m	pH (profile minimum)	7.7651	pH
GOR001	4/13/99 10:14 PM	Water Surface	0.5	108	m	pH (profile minimum)	7.77366	pH
GOR001	6/7/99 10:44 PM	Water Surface	0.5	104	m	pH (profile minimum)	7.84553	pH
GOR001	3/21/00 10:47 PM	Water Surface	0.5	97.5	m	pH (profile minimum)	7.76687	pH
GOR001	4/11/00 10:17 PM	Water Surface	0.5	108	m	pH (profile minimum)	7.93026	pH
GOR001	5/2/00 10:32 PM	Water Surface	0.5	80	m	pH (profile minimum)	8.04249	pH
GOR001	6/13/00 10:52 PM	Water Surface	0.5	92.5	m	pH (profile minimum)	7.9304	pH
GOR001	3/17/03 10:22 PM	Water Surface	1.5	167.5	m	pH (profile minimum)	7.75732	pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	5/13/03 9:55 PM	Water Surface	1.5	26	m	pH (profile minimum)	7.94668	pH
GOR001	6/19/03 10:43 PM	Water Surface	2	169.5	m	pH (profile minimum)	8.10458	pH
GOR001	1/27/04 7:43 PM	Water Surface	1.5	169	m	pH (profile minimum)	7.67638	pH
GOR001	2/27/04 8:47 PM	Water Surface	1	165.5	m	pH (profile minimum)	7.68253	pH
GOR001	3/22/04 9:41 PM	Water Surface	1.5	165.5	m	pH (profile minimum)	7.76264	pH
GOR001	4/26/04 10:00 PM	Water Surface	1.5	164	m	pH (profile minimum)	7.84039	pH
GOR001	5/25/04 9:10 PM	Water Surface	1	164.5	m	pH (profile minimum)	7.8728	pH
GOR001	6/8/04 10:10 PM	Water Surface	1	166.5	m	pH (profile minimum)	7.93176	pH
GOR001	7/19/04 10:31 PM	Water Surface	1	128	m	pH (profile minimum)	6.74518	pH
GOR001	8/30/04 9:14 PM	Water Surface	1.5	165	m	pH (profile minimum)	7.80721	pH
GOR001	9/22/04 10:41 PM	Water Surface	1.5	166.5	m	pH (profile minimum)	7.95171	pH
GOR001	11/10/04 8:41 PM	Water Surface	1	168	m	pH (profile minimum)	7.95317	pH
GOR001	1/10/05 7:53 PM	Water Surface	1	167.5	m	pH (profile minimum)	7.75145	pH
GOR001	2/14/05 7:52 PM	Water Surface	1.5	142.5	m	pH (profile minimum)	7.74786	pH
GOR001	3/15/05 7:14 PM	Water Surface	1.5	164.5	m	pH (profile minimum)	7.82034	pH
GOR001	4/5/05 9:22 PM	Water Surface	1.5	167	m	pH (profile minimum)	7.7317	pH
GOR001	5/3/05 9:55 PM	Water Surface	1.5	167	m	pH (profile minimum)	7.84139	pH
GOR001	6/6/05 8:01 PM	Water Surface	1.5	163	m	pH (profile minimum)	7.80627	pH
GOR001	7/27/05 8:20 PM	Water Surface	1.5	166.5	m	pH (profile minimum)	7.90991	pH
GOR001	8/16/05 9:02 PM	Water Surface	1	166.5	m	pH (profile minimum)	7.88814	pH
GOR001	9/7/05 10:01 PM	Water Surface	1.5	164	m	pH (profile minimum)	7.86299	pH
GOR001	10/12/05 7:03 PM	Water Surface	1.5	45.5	m	pH (profile minimum)	7.72875	pH
GOR001	11/7/05 8:04 PM	Water Surface	1	167	m	pH (profile minimum)	7.6014	pH
GOR001	12/5/05 7:19 PM	Water Surface	1	168	m	pH (profile minimum)	7.53079	pH
GOR001	1/12/06 7:55 PM	Water Surface	1	167.5	m	pH (profile minimum)	7.34499	pH
GOR001	2/8/06 7:06 PM	Water Surface	1	166.5	m	pH (profile minimum)	7.30822	pH
GOR001	3/14/06 8:08 PM	Water Surface	1	166.5	m	pH (profile minimum)	7.37355	pH
GOR001	4/11/06 9:05 PM	Water Surface	1	166	m	pH (profile minimum)	7.54501	pH
GOR001	5/1/06 6:59 PM	Water Surface	1	164.5	m	pH (profile minimum)	7.69315	pH
GOR001	6/12/06 7:28 PM	Water Surface	0.5	162	m	pH (profile minimum)	7.69995	pH
GOR001	7/10/06 10:09 PM	Water Surface	1	166	m	pH (profile minimum)	7.7685	pH
GOR001	8/8/06 7:53 PM	Water Surface	1	164	m	pH (profile minimum)	7.57893	pH
GOR001	9/6/06 8:01 PM	Water Surface	0.5	164.5	m	pH (profile minimum)	7.70145	pH
GOR001	10/10/06 8:06 PM	Water Surface	0.5	121	m	pH (profile minimum)	7.76695	pH
GOR001	11/14/06 7:45 PM	Water Surface	1	167	m	pH (profile minimum)	7.52872	pH
GOR001	12/18/06 7:57 PM	Water Surface	1	167.5	m	pH (profile minimum)	7.45842	pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	2/8/07 10:26 PM	Water Surface	0.5	165	m	pH (profile minimum)	7.3961	pH
GOR001	3/28/07 9:49 PM	Water Surface	0.5	167.5	m	pH (profile minimum)	7.62949	pH
GOR001	4/18/07 9:09 PM	Water Surface	0.5	163	m	pH (profile minimum)	7.64826	pH
GOR001	5/7/07 10:34 PM	Water Surface	0.5	163.5	m	pH (profile minimum)	7.63362	pH
GOR001	6/18/07 9:33 PM	Water Surface	0.5	163.5	m	pH (profile minimum)	7.88024	pH
GOR001	7/17/07 10:30 PM	Water Surface	0.5	164	m	pH (profile minimum)	7.85953	pH
GOR001	8/29/07 8:48 PM	Water Surface	1	165	m	pH (profile minimum)	7.44742	pH
GOR001	9/25/07 10:40 PM	Water Surface	0.5	135	m	pH (profile minimum)	7.57833	pH
GOR001	8/19/08 6:28 PM	Water Surface	0.5	167	m	pH (profile minimum)	7.59862	pH
GOR001	9/22/08 6:29 PM	Water Surface	0.5	166.5	m	pH (profile minimum)	7.58084	pH
GOR001	10/14/08 7:15 PM	Water Surface	1	167.5	m	pH (profile minimum)	7.68507	pH
GOR001	3/30/09 10:30 PM	Water Surface	1	163	m	pH (profile minimum)	7.55053	pH
GOR001	4/13/09 8:53 PM	Water Surface	1.5	164	m	pH (profile minimum)	7.5869	pH
GOR001	5/13/09 7:08 PM	Water Surface	1	164.5	m	pH (profile minimum)	7.61041	pH
GOR001	6/3/09 7:31 PM	Water Surface	1	167	m	pH (profile minimum)	7.774	pH
GOR001	7/21/09 6:13 PM	Water Surface	1	162	m	pH (profile minimum)	7.978	pH
GOR001	8/11/09 6:12 PM	Water Surface	0.5	167.5	m	pH (profile minimum)	7.57705	pH
GOR001	9/10/09 6:13 PM	Water Surface	0.5	167.5	m	pH (profile minimum)	7.68495	pH
GOR001	10/21/09 6:39 PM	Water Surface	0.5	148	m	pH (profile minimum)	7.81573	pH
GOR001	11/30/09 9:04 PM	Water Surface	0.5	167	m	pH (profile minimum)	7.58412	pH
GOR001	12/22/09 7:49 PM	Water Surface	0.5	165.5	m	pH (profile minimum)	7.49269	pH
GOR001	1/14/10 10:06 PM	Water Surface	0.5	170.5	m	pH (profile minimum)	7.44183	pH
GOR001	2/10/10 11:34 PM	Water Surface	1	167.5	m	pH (profile minimum)	7.46522	pH
GOR001	3/2/10 6:54 PM	Water Surface	0.5	164.5	m	pH (profile minimum)	7.49263	pH
GOR001	4/5/10 6:14 PM	Water Surface	0.5	167	m	pH (profile minimum)	7.58797	pH
GOR001	5/5/10 5:25 PM	Water Surface	1	166.5	m	pH (profile minimum)	7.66507	pH
GOR001	6/1/10 5:56 PM	Water Surface	0.5	167	m	pH (profile minimum)	7.67874	pH
GOR001	7/6/10 6:35 PM	Water Surface	0.5	165.5	m	pH (profile minimum)	7.74254	pH
GOR001	9/13/10 6:20 PM	Water Surface	0.5	164.5	m	pH (profile minimum)	7.61683	pH
GOR001	10/4/10 7:39 PM	Water Surface	0.5	166	m	pH (profile minimum)	7.55794	pH
GOR001	11/2/10 5:28 PM	Water Surface	1	166	m	pH (profile minimum)	7.4669	pH
GOR001	12/7/10 6:28 PM	Water Surface	0.5	167.5	m	pH (profile minimum)	7.39653	pH
GOR001	1/10/11 10:14 PM	Water Surface	1	165.5	m	pH (profile minimum)	7.37201	pH
GOR001	2/2/11 8:33 PM	Water Surface	1.5	165.5	m	pH (profile minimum)	7.59139	pH
GOR001	4/12/11 6:48 PM	Water Surface	1	169	m	pH (profile minimum)	7.32338	pH
GOR001	5/4/11 6:39 PM	Water Surface	1	163.5	m	pH (profile minimum)	7.43111	pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	6/6/11 6:53 PM	Water Surface	1	167	m	pH (profile minimum)	7.38745	pH
GOR001	7/6/11 5:56 PM	Water Surface	1	167.5	m	pH (profile minimum)	7.78954	pH
GOR001	8/8/11 6:44 PM	Water Surface	1	166.5	m	pH (profile minimum)	7.93356	pH
GOR001	9/12/11 7:38 PM	Water Surface	1	164	m	pH (profile minimum)	7.76561	pH
GOR001	10/12/11 6:29 PM	Water Surface	1	165	m	pH (profile minimum)	7.70439	pH
GOR001	11/3/11 6:37 PM	Water Surface	1	169	m	pH (profile minimum)	7.69048	pH
GOR001	12/8/11 6:28 PM	Water Surface	1	166	m	pH (profile minimum)	7.54714	pH
GOR001	7/17/12 5:03 PM	Water Surface	1	164.5	m	pH (profile minimum)	7.74797	pH
GOR001	8/13/12 5:06 PM	Water Surface	1	162.5	m	pH (profile minimum)	7.84448	pH
GOR001	4/2/13 7:10 PM	Water Surface	1	168.5	m	pH (profile minimum)	7.39583	pH
GOR001	5/6/13 6:44 PM	Water Surface	1.5	163.5	m	pH (profile minimum)	7.64672	pH
GOR001	6/5/13 6:02 PM	Water Surface	1.5	163.5	m	pH (profile minimum)	7.72234	pH
GOR001	7/9/13 6:34 PM	Water Surface	1.5	164.5	m	pH (profile minimum)	7.7215	pH
GOR001	8/13/13 6:15 PM	Water Surface	1	167.5	m	pH (profile minimum)	7.82284	pH
GOR001	11/20/13 7:05 PM	Water Surface	2	166	m	pH (profile minimum)	7.44301	pH
GOR001	12/31/13 6:56 PM	Water Surface	2	166	m	pH (profile minimum)	7.30895	pH
GOR001	1/14/14 7:00 PM	Water Surface	1	166.5	m	pH (profile minimum)	7.22079	pH
GOR001	2/4/14 7:02 PM	Water Surface	1.5	167.5	m	pH (profile minimum)	7.22623	pH
GOR001	3/10/14 5:44 PM	Water Surface	1	149.5	m	pH (profile minimum)	7.16425	pH
GOR001	4/1/14 6:46 PM	Water Surface	1	164.5	m	pH (profile minimum)	7.30823	pH
GOR001	5/6/14 4:55 PM	Water Surface	2	167.5	m	pH (profile minimum)	7.52885	pH
GOR001	6/3/14 5:54 PM	Water Surface	1	165.5	m	pH (profile minimum)	7.63867	pH
GOR001	8/12/14 5:39 PM	Water Surface	2	167.5	m	pH (profile minimum)	7.88862	pH
GOR001	9/8/14 9:47 PM	Water Surface	2	166	m	pH (profile minimum)	7.85146	pH
GOR001	10/14/14 6:08 PM	Water Surface	2	167.5	m	pH (profile minimum)	7.67676	pH
GOR001	11/10/14 7:17 PM	Water Surface	1	166	m	pH (profile minimum)	7.65683	pH
GOR001	3/17/15 6:00 PM	Water Surface	1	166.5	m	pH (profile minimum)	7.90301	pH
GOR001	4/8/15 6:05 PM	Water Surface	1	166	m	pH (profile minimum)	7.94262	pH
GOR001	5/4/15 6:30 PM	Water Surface	1.5	160.5	m	pH (profile minimum)	7.75588	pH
GOR001	6/4/15 6:00 PM	Water Surface	1	165.5	m	pH (profile minimum)	7.60591	pH
GOR001	7/1/15 5:55 PM	Water Surface	1	160	m	pH (profile minimum)	7.52531	pH
GOR001	8/4/15 11:07 AM	Water Surface	1	170.5	m	pH (profile minimum)	7.72939	pH
GOR001	9/15/15 11:37 AM	Water Surface	1	149.5	m	pH (profile minimum)	7.81633	pH
GOR001	10/6/15 6:01 PM	Water Surface	1	169	m	pH (profile minimum)	7.47917	pH
GOR001	11/9/15 7:25 PM	Water Surface	1	169	m	pH (profile minimum)	7.38573	pH
GOR001	12/14/15 6:50 PM	Water Surface	1	172	m	pH (profile minimum)	7.41899	pH

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	1/19/16 7:11 PM	Water Surface	1	168.5	m	pH (profile minimum)	7.46154	pH
GOR001	2/17/16 7:11 PM	Water Surface	1	167.5	m	pH (profile minimum)	7.46468	pH
GOR001	3/18/16 4:16 PM	Water Surface	1	165.5	m	pH (profile minimum)	7.50997	pH
GOR001	4/7/16 6:12 PM	Water Surface	1	164.5	m	pH (profile minimum)	7.74842	pH
GOR001	5/10/16 8:42 PM	Water Surface	1	150.5	m	pH (profile minimum)	8.14998	pH
GOR001	6/8/16 10:22 PM	Water Surface	1	152.5	m	pH (profile minimum)	8.29995	pH
GOR001	9/22/16 6:05 PM	Water Surface	1	147.5	m	pH (profile minimum)	7.26516	pH
GOR001	10/10/16 9:06 PM	Water Surface	1	167	m	pH (profile minimum)	7.31711	pH
GOR001	11/9/16 8:40 PM	Water Surface	1	170	m	pH (profile minimum)	7.36288	pH
GOR001	12/7/16 10:17 PM	Water Surface	1.5	172	m	pH (profile minimum)	7.52124	pH
						Minimum	6.75	
						Average	7.65	
						10th Percentile	7.37	
						Maximum	8.30	
						Count	128	

Table C - 13: Ambient Profile Salinity Minimum

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	5/6/2014 16:46	Water Surface	2	167.5	m	Salinity (profile minimum)	27.5164	PSU
GOR001	8/12/2014 17:30	Water Surface	2	167.5	m	Salinity (profile minimum)	29.3537	PSU
GOR001	11/10/2014 19:14	Water Surface	1	166	m	Salinity (profile minimum)	29.834	PSU
GOR001	4/1/2014 18:38	Water Surface	1	164.5	m	Salinity (profile minimum)	28.3174	PSU
GOR001	3/6/2013 22:12	Water Surface	1	166	m	Salinity (profile minimum)	28.756	PSU
GOR001	6/3/2014 17:46	Water Surface	1	165.5	m	Salinity (profile minimum)	28.3556	PSU
GOR001	5/6/2013 18:35	Water Surface	1.5	163.5	m	Salinity (profile minimum)	28.0927	PSU
GOR001	3/8/2017 17:24	Water Surface	1.5	171.5	m	Salinity (profile minimum)	26.8346	PSU
GOR001	9/7/2017 19:57	Water Surface	1	166.5	m	Salinity (profile minimum)	29.1223	PSU
GOR001	8/10/2017 20:56	Water Surface	1	166	m	Salinity (profile minimum)	28.7042	PSU
GOR001	7/9/2013 18:25	Water Surface	1.5	164.5	m	Salinity (profile minimum)	29.0674	PSU
GOR001	1/14/2014 19:00	Water Surface	1	166.5	m	Salinity (profile minimum)	29.6473	PSU
GOR001	2/4/2014 18:53	Water Surface	1.5	167.5	m	Salinity (profile minimum)	29.6057	PSU

