

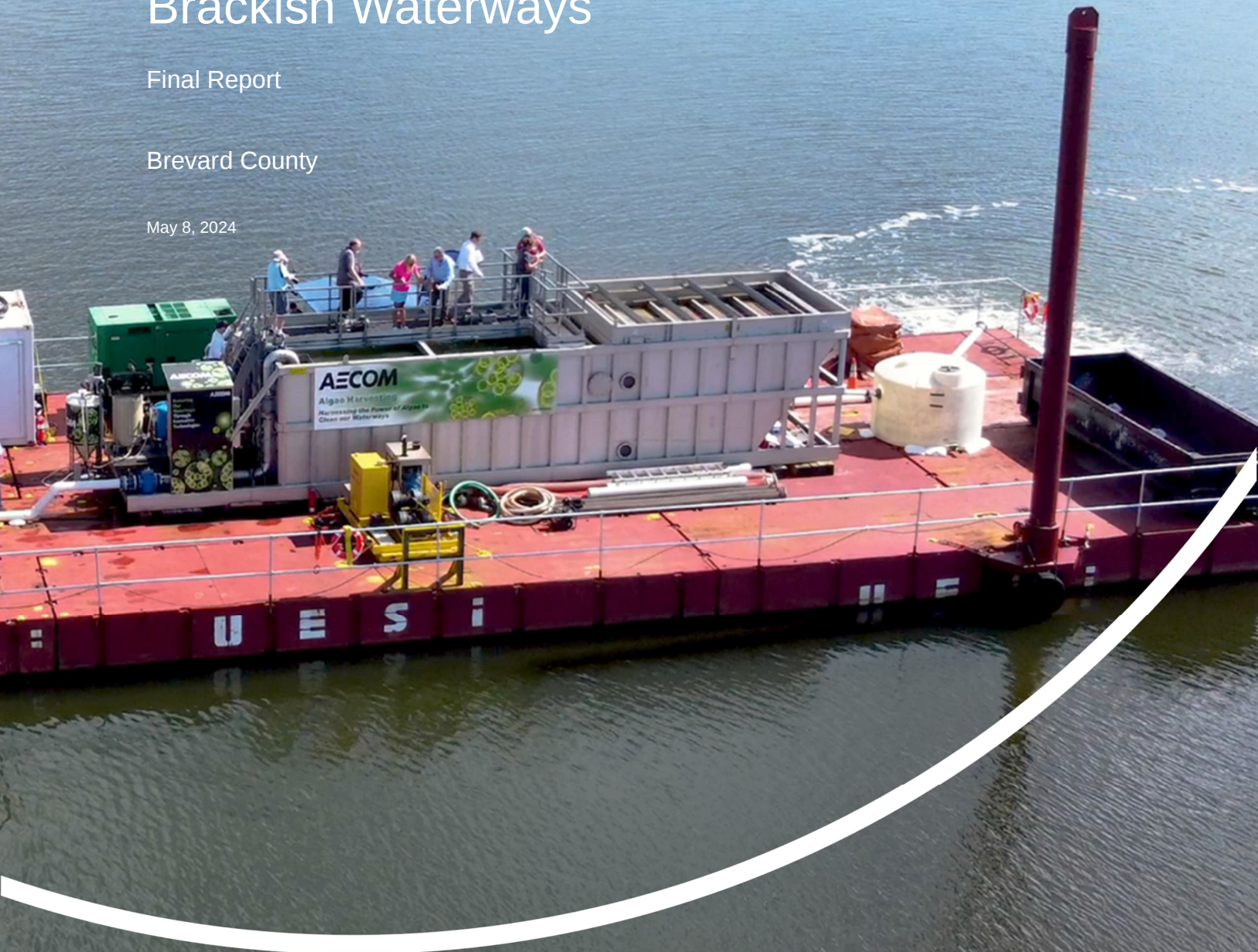
Florida Department of Environmental Protection
Innovation Technology for Harmful Algal Blooms, INV24

Mobile Algae Harvesting to Mitigate Harmful Algal Blooms in Brackish Waterways

Final Report

Brevard County

May 8, 2024



Quality information

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Revision History

Revision	Revision Date	Details	Name	Position
1	04/26/2024	Addressed comments from FDEP on draft version dated 03/15/2024	T. Karst-Riddoch, Ph.D.	Principal Aquatic Scientist
2	05/08/2024	Addressed comments from Brevard County on draft version dated 04/26/2024	T. Karst-Riddoch, Ph.D.	Principal Aquatic Scientist

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Florida Department of Environmental Protection
Innovation Technology for Harmful Algal Blooms Grant Program

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Executive Summary

In 2022, Brevard County was awarded an Innovation Technology for Harmful Algal Blooms grant from the Florida Department of Environmental Protection (FDEP) for the research project, **Mobile Algae Harvesting to Mitigate Harmful Algal Blooms in Brackish Waterways**. The County contracted with AECOM Technical Services, Inc. (AECOM) to design and implement the project.

The goal of the project is to advance research on the use of a barge-mounted Hydronucleation Flotation Technology (HFT) algae harvester for emergency response actions in targeted “Hot Spots” to mitigate harmful algal blooms (HABs) as they occur within the Indian River Lagoon (IRL), and for use in reducing the nutrient loading into the IRL by positioning the harvesters at key tributaries that discharge nutrients into the IRL. The data collected from this research are intended for use in determining:

- Optimal operating parameters of the algae harvesting HFT to rapidly extract algae from brackish water
- Shipboard functionality to mitigate HABs
- Rate and extent to which HAB “Hot Spots” can be restored
- Nutrient and cyanotoxin removal capabilities and benefits
- Carbon sequestration and greenhouse gas emissions benefits
- Economic costs for full-scale operations

A barge-mounted algae harvesting HFT treatment system with a design process flow capacity of 700 gallons per minute (GPM) was used for the project. Equipment mobilization and system startup took place from August 29 to September 8, 2023. A 120-foot x 40-foot barge platform was assembled at the Derecktor Shipyards in Fort Pierce, FL from multiple 10-foot x 40-foot sectional barge components. The treatment system including ancillary equipment was placed on the barge, and the barge was simultaneously pushed and towed 46 miles up the IRL to Barge Station 1 at Melbourne, FL.

The system was operated for five work weeks at four locations in the IRL over a three-month operating period from September 11 to November 15, 2023. The operating locations and work weeks were selected to consider staff availability, weather, algae bloom conditions, and other factors affecting operations. Locations near tributaries were not selected for operations as originally proposed due to lower concentrations of algae present at those locations.

The algae harvester was operated for a total of 191.50 hours, including 47.5 hours of unmanned operations, during which time the operator monitored process controls remotely using the harvester’s Supervisory Control and Data Acquisition (SCADA) system. A total of 4,026,970 gallons of water from the IRL was treated during operations, recovering approximately 255 gallons of algae biomass slurry with a solids content of approximately 8%. The algae slurry was used by AECOM to perform independent, self-funded testing (dewatering tests and slurry and filtrate chemical analyses). The dewatered slurry with a solids content of about 14% was disposed of at a landfill.

Brevard County and AECOM co-hosted a public demonstration event at the City of Melbourne’s Front Street Civic Center in Melbourne, FL on September 13, 2023. The event was well attended with approximately 50 participants, including state, county and local government officials and staff, and Save Our Indian River Lagoon Citizen Oversight Committee and Marine Resources Council staff and members. During the event, AECOM staff gave presentations about the project and guided tours of the algae harvesting barge.

Monitoring was conducted in accordance with an FDEP-approved Quality Assurance Project Plan (QAPP) to provide reliable and representative data on operational controls, treatment performance, and environmental safety. Key optimal operating parameters that were established included:

- Use of aluminum chlorohydrate (ACH) for coagulation and the anionic polymer, FLOPAM™ 934A SH for flocculation at average dosages of 18.7 mg/L and 0.7 mg/L, respectively
- An average recycle flow rate of 45.17% of the influent flow rate

- A float blanket skimming cycle of one skim per 55,085 gallons of treated water

The removal efficiencies of key performance parameters exhibited variation across operational weeks, as anticipated due to fluctuating source water conditions, including variable algae levels, nutrients, low dissolved oxygen, and wave action, impacting overall performance. Despite these challenges, the algae harvesting demonstrated positive outcomes in reducing several key parameters of interest for HAB mitigation. Based on a comparison of key parameter concentrations in the influent and effluent, algae harvesting had average absolute and percent removal efficiencies of:

- 1.1 mg/m³ (21%) for chlorophyll-a
- 0.013 mg/L (26%) for total phosphorus
- 0.013 mg/L (50%) for orthophosphate phosphorus
- 0.002 mg/L (0%) for total nitrogen
- 1.1 mg/L (3%) for total carbon
- 8.63 NTU (75%) for turbidity

An additional water quality benefit of the treatment included an increase in dissolved oxygen in the treated water relative to the influent water. The average increase in mean dissolved oxygen concentration was 1.12 mg/L, representing an increase of 26%.

In contrast to past algae harvesting projects, higher levels of total suspended solids occurred in the effluent compared to the influent. The instability of the float blanket by wave-induced rocking led to the carryover of floc into the effluent stream. This likely contributed to the elevated total suspended solids in the effluent.

The treated water from the algae harvesting system was protective of aquatic life with respect to several key water quality parameters of potential concern including temperature, pH, specific conductivity, and aluminum concentrations. Furthermore, the treated water did not exhibit chronic (7-day) or acute (96-hour) toxicity to either the mysid shrimp, (*Mysidopsis bahia*) or the inland silverside, (*Menidia beryllina*) indicating that the treatment did not cause toxicity to these test species during operations.

Overall, the treatment performance and environmental safety results are encouraging given the first-time application of the HFT algae harvester in brackish water. The harvester, designed for land-based or barge-mounted use in freshwater bodies with minimal wave action, showcased promising performance in the challenging environment of the IRL. Further enhancement in nutrient and algae removal could be achieved by elevating dissolved oxygen levels in the influent water's coagulation chamber to increase floc flotation, and by using a more secure barge anchoring system and/or implementing a pulsed-bed flotation design to address wave action issues for improved stability and performance in larger water bodies such as the IRL.

To further advance understanding and optimize the effectiveness of the HFT algae harvesting system, additional research is recommended. This research should focus on confirming the system's performance under conditions more representative of the typical algae concentrations found in the IRL. Additionally, modifications to the system should be explored and tested to address the challenges posed by periods of low dissolved oxygen and the impact of wave action on the stability of the float blanket. By addressing these factors, future iterations of the algae harvester can be better tailored to the specific environmental conditions of the IRL, thereby enhancing its potential efficacy in mitigating HABs and improving overall water quality.

Acronyms and Abbreviations

Abbreviation/Acronym	Definition
µg/L	microgram per liter
µS/cm	Microsiemens per centimeter
ACH	aluminum chlorohydrate
FDEP	Florida Department of Environmental Protection
ft	foot/feet
gal	gallon(s)
HAB	Harmful Algal Bloom
HFT	Hydronucleation Flotation Technology
kW	kilowatt
kWh	kilowatt hours
lb	pound(s)
m	meter
GPM	gallons per minute
h	hours
mgd	million gallons per day
mL	milliliter
mg/L	milligrams per liter
NTU	nephelometric turbidity unit
SCADA	Supervisory control and data aquisition
QAPP	Quality Assurance Project Plan
PFT	Paint Filter Test
SCADA	Supervisory Control and Data Aquisition
SU	standard units
SJRWMD	St. Johns River Water Management District
TMDL	Total Maximum Daily Load
TN	total nitrogen
TP	total phosphorus
IRL	Indian River Lagoon
USEPA	United States Environmental Protection Agency
AECOM	AECOM Technical Services

1. Background

The Indian River Lagoon (IRL) is a 156-mile long, shallow estuary on Florida's east coast that provides significant ecological and economic value for the nation, the state, and local communities in the five counties that it borders, including Brevard County. It is recognized as an "estuary of national significance" by the U.S. Environmental Protection Agency (USEPA) supporting diverse fish, wildlife, and plant life and was estimated to be responsible for one-seventh of the region's economy, with an annual economic value estimated at \$7.6 billion in 2016. Nutrient enrichment of the IRL has resulted in significant degradation of the IRL, contributing to large-scale and often toxic algal blooms, as well as excessive epiphyton growth. These have caused anoxic events triggering fish kills and have been linked to the reduction in the extent of seagrasses. The IRL was designated in the 1987 Surface Water Improvement and Management Act as a priority waterbody in need of restoration and special protection and was added to the Verified List of impaired waters for the IRL Basin by Secretarial Order on December 12, 2007, due to excessive phosphorus and nitrogen. A Total Maximum Daily Load (TMDL) for nutrients and dissolved oxygen was established by the Florida Department of Environmental Protection (FDEP) in 2009.