GOR001	10/14/2014 17:59	Water Surface	2	167.5	m	Salinity (profile minimum)	30.0045	PSU
GOR001	6/5/2013 17:54	Water Surface	1.5	163.5	m	Salinity (profile minimum)	28.4071	PSU
GOR001	9/8/2014 21:38	Water Surface	2	166	m	Salinity (profile minimum)	29.4576	PSU
GOR001	10/8/2013 18:25	Water Surface	1.5	166	m	Salinity (profile minimum)	29.6956	PSU
GOR001	10/10/2016 21:00	Water Surface	1	167	m	Salinity (profile minimum)	29.382	PSU
GOR001	11/20/2013 18:56	Water Surface	2	166	m	Salinity (profile minimum)	29.8407	PSU
GOR001	2/13/2013 19:15	Water Surface	1.5	165	m	Salinity (profile minimum)	28.6404	PSU
GOR001	3/10/2014 17:36	Water Surface	1	149.5	m	Salinity (profile minimum)	26.483	PSU
GOR001	1/15/2013 20:47	Water Surface	1	165	m	Salinity (profile minimum)	28.4798	PSU
GOR001	9/4/2013 17:56	Water Surface	1	163.5	m	Salinity (profile minimum)	29.5328	PSU
GOR001	4/2/2013 19:01	Water Surface	1	168.5	m	Salinity (profile minimum)	28.4287	PSU
GOR001	7/21/2014 16:53	Water Surface	1	166	m	Salinity (profile minimum)	28.8905	PSU
GOR001	9/12/2011 19:30	Water Surface	1	164	m	Salinity (profile minimum)	29.0176	PSU
GOR001	4/12/2011 18:39	Water Surface	1	169	m	Salinity (profile minimum)	27.1989	PSU
GOR001	5/4/2011 18:30	Water Surface	1	163.5	m	Salinity (profile minimum)	27.8024	PSU
GOR001	2/2/2012 16:45	Water Surface	1	167.5	m	Salinity (profile minimum)	28.2724	PSU
GOR001	10/12/2011 18:22	Water Surface	1	165	m	Salinity (profile minimum)	29.564	PSU
GOR001	5/7/2012 16:47	Water Surface	1	165	m	Salinity (profile minimum)	28.0039	PSU
GOR001	10/8/2012 17:09	Water Surface	0.5	165	m	Salinity (profile minimum)	29.0501	PSU
GOR001	11/9/2016 20:34	Water Surface	1	170	m	Salinity (profile minimum)	28.6266	PSU
GOR001	9/22/2016 17:55	Water Surface	1	147.5	m	Salinity (profile minimum)	29.8889	PSU
GOR001	3/17/2015 17:51	Water Surface	1	166.5	m	Salinity (profile minimum)	27.7931	PSU
GOR001	5/10/2016 20:36	Water Surface	1	150.5	m	Salinity (profile minimum)	28.1548	PSU
GOR001	7/1/2015 17:47	Water Surface	1	160	m	Salinity (profile minimum)	29.0027	PSU
GOR001	7/22/2016 19:53	Water Surface	1	162	m	Salinity (profile minimum)	29.2622	PSU
GOR001	3/18/2016 16:16	Water Surface	1	165.5	m	Salinity (profile minimum)	27.1479	PSU
GOR001	12/7/2016 22:11	Water Surface	1.5	172	m	Salinity (profile minimum)	28.8912	PSU
GOR001	6/8/2016 22:15	Water Surface	1	152.5	m	Salinity (profile minimum)	28.3779	PSU
GOR001	1/19/2016 19:02	Water Surface	1	168.5	m	Salinity (profile minimum)	28.1895	PSU
GOR001	2/18/2015 18:26	Water Surface	1	164.5	m	Salinity (profile minimum)	27.9271	PSU
GOR001	11/9/2015 19:17	Water Surface	1	169	m	Salinity (profile minimum)	30.0387	PSU
GOR001	10/6/2015 17:52	Water Surface	1	169	m	Salinity (profile minimum)	29.8257	PSU
GOR001	6/9/2017 17:30	Water Surface	1	168	m	Salinity (profile minimum)	27.9411	PSU
GOR001	5/19/2017 21:22	Water Surface	1.5	169	m	Salinity (profile minimum)	27.2427	PSU
GOR001	1/11/2017 22:35	Water Surface	1	173.5	m	Salinity (profile minimum)	28.9424	PSU
GOR001	7/7/2017 17:01	Water Surface	1	166.5	m	Salinity (profile minimum)	27.576	PSU
GOR001	4/5/2017 17:33	Water Surface	1.5	170.5	m	Salinity (profile minimum)	27.2254	PSU
GOR001	10/4/2017 17:31	Water Surface	1	168	m	Salinity (profile minimum)	29.6078	PSU
GOR001	12/8/2017 21:16	Water Surface	1	171.5	m	Salinity (profile minimum)	29.3847	PSU
GOR001	8/13/2013 18:06	Water Surface	1	167.5	m	Salinity (profile minimum)	29.2158	PSU

GOR001	12/31/2013 18:49	Water Surface	2	166	m	Salinity (profile minimum)	29.7404	PSU
GOR001	1/10/2011 22:05	Water Surface	1	165.5	m	Salinity (profile minimum)	28.6005	PSU
GOR001	4/9/2012 16:54	Water Surface	1	166	m	Salinity (profile minimum)	28.1276	PSU
GOR001	7/6/2011 17:47	Water Surface	1	167.5	m	Salinity (profile minimum)	28.462	PSU
GOR001	7/17/2012 16:54	Water Surface	1	164.5	m	Salinity (profile minimum)	28.7009	PSU
GOR001	12/8/2011 18:19	Water Surface	1	166	m	Salinity (profile minimum)	29.3199	PSU
GOR001	6/6/2011 18:44	Water Surface	1	167	m	Salinity (profile minimum)	28.0305	PSU
GOR001	2/2/2011 20:25	Water Surface	1.5	165.5	m	Salinity (profile minimum)	28.3698	PSU
GOR001	5/4/2015 18:22	Water Surface	1.5	160.5	m	Salinity (profile minimum)	28.3875	PSU
GOR001	8/4/2015 10:59	Water Surface	1	170.5	m	Salinity (profile minimum)	29.5755	PSU
GOR001	1/22/2015 18:48	Water Surface	1	165.5	m	Salinity (profile minimum)	28.2791	PSU
GOR001	6/4/2015 17:52	Water Surface	1	165.5	m	Salinity (profile minimum)	28.7142	PSU
GOR001	2/17/2016 19:02	Water Surface	1	167.5	m	Salinity (profile minimum)	26.3383	PSU
GOR001	8/30/2016 23:16	Water Surface	1	148	m	Salinity (profile minimum)	29.5848	PSU
GOR001	12/14/2015 18:41	Water Surface	1	172	m	Salinity (profile minimum)	28.4595	PSU
GOR001	4/7/2016 18:08	Water Surface	1	164.5	m	Salinity (profile minimum)	27.6481	PSU
GOR001	4/8/2015 17:58	Water Surface	1	166	m	Salinity (profile minimum)	28.0942	PSU
GOR001	9/15/2015 11:29	Water Surface	1	149.5	m	Salinity (profile minimum)	30.0999	PSU
GOR001	3/7/2012 17:42	Water Surface	1	164	m	Salinity (profile minimum)	28.6404	PSU
GOR001	11/3/2011 18:32	Water Surface	1	169	m	Salinity (profile minimum)	29.2845	PSU
GOR001	8/8/2011 18:36	Water Surface	1	166.5	m	Salinity (profile minimum)	28.5919	PSU
GOR001	11/7/2005 20:04	Water Surface	1	167	m	Salinity (profile minimum)	30.238	PSU
GOR001	10/12/2005 19:02	Water Surface	1.5	45.5	m	Salinity (profile minimum)	30.0394	PSU
GOR001	1/10/2005 19:53	Water Surface	1	167.5	m	Salinity (profile minimum)	29.5376	PSU
GOR001	3/15/2005 19:06	Water Surface	1.5	164.5	m	Salinity (profile minimum)	29.2332	PSU
GOR001	4/5/2005 21:16	Water Surface	1.5	167	m	Salinity (profile minimum)	28.8903	PSU
GOR001	1/12/2006 19:55	Water Surface	1	167.5	m	Salinity (profile minimum)	23.035	PSU
GOR001	8/16/2005 20:54	Water Surface	1	166.5	m	Salinity (profile minimum)	29.4923	PSU
GOR001	5/1/2006 18:50	Water Surface	1	164.5	m	Salinity (profile minimum)	28.7685	PSU
GOR001	12/5/2005 19:18	Water Surface	1	168	m	Salinity (profile minimum)	30.072	PSU
GOR001	2/14/2005 19:52	Water Surface	1.5	142.5	m	Salinity (profile minimum)	29.0737	PSU
GOR001	6/12/2006 19:20	Water Surface	0.5	162	m	Salinity (profile minimum)	28.5078	PSU
GOR001	9/7/2005 21:53	Water Surface	1.5	164	m	Salinity (profile minimum)	29.8389	PSU
GOR001	5/3/2005 21:48	Water Surface	1.5	167	m	Salinity (profile minimum)	28.9043	PSU
GOR001	4/11/2006 20:56	Water Surface	1	166	m	Salinity (profile minimum)	28.274	PSU
GOR001	9/22/2008 18:21	Water Surface	0.5	166.5	m	Salinity (profile minimum)	29.7219	PSU
GOR001	5/13/2009 19:00	Water Surface	1	164.5	m	Salinity (profile minimum)	28.7371	PSU
GOR001	9/25/2007 22:33	Water Surface	0.5	135	m	Salinity (profile minimum)	29.8556	PSU
GOR001	9/10/2009 18:04	Water Surface	0.5	167.5	m	Salinity (profile minimum)	29.9107	PSU
GOR001	7/17/2007 22:21	Water Surface	0.5	164	m	Salinity (profile minimum)	29.0212	PSU

GOR001	4/18/2007 21:01	Water Surface	0.5	163	m	Salinity (profile minimum)	28.3201	PSU
GOR001	10/25/2007 22:13	Water Surface	1	168	m	Salinity (profile minimum)	30.0672	PSU
GOR001	10/14/2008 19:06	Water Surface	1	167.5	m	Salinity (profile minimum)	30.0193	PSU
GOR001	3/30/2009 22:21	Water Surface	1	163	m	Salinity (profile minimum)	28.8423	PSU
GOR001	3/18/2008 20:27	Water Surface	0.5	166	m	Salinity (profile minimum)	28.9621	PSU
GOR001	6/4/2008 18:16	Water Surface	0.5	164	m	Salinity (profile minimum)	27.8231	PSU
GOR001	8/29/2007 20:40	Water Surface	1	165	m	Salinity (profile minimum)	29.5611	PSU
GOR001	5/7/2007 22:26	Water Surface	0.5	163.5	m	Salinity (profile minimum)	27.4338	PSU
GOR001	7/21/2009 18:05	Water Surface	1	162	m	Salinity (profile minimum)	29.3076	PSU
GOR001	8/11/2009 18:05	Water Surface	0.5	167.5	m	Salinity (profile minimum)	29.595	PSU
GOR001	4/13/2009 20:44	Water Surface	1.5	164	m	Salinity (profile minimum)	29.3197	PSU
GOR001	3/28/2007 21:41	Water Surface	0.5	167.5	m	Salinity (profile minimum)	26.7437	PSU
GOR001	4/9/2008 18:07	Water Surface	0.5	167.5	m	Salinity (profile minimum)	28.9993	PSU
GOR001	11/30/2009 20:55	Water Surface	0.5	167	m	Salinity (profile minimum)	29.8625	PSU
GOR001	7/7/2008 18:04	Water Surface	0.5	167	m	Salinity (profile minimum)	29.0924	PSU
GOR001	5/6/2008 18:53	Water Surface	0.5	163	m	Salinity (profile minimum)	28.8208	PSU
GOR001	2/8/2007 22:18	Water Surface	0.5	165	m	Salinity (profile minimum)	28.4242	PSU
GOR001	10/21/2009 18:31	Water Surface	0.5	148	m	Salinity (profile minimum)	30.2658	PSU
GOR001	2/13/2008 18:17	Water Surface	1	161	m	Salinity (profile minimum)	28.4737	PSU
GOR001	12/22/2009 19:40	Water Surface	0.5	165.5	m	Salinity (profile minimum)	29.2391	PSU
GOR001	6/3/2009 19:22	Water Surface	1	167	m	Salinity (profile minimum)	28.8592	PSU
GOR001	6/18/2007 21:24	Water Surface	0.5	163.5	m	Salinity (profile minimum)	28.8271	PSU
GOR001	8/19/2008 18:20	Water Surface	0.5	167	m	Salinity (profile minimum)	29.4424	PSU
GOR001	6/19/2003 22:35	Water Surface	2	169.5	m	Salinity (profile minimum)	29.6742	PSU
GOR001	9/2/2003 23:02	Water Surface	1.5	165	m	Salinity (profile minimum)	29.9041	PSU
GOR001	3/22/2004 21:32	Water Surface	1.5	165.5	m	Salinity (profile minimum)	28.5472	PSU
GOR001	1/27/2004 19:34	Water Surface	1.5	169	m	Salinity (profile minimum)	28.8042	PSU
GOR001	1/28/2003 20:27	Water Surface	1	167.5	m	Salinity (profile minimum)	29.5805	PSU
GOR001	5/25/2004 21:01	Water Surface	1	164.5	m	Salinity (profile minimum)	28.8615	PSU
GOR001	7/19/2004 22:25	Water Surface	1	128	m	Salinity (profile minimum)	29.0504	PSU
GOR001	2/27/2004 20:38	Water Surface	1	165.5	m	Salinity (profile minimum)	28.1195	PSU
GOR001	8/30/2004 21:05	Water Surface	1.5	165	m	Salinity (profile minimum)	29.7901	PSU
GOR001	3/17/2003 22:15	Water Surface	1.5	167.5	m	Salinity (profile minimum)	28.5901	PSU
GOR001	11/10/2004 20:36	Water Surface	1	168	m	Salinity (profile minimum)	30.0422	PSU
GOR001	4/26/2004 21:51	Water Surface	1.5	164	m	Salinity (profile minimum)	28.2286	PSU
GOR001	6/8/2004 22:01	Water Surface	1	166.5	m	Salinity (profile minimum)	29.1771	PSU
GOR001	9/22/2004 22:32	Water Surface	1.5	166.5	m	Salinity (profile minimum)	29.911	PSU
GOR001	5/13/2003 21:54	Water Surface	1.5	26	m	Salinity (profile minimum)	28.3328	PSU
GOR001	9/23/2002 19:16	Water Surface	1.5	65.5	m	Salinity (profile minimum)	29.7236	PSU
GOR001	8/13/2012 16:57	Water Surface	1	162.5	m	Salinity (profile minimum)	28.3893	PSU

GOR001	6/12/2012 16:41	Water Surface	1	165	m	Salinity (profile minimum)	28.0852	PSU
GOR001	9/11/2012 21:04	Water Surface	0.5	167.5	m	Salinity (profile minimum)	28.6945	PSU
GOR001	11/7/2012 17:49	Water Surface	1	156.5	m	Salinity (profile minimum)	29.4039	PSU
GOR001	12/12/2012 23:01	Water Surface	1	171.5	m	Salinity (profile minimum)	28.5813	PSU
GOR001	4/5/2010 18:05	Water Surface	0.5	167	m	Salinity (profile minimum)	28.6357	PSU
GOR001	2/12/2002 20:20	Water Surface	1	163.5	m	Salinity (profile minimum)	28.2886	PSU
GOR001	7/10/2002 20:41	Water Surface	1	103.5	m	Salinity (profile minimum)	28.8742	PSU
GOR001	1/14/2002 22:11	Water Surface	1	33	m	Salinity (profile minimum)	28.9001	PSU
GOR001	11/26/2002 19:19	Water Surface	1	131	m	Salinity (profile minimum)	30.104	PSU
GOR001	8/20/2002 23:15	Water Surface	1	163.5	m	Salinity (profile minimum)	29.2357	PSU
GOR001	5/2/2000 22:28	Water Surface	0.5	80	m	Salinity (profile minimum)	28.2642	PSU
GOR001	10/18/1999 22:29	Water Surface	0.5	107.5	m	Salinity (profile minimum)	29.3945	PSU
GOR001	1/19/2000 21:45	Water Surface	0.5	106	m	Salinity (profile minimum)	27.4376	PSU
GOR001	6/13/2000 22:47	Water Surface	0.5	92.5	m	Salinity (profile minimum)	28.5966	PSU
GOR001	10/4/2000 22:26	Water Surface	0.5	103.5	m	Salinity (profile minimum)	29.7794	PSU
GOR001	4/11/2000 22:13	Water Surface	0.5	108	m	Salinity (profile minimum)	28.3916	PSU
GOR001	1/8/2001 21:20	Water Surface	0.5	89	m	Salinity (profile minimum)	30.1244	PSU
GOR001	9/13/2000 22:49	Water Surface	0.5	106	m	Salinity (profile minimum)	29.4855	PSU
GOR001	5/7/2001 22:45	Water Surface	0.5	90	m	Salinity (profile minimum)	29.5861	PSU
GOR001	2/10/2000 0:34	Water Surface	0.5	108	m	Salinity (profile minimum)	28.2158	PSU
GOR001	11/2/2010 17:20	Water Surface	1	166	m	Salinity (profile minimum)	29.1303	PSU
GOR001	2/10/2010 23:26	Water Surface	1	167.5	m	Salinity (profile minimum)	28.6019	PSU
GOR001	8/10/2010 18:56	Water Surface	0.5	164	m	Salinity (profile minimum)	29.2359	PSU
GOR001	3/2/2010 18:46	Water Surface	0.5	164.5	m	Salinity (profile minimum)	28.7778	PSU
GOR001	7/6/2010 18:26	Water Surface	0.5	165.5	m	Salinity (profile minimum)	28.3927	PSU
GOR001	5/5/2010 17:16	Water Surface	1	166.5	m	Salinity (profile minimum)	28.6848	PSU
GOR001	6/1/2010 17:47	Water Surface	0.5	167	m	Salinity (profile minimum)	28.2775	PSU
GOR001	12/7/2010 18:19	Water Surface	0.5	167.5	m	Salinity (profile minimum)	29.4854	PSU
GOR001	1/14/2010 21:57	Water Surface	0.5	170.5	m	Salinity (profile minimum)	29.185	PSU
GOR001	10/4/2010 19:30	Water Surface	0.5	166	m	Salinity (profile minimum)	29.4477	PSU
GOR001	6/6/2005 19:54	Water Surface	1.5	163	m	Salinity (profile minimum)	28.812	PSU
GOR001	3/14/2006 19:59	Water Surface	1	166.5	m	Salinity (profile minimum)	27.7189	PSU
GOR001	8/8/2006 19:44	Water Surface	1	164	m	Salinity (profile minimum)	29.2115	PSU
GOR001	2/8/2006 18:58	Water Surface	1	166.5	m	Salinity (profile minimum)	26.3352	PSU
GOR001	7/10/2006 22:00	Water Surface	1	166	m	Salinity (profile minimum)	28.806	PSU
GOR001	9/6/2006 19:52	Water Surface	0.5	164.5	m	Salinity (profile minimum)	29.7027	PSU
GOR001	12/18/2006 19:49	Water Surface	1	167.5	m	Salinity (profile minimum)	26.7915	PSU
GOR001	10/10/2006 20:00	Water Surface	0.5	121	m	Salinity (profile minimum)	30.1923	PSU
GOR001	11/14/2006 19:36	Water Surface	1	167	m	Salinity (profile minimum)	28.1393	PSU
GOR001	7/27/2005 20:11	Water Surface	1.5	166.5	m	Salinity (profile minimum)	29.2508	PSU

GOR001	8/15/2000 22:06	Water Surface	0.5	104	m	Salinity (profile minimum)	29.0684	PSU
GOR001	11/14/2000 22:24	Water Surface	0.5	105.5	m	Salinity (profile minimum)	30.1888	PSU
GOR001	12/17/2001 20:21	Water Surface	1	136.5	m	Salinity (profile minimum)	26.6243	PSU
GOR001	3/21/2000 22:47	Water Surface	0.5	97.5	m	Salinity (profile minimum)	28.0986	PSU
GOR001	3/6/2001 22:00	Water Surface	0.5	106.5	m	Salinity (profile minimum)	29.8322	PSU
GOR001	7/19/2000 23:20	Water Surface	0.5	100	m	Salinity (profile minimum)	28.9836	PSU
GOR001	9/19/2001 20:55	Water Surface	0.5	102	m	Salinity (profile minimum)	30.2794	PSU
GOR001	4/13/1999 22:08	Water Surface	0.5	108	m	Salinity (profile minimum)	27.5048	PSU
GOR001	1/5/1999 22:26	Water Surface	0.5	111	m	Salinity (profile minimum)	28.6767	PSU
GOR001	8/27/2001 22:15	Water Surface	0.5	99	m	Salinity (profile minimum)	29.9869	PSU
GOR001	2/5/2001 21:36	Water Surface	0.5	81	m	Salinity (profile minimum)	29.83	PSU
GOR001	7/9/2001 22:35	Water Surface	0.5	100.5	m	Salinity (profile minimum)	29.5158	PSU
GOR001	11/23/1999 23:34	Water Surface	0.5	85.5	m	Salinity (profile minimum)	29.4666	PSU
GOR001	6/11/2001 22:54	Water Surface	0.5	67	m	Salinity (profile minimum)	29.285	PSU
GOR001	2/26/1999 21:37	Water Surface	0.5	84.5	m	Salinity (profile minimum)	26.3404	PSU
GOR001	6/7/1999 22:40	Water Surface	0.5	104	m	Salinity (profile minimum)	27.9571	PSU
GOR001	4/16/2001 22:31	Water Surface	0.5	106.5	m	Salinity (profile minimum)	29.6475	PSU
GOR001	3/18/1999 21:49	Water Surface	0.5	106.5	m	Salinity (profile minimum)	25.6998	PSU
GOR001	7/8/1999 22:10	Water Surface	0.5	89	m	Salinity (profile minimum)	28.3792	PSU
GOR001	8/9/1999 23:20	Water Surface	0.5	86.5	m	Salinity (profile minimum)	29.0648	PSU
GOR001	9/13/1999 23:07	Water Surface	0.5	101.5	m	Salinity (profile minimum)	29.0589	PSU
						Minimum	23.04	PSU
						Average	28.81	PSU
						Maximum	30.28	PSU
						10th Percentile	27.67	PSU
						Count	194	