Efforts to reduce nutrient loads to the IRL are underway with significant contributions from the National Estuary Program, Florida Legislature, FDEP, St. Johns River Water Management District (SJRWMD), Brevard County, the cities, Brevard Zoo, environmental groups, and others. The Save Our Indian River Lagoon Program was created as part of a ½ cent sales tax that Brevard County residents voted to impose on themselves in 2016. The program is designed to address excess nitrogen and phosphorus pollution to the IRL through various projects to reduce pollution inputs, remove legacy loads of pollution, and restore natural filtration systems. A Project Plan for the program was developed in partnership with scientists, economists, environmentalists, and multiple government agencies. It outlines local projects planned to meet water quality targets and improve the health, productivity, aesthetic appeal, and economic value of the lagoon.

While significant progress has been made to reduce point and non-point source nutrients to the IRL, water quality and ecological impairments persist. In 2020, an expansive and severe blue green algae bloom in the IRL occurred from late July to December, multiple fish kills occurred through summer and in the fall, and seagrass transect lengths declined by 37% from 2019 levels. Mitigation and prevention of harmful algal blooms (HABs) within the IRL would be extremely valuable to the overall restoration of the lagoon.

Brevard County identified algae harvesting using the emerging Hydronucleation Flotation Technology (HFT) as a potential innovative tool for mitigating algae blooms and reducing the nutrients in the IRL. The HFT is an advanced dissolved air flotation, liquid-solid separation process that efficiently removes algae cells and other suspended particles along with associated nutrients and algal metabolites from water. The recovered algae biomass has the potential to be further processed for beneficial use as bioplastics, biocrude, and fertilizer that can provide additional benefits including offsetting restoration costs and carbon sequestration. The compact, mobile, and modular design of the HFT allows it to be operated from land or on water, thus providing versatility and scalability to tackle nutrient enrichment and algal blooms in a variety of aquatic settings.

The algae harvesting technology has undergone extensive testing in nutrient and HAB impaired freshwater systems in Florida, Ohio, and New York. Monitoring has consistently demonstrated success in nutrient and solids removal, an average removal exceeding 85% for chlorophyll-a, total phosphorus, and total microcystins and nodularins, and 60% reduction was achieved for total suspended solids and total nitrogen (Page et al. 2020, 2021; AECOM 2020, 2022a, 2022b, 2023). While extremely effective in these demonstration projects, research is needed to test the feasibility of algae harvesting with HFT for use in brackish water for potential implementation in the IRL. If proven successful, the technology could be used in brackish and saltwater locations across Florida to treat algal blooms in situ and contribute to the reduction of nutrient loads, thereby reducing the risk of future occurrences of algal blooms.

In 2022, Brevard County was awarded an Innovation Technology for Harmful Algal Blooms grant from the FDEP for the research project, **Mobile Algae Harvesting to Mitigate Harmful Algal Blooms in Brackish Waterways**. The County contracted with AECOM Technical Services, Inc. (AECOM) to design and implement the project.

2. Project Description

The purpose of the project was to advance research on algae harvesting using HFT for: 1) employing emergency response actions in targeted "Hot Spots" to mitigate HABs as they occur within the IRL, and 2) reducing nutrient loading into the IRL from key tributaries that discharge nutrients into the water. The research involved the deployment of a barge-mounted HFT algae harvesting system in the IRL with operations from September to November 2023, encompassing the end of the rainy season which typically extends from July to October, and fall, when significant algae blooms are typically most frequent. During operations, the system was moved to four selected areas of potential algae bloom activity in the IRL and operated for 25 workdays, including a five-day work week at three of the locations and two five-day work weeks at one location. The system was used to treat a sufficient volume of water on each operational day to monitor and evaluate its performance. The results of the project provide insights into several key considerations for future use of the technology in the IRL and other brackish waters, including:

- Optimal operating parameters of the algae harvesting HFT for rapid extraction of algae from brackish water
- Shipboard functionality to mitigate HABs
- Rate and extent to which HAB "Hot Spots" could be restored
- Nutrient and cyanotoxin removal capabilities and associated benefits
- Carbon sequestration and greenhouse gas emissions benefits
- Economic costs for full-scale operations

3. Financial Summary

The actual cost of the project was \$997,400 versus the original budget of \$999,000 ([Table 1](#)). The cost of the project was lowered by \$1,600 to account for the analysis of phytoplankton taxonomy and enumeration that was budgeted for five monitoring events but was only completed on one event due to sample collection oversight. No changes to the budget were requested. No work beyond the project agreement was undertaken, but AECOM independently funded and conducted ancillary testing on the algae biomass recovered during project operations. The purpose was to explore and assess a passive biomass dewatering approach and evaluate the biomass quality for disposal and potential reuse options.

Table 1. Budget Detail by Task

Task	Budget Amount	Actual Amount
1 – Quality Assurance Project Plan	\$25,000.00	\$25,000.00
2 – Design and Permitting	\$75,000.00	\$75,000.00
3 – Site Preparation, Installation, and System Start-up	\$75,000.00	\$75,000.00
4 – Operations, Maintenance, and Monitoring	\$675,000.00	\$673,400.00
5 – Decommissioning and Site Restoration	\$49,000.00	\$49,000.00
6 – Reporting	\$100,000.00	\$100,000.00
Total Grant Award Amount	\$999,000.00	\$997,400.00

4. Project Schedule

The project timeline, per AECOM's original contract with Brevard County dated October 4, 2022 was from July 1, 2022 to July 15, 2023. The task end and deliverable due dates were amended and the contract end date was extended to May 29, 2024 to account for multiple delays as described below.

Installation and start-up were scheduled to be completed by June 30, 2023 but this task was delayed until September 2023 due to the availability of the necessary equipment. The third operational week was postponed from starting on October 2, 2023 to October 16, 2023 due to severe weather events causing a safety concern for operations. The draft final report deadline was extended by two weeks due to delays in receiving results from the laboratory. Minor delays in the actual versus the amended contract timelines occurred for Task 1a (draft Quality Assurance Project Plan, QAPP) due to additional revisions and Task 4 (Operations, Maintenance, and Monitoring) due to delays in receiving final laboratory results. The project, however, was completed by the final amended contract end date. A comparison between the contract timeline as amended and the actual project timeline is provided in [Table 2](#).

Table 2. Project Timeline by Task

Task	Contract Timeline as Amended			Actual Timeline		
	Task Start Date	Task End Date	Deliverable Due Date	Task Start Date	Task End Date	Deliverable Submission Date
1 – Quality Assurance Project Plan	07/01/2022	02/15/2023		10/04/2022	02/09/2023	
1a – Draft QAPP			10/30/2022			10/31/2022
1b – Final QAPP			02/15/2023			02/09/2023
2 – Design and Permitting	11/01/2022	5/15/2023			4/12/2023	
3 – Site Preparation, Installation, and System Start-up	03/01/2023	11/15/2023		02/06/2023	11/13/2023	
4 – Operations, Maintenance, and Monitoring	08/31/2023	01/31/2024	30 days after the end of the previous operational quarter	09/11/2023	03/12/2024	03/12/2024
5 – Decommissioning and Site Restoration	10/01/2023	02/28/2024		11/29/2023	01/31/2024	
6 – Reporting	10/31/2023	05/10/2024		01/02/2023	04/26/2024	
6a – Draft Final Report			03/15/2024			03/15/2024
6b – Final Report			05/10/2024			05/08/2024

5. Project Activities

The following sections summarize the activities completed for the project. All planned activities were completed in accordance with the grant study Work Plan tasks.

5.1 Quality Assurance Project Plan

A Quality Assurance Project Plan (QAPP) was prepared and approved by FDEP (February 16, 2023) prior to commencement of any operations and monitoring associated with the project. The QAPP specifies the sampling procedures, locations, instruments, frequency, and parameters to be sampled for the project.

5.2 Design and Permitting

The project used an existing HFT algae harvester with a process flow capacity of 700 gallons per minute (gpm) designed by AECOM and Ecosa Process Technologies. The harvester and ancillary equipment were mounted on a barge, and operations were performed from the barge for the duration of the project. Diagrams showing the process flow and general arrangement of the treatment system are provided in **Appendix A**.

The permits, plans, and approvals developed for the project and the dates obtained include:

- FDEP Industrial Wastewater Facility Permit exemption, Permit Exemption Number FLAB07356-002 (issued April 12, 2023)
- Health and Safety Plan (HASP) prepared to address the physical hazards that may be present or encountered during execution of the demonstration pilot, in accordance the requirements of 40 CFR §300.150 and 40 CFR §1910.120 (dated December 20, 2022)
- City of Melbourne Parks and Recreation Facilities Use Permit Agreement (issued August 25, 2023)

5.3 Public Demonstration Event

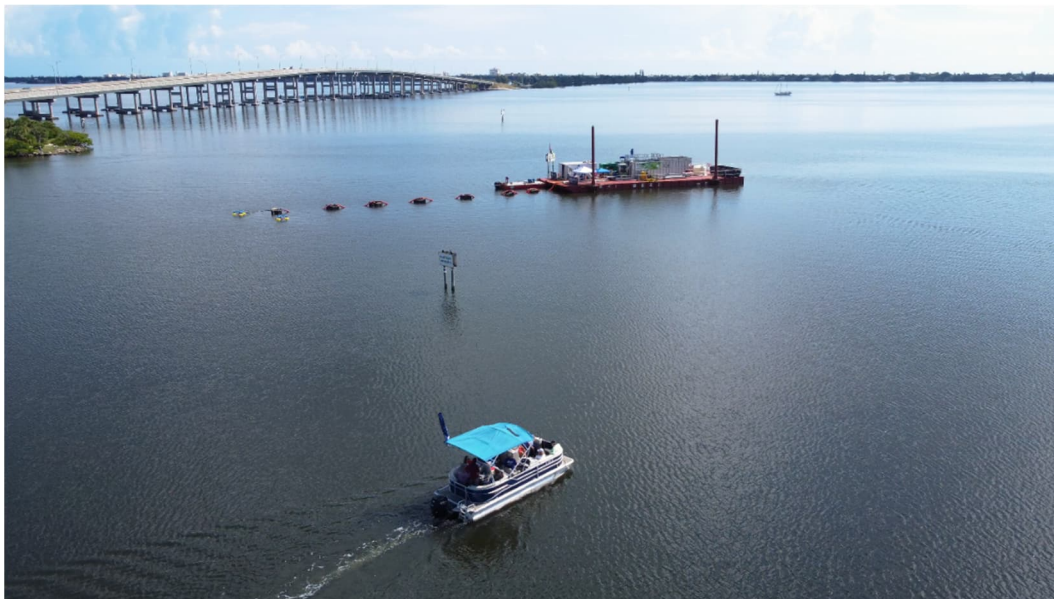
A public demonstration event was held at the City of Melbourne's Front Street Civic Center, located at 2205 Front Street in Melbourne, FL on September 13, 2023. The event was advertised on Brevard County's Save Our Indian River Lagoon website and social media, and invitations were sent by email to approximately 200 potential participants including state, county and local government officials and staff, and Save Our Indian River Lagoon Citizen Oversight Committee and Marine Resources Council staff and members. The event was well attended with approximately 50 participants. During the event, AECOM staff gave presentations about the project and guided tours of the algae harvesting barge.



Aerial view of the public event venue at the City of Melbourne's Civic Front Center with the algae harvesting barge in the background in the IRL



Demonstration event participants in the Civic Front Center viewing a live presentation of how the algae harvesting technology works to separate algae from water.



Demonstration event participants being shuttled to the algae harvesting barge for a guided tour.



Demonstration event participants on the algae harvester (left) and on the barge platform (bottom).