Table C - 14: Ambient Profile Maximum Temperature

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	1/5/1999 22:31	Water Surface	0.5	111	m	Temperature, water (profile maximum)	9.7902	deg C
GOR001	2/26/1999 21:41	Water Surface	0.5	84.5	m	Temperature, water (profile maximum)	8.4532	deg C
GOR001	3/18/1999 21:49	Water Surface	0.5	106.5	m	Temperature, water (profile maximum)	8.6433	deg C
GOR001	4/13/1999 22:08	Water Surface	0.5	108	m	Temperature, water (profile maximum)	8.6677	deg C
GOR001	6/7/1999 22:39	Water Surface	0.5	104	m	Temperature, water (profile maximum)	10.9961	deg C
GOR001	7/8/1999 22:10	Water Surface	0.5	89	m	Temperature, water (profile maximum)	12.3719	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	8/9/1999 23:20	Water Surface	0.5	86.5	m	Temperature, water (profile maximum)	12.3381	deg C
GOR001	9/13/1999 23:07	Water Surface	0.5	101.5	m	Temperature, water (profile maximum)	13.4975	deg C
GOR001	10/18/1999 22:29	Water Surface	0.5	107.5	m	Temperature, water (profile maximum)	12.6067	deg C
GOR001	11/23/1999 23:34	Water Surface	0.5	85.5	m	Temperature, water (profile maximum)	10.7501	deg C
GOR001	1/19/2000 21:50	Water Surface	0.5	106	m	Temperature, water (profile maximum)	8.9291	deg C
GOR001	2/10/2000 0:34	Water Surface	0.5	108	m	Temperature, water (profile maximum)	8.4789	deg C
GOR001	3/21/2000 22:47	Water Surface	0.5	97.5	m	Temperature, water (profile maximum)	8.4817	deg C
GOR001	4/11/2000 22:13	Water Surface	0.5	108	m	Temperature, water (profile maximum)	9.0759	deg C
GOR001	5/2/2000 22:28	Water Surface	0.5	80	m	Temperature, water (profile maximum)	10.0541	deg C
GOR001	6/13/2000 22:47	Water Surface	0.5	92.5	m	Temperature, water (profile maximum)	11.6232	deg C
GOR001	7/19/2000 23:20	Water Surface	0.5	100	m	Temperature, water (profile maximum)	12.9976	deg C
GOR001	8/15/2000 22:06	Water Surface	0.5	104	m	Temperature, water (profile maximum)	13.9651	deg C
GOR001	9/13/2000 22:49	Water Surface	0.5	106	m	Temperature, water (profile maximum)	13.7941	deg C
GOR001	10/4/2000 22:26	Water Surface	0.5	103.5	m	Temperature, water (profile maximum)	13.366	deg C
GOR001	11/14/2000 22:26	Water Surface	0.5	105.5	m	Temperature, water (profile maximum)	11.2529	deg C
GOR001	1/8/2001 21:24	Water Surface	0.5	89	m	Temperature, water (profile maximum)	9.0198	deg C
GOR001	2/5/2001 21:40	Water Surface	0.5	81	m	Temperature, water (profile maximum)	8.4807	deg C
GOR001	3/6/2001 22:00	Water Surface	0.5	106.5	m	Temperature, water (profile maximum)	8.1258	deg C
GOR001	4/16/2001 22:31	Water Surface	0.5	106.5	m	Temperature, water (profile maximum)	9.1111	deg C
GOR001	5/7/2001 22:45	Water Surface	0.5	90	m	Temperature, water (profile maximum)	9.9925	deg C
GOR001	6/11/2001 22:54	Water Surface	0.5	67	m	Temperature, water (profile maximum)	11.2172	deg C
GOR001	7/9/2001 22:35	Water Surface	0.5	100.5	m	Temperature, water (profile maximum)	13.2515	deg C
GOR001	8/27/2001 22:15	Water Surface	0.5	99	m	Temperature, water (profile maximum)	14.0628	deg C
GOR001	9/19/2001 20:55	Water Surface	0.5	102	m	Temperature, water (profile maximum)	13.7815	deg C
GOR001	12/17/2001 20:28	Water Surface	1	136.5	m	Temperature, water (profile maximum)	10.0952	deg C
GOR001	1/14/2002 22:12	Water Surface	1	33	m	Temperature, water (profile maximum)	9.3794	deg C
GOR001	2/12/2002 20:29	Water Surface	1	163.5	m	Temperature, water (profile maximum)	8.6881	deg C
GOR001	7/10/2002 20:41	Water Surface	1	103.5	m	Temperature, water (profile maximum)	12.8838	deg C
GOR001	8/20/2002 23:15	Water Surface	1	163.5	m	Temperature, water (profile maximum)	14.2433	deg C
GOR001	9/23/2002 19:16	Water Surface	1.5	65.5	m	Temperature, water (profile maximum)	13.3914	deg C
GOR001	11/26/2002 19:19	Water Surface	1	131	m	Temperature, water (profile maximum)	10.6995	deg C
GOR001	1/28/2003 20:32	Water Surface	1	167.5	m	Temperature, water (profile maximum)	9.2386	deg C
GOR001	3/17/2003 22:15	Water Surface	1.5	167.5	m	Temperature, water (profile maximum)	9.2384	deg C
GOR001	5/13/2003 21:54	Water Surface	1.5	26	m	Temperature, water (profile maximum)	11.3391	deg C
GOR001	6/19/2003 22:35	Water Surface	2	169.5	m	Temperature, water (profile maximum)	12.3127	deg C
GOR001	9/2/2003 23:02	Water Surface	1.5	165	m	Temperature, water (profile maximum)	14.4226	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	1/27/2004 19:43	Water Surface	1.5	169	m	Temperature, water (profile maximum)	8.6137	deg C
GOR001	2/27/2004 20:38	Water Surface	1	165.5	m	Temperature, water (profile maximum)	8.5194	deg C
GOR001	3/22/2004 21:32	Water Surface	1.5	165.5	m	Temperature, water (profile maximum)	8.9367	deg C
GOR001	4/26/2004 21:51	Water Surface	1.5	164	m	Temperature, water (profile maximum)	11.6004	deg C
GOR001	5/25/2004 21:01	Water Surface	1	164.5	m	Temperature, water (profile maximum)	11.7349	deg C
GOR001	6/8/2004 22:01	Water Surface	1	166.5	m	Temperature, water (profile maximum)	12.1653	deg C
GOR001	7/19/2004 22:25	Water Surface	1	128	m	Temperature, water (profile maximum)	14.4528	deg C
GOR001	8/30/2004 21:05	Water Surface	1.5	165	m	Temperature, water (profile maximum)	14.5026	deg C
GOR001	9/22/2004 22:32	Water Surface	1.5	166.5	m	Temperature, water (profile maximum)	14.1148	deg C
GOR001	11/10/2004 20:36	Water Surface	1	168	m	Temperature, water (profile maximum)	12.0287	deg C
GOR001	1/10/2005 20:02	Water Surface	1	167.5	m	Temperature, water (profile maximum)	9.3752	deg C
GOR001	2/14/2005 19:53	Water Surface	1.5	142.5	m	Temperature, water (profile maximum)	8.6399	deg C
GOR001	3/15/2005 19:06	Water Surface	1.5	164.5	m	Temperature, water (profile maximum)	8.9383	deg C
GOR001	4/5/2005 21:16	Water Surface	1.5	167	m	Temperature, water (profile maximum)	9.0825	deg C
GOR001	5/3/2005 21:48	Water Surface	1.5	167	m	Temperature, water (profile maximum)	10.7292	deg C
GOR001	6/6/2005 19:54	Water Surface	1.5	163	m	Temperature, water (profile maximum)	11.7317	deg C
GOR001	7/27/2005 20:11	Water Surface	1.5	166.5	m	Temperature, water (profile maximum)	15.1385	deg C
GOR001	8/16/2005 20:54	Water Surface	1	166.5	m	Temperature, water (profile maximum)	14.9688	deg C
GOR001	9/7/2005 21:53	Water Surface	1.5	164	m	Temperature, water (profile maximum)	14.695	deg C
GOR001	10/12/2005 19:02	Water Surface	1.5	45.5	m	Temperature, water (profile maximum)	13.4458	deg C
GOR001	11/7/2005 20:04	Water Surface	1	167	m	Temperature, water (profile maximum)	11.9998	deg C
GOR001	12/5/2005 19:27	Water Surface	1	168	m	Temperature, water (profile maximum)	10.7326	deg C
GOR001	1/12/2006 20:04	Water Surface	1	167.5	m	Temperature, water (profile maximum)	9.416	deg C
GOR001	2/8/2006 19:07	Water Surface	1	166.5	m	Temperature, water (profile maximum)	8.939	deg C
GOR001	3/14/2006 20:08	Water Surface	1	166.5	m	Temperature, water (profile maximum)	8.4386	deg C
GOR001	4/11/2006 20:56	Water Surface	1	166	m	Temperature, water (profile maximum)	9.5084	deg C
GOR001	5/1/2006 18:50	Water Surface	1	164.5	m	Temperature, water (profile maximum)	9.7323	deg C
GOR001	6/12/2006 19:20	Water Surface	0.5	162	m	Temperature, water (profile maximum)	11.9364	deg C
GOR001	7/10/2006 22:00	Water Surface	1	166	m	Temperature, water (profile maximum)	13.7823	deg C
GOR001	8/8/2006 19:44	Water Surface	1	164	m	Temperature, water (profile maximum)	14.2247	deg C
GOR001	9/6/2006 19:52	Water Surface	0.5	164.5	m	Temperature, water (profile maximum)	14.5479	deg C
GOR001	10/10/2006 20:00	Water Surface	0.5	121	m	Temperature, water (profile maximum)	13.4564	deg C
GOR001	11/14/2006 19:44	Water Surface	1	167	m	Temperature, water (profile maximum)	11.5498	deg C
GOR001	12/18/2006 19:58	Water Surface	1	167.5	m	Temperature, water (profile maximum)	10.1407	deg C
GOR001	2/8/2007 22:18	Water Surface	0.5	165	m	Temperature, water (profile maximum)	8.6002	deg C
GOR001	3/28/2007 21:41	Water Surface	0.5	167.5	m	Temperature, water (profile maximum)	9.4486	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	4/18/2007 21:01	Water Surface	0.5	163	m	Temperature, water (profile maximum)	9.0931	deg C
GOR001	5/7/2007 22:26	Water Surface	0.5	163.5	m	Temperature, water (profile maximum)	11.0188	deg C
GOR001	6/18/2007 21:24	Water Surface	0.5	163.5	m	Temperature, water (profile maximum)	11.516	deg C
GOR001	7/17/2007 22:21	Water Surface	0.5	164	m	Temperature, water (profile maximum)	13.3498	deg C
GOR001	8/29/2007 20:40	Water Surface	1	165	m	Temperature, water (profile maximum)	13.9029	deg C
GOR001	9/25/2007 22:33	Water Surface	0.5	135	m	Temperature, water (profile maximum)	13.3883	deg C
GOR001	10/25/2007 22:13	Water Surface	1	168	m	Temperature, water (profile maximum)	12.0868	deg C
GOR001	2/13/2008 18:25	Water Surface	1	161	m	Temperature, water (profile maximum)	7.6295	deg C
GOR001	3/18/2008 20:27	Water Surface	0.5	166	m	Temperature, water (profile maximum)	7.8845	deg C
GOR001	4/9/2008 18:07	Water Surface	0.5	167.5	m	Temperature, water (profile maximum)	8.4071	deg C
GOR001	5/6/2008 18:53	Water Surface	0.5	163	m	Temperature, water (profile maximum)	8.9155	deg C
GOR001	6/4/2008 18:16	Water Surface	0.5	164	m	Temperature, water (profile maximum)	10.0169	deg C
GOR001	7/7/2008 18:04	Water Surface	0.5	167	m	Temperature, water (profile maximum)	12.139	deg C
GOR001	8/19/2008 18:20	Water Surface	0.5	167	m	Temperature, water (profile maximum)	13.2125	deg C
GOR001	9/22/2008 18:21	Water Surface	0.5	166.5	m	Temperature, water (profile maximum)	13.1894	deg C
GOR001	10/14/2008 19:06	Water Surface	1	167.5	m	Temperature, water (profile maximum)	12.4189	deg C
GOR001	3/30/2009 22:21	Water Surface	1	163	m	Temperature, water (profile maximum)	7.6384	deg C
GOR001	4/13/2009 20:44	Water Surface	1.5	164	m	Temperature, water (profile maximum)	7.9724	deg C
GOR001	5/13/2009 19:00	Water Surface	1	164.5	m	Temperature, water (profile maximum)	9.3552	deg C
GOR001	6/3/2009 19:22	Water Surface	1	167	m	Temperature, water (profile maximum)	11.064	deg C
GOR001	7/21/2009 18:05	Water Surface	1	162	m	Temperature, water (profile maximum)	12.9907	deg C
GOR001	8/11/2009 18:05	Water Surface	0.5	167.5	m	Temperature, water (profile maximum)	13.7177	deg C
GOR001	9/10/2009 18:04	Water Surface	0.5	167.5	m	Temperature, water (profile maximum)	13.8535	deg C
GOR001	10/21/2009 18:31	Water Surface	0.5	148	m	Temperature, water (profile maximum)	12.5776	deg C
GOR001	11/30/2009 21:04	Water Surface	0.5	167	m	Temperature, water (profile maximum)	10.9785	deg C
GOR001	12/22/2009 19:49	Water Surface	0.5	165.5	m	Temperature, water (profile maximum)	9.9829	deg C
GOR001	1/14/2010 22:05	Water Surface	0.5	170.5	m	Temperature, water (profile maximum)	9.1171	deg C
GOR001	2/10/2010 23:34	Water Surface	1	167.5	m	Temperature, water (profile maximum)	8.8476	deg C
GOR001	3/2/2010 18:46	Water Surface	0.5	164.5	m	Temperature, water (profile maximum)	8.8469	deg C
GOR001	4/5/2010 18:05	Water Surface	0.5	167	m	Temperature, water (profile maximum)	8.9609	deg C
GOR001	5/5/2010 17:16	Water Surface	1	166.5	m	Temperature, water (profile maximum)	9.7791	deg C
GOR001	6/1/2010 17:47	Water Surface	0.5	167	m	Temperature, water (profile maximum)	10.9981	deg C
GOR001	7/6/2010 18:26	Water Surface	0.5	165.5	m	Temperature, water (profile maximum)	13.1902	deg C
GOR001	8/10/2010 18:55	Water Surface	0.5	164	m	Temperature, water (profile maximum)	13.1262	deg C
GOR001	9/13/2010 18:11	Water Surface	0.5	164.5	m	Temperature, water (profile maximum)	13.1795	deg C
GOR001	10/4/2010 19:30	Water Surface	0.5	166	m	Temperature, water (profile maximum)	13.2413	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	11/2/2010 17:20	Water Surface	1	166	m	Temperature, water (profile maximum)	11.9968	deg C
GOR001	12/7/2010 18:28	Water Surface	0.5	167.5	m	Temperature, water (profile maximum)	10.0435	deg C
GOR001	1/10/2011 22:14	Water Surface	1	165.5	m	Temperature, water (profile maximum)	8.8164	deg C
GOR001	2/2/2011 20:33	Water Surface	1.5	165.5	m	Temperature, water (profile maximum)	8.5366	deg C
GOR001	4/12/2011 18:39	Water Surface	1	169	m	Temperature, water (profile maximum)	8.3109	deg C
GOR001	5/4/2011 18:30	Water Surface	1	163.5	m	Temperature, water (profile maximum)	9.4543	deg C
GOR001	6/6/2011 18:44	Water Surface	1	167	m	Temperature, water (profile maximum)	10.4727	deg C
GOR001	7/6/2011 17:47	Water Surface	1	167.5	m	Temperature, water (profile maximum)	11.9676	deg C
GOR001	8/8/2011 18:36	Water Surface	1	166.5	m	Temperature, water (profile maximum)	13.5286	deg C
GOR001	9/12/2011 19:30	Water Surface	1	164	m	Temperature, water (profile maximum)	13.4691	deg C
GOR001	10/12/2011 18:22	Water Surface	1	165	m	Temperature, water (profile maximum)	12.4704	deg C
GOR001	11/3/2011 18:32	Water Surface	1	169	m	Temperature, water (profile maximum)	11.6187	deg C
GOR001	12/8/2011 18:23	Water Surface	1	166	m	Temperature, water (profile maximum)	9.9541	deg C
GOR001	2/2/2012 16:54	Water Surface	1	167.5	m	Temperature, water (profile maximum)	8.1584	deg C
GOR001	3/7/2012 17:51	Water Surface	1	164	m	Temperature, water (profile maximum)	7.6909	deg C
GOR001	4/9/2012 16:55	Water Surface	1	166	m	Temperature, water (profile maximum)	8.1261	deg C
GOR001	5/7/2012 16:47	Water Surface	1	165	m	Temperature, water (profile maximum)	9.0406	deg C
GOR001	6/12/2012 16:41	Water Surface	1	165	m	Temperature, water (profile maximum)	11.0904	deg C
GOR001	7/17/2012 16:54	Water Surface	1	164.5	m	Temperature, water (profile maximum)	12.4374	deg C
GOR001	8/13/2012 16:57	Water Surface	1	162.5	m	Temperature, water (profile maximum)	14.8664	deg C
GOR001	9/11/2012 21:04	Water Surface	0.5	167.5	m	Temperature, water (profile maximum)	14.7562	deg C
GOR001	10/8/2012 17:09	Water Surface	0.5	165	m	Temperature, water (profile maximum)	13.2775	deg C
GOR001	11/7/2012 17:49	Water Surface	1	156.5	m	Temperature, water (profile maximum)	11.7067	deg C
GOR001	12/12/2012 23:10	Water Surface	1	171.5	m	Temperature, water (profile maximum)	10.2147	deg C
GOR001	1/15/2013 20:56	Water Surface	1	165	m	Temperature, water (profile maximum)	9.0711	deg C
GOR001	2/13/2013 19:24	Water Surface	1.5	165	m	Temperature, water (profile maximum)	8.426	deg C
GOR001	3/6/2013 22:12	Water Surface	1	166	m	Temperature, water (profile maximum)	8.237	deg C
GOR001	4/2/2013 19:01	Water Surface	1	168.5	m	Temperature, water (profile maximum)	8.9914	deg C
GOR001	5/6/2013 18:35	Water Surface	1.5	163.5	m	Temperature, water (profile maximum)	10.6258	deg C
GOR001	6/5/2013 17:54	Water Surface	1.5	163.5	m	Temperature, water (profile maximum)	11.6375	deg C
GOR001	7/9/2013 18:25	Water Surface	1.5	164.5	m	Temperature, water (profile maximum)	12.9066	deg C
GOR001	8/13/2013 18:06	Water Surface	1	167.5	m	Temperature, water (profile maximum)	13.8951	deg C
GOR001	9/4/2013 17:56	Water Surface	1	163.5	m	Temperature, water (profile maximum)	14.1724	deg C
GOR001	10/8/2013 18:25	Water Surface	1.5	166	m	Temperature, water (profile maximum)	12.8151	deg C
GOR001	11/20/2013 18:56	Water Surface	2	166	m	Temperature, water (profile maximum)	11.0178	deg C
GOR001	12/31/2013 18:54	Water Surface	2	166	m	Temperature, water (profile maximum)	9.0047	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	1/14/2014 19:05	Water Surface	1	166.5	m	Temperature, water (profile maximum)	8.6426	deg C
GOR001	2/4/2014 19:02	Water Surface	1.5	167.5	m	Temperature, water (profile maximum)	8.2399	deg C
GOR001	3/10/2014 17:36	Water Surface	1	149.5	m	Temperature, water (profile maximum)	8.2457	deg C
GOR001	4/1/2014 18:38	Water Surface	1	164.5	m	Temperature, water (profile maximum)	8.5568	deg C
GOR001	5/6/2014 16:46	Water Surface	2	167.5	m	Temperature, water (profile maximum)	9.9621	deg C
GOR001	6/3/2014 17:46	Water Surface	1	165.5	m	Temperature, water (profile maximum)	11.288	deg C
GOR001	7/21/2014 16:53	Water Surface	1	166	m	Temperature, water (profile maximum)	13.7033	deg C
GOR001	8/12/2014 17:30	Water Surface	2	167.5	m	Temperature, water (profile maximum)	13.8992	deg C
GOR001	9/8/2014 21:38	Water Surface	2	166	m	Temperature, water (profile maximum)	14.2819	deg C
GOR001	10/14/2014 17:59	Water Surface	2	167.5	m	Temperature, water (profile maximum)	13.4232	deg C
GOR001	11/10/2014 19:14	Water Surface	1	166	m	Temperature, water (profile maximum)	12.5218	deg C
GOR001	1/22/2015 18:57	Water Surface	1	165.5	m	Temperature, water (profile maximum)	9.9295	deg C
GOR001	2/18/2015 18:26	Water Surface	1	164.5	m	Temperature, water (profile maximum)	9.8148	deg C
GOR001	3/17/2015 17:51	Water Surface	1	166.5	m	Temperature, water (profile maximum)	9.8938	deg C
GOR001	4/8/2015 17:58	Water Surface	1	166	m	Temperature, water (profile maximum)	10.2058	deg C
GOR001	5/4/2015 18:22	Water Surface	1.5	160.5	m	Temperature, water (profile maximum)	11.2149	deg C
GOR001	6/4/2015 17:52	Water Surface	1	165.5	m	Temperature, water (profile maximum)	12.4662	deg C
GOR001	7/1/2015 17:47	Water Surface	1	160	m	Temperature, water (profile maximum)	14.6341	deg C
GOR001	8/4/2015 10:59	Water Surface	1	170.5	m	Temperature, water (profile maximum)	14.7042	deg C
GOR001	9/15/2015 11:29	Water Surface	1	149.5	m	Temperature, water (profile maximum)	14.5782	deg C
GOR001	10/6/2015 17:52	Water Surface	1	169	m	Temperature, water (profile maximum)	14.4138	deg C
GOR001	11/9/2015 19:17	Water Surface	1	169	m	Temperature, water (profile maximum)	12.9979	deg C
GOR001	12/14/2015 18:50	Water Surface	1	172	m	Temperature, water (profile maximum)	11.3712	deg C
GOR001	1/19/2016 19:11	Water Surface	1	168.5	m	Temperature, water (profile maximum)	9.791	deg C
GOR001	2/17/2016 19:02	Water Surface	1	167.5	m	Temperature, water (profile maximum)	9.3892	deg C
GOR001	3/18/2016 16:17	Water Surface	1	165.5	m	Temperature, water (profile maximum)	9.2526	deg C
GOR001	4/7/2016 18:08	Water Surface	1	164.5	m	Temperature, water (profile maximum)	10.0696	deg C
GOR001	5/10/2016 20:36	Water Surface	1	150.5	m	Temperature, water (profile maximum)	11.6039	deg C
GOR001	6/8/2016 22:15	Water Surface	1	152.5	m	Temperature, water (profile maximum)	12.9987	deg C
GOR001	7/22/2016 19:52	Water Surface	1	162	m	Temperature, water (profile maximum)	13.6862	deg C
GOR001	8/30/2016 23:16	Water Surface	1	148	m	Temperature, water (profile maximum)	14.9443	deg C
GOR001	9/22/2016 17:55	Water Surface	1	147.5	m	Temperature, water (profile maximum)	14.2196	deg C
GOR001	10/10/2016 21:00	Water Surface	1	167	m	Temperature, water (profile maximum)	13.9595	deg C
GOR001	11/9/2016 20:34	Water Surface	1	170	m	Temperature, water (profile maximum)	13.1287	deg C
GOR001	12/7/2016 22:17	Water Surface	1.5	172	m	Temperature, water (profile maximum)	11.4788	deg C
GOR001	1/11/2017 22:38	Water Surface	1	173.5	m	Temperature, water (profile maximum)	9.0777	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	3/8/2017 17:29	Water Surface	1.5	171.5	m	Temperature, water (profile maximum)	7.9566	deg C
GOR001	4/5/2017 17:33	Water Surface	1.5	170.5	m	Temperature, water (profile maximum)	8.5437	deg C
GOR001	5/19/2017 21:22	Water Surface	1.5	169	m	Temperature, water (profile maximum)	10.677	deg C
GOR001	6/9/2017 17:30	Water Surface	1	168	m	Temperature, water (profile maximum)	11.9511	deg C
GOR001	7/7/2017 17:01	Water Surface	1	166.5	m	Temperature, water (profile maximum)	13.2415	deg C
GOR001	8/10/2017 20:56	Water Surface	1	166	m	Temperature, water (profile maximum)	14.341	deg C
GOR001	9/7/2017 19:57	Water Surface	1	166.5	m	Temperature, water (profile maximum)	14.5601	deg C
GOR001	10/4/2017 17:31	Water Surface	1	168	m	Temperature, water (profile maximum)	13.7069	deg C
GOR001	12/8/2017 21:22	Water Surface	1	171.5	m	Temperature, water (profile maximum)	10.4266	deg C
						Minimum	7.63	deg C
						Average	11.24	deg C
						90th Percentile	14.20	deg C
						90th Percentile (May-October)	14.53	deg C
						Maximum	15.14	deg C
						Count	195	