5.4 Site Preparation, Installation, and System Start-up

Initial site reconnaissance of the IRL was conducted in March 2023 and included visits to various shoreline locations in Fort Pierce, Vero, Sebastian, Melbourne, Palm Shores, Cocoa Beach, and Titusville, FL. The purpose of these visits was to survey general site conditions (e.g., parking, docking and boat ramp facilities) that would be needed to access the barge for the startup and shakedown of the HFT algae harvesting system and for future operations.

Water samples collected during the site reconnaissance were screened for their response to coagulation using aluminum chlorohydrate (ACH) and their further response to flocculation with Polytec 2160, a polyacrylamide flocculant, and FLOPAM™ AN 934 SH (FLOPAM). Based on the bench scale tests, ACH at a dosage of 20 parts per million (ppm) and FLOPAM at a dosage of 1 ppm were selected.

Algae bloom activity in the IRL was closely monitored beginning in March 2023 by screening various sources of information including:

- Continuous monitoring of field parameters in the IRL from:
 - the Ocean Research & Conservation Association, Inc., accessed online here
 - the SJRWMD, accessed online here
- FDEP Blue-Green Algal Bloom Weekly Reports and Algal Bloom Sampling Status and Observations reported here
- Satellite imagery from the ESA Sentinel Satellites from Applied Ecology, Inc. provided to Brevard County and accessed online here
- HAB Monitoring Reports from Fish and Wildlife Research Institute provided to Brevard County
- Field chlorophyll-a measurements (by fluorometry using an “algae torch” manufactured by BBE) at selected nearshore locations by Brevard County approximately every two weeks.

Biweekly meetings were held with Brevard County beginning in May 2023 to discuss algae conditions and to plan the timing for the algae harvesting system installation and startup.

In mid-August, screening of algae levels indicated that the highest concentration of algae was located south of the Melbourne Causeway and east of the Front Street Civic Center. In consultation with FDEP, it was agreed by AECOM and Brevard County that operations would begin in September 2023 at that location ([Figure 1](#)).

Equipment mobilization and system startup took place from August 29 to September 8, 2023. A 120-foot x 40-foot barge platform was assembled at the Derecktor Shipyards in Fort Pierce, FL from multiple 10-foot x 40-foot sectional barge components. The treatment system including ancillary equipment was placed on the barge, and the barge was simultaneously pushed and towed 46 miles up the IRL to Barge Station 1 at Melbourne, FL ([Figure 1](#)).

Once at Barge Station 1, spuds attached to the barge were lowered to hold the barge stationary. The HFT algae harvesting system was assembled and connected to the power supply. The water intake pipe, fitted with two Elastec® Seaskater Self-Adjusting Weir Skimmers, was deployed off the bow of the barge into the IRL to take water from within the photic zone where algae levels are typically greatest. A 6-inch polyvinyl chloride discharge pipe was installed on the harvester and terminated off the stern of the barge.

The HFT algae harvesting system was started up for shakedown to test all components for functionality. The system was run for 8.25 hours during shakedown without the use of water treatment chemicals.

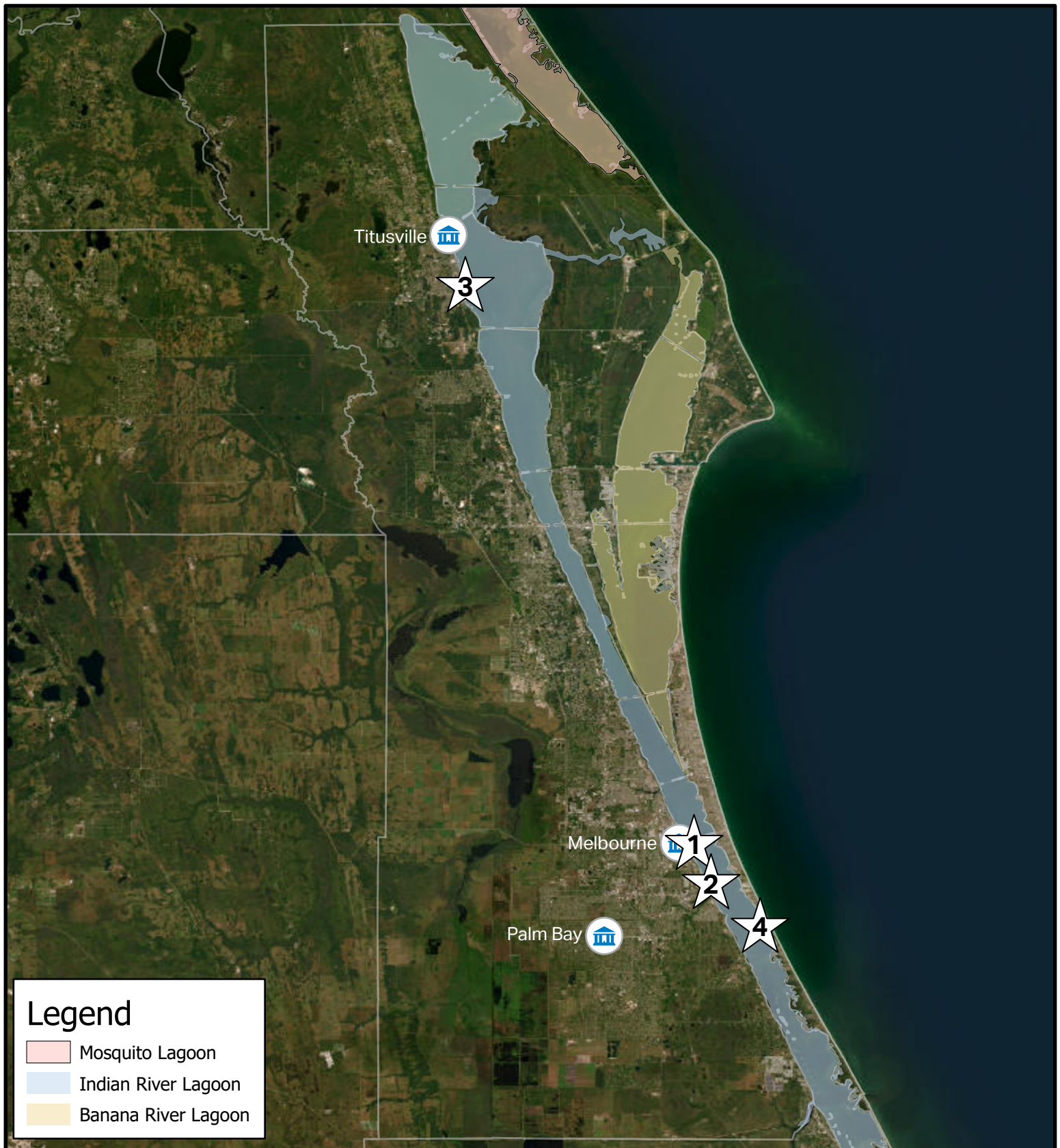
A detailed System Installation and Startup Report (November 6, 2023) was prepared for Brevard County and provides additional information and photos of the mobilization, installation, and start-up.



Algae harvester and ancillary equipment loaded onto the barge at Derecktor Shipyards, Fort Pierce, FL



Fully assembled algae harvesting system at Barge Station 1, Melbourne, FL.



Legend

- Mosquito Lagoon
- Indian River Lagoon
- Banana River Lagoon

Datum:
GCS WGS 1984

Service Layer Credits:
Earthstar Geographics

AECOM



0 5 10 20
Miles

Scale: 1:500,000

Designed	JRL
Drawn	JRL
Checked	TC
Peer Review	TC
Project Manager	AM
Project Number	60695249

Figure 1

Indian River Lagoon
Site Overview Map

1/24/2024

5.5 Algae Harvesting Operations, Maintenance and Monitoring

The barge-mounted HFT algae harvesting system was operated for five work weeks at four locations in the IRL over the three-month period from September to November 2023 (**Figure 1, Table 3**). The operating locations and work weeks were selected by AECOM in consultation with Brevard County and FDEP to consider staff availability, weather, algae bloom conditions, and other factors affecting operations. Locations near tributaries were not selected for operations as originally proposed due to lower concentrations of algae present at those locations. To reposition the barge, all equipment was secured on the barge, the spuds were raised, and the barge was towed to the selected location. Upon arrival at the new location, the spuds were lowered to the riverbed to hold the barge stationary, and the intake water assembly was redeployed.

Table 3. Algae Harvesting Dates and Locations

Work Week	Location	Operations Start Date	Operations End Date	Location Description	Latitude	Longitude
1	1	2023-09-11	2023-09-15	Approximately 0.3 miles east of the Front Street Civic Center docks at Melbourne	28.07983°	-80.59476°
2	2	2023-09-25	2023-09-29	Approximately 0.5 miles north of Castaway Point Park at Palm Bay	28.04620°	-80.57995°
3	3	2023-10-16	2023-10-20	Approximately 0.2 miles east of Rotary Riverfront Park near Titusville	28.56572°	-80.79349°
4		2023-10-23	2023-10-27			
5	4	2023-11-08	2023-11-15	Approximately 0.2 miles south of Coconut Point near Melbourne Beach	28.00800°	-80.53711°

During each week of operations, the harvester was operated daily to evaluate system performance. In the first four weeks of operations, the harvester was operated for an average of 5.88 hours per day during regular work hours (between approximately 8:00 a.m. and 6:00 p.m.). In the fifth week, operations were extended to evaluate system performance with diurnal changes in water quality and algae levels in the IRL and to test unmanned operations. The system was run continuously for a total of 79.75 hours in Week 5, including 49.5 hours of unmanned operations, during which time the operator monitored process controls by remote access to the Supervisory Control and Data Acquisition (SCADA) system. Key system control parameters were purposely varied during operations to optimize the performance of the algae harvester to remove algae from the IRL water including:

- Dosages of the coagulant and flocculant
- Mixing speeds in the coagulant and flocculant chambers
- Recycle flow rates (recycle water used to create nanobubbles for flotation of the algae floc)
- Skimming speed and the number and timing of skimming cycles

Process control data were measured continuously every 15 minutes (as the average of measurements taken every 15 seconds) during operations and recorded by the SCADA system.

The algae harvester and support equipment were inspected each day prior to operations, regularly during operations, and at the end of each operational week. Only minor repairs were required with little to no downtime, including replacement of the polymer feed line, installation of a foot valve intake pipe, and cleaning of the foot valve.

Approximately 255 gallons of algae slurry was recovered during operations, which was stored in a poly collection tank on the barge. Samples of the biomass were collected for laboratory analyses and the remaining biomass at the end of operations was used to perform dewatering studies for ancillary research by AECOM (see **Section 6**). The dewatered algae biomass was removed from the barge during decommissioning for disposal at the St. Lucie County Sanitary Landfill in Fort Pierce, FL.

Algae harvesting performance monitoring was conducted for water quality field parameters and laboratory analytes. Multiparameter water quality sondes (EXO2, YSI Inc.) installed in an influent (pre-treatment raw water from the IRL) port and effluent (post treatment water) port were used to collect continuous field measurements of temperature, specific conductivity, pH, dissolved oxygen, turbidity, chlorophyll-a, and phycocyanin. The sondes were programmed to log data at regularly scheduled intervals (i.e., every 15 minutes) during the operation of the algae harvester and were recorded by the SCADA system.

Water samples were collected from the influent and effluent sample ports for laboratory analysis of the parameters listed in **Table 4**. Samples were collected daily during operations for all parameters except for aquatic toxicity bioassays which were collected weekly and phytoplankton identification and enumeration (influent only) which was sampled once in Week 5.

Table 4. Laboratory Parameters, Test Methods, and Laboratories

Due to 508 compliance requirements, Table 1 was removed from this document. To access the full document, which does not meet 508 compliance standards, please reach out to InnTech_HAB@FloridaDEP.gov

All monitoring activities were completed as per the approved QAPP, except for phytoplankton identification and enumeration, which was sampled in only one week instead of each of the five operational weeks due to field sampling oversight, and dissolved organic carbon, which was not analyzed in Week 1 due to laboratory error. Additional analytes not included in the QAPP that were analyzed included the algal toxins, saxitoxins and domoic acid. These toxins were added to the parameter list due to the dominance of taxa potentially producing them in the IRL during operations.

Removal efficiency was calculated using the influent and effluent concentration for key performance parameters as:

$$\% \text{ Removal} = \frac{(\text{Influent Concentration} - \text{Effluent Concentration})}{\text{Influent Concentration}} \times 100$$

A Quarterly Operating Report (draft dated March 12, 2024) was prepared documenting details of operations, maintenance, and monitoring activities. This report includes all data collected during the project, laboratory certificates of analysis, data quality evaluations, data summaries including statistical evaluations of key algae harvesting performance metrics and data interpretations.

5.6 Decommissioning and Site Restoration

Decommissioning of the barge-mounted algae harvesting system was completed over a three-day period from December 3 to 5, 2023. The barge was pushed from its last operational location near Melbourne Beach (approximately 0.2 miles south of Coconut Point) approximately 32 miles to the Vero Beach City Power Plant, Vero Beach, FL. Two 50-ton cranes were used to lift the algae harvester off the barge and place it onto a low-boy trailer to be hauled away. Ancillary equipment, including intake piping assemblies, algae slurry collection tank, intake pump and skimmers and the 100 kW generator and external fuel tank were offloaded and hauled away. Recovered algae biomass was dewatered using mesh dewatering bags and the resultant slurry cake was disposed of at the St. Lucie County Sanitary Landfill in Fort Pierce, FL.

A signed statement dated January 24, 2024, confirming completion of the decommissioning and site restoration and a photolog documenting the activities was provided by Dan Levy (AECOM) to Terri Breeden (Brevard County).



Algae harvester being lifted from the barge (left) and placed on a transport trailer for hauling offsite (right).



Recovered algae biomass being dewatered in a dewatering mesh bag.

6. Ancillary Testing

AECOM funded and conducted ancillary testing of a dewatering process for the recovered algae slurry and an oxygenation enrichment process for coagulated water within the harvester to further improve system performance. This testing was not part of the scope of work for the project but provides useful information to support the assessment of the feasibility of algae harvesting at scale in the IRL for nutrient removal and HAB mitigation.

6.1 Passive Slurry Dewatering

Slurry produced by the harvester was collected and stored for dewatering. Due to a host of site-specific factors, the rate of slurry production was relatively low with volumes of roughly 15 to 30 gallons per day. Low to moderate levels of algae biomass in the IRL influent water to the algae harvester and lower harvester flow rates used for the demonstration project contributed to the low slurry production rate. Where the slurry lacked in volume it was made-up for in concentration with slurry reaching 8% total solids compared to the 2-3% solids observed in other algae harvesting projects in freshwater systems. This higher-than-normal thickening occurred, at least in part, with shallower skimmer depth and reduced skimming cycles used during operations causing high solids retention time in the harvester float blanket.

The tests used a passive dewatering approach with mesh filter bags. Known commercially as a SuperSack®, these open top bags with 35"x35"x40" dimensions were ideally suited for the operation. Standard pallet sized footprint, integrated hooks for forklift handling, strength, and mesh pore size (37 mesh / 460 µm) demonstrated favorable performance as a low-tech, value added, algae biosolids dewatering technique. Tests were performed using neat slurry (without dilution or polymer) and flocculated slurry (with dilution water and polymer added). The test set-up and execution are highlighted in the photolog presented in [Table 5](#). Refer to [Appendix B](#) for dewatering product information sheets.

Approximately 255 gallons of the algae slurry was placed into the dewatering bags to retain the harvested solids while draining the liquid by gravity. Each bag was partially filled with the neat slurry, and samples taken at the side and the middle to cover least to most dewatered conditions for total solids measurements. After storage in the bags for two and a half weeks, total solids measured between 13% to 16% solids for two separate batches of neat slurry. Dewatering without flocculation, as in this case, is a worst-case scenario. Still, bag dewatering of neat slurry in this manner was effective. Added dewatering effect was provided by the bags remaining on the barge in the open-air environment with wind and sunlight exposure assisting the dewatering process.

Table 5. Dewatering Bench-testing Photolog

 Photo A Bench-testing field lab set-up: polymer dilution and mixing, total solids analyzer, and flocculated slurry samples.	 Photo B Bench-testing field lab set-up: Flocculated slurry samples and dewatered slurry samples in SuperSack® bag material.
 Photo C IRL Harvested neat slurry.	 Photo D Flocculated slurry showing robust “popcorn” floc formation (left) and dewatered cake in bench-test sample (right).
 Photo E On barge dewatering (Bag 1) with neat slurry within SuperSack® bag after 2.5 weeks of open air dewatering.	 Photo F On barge dewatering (Bag 2) with neat slurry within SuperSack® bag after 2.5 weeks of open air dewatering.

A series of bench tests were conducted to evaluate bag dewatering with flocculation under controlled conditions. The bench samples were left outside in the open air under a covered area for rain protection during testing. Ambient temperatures were relatively cool ranging between 50 to 70 degrees F. As shown in **Table 6**, total solids were more than 12% after 4 hours of dewatering for both the moderate and high polymer doses. After 72 hours, both polymer dosages achieved between 13.6% to 13.7% total solids. It is therefore concluded that the moderate polymer dose was optimal for achieving higher total solids in less time.

Paint filter tests (PFTs) provided another measure of dewatering effectiveness. As the name implies, the PFT is conducted with a standard 40 mesh cone shaped filter. The test result is the elapsed time to pass water droplets through the filter. Of the four samples tested, PFT times were 6 minutes, 0.75 minutes, 3 minutes, and 1.25 minutes for samples having total solids content of 16%, 15.6%, 13.9% and 13%, respectively.

While dewatered cake reached relatively good total solids content, the samples were observed to release water at the surface over time, best described as a sweating effect. This may make passing a 5-minute PFT difficult for the purpose of meeting landfill disposal requirements or requiring delivery of fresh, same day, dewatered cake. Additional testing with absorbent type material additives is recommended to evaluate locking in dewatered solids moisture content.

Due to 508 compliance requirements, Table 6 was removed from this document. To access the full document, which does not meet 508 compliance standards, please reach out to InnTech_HAB@FloridaDEP.gov

6.1.1 Cake and Filtrate Analysis

Analytical results for the dewatered cake and filtrate samples are presented in **Tables 7 and 8**. In order of decreasing content, the cake contains predominantly aluminum, sodium, calcium, magnesium, sulfate, iron, and nitrogen. Aluminum is attributed to the use of ACH coagulant whereas the high ion content is associated with the brackish water of the IRL. Moderate levels of both nitrogen and phosphorus show nutrient recovery potential. Biofuel potential appears limited based on the low total volatile solids content of 22%, presenting an ash content that may preclude the use of hydrothermal treatment processes.

Dewatered filtrate showed aluminum was effectively captured by the dewatering operation with less than 0.2 mg/L measured in the filtrate, meeting the drinking water standard for aluminum. Otherwise, the filtrate contained moderate amounts of TSS and nutrients. The filtrate quality is suitable for disposal directly to a sanitary sewer. However, treatment is needed before returning to the lagoon. One option is blending the filtrate with the harvester influent and retreating through the harvester process. Additional investigations into filtrate treatment options for both on-site and off-site HAB remediation site disposal are recommended.

Table 7. Dewatering Bench-testing Summary – Dewatered Cake Analysis

Parameter	Units	Cake Sample			
		SuperSack® DB5 72 hr	SuperSack® DB6 72 hr	60 Mesh DM5 72 hr	60 Mesh DM6 72 hr
Aluminum	mg/kg	124,000	133,000	122,000	126,000
Arsenic	mg/kg	13.2	13.0	9.3	10.4
Barium	mg/kg	16.5	17.4	18.3	18.1
Beryllium	mg/kg	0.33 l	0.37 l	0.37 l	0.37 l
Boron	mg/kg	193	203	203	196
Calcium	mg/kg	25,700	27,300	24,700	24,900
Chromium	mg/kg	24.6	25.9	25.7	57.3
Cobalt	mg/kg	1.2 l	1.3 l	1.1 l	1.5 l
Copper	mg/kg	13.7	15.0	15.4	16.1
Iron	mg/kg	8,990	9,390	8,640	8,780
Lead	mg/kg	8.3	9.1	8.3	8.7
Magnesium	mg/kg	15,100	15,600	14,700	14,600
Manganese	mg/kg	451	517	483	480
Nickel	mg/kg	7.8	8.6	8.4	21.3
Potassium	mg/kg	2,880	2950	2,800	2,740
Sodium	mg/kg	45,900	46,000	43,500	43,400
Strontium	mg/kg	349	364	372	367
Tin	mg/kg	22.2 l	21.6	20.7	20.1
Vanadium	mg/kg	44.4	46.8	47.1	46.8
Zinc	mg/kg	84.2	89.4	83.1	85.2
Mercury	mg/kg	0.081	0.073	0.085	0.091
Percent Moist.	%	87.5	87.1	87.0	87.1
Total Solids	%	12.1	13.0	12.7	12.8
Total Volatile solids	%	22.4	22.4	22.7	22.2
pH	SU	7.6	7.7	7.5	7.6
Total Kjeldahl Nitrogen	mg/kg	5,990	7,240	1,770	6,370
Phosphorus, Total	mg/kg	857	1,020	793	908
Sulfate	mg/kg	17,000	16,600	14,500	17,400

Notes: DB = dewatering bag, DM = dewatering mesh, mg/kg = milligrams per kilogram, SU = standard pH units.

Table 8. Dewatering Bench-testing Summary – Dewatering Filtrate Analysis

Parameter	Units	SuperSack® DB5+6 Composite
Aluminum	mg/L	0.189
Total Suspended Solids	mg/L	44.7
Nitrogen, Total	mg/L	14.3
Ammonia Nitrogen	mg/L	13.1
Total Kjeldahl Nitrogen	mg/L	14.3
Nitrate Nitrogen	mg/L	0.018 l
Phosphorus, Total	mg/L	0.053
Total Organic Carbon	mg/L	64.2
Dissolved Organic Carbon	mg/L	38.8

Notes: DB = dewatering bag

6.2 In-situ Harvester Oxygen Enrichment

Water quality monitoring showed the raw IRL influent experienced low dissolved oxygen saturation in Weeks 1 and 2 of operations, ranging from 40% to 60% saturation. The low dissolved oxygen saturation hampered bubble stability, as bubbles produced by the recycle water stream dissolved into solution to achieve saturation rather than remaining as stable microbubbles in suspension to float particles to the surface for extraction/skimming. Lower algae harvesting performance to remove solids generally coincided with low dissolved oxygen saturation and resultant loss of microbubble concentration in the flotation chamber of the algae harvester.

Efforts to mitigate low dissolved oxygen saturation focused on aerating water within the coagulation chamber of the algae harvester. This chamber represents roughly 30% of the overall treatment volume and is used for chemical addition, rapid mixing, and coagulation. With a sump pump recirculating the coagulation chamber water, dissolved oxygen concentrations improved by approximately 10% from 4 mg/L in the water entering the chamber to 4.5 mg/L in water discharging from the chamber. During this testing, the water temperatures were warm at approximately 29 degrees C beginning on September 29, 2023. As dissolved oxygen saturation decreases with warmer water temperatures, higher oxygenation potential would be expected at lower water temperatures.

A follow-up investigation included adding a “venturi” to the sump pump. The set-up produced a jacuzzi like effect with high turbulence and microbubble formation and dispersion throughout the basin. While the system could not be fully tested for effectiveness, due to dissolved oxygen improving to near saturation when these tests completed, the system showed good potential for aerating the influent to assist the algae harvesting performance for liquid/solid separation. This testing started on November 9, 2023 with moderate water temperatures of approximately 23 degrees C.



Modified sump pump for mixing and aeration with venturi air vent. Pump is secured to the harvester coagulation chamber sidewall.



Oxygenated coagulation chamber (top compartment) with foamy surface and surface agitation from hydraulic mixing. Downstream flocculation chamber (bottom compartment).