Table C - 15: Ambient Profile Median Temperature

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	1/5/1999 22:26	Water Surface	0.5	111	m	Temperature, water (profile median)	9.7479	deg C
GOR001	2/26/1999 21:37	Water Surface	0.5	84.5	m	Temperature, water (profile median)	8.422	deg C
GOR001	4/13/1999 22:08	Water Surface	0.5	108	m	Temperature, water (profile median)	8.4423	deg C
GOR001	6/7/1999 22:39	Water Surface	0.5	104	m	Temperature, water (profile median)	10.2326	deg C
GOR001	7/8/1999 22:10	Water Surface	0.5	89	m	Temperature, water (profile median)	11.1154	deg C
GOR001	8/9/1999 23:20	Water Surface	0.5	86.5	m	Temperature, water (profile median)	12.2411	deg C
GOR001	9/13/1999 23:07	Water Surface	0.5	101.5	m	Temperature, water (profile median)	12.9225	deg C
GOR001	10/18/1999 22:29	Water Surface	0.5	107.5	m	Temperature, water (profile median)	12	deg C
GOR001	11/23/1999 23:34	Water Surface	0.5	85.5	m	Temperature, water (profile median)	10.7189	deg C
GOR001	1/19/2000 21:45	Water Surface	0.5	106	m	Temperature, water (profile median)	8.8918	deg C
GOR001	2/10/2000 0:34	Water Surface	0.5	108	m	Temperature, water (profile median)	8.4135	deg C
GOR001	3/21/2000 22:47	Water Surface	0.5	97.5	m	Temperature, water (profile median)	8.1906	deg C
GOR001	4/11/2000 22:13	Water Surface	0.5	108	m	Temperature, water (profile median)	8.64545	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	5/2/2000 22:28	Water Surface	0.5	80	m	Temperature, water (profile median)	9.4744	deg C
GOR001	6/13/2000 22:47	Water Surface	0.5	92.5	m	Temperature, water (profile median)	10.767	deg C
GOR001	7/19/2000 23:20	Water Surface	0.5	100	m	Temperature, water (profile median)	12.314	deg C
GOR001	8/15/2000 22:06	Water Surface	0.5	104	m	Temperature, water (profile median)	13.2587	deg C
GOR001	9/13/2000 22:49	Water Surface	0.5	106	m	Temperature, water (profile median)	13.0547	deg C
GOR001	10/4/2000 22:26	Water Surface	0.5	103.5	m	Temperature, water (profile median)	12.6666	deg C
GOR001	11/14/2000 22:24	Water Surface	0.5	105.5	m	Temperature, water (profile median)	11.2182	deg C
GOR001	1/8/2001 21:20	Water Surface	0.5	89	m	Temperature, water (profile median)	8.9937	deg C
GOR001	2/5/2001 21:36	Water Surface	0.5	81	m	Temperature, water (profile median)	8.45655	deg C
GOR001	3/6/2001 22:00	Water Surface	0.5	106.5	m	Temperature, water (profile median)	8.0415	deg C
GOR001	4/16/2001 22:31	Water Surface	0.5	106.5	m	Temperature, water (profile median)	8.5318	deg C
GOR001	5/7/2001 22:45	Water Surface	0.5	90	m	Temperature, water (profile median)	9.4045	deg C
GOR001	6/11/2001 22:54	Water Surface	0.5	67	m	Temperature, water (profile median)	10.8703	deg C
GOR001	7/9/2001 22:35	Water Surface	0.5	100.5	m	Temperature, water (profile median)	11.9251	deg C
GOR001	8/27/2001 22:15	Water Surface	0.5	99	m	Temperature, water (profile median)	12.9851	deg C
GOR001	9/19/2001 20:55	Water Surface	0.5	102	m	Temperature, water (profile median)	13.2587	deg C
GOR001	12/17/2001 20:21	Water Surface	1	136.5	m	Temperature, water (profile median)	10.0434	deg C
GOR001	1/14/2002 22:11	Water Surface	1	33	m	Temperature, water (profile median)	9.3573	deg C
GOR001	2/12/2002 20:20	Water Surface	1	163.5	m	Temperature, water (profile median)	8.5971	deg C
GOR001	7/10/2002 20:41	Water Surface	1	103.5	m	Temperature, water (profile median)	12.0975	deg C
GOR001	8/20/2002 23:15	Water Surface	1	163.5	m	Temperature, water (profile median)	12.9082	deg C
GOR001	9/23/2002 19:16	Water Surface	1.5	65.5	m	Temperature, water (profile median)	13.0808	deg C
GOR001	11/26/2002 19:19	Water Surface	1	131	m	Temperature, water (profile median)	10.6491	deg C
GOR001	3/17/2003 22:15	Water Surface	1.5	167.5	m	Temperature, water (profile median)	8.9413	deg C
GOR001	5/13/2003 21:54	Water Surface	1.5	26	m	Temperature, water (profile median)	10.4592	deg C
GOR001	6/19/2003 22:35	Water Surface	2	169.5	m	Temperature, water (profile median)	11.4313	deg C
GOR001	9/2/2003 23:02	Water Surface	1.5	165	m	Temperature, water (profile median)	13.5798	deg C
GOR001	1/27/2004 19:34	Water Surface	1.5	169	m	Temperature, water (profile median)	8.59205	deg C
GOR001	3/22/2004 21:32	Water Surface	1.5	165.5	m	Temperature, water (profile median)	8.6756	deg C
GOR001	5/25/2004 21:01	Water Surface	1	164.5	m	Temperature, water (profile median)	10.5781	deg C
GOR001	6/8/2004 22:01	Water Surface	1	166.5	m	Temperature, water (profile median)	11.1728	deg C
GOR001	7/19/2004 22:25	Water Surface	1	128	m	Temperature, water (profile median)	12.8925	deg C
GOR001	8/30/2004 21:05	Water Surface	1.5	165	m	Temperature, water (profile median)	13.623	deg C
GOR001	9/22/2004 22:32	Water Surface	1.5	166.5	m	Temperature, water (profile median)	13.4311	deg C
GOR001	11/10/2004 20:36	Water Surface	1	168	m	Temperature, water (profile median)	11.9729	deg C
GOR001	1/10/2005 19:53	Water Surface	1	167.5	m	Temperature, water (profile median)	9.3597	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	2/14/2005 19:52	Water Surface	1.5	142.5	m	Temperature, water (profile median)	8.6168	deg C
GOR001	3/15/2005 19:06	Water Surface	1.5	164.5	m	Temperature, water (profile median)	8.82665	deg C
GOR001	5/3/2005 21:48	Water Surface	1.5	167	m	Temperature, water (profile median)	9.8043	deg C
GOR001	6/6/2005 19:54	Water Surface	1.5	163	m	Temperature, water (profile median)	11.1095	deg C
GOR001	7/27/2005 20:11	Water Surface	1.5	166.5	m	Temperature, water (profile median)	12.8259	deg C
GOR001	8/16/2005 20:54	Water Surface	1	166.5	m	Temperature, water (profile median)	13.6486	deg C
GOR001	9/7/2005 21:53	Water Surface	1.5	164	m	Temperature, water (profile median)	13.6841	deg C
GOR001	10/12/2005 19:02	Water Surface	1.5	45.5	m	Temperature, water (profile median)	13.2161	deg C
GOR001	11/7/2005 20:04	Water Surface	1	167	m	Temperature, water (profile median)	11.8049	deg C
GOR001	2/8/2006 18:58	Water Surface	1	166.5	m	Temperature, water (profile median)	8.9035	deg C
GOR001	3/14/2006 19:59	Water Surface	1	166.5	m	Temperature, water (profile median)	8.41225	deg C
GOR001	4/11/2006 20:56	Water Surface	1	166	m	Temperature, water (profile median)	8.7446	deg C
GOR001	6/12/2006 19:20	Water Surface	0.5	162	m	Temperature, water (profile median)	10.9168	deg C
GOR001	7/10/2006 22:00	Water Surface	1	166	m	Temperature, water (profile median)	12.6131	deg C
GOR001	8/8/2006 19:44	Water Surface	1	164	m	Temperature, water (profile median)	12.9727	deg C
GOR001	9/6/2006 19:52	Water Surface	0.5	164.5	m	Temperature, water (profile median)	13.4755	deg C
GOR001	10/10/2006 20:00	Water Surface	0.5	121	m	Temperature, water (profile median)	12.9279	deg C
GOR001	11/14/2006 19:36	Water Surface	1	167	m	Temperature, water (profile median)	11.4919	deg C
GOR001	12/18/2006 19:49	Water Surface	1	167.5	m	Temperature, water (profile median)	10.0334	deg C
GOR001	2/8/2007 22:18	Water Surface	0.5	165	m	Temperature, water (profile median)	8.4429	deg C
GOR001	4/18/2007 21:01	Water Surface	0.5	163	m	Temperature, water (profile median)	8.8048	deg C
GOR001	5/7/2007 22:26	Water Surface	0.5	163.5	m	Temperature, water (profile median)	9.2675	deg C
GOR001	6/18/2007 21:24	Water Surface	0.5	163.5	m	Temperature, water (profile median)	10.9889	deg C
GOR001	7/17/2007 22:21	Water Surface	0.5	164	m	Temperature, water (profile median)	12.2491	deg C
GOR001	8/29/2007 20:40	Water Surface	1	165	m	Temperature, water (profile median)	13.0448	deg C
GOR001	9/25/2007 22:33	Water Surface	0.5	135	m	Temperature, water (profile median)	13.0115	deg C
GOR001	2/13/2008 18:17	Water Surface	1	161	m	Temperature, water (profile median)	7.6146	deg C
GOR001	3/18/2008 20:27	Water Surface	0.5	166	m	Temperature, water (profile median)	7.7292	deg C
GOR001	5/6/2008 18:53	Water Surface	0.5	163	m	Temperature, water (profile median)	8.6074	deg C
GOR001	6/4/2008 18:16	Water Surface	0.5	164	m	Temperature, water (profile median)	9.5784	deg C
GOR001	7/7/2008 18:04	Water Surface	0.5	167	m	Temperature, water (profile median)	10.7232	deg C
GOR001	8/19/2008 18:20	Water Surface	0.5	167	m	Temperature, water (profile median)	12.152	deg C
GOR001	9/22/2008 18:21	Water Surface	0.5	166.5	m	Temperature, water (profile median)	12.5898	deg C
GOR001	10/14/2008 19:06	Water Surface	1	167.5	m	Temperature, water (profile median)	12.0763	deg C
GOR001	3/30/2009 22:21	Water Surface	1	163	m	Temperature, water (profile median)	7.5421	deg C
GOR001	4/13/2009 20:44	Water Surface	1.5	164	m	Temperature, water (profile median)	7.8275	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	5/13/2009 19:00	Water Surface	1	164.5	m	Temperature, water (profile median)	8.7684	deg C
GOR001	6/3/2009 19:22	Water Surface	1	167	m	Temperature, water (profile median)	9.8411	deg C
GOR001	7/21/2009 18:05	Water Surface	1	162	m	Temperature, water (profile median)	12.0118	deg C
GOR001	8/11/2009 18:05	Water Surface	0.5	167.5	m	Temperature, water (profile median)	12.3573	deg C
GOR001	9/10/2009 18:04	Water Surface	0.5	167.5	m	Temperature, water (profile median)	12.9393	deg C
GOR001	10/21/2009 18:31	Water Surface	0.5	148	m	Temperature, water (profile median)	12.3119	deg C
GOR001	11/30/2009 20:55	Water Surface	0.5	167	m	Temperature, water (profile median)	10.8226	deg C
GOR001	12/22/2009 19:40	Water Surface	0.5	165.5	m	Temperature, water (profile median)	9.8126	deg C
GOR001	1/14/2010 21:57	Water Surface	0.5	170.5	m	Temperature, water (profile median)	9.1094	deg C
GOR001	2/10/2010 23:26	Water Surface	1	167.5	m	Temperature, water (profile median)	8.8357	deg C
GOR001	3/2/2010 18:46	Water Surface	0.5	164.5	m	Temperature, water (profile median)	8.8022	deg C
GOR001	6/1/2010 17:47	Water Surface	0.5	167	m	Temperature, water (profile median)	10.3363	deg C
GOR001	7/6/2010 18:26	Water Surface	0.5	165.5	m	Temperature, water (profile median)	11.5675	deg C
GOR001	8/10/2010 18:55	Water Surface	0.5	164	m	Temperature, water (profile median)	12.504	deg C
GOR001	9/13/2010 18:11	Water Surface	0.5	164.5	m	Temperature, water (profile median)	12.7254	deg C
GOR001	10/4/2010 19:30	Water Surface	0.5	166	m	Temperature, water (profile median)	12.731	deg C
GOR001	11/2/2010 17:20	Water Surface	1	166	m	Temperature, water (profile median)	11.7728	deg C
GOR001	1/10/2011 22:05	Water Surface	1	165.5	m	Temperature, water (profile median)	8.7482	deg C
GOR001	2/2/2011 20:25	Water Surface	1.5	165.5	m	Temperature, water (profile median)	8.4626	deg C
GOR001	4/12/2011 18:39	Water Surface	1	169	m	Temperature, water (profile median)	7.9982	deg C
GOR001	5/4/2011 18:30	Water Surface	1	163.5	m	Temperature, water (profile median)	8.5453	deg C
GOR001	6/6/2011 18:44	Water Surface	1	167	m	Temperature, water (profile median)	9.6634	deg C
GOR001	7/6/2011 17:47	Water Surface	1	167.5	m	Temperature, water (profile median)	10.8072	deg C
GOR001	8/8/2011 18:36	Water Surface	1	166.5	m	Temperature, water (profile median)	12.3273	deg C
GOR001	9/12/2011 19:30	Water Surface	1	164	m	Temperature, water (profile median)	12.5548	deg C
GOR001	10/12/2011 18:22	Water Surface	1	165	m	Temperature, water (profile median)	12.095	deg C
GOR001	11/3/2011 18:32	Water Surface	1	169	m	Temperature, water (profile median)	11.5462	deg C
GOR001	12/8/2011 18:19	Water Surface	1	166	m	Temperature, water (profile median)	9.9079	deg C
GOR001	3/7/2012 17:42	Water Surface	1	164	m	Temperature, water (profile median)	7.6649	deg C
GOR001	4/9/2012 16:54	Water Surface	1	166	m	Temperature, water (profile median)	7.8927	deg C
GOR001	5/7/2012 16:47	Water Surface	1	165	m	Temperature, water (profile median)	8.6284	deg C
GOR001	6/12/2012 16:41	Water Surface	1	165	m	Temperature, water (profile median)	10.0549	deg C
GOR001	7/17/2012 16:54	Water Surface	1	164.5	m	Temperature, water (profile median)	11.2895	deg C
GOR001	8/13/2012 16:57	Water Surface	1	162.5	m	Temperature, water (profile median)	12.0343	deg C
GOR001	9/11/2012 21:04	Water Surface	0.5	167.5	m	Temperature, water (profile median)	12.754	deg C
GOR001	10/8/2012 17:09	Water Surface	0.5	165	m	Temperature, water (profile median)	12.5129	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	12/12/2012 23:01	Water Surface	1	171.5	m	Temperature, water (profile median)	10.1977	deg C
GOR001	1/15/2013 20:47	Water Surface	1	165	m	Temperature, water (profile median)	9.0221	deg C
GOR001	3/6/2013 22:12	Water Surface	1	166	m	Temperature, water (profile median)	8.2267	deg C
GOR001	5/6/2013 18:35	Water Surface	1.5	163.5	m	Temperature, water (profile median)	9.2504	deg C
GOR001	6/5/2013 17:54	Water Surface	1.5	163.5	m	Temperature, water (profile median)	10.205	deg C
GOR001	7/9/2013 18:25	Water Surface	1.5	164.5	m	Temperature, water (profile median)	11.6559	deg C
GOR001	8/13/2013 18:06	Water Surface	1	167.5	m	Temperature, water (profile median)	12.6673	deg C
GOR001	9/4/2013 17:56	Water Surface	1	163.5	m	Temperature, water (profile median)	13.1273	deg C
GOR001	10/8/2013 18:25	Water Surface	1.5	166	m	Temperature, water (profile median)	12.4865	deg C
GOR001	11/20/2013 18:56	Water Surface	2	166	m	Temperature, water (profile median)	10.9617	deg C
GOR001	12/31/2013 18:49	Water Surface	2	166	m	Temperature, water (profile median)	8.989	deg C
GOR001	1/14/2014 19:00	Water Surface	1	166.5	m	Temperature, water (profile median)	8.6215	deg C
GOR001	3/10/2014 17:36	Water Surface	1	149.5	m	Temperature, water (profile median)	7.8202	deg C
GOR001	4/1/2014 18:38	Water Surface	1	164.5	m	Temperature, water (profile median)	8.1603	deg C
GOR001	5/6/2014 16:46	Water Surface	2	167.5	m	Temperature, water (profile median)	9.1199	deg C
GOR001	6/3/2014 17:46	Water Surface	1	165.5	m	Temperature, water (profile median)	10.4635	deg C
GOR001	7/21/2014 16:53	Water Surface	1	166	m	Temperature, water (profile median)	12.5492	deg C
GOR001	8/12/2014 17:30	Water Surface	2	167.5	m	Temperature, water (profile median)	13.0746	deg C
GOR001	9/8/2014 21:38	Water Surface	2	166	m	Temperature, water (profile median)	13.7695	deg C
GOR001	10/14/2014 17:59	Water Surface	2	167.5	m	Temperature, water (profile median)	13.053	deg C
GOR001	11/10/2014 19:14	Water Surface	1	166	m	Temperature, water (profile median)	12.3469	deg C
GOR001	1/22/2015 18:48	Water Surface	1	165.5	m	Temperature, water (profile median)	9.9019	deg C
GOR001	2/18/2015 18:25	Water Surface	1	164.5	m	Temperature, water (profile median)	9.7689	deg C
GOR001	3/17/2015 17:51	Water Surface	1	166.5	m	Temperature, water (profile median)	9.6942	deg C
GOR001	4/8/2015 17:58	Water Surface	1	166	m	Temperature, water (profile median)	9.9629	deg C
GOR001	5/4/2015 18:22	Water Surface	1.5	160.5	m	Temperature, water (profile median)	10.6306	deg C
GOR001	6/4/2015 17:52	Water Surface	1	165.5	m	Temperature, water (profile median)	11.5886	deg C
GOR001	7/1/2015 17:47	Water Surface	1	160	m	Temperature, water (profile median)	13.1242	deg C
GOR001	8/4/2015 10:59	Water Surface	1	170.5	m	Temperature, water (profile median)	13.776	deg C
GOR001	9/15/2015 11:29	Water Surface	1	149.5	m	Temperature, water (profile median)	14.2318	deg C
GOR001	10/6/2015 17:52	Water Surface	1	169	m	Temperature, water (profile median)	13.8381	deg C
GOR001	11/9/2015 19:17	Water Surface	1	169	m	Temperature, water (profile median)	12.8667	deg C
GOR001	12/14/2015 18:41	Water Surface	1	172	m	Temperature, water (profile median)	11.2189	deg C
GOR001	4/7/2016 18:08	Water Surface	1	164.5	m	Temperature, water (profile median)	9.6818	deg C
GOR001	5/10/2016 20:36	Water Surface	1	150.5	m	Temperature, water (profile median)	11.0245	deg C
GOR001	6/8/2016 22:15	Water Surface	1	152.5	m	Temperature, water (profile median)	11.9917	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	7/22/2016 19:52	Water Surface	1	162	m	Temperature, water (profile median)	12.9306	deg C
GOR001	8/30/2016 23:16	Water Surface	1	148	m	Temperature, water (profile median)	13.9265	deg C
GOR001	9/22/2016 17:55	Water Surface	1	147.5	m	Temperature, water (profile median)	13.4975	deg C
GOR001	10/10/2016 21:00	Water Surface	1	167	m	Temperature, water (profile median)	13.0993	deg C
GOR001	12/7/2016 22:11	Water Surface	1.5	172	m	Temperature, water (profile median)	11.4227	deg C
GOR001	1/11/2017 22:35	Water Surface	1	173.5	m	Temperature, water (profile median)	9.0523	deg C
GOR001	3/8/2017 17:24	Water Surface	1.5	171.5	m	Temperature, water (profile median)	7.9394	deg C
GOR001	4/5/2017 17:33	Water Surface	1.5	170.5	m	Temperature, water (profile median)	8.2914	deg C
GOR001	5/19/2017 21:22	Water Surface	1.5	169	m	Temperature, water (profile median)	9.5002	deg C
GOR001	6/9/2017 17:30	Water Surface	1	168	m	Temperature, water (profile median)	10.887	deg C
GOR001	7/7/2017 17:01	Water Surface	1	166.5	m	Temperature, water (profile median)	11.9754	deg C
GOR001	8/10/2017 20:56	Water Surface	1	166	m	Temperature, water (profile median)	13.1267	deg C
GOR001	9/7/2017 19:57	Water Surface	1	166.5	m	Temperature, water (profile median)	13.8896	deg C
GOR001	10/4/2017 17:31	Water Surface	1	168	m	Temperature, water (profile median)	13.2197	deg C
GOR001	12/8/2017 21:16	Water Surface	1	171.5	m	Temperature, water (profile median)	10.3355	deg C
						Minimum	7.54	deg C
						Average	10.86	deg C
						90th Percentile	13.13	deg C
						Maximum	14.23	deg C
						Count	172	