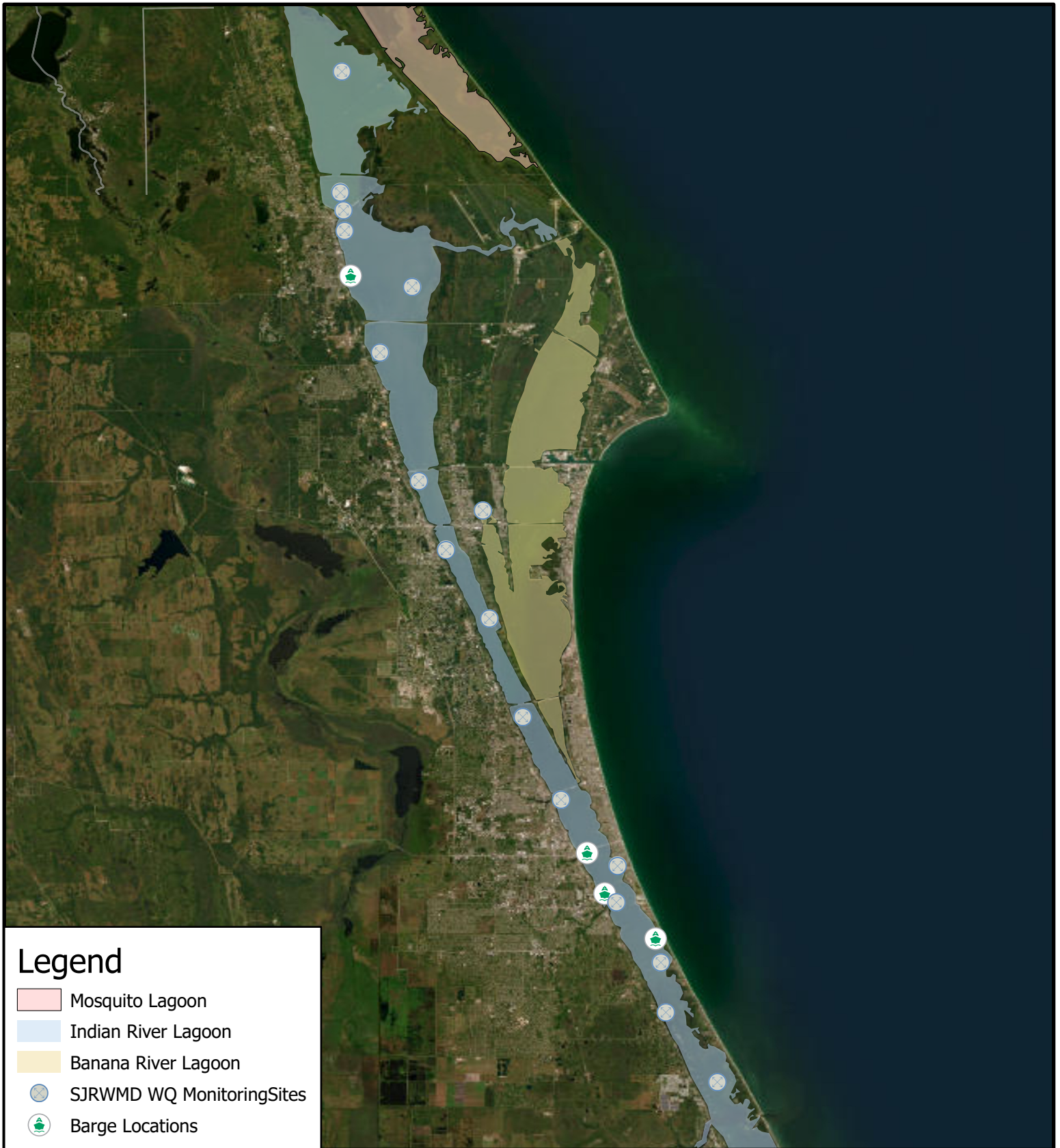
7. Algae Harvesting Treatment Performance and Benefits

7.1 Introduction

Algae harvesting by HFT has been proven in multiple previous demonstration projects to effectively remove algae and other suspended particles from freshwater as well as nutrients and algal toxins across a wide range of operating conditions and water body types. The treatment has also been demonstrated to improve other water quality parameters that would benefit aquatic life (e.g., reducing elevated pH and increasing low dissolved oxygen concentrations common to HAB-impaired waters). The performance of the barge-mounted algae harvesting system for brackish water in the IRL was generally consistent with these previous studies based on a comparison of water quality in the influent (raw water from the IRL) and effluent (treated water returned to the IRL) with some exceptions reflecting differences in source water conditions.

Algae and nutrient concentrations in the IRL can be highly variable within and between years. During operations, however, algae levels and nutrient concentrations were lower than expected based on long-term (2014-2022) data collected by the St. Johns River Water Management District at multiple sites in the IRL ([Figure 2](#), [Figure 3](#)). The median chlorophyll-a, total phosphorus and total Kjeldahl nitrogen concentrations in influent water to the algae harvester were below the 25th percentile concentrations in the IRL in each month of operation, except for total phosphorus in September. Total Kjeldahl nitrogen concentrations are provided because of a lack of nitrate and nitrite nitrogen data to calculate total nitrogen.

Even under these conditions of lower algae and nutrient concentrations in the IRL, as will be demonstrated, the algae harvester was able to remove algae and phosphorus from the water. Additionally, the treatment also improved various water quality parameters including turbidity, and dissolved oxygen. These benefits, coupled with potential for carbon sequestration to mitigate greenhouse gas emissions support the potential use of algae harvesting for HAB mitigation in the IRL. The following sections discuss key findings of this research project as they relate to operational efficiency, water quality benefits, carbon capture, and environmental safety of algae harvesting.



Legend

- Mosquito Lagoon
- Indian River Lagoon
- Banana River Lagoon
- + SJRWMD WQ Monitoring Sites
- 🏠 Barge Locations

Datum:
GCS WGS 1984

Service Layer Credits:
Earthstar Geographics

AECOM

N



0 5 10 20
Miles

Scale: 1:483,438

Designed	JRL
Drawn	JRL
Checked	TC
Peer Review	TC
Project Manager	AM
Project Number	60695249

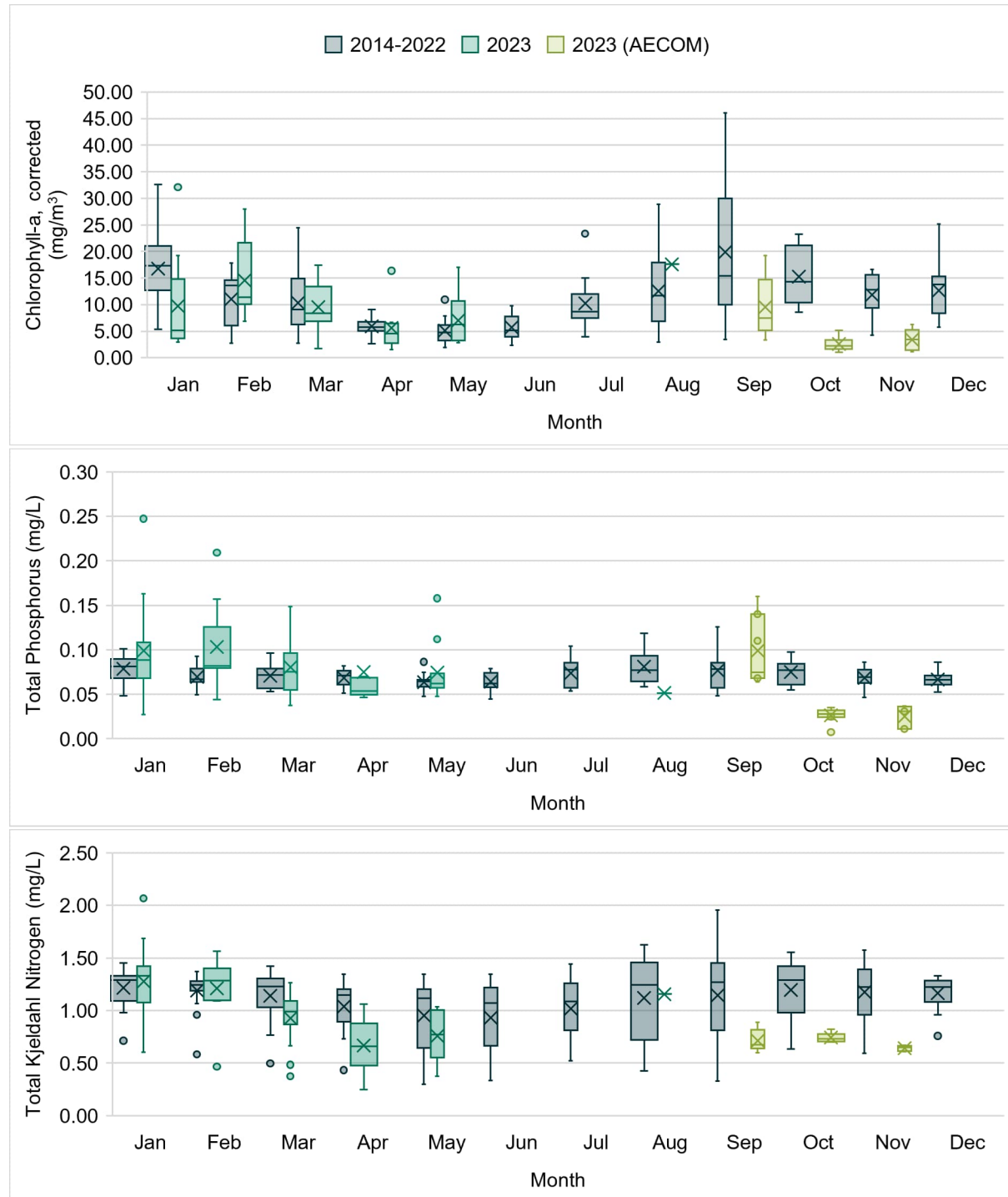
Figure 2

Indian River Lagoon

St. Johns River Water
Management District
Active Water Quality Monitoring
Sites in the IRL (Brevard County)

3/13/2024

Figure 3. Box and Whisker Plots of Long-Term (2014-2022) Monthly Concentrations of Chlorophyll-a, Total Phosphorus and Total Nitrogen in the IRL Compared to 2023



Notes: mg/m³ = milligrams per cubic meter; mg/L = milligrams per liter. Boxes denote the 25th to 75th percentile range, horizontal lines through the boxes denote the median, whiskers denote the range, and 'X' symbols denote the mean. Dots denote outliers.

Data Source: SJRWMD data downloaded from the Environmental Data Retrieval Tool, URL: <http://webapub.sjrwmd.com/agws10/edqt/> retrieved March 1, 2024. 2023 (AECOM) data are daily influent concentrations during algae harvesting operations.

7.2 Operations

Operational and process controls were adjusted during operations to optimize liquid-solid separation and are summarized in [Table 9](#) by week of operation. The optimal key operating parameters during the project included:

- Use of ACH and FLOPAM 934A SH at average dosages of 18.7 mg/L and 0.7 mg/L, respectively
- An average recycle flow rate of 45.17% of the influent flow rate
- An average of one skim per 55,085 gallons of treated water during manned operations and one skim per 72,000 gallons of water treated during unmanned operations.

Table 9. Summary of Weekly Operational and Process Control Parameters

Parameter	Week 1	Week 2	Week 3	Week 4	Week 5	Weeks 1-5
Date Range	Sep. 11-15	Sep. 25-29 (4)	Oct. 16-20	Oct. 23-27 (5)	Nov. 8-15	Sep. 11- Nov.15
Processing Time (hours)	29.25	28.25	30.75	23.5	79.75	191.5
Ave. Influent Rate (GPM)	499.46	353.4	300.97	391.68	300.86	369.27
Water Treated (gallons)	876,269	598,322	554,990	559,441	1,437,949	4,026,970
Ave. Coagulant Dose (mg/L) ⁽¹⁾	24	20	18	13.7	18	18.7
Ave. Polymer Dose (mg/L) ⁽²⁾	1	0.5	0.5	0.7	1	0.7
Ave. Mixer Tank 1 Speed (%)	42	40	40	48	40	42
Ave. Mixer Tank 2 Speed (%)	22	20	27	29	30	26
Ave. Skimmer Drive Speed (%)	80	64	58	46	71	64
Number of Skim Cycles	13	15	9	10	19	66
Ave. Recycle Rate (% of influent rate)	31.42	41.53	53.77	44.94	54.18	45.17
Ave. Power (kW)	16.77	16.15	15.42	16.79	16.10	16.25
Energy Consumption (kWh) ⁽³⁾	489	457	474	393	1,287	3,100

Notes: 1-Coagulant used was aluminum chlorohydrate (ACH); 2-Flocculant used was the anionic polymer, FLOPAM 934A SH; 3-calculated as the product of the total processing time (h) and average power used (kW); 4-operations were abandoned on September 25, 2023 due to inclement weather therefore no processing was completed; 5-Operations were suspended at 11:30 am on October 25 and 26, 2023 due to high winds and wave action. Ave. = average; GPM = gallons per minute; mg/L = milligrams per liter; % = percentage; kW = kilowatt; kWh=kilowatt hours

The operating and control parameters were generally similar to those for previous algae harvesting research projects in freshwater systems, with the exception of the recycle flow rate. The recycle flow rate affects the amount of water recycled from the clarified effluent stream used to create the nanobubbles in the flotation chamber. A higher recycle flow rate (range of 27.25% to 55.97% of the influent flow rate) was needed for good floc formation and flotation for the IRL water compared to freshwater bodies (typical range of 20%-30%). High salinity reduces air saturation as well as the mobility of bubbles and flocs, thus requiring higher recycle flows to introduce more air to the system. Moreover, dissolved oxygen concentrations (and % saturation) were very low during operations in September (Weeks 1 and 2), causing bubble instability despite the use of higher recycle flow rates. Addition of in situ oxygen enrichment of the influent water, for example, by using a sump pump and venturi system to aerate the water in the coagulation chamber of the algae harvester would help to alleviate issues with low dissolved oxygen and resulting bubble stability (see [Section 6.2](#)).