Table C - 16: Ambient Profile Minimum Temperature

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	1/5/1999 22:26	Water Surface	0.5	111	m	Temperature, water (profile minimum)	9.6219	deg C
GOR001	2/26/1999 21:37	Water Surface	0.5	84.5	m	Temperature, water (profile minimum)	8.1507	deg C
GOR001	3/18/1999 21:54	Water Surface	0.5	106.5	m	Temperature, water (profile minimum)	8.1945	deg C
GOR001	4/13/1999 22:11	Water Surface	0.5	108	m	Temperature, water (profile minimum)	8.4167	deg C
GOR001	6/7/1999 22:44	Water Surface	0.5	104	m	Temperature, water (profile minimum)	10.077	deg C
GOR001	7/8/1999 22:14	Water Surface	0.5	89	m	Temperature, water (profile minimum)	11.0774	deg C
GOR001	8/9/1999 23:22	Water Surface	0.5	86.5	m	Temperature, water (profile minimum)	12.1892	deg C
GOR001	9/13/1999 23:12	Water Surface	0.5	101.5	m	Temperature, water (profile minimum)	12.5694	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	10/18/1999 22:33	Water Surface	0.5	107.5	m	Temperature, water (profile minimum)	11.9712	deg C
GOR001	11/23/1999 23:38	Water Surface	0.5	85.5	m	Temperature, water (profile minimum)	10.7005	deg C
GOR001	1/19/2000 21:45	Water Surface	0.5	106	m	Temperature, water (profile minimum)	8.3753	deg C
GOR001	2/10/2000 0:37	Water Surface	0.5	108	m	Temperature, water (profile minimum)	8.3939	deg C
GOR001	3/21/2000 22:51	Water Surface	0.5	97.5	m	Temperature, water (profile minimum)	8.1746	deg C
GOR001	4/11/2000 22:17	Water Surface	0.5	108	m	Temperature, water (profile minimum)	8.5901	deg C
GOR001	5/2/2000 22:32	Water Surface	0.5	80	m	Temperature, water (profile minimum)	9.3322	deg C
GOR001	6/13/2000 22:51	Water Surface	0.5	92.5	m	Temperature, water (profile minimum)	10.5595	deg C
GOR001	7/19/2000 23:25	Water Surface	0.5	100	m	Temperature, water (profile minimum)	12.0341	deg C
GOR001	8/15/2000 22:11	Water Surface	0.5	104	m	Temperature, water (profile minimum)	12.7356	deg C
GOR001	9/13/2000 22:52	Water Surface	0.5	106	m	Temperature, water (profile minimum)	12.9089	deg C
GOR001	10/4/2000 22:31	Water Surface	0.5	103.5	m	Temperature, water (profile minimum)	12.5718	deg C
GOR001	11/14/2000 22:29	Water Surface	0.5	105.5	m	Temperature, water (profile minimum)	11.1901	deg C
GOR001	1/8/2001 21:20	Water Surface	0.5	89	m	Temperature, water (profile minimum)	8.9696	deg C
GOR001	2/5/2001 21:36	Water Surface	0.5	81	m	Temperature, water (profile minimum)	8.3839	deg C
GOR001	3/6/2001 22:01	Water Surface	0.5	106.5	m	Temperature, water (profile minimum)	8.0349	deg C
GOR001	4/16/2001 22:36	Water Surface	0.5	106.5	m	Temperature, water (profile minimum)	8.4946	deg C
GOR001	5/7/2001 22:50	Water Surface	0.5	90	m	Temperature, water (profile minimum)	9.2532	deg C
GOR001	6/11/2001 22:57	Water Surface	0.5	67	m	Temperature, water (profile minimum)	10.7099	deg C
GOR001	7/9/2001 22:40	Water Surface	0.5	100.5	m	Temperature, water (profile minimum)	11.6622	deg C
GOR001	8/27/2001 22:19	Water Surface	0.5	99	m	Temperature, water (profile minimum)	12.9569	deg C
GOR001	9/19/2001 21:00	Water Surface	0.5	102	m	Temperature, water (profile minimum)	13.1208	deg C
GOR001	12/17/2001 20:21	Water Surface	1	136.5	m	Temperature, water (profile minimum)	9.3595	deg C
GOR001	1/14/2002 22:11	Water Surface	1	33	m	Temperature, water (profile minimum)	9.2847	deg C
GOR001	2/12/2002 20:20	Water Surface	1	163.5	m	Temperature, water (profile minimum)	8.4065	deg C
GOR001	7/10/2002 20:46	Water Surface	1	103.5	m	Temperature, water (profile minimum)	11.6156	deg C
GOR001	8/20/2002 23:23	Water Surface	1	163.5	m	Temperature, water (profile minimum)	12.3912	deg C
GOR001	9/23/2002 19:19	Water Surface	1.5	65.5	m	Temperature, water (profile minimum)	12.78	deg C
GOR001	11/26/2002 19:26	Water Surface	1	131	m	Temperature, water (profile minimum)	10.6093	deg C
GOR001	1/28/2003 20:27	Water Surface	1	167.5	m	Temperature, water (profile minimum)	9.2066	deg C
GOR001	3/17/2003 22:24	Water Surface	1.5	167.5	m	Temperature, water (profile minimum)	8.9263	deg C
GOR001	5/13/2003 21:54	Water Surface	1.5	26	m	Temperature, water (profile minimum)	10.4043	deg C
GOR001	6/19/2003 22:43	Water Surface	2	169.5	m	Temperature, water (profile minimum)	11.2177	deg C
GOR001	9/2/2003 23:11	Water Surface	1.5	165	m	Temperature, water (profile minimum)	13.4107	deg C
GOR001	1/27/2004 19:34	Water Surface	1.5	169	m	Temperature, water (profile minimum)	8.5228	deg C
GOR001	2/27/2004 20:39	Water Surface	1	165.5	m	Temperature, water (profile minimum)	8.358	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	3/22/2004 21:40	Water Surface	1.5	165.5	m	Temperature, water (profile minimum)	8.5254	deg C
GOR001	4/26/2004 22:00	Water Surface	1.5	164	m	Temperature, water (profile minimum)	9.3149	deg C
GOR001	5/25/2004 21:08	Water Surface	1	164.5	m	Temperature, water (profile minimum)	10.4085	deg C
GOR001	6/8/2004 22:10	Water Surface	1	166.5	m	Temperature, water (profile minimum)	10.8879	deg C
GOR001	7/19/2004 22:32	Water Surface	1	128	m	Temperature, water (profile minimum)	12.5151	deg C
GOR001	8/30/2004 21:14	Water Surface	1.5	165	m	Temperature, water (profile minimum)	13.3389	deg C
GOR001	9/22/2004 22:41	Water Surface	1.5	166.5	m	Temperature, water (profile minimum)	12.9776	deg C
GOR001	11/10/2004 20:45	Water Surface	1	168	m	Temperature, water (profile minimum)	11.9163	deg C
GOR001	1/10/2005 19:53	Water Surface	1	167.5	m	Temperature, water (profile minimum)	9.253	deg C
GOR001	2/14/2005 19:52	Water Surface	1.5	142.5	m	Temperature, water (profile minimum)	8.4905	deg C
GOR001	3/15/2005 19:14	Water Surface	1.5	164.5	m	Temperature, water (profile minimum)	8.7724	deg C
GOR001	4/5/2005 21:25	Water Surface	1.5	167	m	Temperature, water (profile minimum)	8.8711	deg C
GOR001	5/3/2005 21:57	Water Surface	1.5	167	m	Temperature, water (profile minimum)	9.6575	deg C
GOR001	6/6/2005 20:01	Water Surface	1.5	163	m	Temperature, water (profile minimum)	10.8764	deg C
GOR001	7/27/2005 20:20	Water Surface	1.5	166.5	m	Temperature, water (profile minimum)	12.6837	deg C
GOR001	8/16/2005 21:02	Water Surface	1	166.5	m	Temperature, water (profile minimum)	13.2754	deg C
GOR001	9/7/2005 22:02	Water Surface	1.5	164	m	Temperature, water (profile minimum)	13.4445	deg C
GOR001	10/12/2005 19:03	Water Surface	1.5	45.5	m	Temperature, water (profile minimum)	13.1714	deg C
GOR001	11/7/2005 20:10	Water Surface	1	167	m	Temperature, water (profile minimum)	11.772	deg C
GOR001	12/5/2005 19:18	Water Surface	1	168	m	Temperature, water (profile minimum)	10.5375	deg C
GOR001	1/12/2006 19:55	Water Surface	1	167.5	m	Temperature, water (profile minimum)	8.4707	deg C
GOR001	2/8/2006 18:58	Water Surface	1	166.5	m	Temperature, water (profile minimum)	8.5733	deg C
GOR001	3/14/2006 20:00	Water Surface	1	166.5	m	Temperature, water (profile minimum)	8.3445	deg C
GOR001	4/11/2006 21:04	Water Surface	1	166	m	Temperature, water (profile minimum)	8.7245	deg C
GOR001	5/1/2006 18:58	Water Surface	1	164.5	m	Temperature, water (profile minimum)	9.2747	deg C
GOR001	6/12/2006 19:28	Water Surface	0.5	162	m	Temperature, water (profile minimum)	10.698	deg C
GOR001	7/10/2006 22:09	Water Surface	1	166	m	Temperature, water (profile minimum)	11.9052	deg C
GOR001	8/8/2006 19:52	Water Surface	1	164	m	Temperature, water (profile minimum)	12.6504	deg C
GOR001	9/6/2006 20:01	Water Surface	0.5	164.5	m	Temperature, water (profile minimum)	13.1459	deg C
GOR001	10/10/2006 20:06	Water Surface	0.5	121	m	Temperature, water (profile minimum)	12.8247	deg C
GOR001	11/14/2006 19:36	Water Surface	1	167	m	Temperature, water (profile minimum)	11.1886	deg C
GOR001	12/18/2006 19:49	Water Surface	1	167.5	m	Temperature, water (profile minimum)	8.7255	deg C
GOR001	2/8/2007 22:19	Water Surface	0.5	165	m	Temperature, water (profile minimum)	8.4214	deg C
GOR001	3/28/2007 21:49	Water Surface	0.5	167.5	m	Temperature, water (profile minimum)	8.3983	deg C
GOR001	4/18/2007 21:08	Water Surface	0.5	163	m	Temperature, water (profile minimum)	8.6613	deg C
GOR001	5/7/2007 22:35	Water Surface	0.5	163.5	m	Temperature, water (profile minimum)	9.1268	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	6/18/2007 21:33	Water Surface	0.5	163.5	m	Temperature, water (profile minimum)	10.6456	deg C
GOR001	7/17/2007 22:30	Water Surface	0.5	164	m	Temperature, water (profile minimum)	11.8404	deg C
GOR001	8/29/2007 20:49	Water Surface	1	165	m	Temperature, water (profile minimum)	12.6288	deg C
GOR001	9/25/2007 22:39	Water Surface	0.5	135	m	Temperature, water (profile minimum)	12.6717	deg C
GOR001	10/25/2007 22:22	Water Surface	1	168	m	Temperature, water (profile minimum)	11.7576	deg C
GOR001	2/13/2008 18:17	Water Surface	1	161	m	Temperature, water (profile minimum)	7.4685	deg C
GOR001	3/18/2008 20:33	Water Surface	0.5	166	m	Temperature, water (profile minimum)	7.7143	deg C
GOR001	4/9/2008 18:14	Water Surface	0.5	167.5	m	Temperature, water (profile minimum)	7.8671	deg C
GOR001	5/6/2008 19:01	Water Surface	0.5	163	m	Temperature, water (profile minimum)	8.5213	deg C
GOR001	6/4/2008 18:25	Water Surface	0.5	164	m	Temperature, water (profile minimum)	9.4221	deg C
GOR001	7/7/2008 18:12	Water Surface	0.5	167	m	Temperature, water (profile minimum)	10.5586	deg C
GOR001	8/19/2008 18:29	Water Surface	0.5	167	m	Temperature, water (profile minimum)	12.0225	deg C
GOR001	9/22/2008 18:30	Water Surface	0.5	166.5	m	Temperature, water (profile minimum)	12.294	deg C
GOR001	10/14/2008 19:14	Water Surface	1	167.5	m	Temperature, water (profile minimum)	11.8931	deg C
GOR001	3/30/2009 22:29	Water Surface	1	163	m	Temperature, water (profile minimum)	7.5189	deg C
GOR001	4/13/2009 20:52	Water Surface	1.5	164	m	Temperature, water (profile minimum)	7.7889	deg C
GOR001	5/13/2009 19:08	Water Surface	1	164.5	m	Temperature, water (profile minimum)	8.6136	deg C
GOR001	6/3/2009 19:31	Water Surface	1	167	m	Temperature, water (profile minimum)	9.5775	deg C
GOR001	7/21/2009 18:13	Water Surface	1	162	m	Temperature, water (profile minimum)	11.5617	deg C
GOR001	8/11/2009 18:13	Water Surface	0.5	167.5	m	Temperature, water (profile minimum)	12.229	deg C
GOR001	9/10/2009 18:12	Water Surface	0.5	167.5	m	Temperature, water (profile minimum)	12.4553	deg C
GOR001	10/21/2009 18:39	Water Surface	0.5	148	m	Temperature, water (profile minimum)	12.1939	deg C
GOR001	11/30/2009 20:55	Water Surface	0.5	167	m	Temperature, water (profile minimum)	10.7148	deg C
GOR001	12/22/2009 19:40	Water Surface	0.5	165.5	m	Temperature, water (profile minimum)	9.311	deg C
GOR001	1/14/2010 21:57	Water Surface	0.5	170.5	m	Temperature, water (profile minimum)	9.0516	deg C
GOR001	2/10/2010 23:26	Water Surface	1	167.5	m	Temperature, water (profile minimum)	8.6693	deg C
GOR001	3/2/2010 18:52	Water Surface	0.5	164.5	m	Temperature, water (profile minimum)	8.7931	deg C
GOR001	4/5/2010 18:05	Water Surface	0.5	167	m	Temperature, water (profile minimum)	8.8686	deg C
GOR001	5/5/2010 17:24	Water Surface	1	166.5	m	Temperature, water (profile minimum)	9.4337	deg C
GOR001	6/1/2010 17:56	Water Surface	0.5	167	m	Temperature, water (profile minimum)	10.1995	deg C
GOR001	7/6/2010 18:35	Water Surface	0.5	165.5	m	Temperature, water (profile minimum)	11.4143	deg C
GOR001	8/10/2010 19:04	Water Surface	0.5	164	m	Temperature, water (profile minimum)	12.1593	deg C
GOR001	9/13/2010 18:20	Water Surface	0.5	164.5	m	Temperature, water (profile minimum)	12.2909	deg C
GOR001	10/4/2010 19:39	Water Surface	0.5	166	m	Temperature, water (profile minimum)	12.4167	deg C
GOR001	11/2/2010 17:29	Water Surface	1	166	m	Temperature, water (profile minimum)	11.6787	deg C
GOR001	12/7/2010 18:19	Water Surface	0.5	167.5	m	Temperature, water (profile minimum)	9.9379	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	1/10/2011 22:05	Water Surface	1	165.5	m	Temperature, water (profile minimum)	8.2775	deg C
GOR001	2/2/2011 20:25	Water Surface	1.5	165.5	m	Temperature, water (profile minimum)	8.4	deg C
GOR001	4/12/2011 18:47	Water Surface	1	169	m	Temperature, water (profile minimum)	7.9568	deg C
GOR001	5/4/2011 18:39	Water Surface	1	163.5	m	Temperature, water (profile minimum)	8.4071	deg C
GOR001	6/6/2011 18:53	Water Surface	1	167	m	Temperature, water (profile minimum)	9.5775	deg C
GOR001	7/6/2011 17:56	Water Surface	1	167.5	m	Temperature, water (profile minimum)	10.7769	deg C
GOR001	8/8/2011 18:44	Water Surface	1	166.5	m	Temperature, water (profile minimum)	11.9052	deg C
GOR001	9/12/2011 19:39	Water Surface	1	164	m	Temperature, water (profile minimum)	12.3429	deg C
GOR001	10/12/2011 18:31	Water Surface	1	165	m	Temperature, water (profile minimum)	11.9323	deg C
GOR001	11/3/2011 18:41	Water Surface	1	169	m	Temperature, water (profile minimum)	11.4702	deg C
GOR001	12/8/2011 18:19	Water Surface	1	166	m	Temperature, water (profile minimum)	9.6939	deg C
GOR001	2/2/2012 16:45	Water Surface	1	167.5	m	Temperature, water (profile minimum)	7.5581	deg C
GOR001	3/7/2012 17:44	Water Surface	1	164	m	Temperature, water (profile minimum)	7.6099	deg C
GOR001	4/9/2012 16:59	Water Surface	1	166	m	Temperature, water (profile minimum)	7.8671	deg C
GOR001	5/7/2012 16:55	Water Surface	1	165	m	Temperature, water (profile minimum)	8.5672	deg C
GOR001	6/12/2012 16:50	Water Surface	1	165	m	Temperature, water (profile minimum)	9.9111	deg C
GOR001	7/17/2012 17:02	Water Surface	1	164.5	m	Temperature, water (profile minimum)	11.0662	deg C
GOR001	8/13/2012 17:06	Water Surface	1	162.5	m	Temperature, water (profile minimum)	11.8806	deg C
GOR001	9/11/2012 21:13	Water Surface	0.5	167.5	m	Temperature, water (profile minimum)	12.4365	deg C
GOR001	10/8/2012 17:18	Water Surface	0.5	165	m	Temperature, water (profile minimum)	12.3018	deg C
GOR001	11/7/2012 17:57	Water Surface	1	156.5	m	Temperature, water (profile minimum)	11.4212	deg C
GOR001	12/12/2012 23:01	Water Surface	1	171.5	m	Temperature, water (profile minimum)	10.0269	deg C
GOR001	1/15/2013 20:48	Water Surface	1	165	m	Temperature, water (profile minimum)	8.8105	deg C
GOR001	2/13/2013 19:15	Water Surface	1.5	165	m	Temperature, water (profile minimum)	8.377	deg C
GOR001	3/6/2013 22:12	Water Surface	1	166	m	Temperature, water (profile minimum)	8.2115	deg C
GOR001	4/2/2013 19:08	Water Surface	1	168.5	m	Temperature, water (profile minimum)	8.4972	deg C
GOR001	5/6/2013 18:43	Water Surface	1.5	163.5	m	Temperature, water (profile minimum)	9.1162	deg C
GOR001	6/5/2013 18:01	Water Surface	1.5	163.5	m	Temperature, water (profile minimum)	10.0831	deg C
GOR001	7/9/2013 18:34	Water Surface	1.5	164.5	m	Temperature, water (profile minimum)	11.3075	deg C
GOR001	8/13/2013 18:13	Water Surface	1	167.5	m	Temperature, water (profile minimum)	12.5291	deg C
GOR001	9/4/2013 18:05	Water Surface	1	163.5	m	Temperature, water (profile minimum)	12.8091	deg C
GOR001	10/8/2013 18:34	Water Surface	1.5	166	m	Temperature, water (profile minimum)	12.1644	deg C
GOR001	11/20/2013 19:04	Water Surface	2	166	m	Temperature, water (profile minimum)	10.9475	deg C
GOR001	12/31/2013 18:49	Water Surface	2	166	m	Temperature, water (profile minimum)	8.9361	deg C
GOR001	1/14/2014 19:00	Water Surface	1	166.5	m	Temperature, water (profile minimum)	8.5973	deg C
GOR001	2/4/2014 18:53	Water Surface	1.5	167.5	m	Temperature, water (profile minimum)	8.1785	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	3/10/2014 17:43	Water Surface	1	149.5	m	Temperature, water (profile minimum)	7.8052	deg C
GOR001	4/1/2014 18:46	Water Surface	1	164.5	m	Temperature, water (profile minimum)	8.1104	deg C
GOR001	5/6/2014 16:55	Water Surface	2	167.5	m	Temperature, water (profile minimum)	9.0413	deg C
GOR001	6/3/2014 17:55	Water Surface	1	165.5	m	Temperature, water (profile minimum)	10.2498	deg C
GOR001	7/21/2014 17:02	Water Surface	1	166	m	Temperature, water (profile minimum)	12.3413	deg C
GOR001	8/12/2014 17:39	Water Surface	2	167.5	m	Temperature, water (profile minimum)	12.8929	deg C
GOR001	9/8/2014 21:47	Water Surface	2	166	m	Temperature, water (profile minimum)	13.3291	deg C
GOR001	10/14/2014 18:07	Water Surface	2	167.5	m	Temperature, water (profile minimum)	12.71	deg C
GOR001	11/10/2014 19:16	Water Surface	1	166	m	Temperature, water (profile minimum)	12.3385	deg C
GOR001	1/22/2015 18:48	Water Surface	1	165.5	m	Temperature, water (profile minimum)	9.7982	deg C
GOR001	2/18/2015 18:26	Water Surface	1	164.5	m	Temperature, water (profile minimum)	9.7226	deg C
GOR001	3/17/2015 17:58	Water Surface	1	166.5	m	Temperature, water (profile minimum)	9.6656	deg C
GOR001	4/8/2015 18:05	Water Surface	1	166	m	Temperature, water (profile minimum)	9.8821	deg C
GOR001	5/4/2015 18:29	Water Surface	1.5	160.5	m	Temperature, water (profile minimum)	10.4797	deg C
GOR001	6/4/2015 18:00	Water Surface	1	165.5	m	Temperature, water (profile minimum)	11.2528	deg C
GOR001	7/1/2015 17:55	Water Surface	1	160	m	Temperature, water (profile minimum)	12.5224	deg C
GOR001	8/4/2015 11:06	Water Surface	1	170.5	m	Temperature, water (profile minimum)	13.6781	deg C
GOR001	9/15/2015 11:37	Water Surface	1	149.5	m	Temperature, water (profile minimum)	13.9788	deg C
GOR001	10/6/2015 18:01	Water Surface	1	169	m	Temperature, water (profile minimum)	13.7017	deg C
GOR001	11/9/2015 19:26	Water Surface	1	169	m	Temperature, water (profile minimum)	12.7765	deg C
GOR001	12/14/2015 18:41	Water Surface	1	172	m	Temperature, water (profile minimum)	10.7254	deg C
GOR001	1/19/2016 19:02	Water Surface	1	168.5	m	Temperature, water (profile minimum)	9.413	deg C
GOR001	2/17/2016 19:02	Water Surface	1	167.5	m	Temperature, water (profile minimum)	9.2915	deg C
GOR001	3/18/2016 16:16	Water Surface	1	165.5	m	Temperature, water (profile minimum)	9.1819	deg C
GOR001	4/7/2016 18:17	Water Surface	1	164.5	m	Temperature, water (profile minimum)	9.6085	deg C
GOR001	5/10/2016 20:42	Water Surface	1	150.5	m	Temperature, water (profile minimum)	10.8316	deg C
GOR001	6/8/2016 22:22	Water Surface	1	152.5	m	Temperature, water (profile minimum)	11.7826	deg C
GOR001	7/22/2016 19:58	Water Surface	1	162	m	Temperature, water (profile minimum)	12.6631	deg C
GOR001	8/30/2016 23:21	Water Surface	1	148	m	Temperature, water (profile minimum)	13.5038	deg C
GOR001	9/22/2016 18:05	Water Surface	1	147.5	m	Temperature, water (profile minimum)	13.1949	deg C
GOR001	10/10/2016 21:05	Water Surface	1	167	m	Temperature, water (profile minimum)	12.9317	deg C
GOR001	11/9/2016 20:40	Water Surface	1	170	m	Temperature, water (profile minimum)	12.3221	deg C
GOR001	12/7/2016 22:11	Water Surface	1.5	172	m	Temperature, water (profile minimum)	10.8171	deg C
GOR001	1/11/2017 22:35	Water Surface	1	173.5	m	Temperature, water (profile minimum)	8.681	deg C
GOR001	3/8/2017 17:24	Water Surface	1.5	171.5	m	Temperature, water (profile minimum)	7.5006	deg C
GOR001	4/5/2017 17:39	Water Surface	1.5	170.5	m	Temperature, water (profile minimum)	8.2155	deg C