While good floc formation was achieved during operations, instability of the float blanket in the flotation chamber was observed during operations due to movement of the barge from wave action. This issue was most prevalent in Week 4 when there was significant wave action on the IRL that caused a 'sloshing' of the float blanket. Instability of the

float blanket resulted in carryover of floc into the effluent stream, which ultimately increased the concentrations of total suspended solids in the effluent and also likely contributed to reduced algae and nutrient removal potential, as described in [Section 7.2](#). Improved anchoring of the barge would lessen the potential impact of wave action on the float blanket. In addition, the algae harvester used for this project was designed for land-based use or for use on a barge in water bodies with moderate wave action. Rocking due to stronger wave action in larger systems can be addressed by using a pulsed-bed flotation design instead of the fixed bed flotation design of the harvester that was used for this project. In the pulsed bed design, the surface of the water in the flotation chamber is recessed (i.e., increased freeboard), and the surface level is raised for skimming thus reducing the 'sloshing' effect generated by strong wave action.

7.3 Water Quality Benefits

The performance evaluation of the barge-mounted algae harvesting system to remove suspended algae and nutrients for HAB mitigation, and to provide additional water quality benefits by improving various water quality parameters associated with HAB-affected water bodies, is presented below. This assessment is based on a comparison between the influent (raw water from the Indian River Lagoon - IRL) and effluent (treated water returned to the IRL). A summary of field and laboratory parameters in the algae harvesting influent and effluent, along with percentage removal efficiencies, is provided in [Table 10](#) and [Table 11](#), respectively. Data for the field measurements and laboratory parameters are provided in [Attachment C](#).

Table 10. Summary of Field Water Quality Measurements in Algae Harvesting Influent and Effluent

Statistic	Temperature (°C)		Specific Conductivity (µS/cm)		pH (SU)		Turbidity (NTU)		Dissolved Oxygen (% sat.)		Dissolved Oxygen (mg/L)		Chlorophyll-a (RFU)	
	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF
N	750	750	750	750	750	750	750	750	750	750	750	750	750	750
Minimum	20.97	21.07	8,024	22,190	7.53	7.35	1.33	1.65	14.77	41.22	1.09	2.88	0.72	0.04
Maximum	34.22	33.05	35,148	34,785	8.68	8.42	97.51	18.59	127.52	121.29	9.03	9.07	28.50	6.32
Mean	25.63	25.74	29,278	29,270	8.05	7.96	11.47	2.84	78.70	94.50	5.87	7.01	4.93	1.87
SD	3.43	3.32	2,213	1,976	0.22	0.21	13.57	1.22	21.68	13.44	1.76	1.24	4.46	1.47
Median	23.90	24.02	28,682	28,703	8.09	7.99	5.82	2.57	84.32	100.15	6.44	7.62	2.83	1.40
Q1	23.24	23.44	28,106	27,989	7.89	7.85	2.89	2.18	70.78	86.64	4.94	5.97	2.25	0.74
Q3	28.75	29.04	30,271	30,198	8.20	8.13	10.73	3.06	92.57	103.64	7.10	7.88	7.12	3.35
% Reduction	-0.4%		0.03%		1% (17.5% as H ⁺)		75%		-20%		-19%		62%	

Notes: INF = Influent; EFF = Effluent; N = number of observations; SD = standard deviation; Q1 and Q3 are the first quartile (25th percentile) and third quartile (75th percentile), respectively; °C = degree Celsius; µS/cm = microsiemens per centimeter; SU = standard unit; % sat. = percent saturation; mg/L = milligrams per liter; NTU = nephelometric turbidity unit. The mean is the arithmetic mean for all parameters except for pH, which is the geometric mean. % reduction is calculated as the difference between mean values in the influent and effluent divided by the mean influent value (geomean values were used for pH).

Table 11. Summary of Laboratory Water Quality Analytes in Algae Harvesting Influent and Effluent

Analyte	Units	MDL				Influent					Effluent		% Reduction
			n	n<MDL	Mean	SD	Median	n	n<MDL	Mean	SD	Median	
Alkalinity, Total as CaCO3	mg/L	5	24		126	7	125	24		124	7	123	2%
Aluminum	µg/L	30.7	24	5	124	80	101	24		900	223	850	-624%
Aluminum, Dissolved	µg/L	30.7	24	24	35.8	24.6	30.7	24	10	98.9	124.2	61.8	-176%
Chloride	mg/L	500	24		10,788	1,236	10,300	24		10,674	1,307	10,150	1%
Chlorophyll-a (Corrected)	mg/m³	1	24	1	5.3	4.7	3.8	24	2	4.2	3.4	2.4	21%
Carbon, Dissolved Organic	mg/L	0.5	18		8.8	2.6	10.5	18		8.3	3.0	10.2	6%
Nitrogen, Ammonia	mg/L	0.035	19	12	0.059	0.040	0.035	17	11	0.051	0.033	0.035	14%
Nitrogen, Kjeldahl, Total	mg/L	0.2	21		0.86	0.21	0.79	24		0.865	0.083	0.870	0%
Nitrogen, Kjeldahl, Total, Dissolved	mg/L	0.2	21		0.71	0.07	0.70	24		0.75	0.13	0.75	-5%
Nitrogen, NO2+NO3	mg/L	0.015	24	22	0.016	0.003	0.015	23	23	0.015	0.000	0.015	5%
Orthophosphate as P	mg/L	0.0038	22	4	0.026	0.026	0.013	23	5	0.013	0.011	0.006	50%
Phosphorus, Total	mg/L	0.0028	22		0.049	0.040	0.032	22		0.036	0.027	0.023	26%
Phosphorus, Total, Dissolved	mg/L	0.0028	24		0.024	0.023	0.012	24		0.014	0.009	0.009	44%
Salinity	ppt	7	24		20.5	1.7	19.6	24		20.4	1.5	19.6	1%
Carbon, Total	mg/L	1.4	24		34.4	1.8	34.1	24		33.4	1.5	33.3	3%
Nitrogen, Total	mg/L	0.2	21		0.86	0.21	0.80	23		0.86	0.08	0.87	0%
Nitrogen, Total, Dissolved	mg/L	0.2	21		0.72	0.07	0.71	23		0.75	0.13	0.75	-4%
Carbon, Total Organic	mg/L	0.5	23		11.0	0.5	11.1	23		10.7	0.7	11.0	3%
Solids, Total Suspended	mg/L	5	24		21.0	9.6	19.3	24		27.9	8.2	27.0	-33%
Saxitoxins	ng/L	0.1	24		1.6	2.2	0.2	24		1.4	1.8	0.2	11%
Total Microcystins/Nodularins	ng/L	0.3	22	20	0.3	0.0	0.3	22	18	0.3	0.0	0.3	0%
Domoic Acid	ng/L	0.5	2	2	0.5	0.0	0.5	2	2	0.5	0.0	0.5	0%

Notes: MDL = Method Detection Limit; mg/mm³ = milligrams per cubic millimeter; mg/L = milligrams per liter, µg/L = micrograms per liter, n = count of observations, SD = standard deviation. Values below the MDL were set to the MDL for the calculation of descriptive statistics. % reduction is calculated using mean values.

7.3.1 Chlorophyll-a and Total Suspended Solids

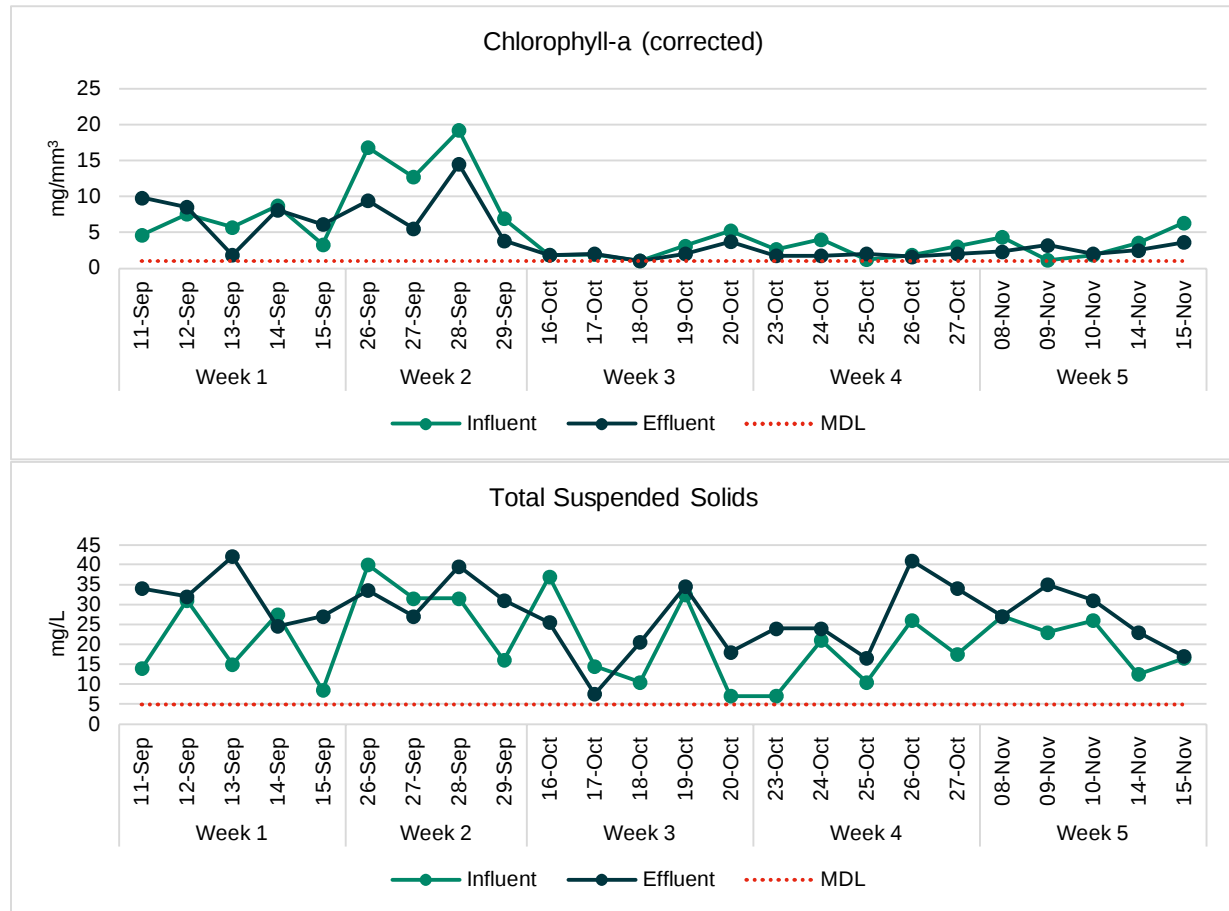
Algae harvesting by HFT is a liquid/solid separation process that has been optimized to remove suspended algae and other particulates from water. On average, concentrations of chlorophyll-a, an indicator of suspended algae biomass, were lower in the effluent compared to the influent in all weeks of operation except for Week 1 (**Figure 4, Figure 5**). This reduction was low with an average removal of 21% compared to the average chlorophyll-a removal efficiency of greater than 85% in previous HFT algae harvesting projects.