Location ID	Field Collection Start Date Time	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Result Parameter Name	Result Value	Result Unit
GOR001	5/19/2017 21:28	Water Surface	1.5	169	m	Temperature, water (profile minimum)	9.4	deg C
GOR001	6/9/2017 17:36	Water Surface	1	168	m	Temperature, water (profile minimum)	10.6676	deg C
GOR001	7/7/2017 17:06	Water Surface	1	166.5	m	Temperature, water (profile minimum)	11.7162	deg C
GOR001	8/10/2017 21:02	Water Surface	1	166	m	Temperature, water (profile minimum)	12.9081	deg C
GOR001	9/7/2017 20:03	Water Surface	1	166.5	m	Temperature, water (profile minimum)	13.3327	deg C
GOR001	10/4/2017 17:37	Water Surface	1	168	m	Temperature, water (profile minimum)	12.9399	deg C
GOR001	12/8/2017 21:16	Water Surface	1	171.5	m	Temperature, water (profile minimum)	10.2429	deg C
						Minimum	7.47	deg C
						Average	10.49	deg C
						Maximum	13.98	deg C
						90th Percentile	12.90	deg C
						Count	195	

Table C - 17: Zinc Ambient Data

Field Collection Start Date	Field Collection Reference Point	Field Collection Upper Depth	Field Collection Lower Depth	Field Collection Depth Units	Sample ID	Result Parameter Name	Result Value	Result Value Units	Fraction Analyzed
1/11/2010	Water surface	10	10	m	1001013-13	Zinc	0.59	ug/L	Dissolved
1/11/2010	Water surface	90	90	m	1001013-14	Zinc	0.69	ug/L	Dissolved
10/1/2009	Water surface	15	15	m	0910041-13	Zinc	0.73	ug/L	Dissolved
10/1/2009	Water surface	85	85	m	0910041-14	Zinc	0.36	ug/L	Dissolved
7/9/2009	Water surface	15	15	m	0906045-13	Zinc	0.41	ug/L	Dissolved
						Minimum	0.36	ug/L	
						Average	0.56	ug/L	
						Geo Mean	0.54	ug/L	
						Maximum	0.73	ug/L	
						90th Percentile	0.71		
						Count	5		

Appendix D. Existing Permit Effluent Limits and Monitoring Requirements

Table D - 1: Existing Permit Effluent Limits and Monitoring Requirements

Parameter	Effluent Limitations				Monitoring Requirements		
	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Instantaneous Maximum Limit	Sample Location	Sample Frequency	Sample Type
Flow	7.0 MGD	---	---	---	Effluent	continuous	measure
Biochemical Oxygen Demand (BOD_5)[a]	30 mg/l 1751 lbs/day	45 mg/l 2627 lbs/day	--- ---	--- ---	Influent and Effluent	daily composite	24-hr
BOD_5 (percent removal)[l]	85% removal				Influent and Effluent	Monthly calculation	calculation
Total Suspended Solids (TSS)	30 mg/l 1751 lbs/day	45 mg/l 2627 lbs/day	--- ---	--- ---	Influent and Effluent	daily composite	24-hr
TSS (percent removal)[l]	85% removal				Influent and Effluent	Monthly calculation	calculation
Fecal Coliform Bacteria[b]	200/100 ml	400/100 ml	---	---	Effluent	Daily	grab
Total Residual Chlorine	0.36 mg/L		0.50 mg/L (Max. Daily)-	---	Final effluent	daily	grab
pH	6.0-8.5 s.u.				Effluent	daily	grab
TPH	--- ---	--- ---	10 mg/L ---	--- ---	Influent and Effluent Digested Sludge	monthly for 1 yr; then quarterly w/ pretreatment parameter Set 1 below[g]	grab grab
Total Ammonia[h] as N, mg/L	---	---	---	---	Effluent	Monthly	grab
Total Kjeldahl Nitrogen (TKN), mg/L	---	---	---	---	Effluent	Monthly	grab
Nitrogen, NO2+NO3, mg/L	---	---	---	---	Effluent	Monthly	grab
Total Phosphorus, mg/L	---	---	---	---	Effluent	Monthly	grab
Ethylene glycol and propylene glycol, mg/L	---	---	---	---	Influent, Effluent	Weekly (December through February)	composite
Temperature[i], °C	---	---	---	---	Effluent	Daily	grab
NPDES Application Form 2A Effluent Testing[j]	---	---	---	---	Effluent	3x / 5 years	---

Parameter	Effluent Limitations				Monitoring Requirements		
	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Instantaneous Maximum Limit	Sample Location	Sample Frequency	Sample Type
Whole Effluent Toxicity (WET) Testing	---	---	---	---	Effluent	Acute Tests: January 2013 and July 2013 and Chronic Tests April 2013 and October 2013	24-hr
Pretreatment Parameters, Set 1[f]: Priority pollutant metals, TPH, and cyanide	---	---	10 mg/L, TPH	---	Influent Effluent Digested Sludge	Quarterly[d] Quarterly[d] 1 taken w/in 30 days of inf. sample[g]	Composite (TPH & cyanide grab)[e] Composite (TPH & cyanide grab)[e] Grab
Pretreatment Parameters, Set 2[f]: Priority pollutant organics	---	---	---	---	Influent Effluent Digested Sludge	Annually[d] Annually[d] 1 taken w/in 30 days of inf. sample[g]	Composite[e] Composite[e] Grab
Polybrominated diphenyl ethers (PBDEs)	---	---	---	---	Influent Effluent	Quarterly (during the first full year & year 5 of the 5-yr permit cycle).	Grab
Sludge Monitoring (for land application)	Abide by the limitations and monitoring requirements established by 40 CFR Part 503[k].						

a.) Samples for BOD5 analysis may be taken before or after the disinfection process. If taken after, the sample must be dechlorinated and reseeded.

b.) Average monthly fecal coliform count must not exceed a geometric mean of 200/100 ml. The average weekly fecal coliform count must not exceed a geometric mean of 400/100 ml. See [Permit] Part V for a definition of geometric mean. The fecal coliform sample must be taken concurrently with Total Residual Chlorine (before dechlorination). Reporting is required within 24 hours of a maximum daily limit or instantaneous maximum limit violation. See [Permit] Section I.B.2. and III.G.

c.) Sampled after dechlorination.

d.) The days selected for routine sampling shall be rotated annually or quarterly (e.g., first quarter sample Monday, second quarter sample Tuesday, etc. during normal operating hours). The influent and effluent must be sampled on days when industrial and commercial discharges are occurring at normal to maximum levels.

e.) Cyanide, Volatile Organics and Phenols must be taken as a minimum of 2 grab samples and separately analyzed in place of each 24 hour composite. Cyanide grab samples shall consist of a minimum of two samples collected at intervals of 15 minutes or greater within a 24-hour period (with the maximum of the two values reported). TPH must also be taken as a grab sample set (one grab for NWTPH-Gx and one grab for NWTPH-Dx).

f.) The Set 1 and Set 2 Pretreatment Parameters lists are contained in [Permit] Section I.B.9 below and reflect the priority pollutant wastewater characterization results submitted with the permit application. **Monitoring should also address any additional pollutants expected from nondomestic sources.**

Parameter	Effluent Limitations				Monitoring Requirements		
	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Instantaneous Maximum Limit	Sample Location	Sample Frequency	Sample Type

g.) The timing of the sludge sample relative to the associated influent sample should reflect the solids retention time in the digester. Sludge samples must be analyzed using NWTPH methods as noted in the other TPH monitoring permit requirements.

h.) The effluent nutrient sampling parameters are continued from the previous permit, however the frequency was increased from semi-annual to monthly sampling.

i.) Temperature monitoring should occur during the time of day when effluent temperatures are expected to be at their highest. Report results to the EPA monthly with the DMR.

j.) Where applicable, effluent monitoring required by other conditions of this permit (e.g. equivalent pretreatment monitoring) may be used to satisfy this requirement.

k.) Until future issuance of a sludge-only permit, sludge management and disposal activities at the facility continue to be subject to the national sewage sludge standards at 40 CFR Part 503. These regulations are self-implementing; therefore, permittees must comply with them whether or not a permit has been issued.

l.) Percent removal of BOD and TSS is calculated as follows (concentrations in mg/L): (Average Monthly Influent Concentration - Average Monthly Effluent Concentration) / Average Monthly Influent Concentration.

Appendix E. Reasonable Potential and WQBEL Formulae

A. Reasonable Potential Analysis

EPA uses the process described in the *TSD* to determine reasonable potential. To determine if there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for a given pollutant, EPA compares the maximum projected receiving water concentration to the water quality criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential, and a WQBEL must be included in the permit.

1. Mass Balance

For discharges to non-flowing water bodies, the maximum projected receiving water concentration is determined using the following mass balance equation:

$$C_d = \frac{C_e - C_u}{D} + C_u \qquad \textit{Equation 1}$$

where,

C_d	=	Receiving water concentration downstream of the effluent discharge (that is, the concentration at the edge of the mixing zone)
C_e	=	Maximum projected effluent concentration
C_u	=	95th percentile measured receiving water upstream concentration
D	=	Dilution factor

If the criterion is expressed as dissolved metal, the effluent concentrations are measured in total recoverable metal and must be converted to dissolved metal as follows:

$$C_d = \frac{CF \times C_e - C_u}{D} + C_u$$ *Equation 2*

Where C_e is expressed as total recoverable metal, C_u and C_d are expressed as dissolved metal, and CF is a conversion factor used to convert between dissolved and total recoverable metal.