Total suspended solids are often used as an indicator of algae biomass in productive waterbodies, but this parameter is also strongly influenced by sediments that are resuspended by wind and wave action in shallow waters like the IRL. Total suspended solids were not reduced by algae harvesting, with higher concentrations in the treated water compared to the influent in all weeks of operation (**Figure 4**). This result is contrary to previous HFT algae harvesting demonstration projects, where an average reduction of 60% total suspended solids has been reported.

The relatively low % removal of chlorophyll-a and the increase in total suspended solids after treatment can be explained by a combination of factors. As previously described, chlorophyll-a concentrations in the IRL were exceptionally low during the last three weeks of operations in September and October compared to the last nine years (2014-2022) (**Figure 3**). In these weeks, the average chlorophyll-a concentration in the influent was 3.1 mg/m³, with several values near or below the laboratory method detection limit of 1.0 mg/m³. Therefore, there was little to no chlorophyll-a to be removed by the treatment.

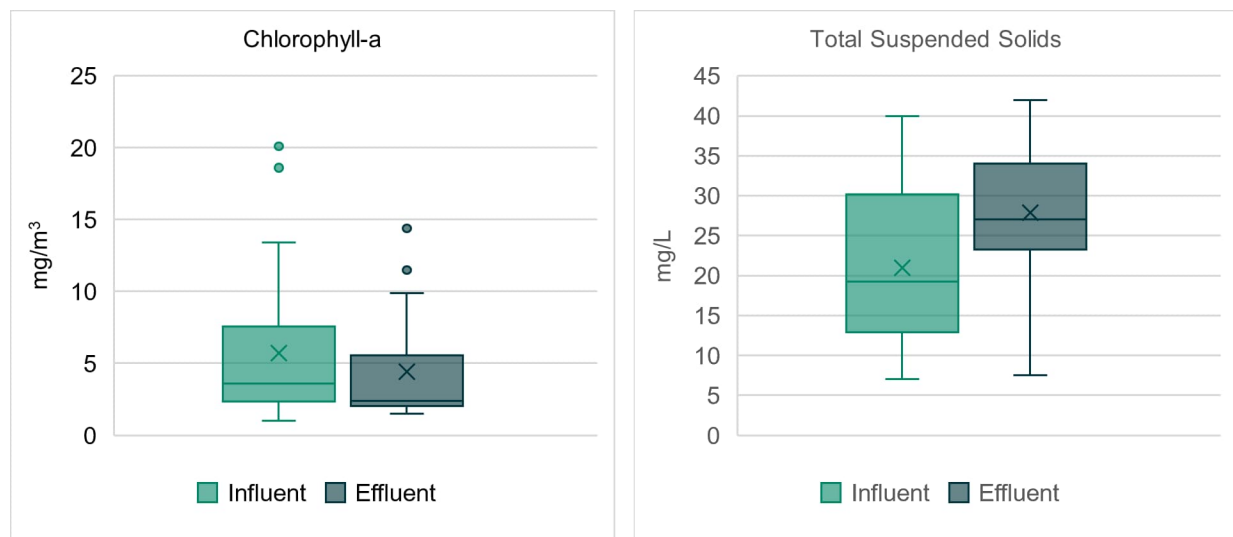
Higher chlorophyll-a concentrations in the influent occurred in the first two weeks of operations that were similar to long-term concentrations for the IRL in September, and total suspended solids were highly variable but on average, were relatively high in all operational weeks. The lower-than-expected reduction in chlorophyll-a in these weeks and the increased concentrations of total suspended solids in the effluent throughout the algae harvesting period can be attributed to a combination of low bubble stability that reduced solids flotation (in Weeks 1 and 2) and wave action that caused instability of the float blanket and floc carryover into the effluent stream.

Figure 4. Patterns in Chlorophyll-a and Total Suspended Solids in the Algae Harvester Influent and Effluent



Notes: MDL = Method Detection Limit; mg/mm³ = milligrams per cubic millimeter; mg/L = milligrams per liter

Figure 5. Box and Whisker Plots of Chlorophyll-a and Total Suspended Solids in the Algae Harvester Influent and Effluent



Notes: mg/m³ = milligrams per cubic meter; mg/L = milligrams per liter. Boxes denote the 25th to 75th percentile range, horizontal lines through the boxes denote the median, whiskers denote the range, and 'X' symbols denote the mean. Dots denote outliers.

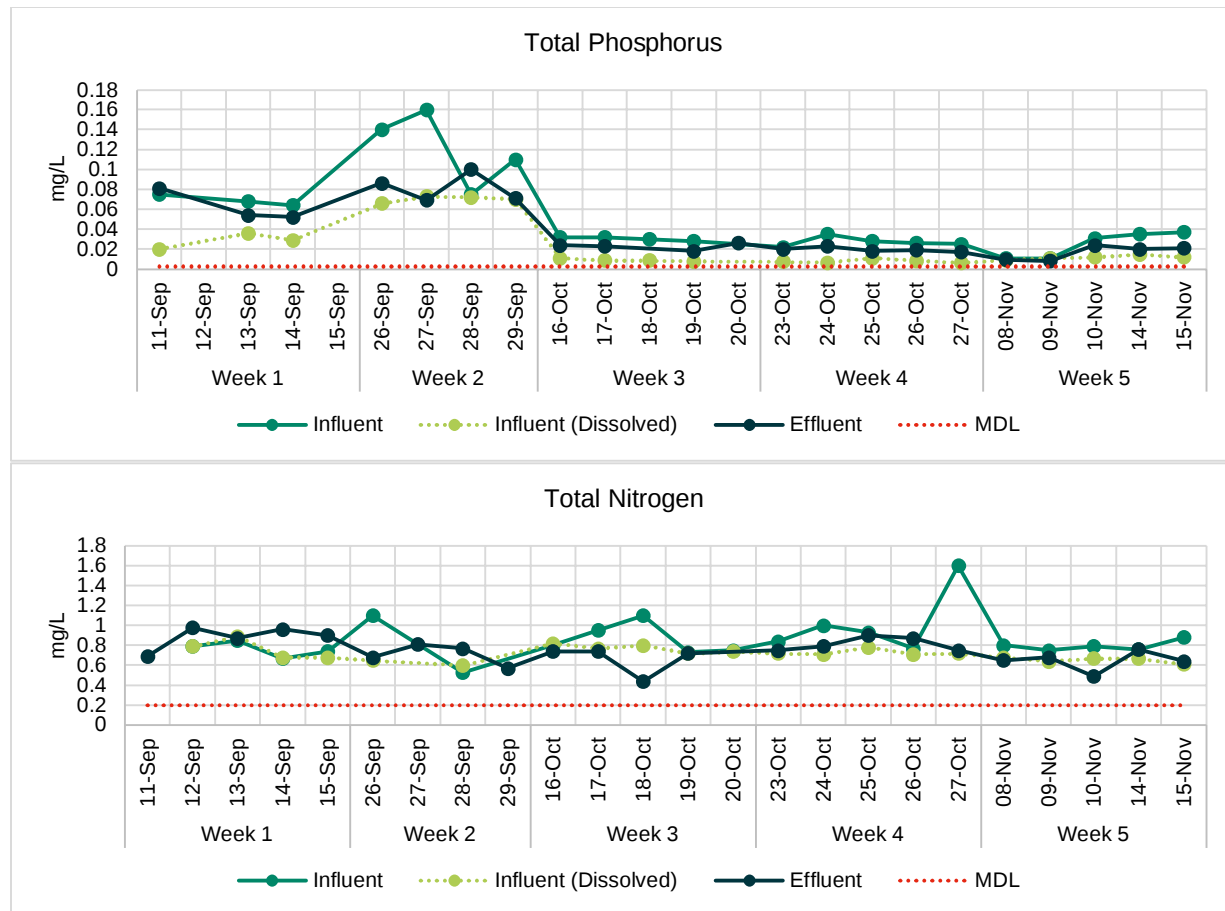
7.3.2 Phosphorus and Nitrogen

On average, concentrations of total phosphorus, a key nutrient for algae, were lower in the effluent compared to the influent in all weeks of operation (**Figure 6, Figure 7**). This reduction was low with an average removal of 29% compared to the average removal efficiency of greater than 85% in previous HFT algae harvesting projects.

By contrast, algae harvesting did not reduce total nitrogen concentrations (**Figure 6, Figure 7**). A lower removal efficiency for nitrogen compared to phosphorus has been observed in past HFT algae harvesting projects and has been attributed to the greater proportion of nitrogen that occurs in the dissolved form. As a liquid/solid separation process, algae harvesting is not as efficient in removing dissolved nutrients. Dissolved nitrogen represented 86% of the total nitrogen in the influent water the IRL, and 100% of the nitrogen was dissolved in 5 of 24 (21%) of the weekly samples.

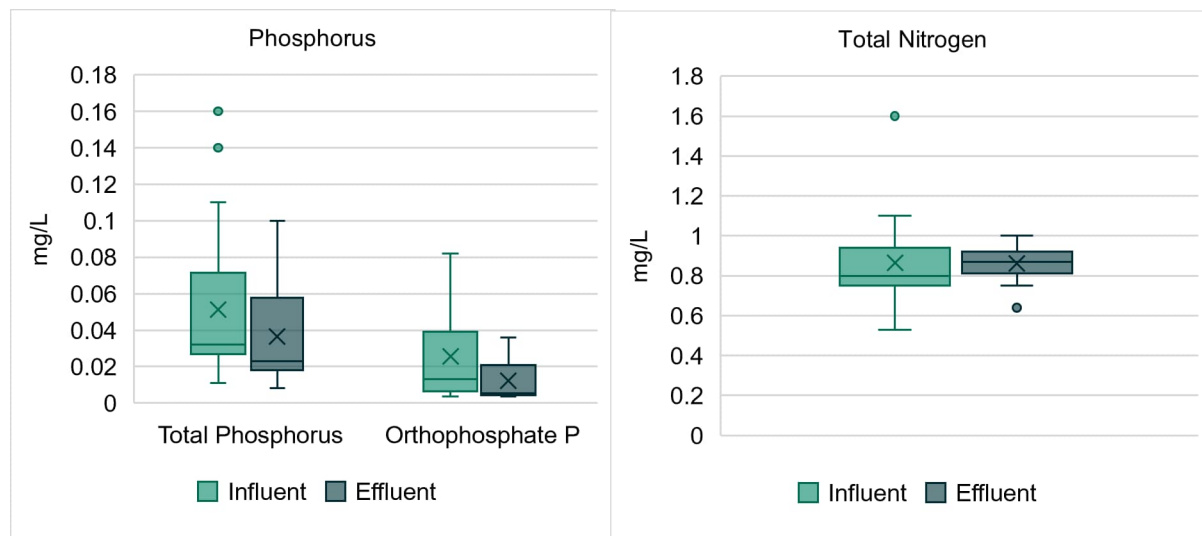
Another factor contributing to the higher phosphorus removal relative to nitrogen is the ability of the algae harvesting process to remove orthophosphate, the dissolved and bioavailable form of phosphorus that is taken up by algae. Orthophosphate (as phosphorus) was reduced by an average of 44% by the algae harvesting treatment. Orthophosphate phosphorus reduction is expected as the aluminum (Al^{3+}) from the ACH reacts with the orthophosphate ion (PO_4^{3-}) to form aluminum phosphate [$Al(PO_4)$], which is a solid in water and can be removed by the flotation process. While some orthophosphate reduction has been observed in previously studied freshwater systems, concentrations in these waterbodies were comparatively much lower than in the IRL.

Figure 6. Patterns in Total Phosphorus and Total Nitrogen in the Algae Harvester Influent and Effluent



Notes: MDL = Method Detection Limit; mg/L = milligrams per liter

Figure 7. Box and Whisker Plots of Total Phosphorus, Orthophosphate Phosphorus and Total Nitrogen Solids in the Algae Harvester Influent and Effluent



Notes: mg/m³ = milligrams per cubic meter; mg/L = milligrams per liter. Boxes denote the 25th to 75th percentile range, horizontal lines through the boxes denote the median, whiskers denote the range, and 'X' symbols denote the mean. Dots denote outliers.