The above equations for C_d are the forms of the mass balance equation which were used to determine reasonable potential and calculate wasteload allocations.

If a mixing zone is not allowed, dilution is not considered when projecting the receiving water concentration and,

$$C_d = C_e$$ *Equation 3*

2. Maximum Projected Effluent Concentration

When determining the projected receiving water concentration downstream of the effluent discharge, EPA's *TSD* recommends using the maximum projected effluent concentration (C_e) in the mass balance calculation. To determine the maximum projected effluent concentration (C_e) EPA has developed a statistical approach to better characterize the effects of effluent variability. The approach combines knowledge of effluent variability as estimated by a coefficient of variation (CV) with the uncertainty due to a limited number of data to project an estimated maximum concentration for the effluent. Once the CV for each pollutant parameter has been calculated, the reasonable potential multiplier (RPM) used to derive the maximum projected effluent concentration (C_e) can be calculated using the following equations:

First, the percentile represented by the highest reported concentration is calculated.

$$p_n = (1 - \text{confidence level})^{1/n}$$ *Equation 4*

where,

p_n = the percentile represented by the highest reported concentration

n = the number of samples

confidence level = 99% = 0.99

and

$$RPM = \frac{C_{99}}{C_{P_n}} = \frac{e^{Z_{99} \times \sigma - 0.5 \times \sigma^2}}{e^{Z_{P_n} \times \sigma - 0.5 \times \sigma^2}}$$ *Equation 5*

Where,

σ^2 = $\ln(CV^2 + 1)$

Z_{99}	=	2.326 (z-score for the 99th percentile)
Z_{Pn}	=	z-score for the P_n percentile (inverse of the normal cumul distribution function at a given percentile)
CV	=	coefficient of variation (standard deviation ÷ mean)

The maximum projected effluent concentration is determined by simply multiplying the maximum reported effluent concentration by the RPM:

$$C_e = (RPM)(MRC) \qquad \textit{Equation 6}$$

where MRC = Maximum Reported Concentration

3. Maximum Projected Effluent Concentration at the Edge of the Mixing Zone

Once the maximum projected effluent concentration is calculated, the maximum projected effluent concentration at the edge of the acute and chronic mixing zones is calculated using the mass balance equations presented previously.

4. Reasonable Potential

The discharge has reasonable potential to cause or contribute to an exceedance of water quality criteria if the maximum projected concentration of the pollutant at the edge of the mixing zone exceeds the most stringent criterion for that pollutant.

B. WQBEL Calculations

1. Calculate the Wasteload Allocations (WLAs)

Wasteload allocations (WLAs) are calculated using the same mass balance equations used to calculate the concentration of the pollutant at the edge of the mixing zone in the RPA. To calculate the wasteload allocations, C_d is set equal to the acute or chronic criterion and the equation is solved for C_e. The calculated C_e is the acute or chronic WLA. Equation 6 is rearranged to solve for the WLA, becoming:

$$C_e = WLA = D \times (C_d - C_u) + C_u \qquad \textit{Equation 7}$$

Washington's water quality criteria for some metals are expressed as the dissolved fraction, but the Federal regulation at 40 CFR 122.45(c) requires that effluent limits be expressed as total recoverable metal. Therefore, EPA must calculate a wasteload allocation in total recoverable metal that will be protective of the dissolved criterion. This is accomplished by dividing the WLA expressed as dissolved by the criteria translator, as shown in equation __. As discussed in Appendix ___, the criteria translator (CT) is equal to the conversion factor, because site-specific translators are not available for this discharge.

$$C_e = WLA = \frac{D \times (C_d - C_u) + C_u}{CT} \qquad \textit{Equation 8}$$

The next step is to compute the "long term average" concentrations which will be protective of the WLAs. This is done using the following equations from EPA's *TSD*:

$$LTA_a = WLA_a \times e^{(0.5\sigma^2 - z\,\sigma)} \qquad \textit{Equation 9}$$

$$LTA_c = WLA_c \times e^{(0.5\sigma_4^2 - z\sigma_4)} \qquad \textit{Equation 10}$$

where,

σ^2 = $\ln(CV^2 + 1)$

Z_{99} = 2.326 (z-score for the 99th percentile probability basis)

CV = coefficient of variation (standard deviation ÷ mean)

σ_4^2 = $\ln(CV^2/4 + 1)$

For ammonia, because the chronic criterion is based on a 30-day averaging period, the Chronic Long Term Average (LTAc) is calculated as follows:

$$LTA_c = WLA_c \times e^{(0.5\sigma_{30}^2 - z\sigma_{30})} \qquad \textit{Equation 11}$$

where,

σ_{30}^2 = $\ln(CV^2/30 + 1)$

The LTAs are compared and the more stringent is used to develop the daily maximum and monthly average permit limits as shown below.

2. Derive the maximum daily and average monthly effluent limits

Using the *TSD* equations, the MDL and AML effluent limits are calculated as follows:

$$\mathrm{MDL} = \mathrm{LTA} \times \mathrm{e}^{(z_m\sigma - 0.5\sigma^2)} \qquad \textit{Equation 12}$$

$$\mathrm{AML} = \mathrm{LTA} \times \mathrm{e}^{(z_a\sigma_n - 0.5\sigma_n^2)} \qquad \textit{Equation 13}$$

where σ, and σ^2 are defined as they are for the LTA equations above, and,

σ_n^2 = $\ln(CV^2/n + 1)$

z_a = 1.645 (z-score for the 95th percentile probability basis)

z_m = 2.326 (z-score for the 99th percentile probability basis)

n = number of sampling events required per month. With the exception of ammonia, if the AML is based on the LTA_c, i.e., $LTA_{minimum} = LTA_c$), the value of ''n'' should is set at a minimum of 4. For ammonia, In the case of ammonia, if the AML is based on the LTA_c, i.e., $LTA_{minimum} = LTA_c$), the value of ''n'' should is set at a minimum of 30.

Appendix F. Reasonable Potential and WQBEL Calculations

Table E - 1: Toxics Reasonable Potential Analyses (1 of 2)

Pollutant, CAS No. & NPDES Application Ref. No.			AMMONIA, Criteria as Total NH3	ARSENIC (dissolved) 7440382 2M	ARSENIC (inorganic)	COPPER - 744058 6M Hardness dependent	ZINC - 7440666 13M hardness dependent	CADMIUM - 7440439 4M Hardness dependent	CHROMIUM(HEX) 18540299 - Dissolved	LEAD - 7439921 7M Dependent on hardness	TRICHLOROBENZENE 1,2,4 120821 46B	NAPHTHALENE 91203 39B	CHLOROFORM 67663 11V
Effluent Data	# of Samples (n)		101	10	10	11	11	10	10	10	6	6	3
	Coeff of Variation (Cv)		1.4816	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	Effluent Concentration, ug/L (Max. or 95th Percentile)		16,000	1.5	1.5	60	110	1	3	1.3	2.5	2.5	1
	Calculated 50th percentile Effluent Conc. (when n>10)						36.5						
Receiving Water Data	90th Percentile Conc., ug/L		918	1.4		0.39	0.71	0.78	0	0.043		0	
	Geo Mean, ug/L				0		0.54				0		0
Water Quality Criteria	Aquatic Life Criteria, ug/L	Acute	8,094	69	-	4.8	90	33	1100	210	-	2350	-
		Chronic	1,216	36	-	3.1	81	7.9	50	8.1	-	-	-
	WQ Criteria for Protection of Human Health, ug/L		-	-	0.14	-	1000	-	-	-	0.037	-	600
	Metal Criteria Translator, decimal	Acute	-	1	-	0.83	0.946	0.994	-	0.951	-	-	-
		Chronic	-	-	-	0.83	0.946	0.994	-	0.951	-	-	-
	Carcinogen?		N	Y	Y	N	N	N	N	N	-	N	Y

Aquatic Life Reasonable Potential

Effluent percentile value			0.950	0.950		0.950	0.950	0.950	0.950	0.950	0.950	
s	$s^2=\ln(CV^2+1)$		1.078	0.555		0.555	0.555	0.555	0.555	0.555	0.555	
Pn	$Pn=(1\text{-confidence level})^{1/n}$		0.955	0.631		0.658	0.658	0.631	0.631	0.631	0.607	
Multiplier			0.94	2.07		1.99	1.99	2.07	2.07	2.07	2.14	
Max concentration (ug/L) at edge of...		Acute	1,229	1.437		2.556	5.238	0.808	0.136	0.098	0.118	
		Chronic	1,079	1.419		1.510	3.051	0.794	0.071	0.072	0.061	
Reasonable Potential? Limit Required?			**NO**	**NO**		**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	

Aquatic Life Limit Calculation

# of Compliance Samples Expected per month												
LTA Coeff. Var. (CV), decimal												
Permit Limit Coeff. Var. (CV), decimal												
Waste Load Allocations, ug/L		Acute										
Long Term Averages, ug/L		Acute										
		Chronic										
Limiting LTA, ug/L												
Metal Translator or 1?												
Average Monthly Limit (AML), ug/L												
Maximum Daily Limit (MDL), ug/L												

Human Health Reasonable Potential

s	$s^2=\ln(CV^2+1)$				0.55451	0.55451			0.5545	0.5545		
Pn	$Pn=(1\text{-confidence level})^{1/n}$				0.741	0.762			0.607	0.368		
Multiplier					0.69859	0.67401			0.8603	1.2049		
Dilution Factor					88	88			88	88		
Max Conc. at edge of Chronic Zone, ug/L					0.01191	0.94864			0.0244	0.0137		
Reasonable Potential? Limit Required?					**NO**	**NO**			**NO**	**NO**		

Table E - 2: Toxics Reasonable Potential Analyses (2 of 2)

Pollutant, CAS No. & NPDES Application Ref. No.			2,4-DINITROPHENOL 51285 5A	2-NITROPHENOL 88755	SILVER - 7740224 11M dependent on hardness.	CHLORINE (Total Residual) 7782505	NICKEL - 7440020 9M - Dependent on hardness	ANTIMONY (INORGANIC) 7440360 1M						
Effluent Data	# of Samples (n)		3	3	10	91	10	6						
	Coeff of Variation (Cv)		0.6	0.6	0.6	0.6	0.6	0.6		0.6	0.6	0.6	0.6	
	Effluent Concentration, ug/L (Max. or 95th Percentile)		20	3	1	140	2.5	1						
	Calculated 50th percentile Effluent Conc. (when n>10)													
Receiving Water Data	90th Percentile Conc., ug/L				0	0	0							
	Geo Mean, ug/L		0.0056				0	0						
Water Quality Criteria	Aquatic Life Criteria, ug/L	Acute	-	-	1.9	13	74	-						
		Chronic	-	-	-	7.5	8.2	-						
	WQ Criteria for Protection of Human Health, ug/L		100	-	-	-	100	90						
	Metal Criteria Translator, decimal	Acute	-	-	0.85	-	0.99	-						
		Chronic	-	-	-	-	0.99	-						
	Carcinogen?		N	N	N	N	N	N						

Aquatic Life Reasonable Potential

Effluent percentile value					0.950	0.950	0.950							
s	$s^2=\ln(CV^2+1)$				0.555	0.555	0.555							
Pn	$Pn=(1\text{-confidence level})^{1/n}$				0.741	0.968	0.741							
Multiplier					1.74	0.89	1.74							
Max concentration (ug/L) at edge of...		Acute			0.032	2.751	0.095							
		Chronic			0.020	1.422	0.049							
Reasonable Potential? Limit Required?					**NO**	**NO**	**NO**							

Aquatic Life Limit Calculation

# of Compliance Samples Expected per month														
LTA Coeff. Var. (CV), decimal														
Permit Limit Coeff. Var. (CV), decimal														
Waste Load Allocations, ug/L		Acute												
		Chronic												
Long Term Averages, ug/L		Acute												
		Chronic												
Limiting LTA, ug/L														
Metal Translator or 1?														
Average Monthly Limit (AML), ug/L														
Maximum Daily Limit (MDL), ug/L														

Human Health Reasonable Potential

s	$s^2=\ln(CV^2+1)$		0.5545				0.55451	0.55451						
Pn	$Pn=(1\text{-confidence level})^{1/n}$		0.368				0.741	0.607						
Multiplier			1.2049				0.69859	0.86028						
Dilution Factor			88				88	88						
Max Conc. at edge of Chronic Zone, ug/L			0.2793				0.01985	0.0098						
Reasonable Potential? Limit Required?			**NO**				**NO**	**NO**						

Table E - 3: Fecal Coliform Reasonable Potential Analysis

Calculation of Fecal Coliform at Chronic Mixing Zone

INPUT	
Chronic Dilution Factor	88.0
Receiving Water [bacteria indicator], #/100 ml	2
Effluent [Bacteria indicator] - worst case, #/100 ml	400
Surface Water Criterion, #/100 ml	*14*
OUTPUT	
[bacteria indicator] at Mixing Zone Boundary, #/100 ml	**7**
Difference between mixed and ambient, #/100 ml	5

Conclusion: At design flow, the discharge has no reasonable potential to violate water quality standards for fecal coliform.

Table E - 4: Low pH Reasonable Potential Analysis

Calculation of pH of a Mixture in Marine Water

Based on the CO2SYS program (Lewis and Wallace, 1998), http://cdiac.esd.ornl.gov/oceans/co2rprt.html

INPUT	
1. MIXING ZONE BOUNDARY CHARACTERISTICS	
Dilution factor at mixing zone boundary	88.0
Depth at plume trapping level (m)	17.000
2. BACKGROUND RECEIVING WATER CHARACTERISTICS	
Temperature (deg C):	14.53
pH:	7.37
Salinity (psu):	27.67
Total alkalinity (meq/L)	2.24
3. EFFLUENT CHARACTERISTICS	
Temperature (deg C):	22.70
pH:	6.00
Salinity (psu)	12.00
Total alkalinity (meq/L):	2.26
4. CLICK THE 'Calculate" BUTTON TO UPDATE OUTPUT RESULTS -->	Calculate
OUTPUT	
CONDITIONS AT THE MIXING ZONE BOUNDARY	
Temperature (deg C):	14.62
Salinity (psu)	27.49
Density (kg/m^3)	1020
Alkalinity (mmol/kg-SW):	2.20
Total Inorganic Carbon (mmol/kg-SW):	2
pH at Mixing Zone Boundary:	**7.29**

Table E - 5: High pH Reasonable Potential Analysis

Calculation of pH of a Mixture in Marine Water

Based on the CO2SYS program (Lewis and Wallace, 1998), http://cdiac.esd.ornl.gov/oceans/co2rprt.html

INPUT	
1. MIXING ZONE BOUNDARY CHARACTERISTICS	
Dilution factor at mixing zone boundary	88.0
Depth at plume trapping level (m)	17.000
2. BACKGROUND RECEIVING WATER CHARACTERISTICS	
Temperature (deg C):	14.53
pH:	8.03
Salinity (psu):	27.67
Total alkalinity (meq/L)	2.24
3. EFFLUENT CHARACTERISTICS	
Temperature (deg C):	22.70
pH:	8.50
Salinity (psu)	12.00
Total alkalinity (meq/L):	2.26
4. CLICK THE 'Calculate" BUTTON TO UPDATE OUTPUT RESULTS -->	Calculate
OUTPUT	
CONDITIONS AT THE MIXING ZONE BOUNDARY	
Temperature (deg C):	14.62
Salinity (psu)	27.49
Density (kg/m^3)	1020
Alkalinity (mmol/kg-SW):	2.20
Total Inorganic Carbon (mmol/kg-SW):	2
pH at Mixing Zone Boundary:	**8.04**

Table E - 6: Annual Temperature Reasonable Potential Analysis

Marine Temperature Reasonable Potential and Limit Calculation

Based on WAC 173-201A-200(1)(c)(i)--(ii) and Water Quality Program Guidance. All Data inputs must meet WQ guidelines.

INPUT	
1. Chronic Dilution Factor at Mixing Zone Boundary	88.0
2. Annual max 1DADMax Ambient Temperature (Background 90th percentile)	14.2 °C
3. 1DADMax Effluent Temperature (95th percentile)	22.7 °C
4. Aquatic Life Temperature WQ Criterion	13.0 °C
OUTPUT	
5. Temperature at Chronic Mixing Zone Boundary:	14.30 °C
6. Incremental Temperature Increase or decrease:	0.10 °C
7. Maximum Incremental Temperature Increase 12/(T-2)	---
8. Maximum Allowable Temperature at Mixing Zone Boundary:	13.00 °C
A. If ambient temp is warmer than WQ criterion	
9. Does temp fall within this warmer temp range?	YES
10. **If YES - Use TMDL-based or performance-based limit - Do Not use this spreadsheet**	NO LIMIT
B. If ambient temp is cooler than WQ criterion but within 12/(T_{amb}-2) of the criterion	
11. Does temp fall within this Incremental temp. range?	---
12. Temp increase allowed at mixing zone boundary, if required:	---
C. If ambient temp is cooler than (WQ criterion - 12/(T_{amb}-2))	
13. Does temp fall within this Incremental temp. range?	---
14. Temp increase allowed at mixing zone boundary, if required:	---
RESULTS	
15. Do any of the above cells show a temp increase?	**NO**
16. Temperature Limit if Required?	**NO LIMIT**