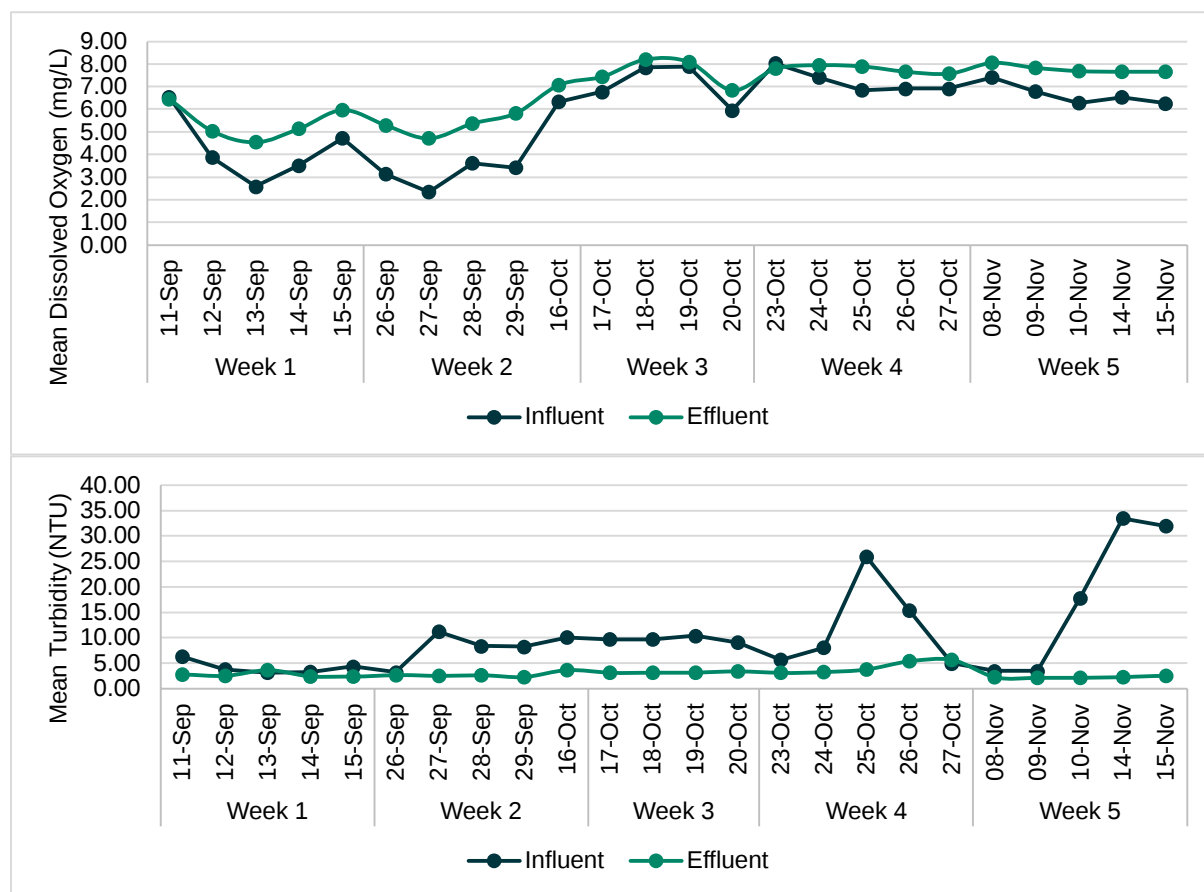
7.3.3 Dissolved Oxygen and Turbidity

In addition to removing algae and phosphorus, the algae harvesting treatment provided several additional water quality benefits, by improving dissolved oxygen and water clarity, which are commonly impaired in HAB-affected water bodies. Patterns in average dissolved oxygen and turbidity in the influent and effluent during daily operations are illustrated in [Figure 8](#).

Algae harvesting increases dissolved oxygen of the treated water due to the introduction of nanobubbles produced by the recycle water stream. As the nanobubbles rise to the surface of the flotation chamber during treatment, a portion of the oxygen in the bubbles diffuses into the water. As previously noted, the dissolved oxygen of the influent water from the IRL was very low in the first two weeks of operations with a mean of 4.08 mg/L (± 1.62 SD) in Week 1 and 3.21 mg/L (± 0.98 SD) in Week 2, reducing nanobubble stability thus reducing performance of the treatment to remove solids. Dissolved oxygen concentrations increased to an average of 8.05 mg/L (± 0.49 SD) in the last three weeks of operations, with no issues in nanobubble stability. As expected, the algae harvesting treatment process increased the mean dissolved oxygen by 1.12 mg/L, representing an average increase of 26%.

By removing algae and other suspended particles, algae harvesting has been shown to reduce turbidity, resulting in highly clarified water. The turbidity of the influent water was highly variable over the operational period, with episodes of higher turbidity during periods of strong winds and wave action (especially in Weeks 4 and 5) that caused sediment resuspension in the IRL. This is supported by the accumulation of fine sand in the bottom of the algae harvester chambers following operations in Weeks 2 to 5. Despite the relatively low removal of algae (as chlorophyll-a) and the increased total suspended solids in the effluent due to floc carryover (see [Section 7.2.1](#)), turbidity was reduced by an average of 8.63 mg/L, representing an average decrease of 75%. Turbidity was reduced even though TSS increased. This may be attributed to the sampling design, as the TSS was analyzed from discrete grab samples collected daily, while turbidity measurements were obtained continuously from in-line sondes. The higher TSS may therefore have been episodic. Additionally, the floc particles contributing to the increase in effluent TSS are large and would have less of an impact on turbidity than smaller particulate matter (e.g., algae cells) that is effectively removed by the harvester.

Figure 8. Patterns in Dissolved Oxygen and Turbidity in the Algae Harvester Influent and Effluent



7.4 Carbon Sequestration and Greenhouse Gas Emissions Benefits

Although algal blooms are fueled by the presence of excess nutrients in a water body, carbon is the building block for algae production. Decomposition of algae biomass in waterbodies results in the re-release of carbon in the form of carbon dioxide and in some cases, as methane gas. Recent research has shown that methane fluxes from aquatic ecosystems contribute 41% (median) or 53% (mean) of total global methane emissions from anthropogenic and natural sources (Rosentreter et al., 2021). New research also suggests that cyanobacteria can directly produce methane (Bižić et al., 2020). Jointly, carbon dioxide and methane account for approximately 70% of total greenhouse radiative forcing and are major contributors to global warming and climate change (IPCC, 2013). Eutrophic waterbodies are therefore considered major contributors to greenhouse gas emissions. Lake Erie, for example, was found to emit methane at a rate comparable to and higher than most landfills and natural gas distribution systems in Ohio and Michigan (Fernandez et al, 2020). Physical removal of algae biomass including cyanobacteria and the carbon they contain using HFT algae harvesting would therefore help reduce these aquatic sources of greenhouse gases and provide an innovative and effective technology to help combat climate change.

Based on work conducted in the IRL, the algae harvester operated at 700 GPM for 24 hours would remove approximately 1 ton of carbon dioxide equivalents (CO₂e) every 303.5 days. This estimate is conservative given the lower levels of algae in the IRL during the operational period compared to the long-term average (based on chlorophyll-a concentrations). The harvested algae are helping drive a variety of new businesses focused on beneficial use and long-term sequestration of the carbon contained within the algal cells. These include biofuels, bioplastics and foam, black ink, and sustainable fertilizer, among others.

7.5 Environmental Safety

Monitoring of field and laboratory parameters in the treated water from the algae harvesting system demonstrated that the process is protective of aquatic life with respect to several key water quality parameters of potential concern.

The coagulant, ACH, and the flocculant, FLOPAM 934A SH, were used in small amounts in the HFT algae harvesting process to enhance separation of algae from the water. These conditioners are approved by the National Sanitation Foundation (NSF) International and are commonly used for purification in potable water and wastewater treatment. Chemical constituents of these compounds (i.e., aluminum in the ACH) occur naturally in surface water but can be toxic to aquatic life at high concentrations. The ACH can also cause a lowering of pH and increase in conductivity. Use of ACH and FLOPAM 934A SH did not cause changes to effluent quality that would adversely affect aquatic life, as evidenced by the following:

- Average weekly total aluminum concentration increased from 124 µg/L ±79.9 in the influent to 900 µg/L ±223 in the effluent (maximum concentration = 1,490 µg/L), which is below the FDEP surface water quality criterion of 1.5 mg/L (1,500 µg/L)
- There was no significant difference in average specific conductivity between the influent (average = 29,278 µS/cm) and effluent (average = 29,270 µS/cm) (Mann-Whitney U Test, $p < .001$)
- pH in Weeks 1-4 of operations was significantly lower in the effluent than in the influent, however, the average difference in geometric mean pH was small (0.15 SU) and below the FDEP criterion of less than a 1 SU change from background pH in coastal waters.

In addition, the effluent passed relevant chronic and acute toxicity tests. The influent and effluent samples did not exhibit chronic (7-day) or acute (96-hour) toxicity to either the mysid shrimp, (*Mysidopsis bahia*) or the inland silverside, (*Menidia beryllina*). The chronic IC25 (Inhibition Concentration causing a 25% reduction in growth or reproduction of test organisms) was >100% sample and the acute LC50 (median lethal concentration) was >100% sample for all bioassay tests. The tests were valid for all weeks except for:

- Week 1 - chronic tests with *M. beryllina* for the influent and effluent samples were invalid due to low control survival
- Week 4 – the chronic test with *M. beryllina* for the effluent sample was invalid due to low control survival

Algal toxin concentrations were generally low in all samples. Total microcystins and nodularins were detected in only 2 of 24 influent samples and in 4 of 24 effluent samples at very low concentrations at or near the Method Reporting Limit (MRL) of 0.3 nanograms per milliliter (ng/mL). Saxitoxins were detected above the MRL (1.0 ng/mL) in all of the submitted samples but were below the World Health Organization recreational guidance value of 30 ng/mL (maximum = 8.6 ng/L on September 11, 2023) in the influent. The % reduction in average saxitoxin concentration was 14% for Weeks 1 to 5. Domoic acid was analyzed in Week 5 (September 8 and 9, 2023) due to the presence of the diatom, *Pseudonitzschia* sp., which is a potential domoic acid producer, but was not detected in the influent or the effluent (MRL = 0.5 ng/mL). Previous algae harvesting demonstration projects have consistently demonstrated that the algae harvesting process does not damage cell walls of cyanobacteria so intracellular toxins are not released as “free” toxins in the water. Intracellular toxins are effectively removed along with the algae.

8. Cost Effectiveness

The cost of an HFT algae harvesting system to reduce nutrients in the IRL will depend on the system size, design, and implementation strategy. For budgeting purposes, a rough order-of-magnitude cost for a 5-mgd barge-mounted system is provided in [Table 10](#). Amortized over 25 years, the cost of the treatment for a 5-mgd system would be \$1,961,000 per year. This estimate assumes that the harvester would be operated continuously (24 hours per day) with a 10% downtime (e.g., for maintenance and extreme weather events), representing 328.5 operational days per year.

Table 12. Rough Order-of-Magnitude Cost for Implementation of a Barge-Mounted 5-MGD HFT Algae Harvesting System in the IRL

Item	5-MGD
Capital/Engineering	\$8,975,000
• engineering	\$125,000
• permitting	\$75,000
• marine barge platform	\$1,000,000
• support boats	\$150,000
• power	\$250,000
• intake system	\$250,000
• discharge system	\$50,000
• algae harvester	\$6,250,000
• dewatering system	\$700,000
• support equipment (holding tanks, equipment storage units, etc.)	\$125,000
Operations (cost/year)	\$1,450,000
• power	\$150,000
• coagulant/flocculant	\$150,000
• labor	\$500,000
• landfill disposal	\$600,000
• monitoring	\$50,000
Estimated Cost per Year (25-year amortized at 3% per year)	\$1,961,000
Operating Cost per 1000 Gallons of Water Treated	\$0.88

The factors that most influence the cost effectiveness of the treatment are operational costs for labor and landfill disposal of the recovered algae biomass. Progress towards implementing Intelligent Process Automation System (IPAS) into operations will reduce onsite labor requirements and further optimize efficiencies which will also provide cost savings. Preliminary estimates suggest that the use of IPAS could drop the labor costs by as much as 50%. In addition, the valorization of the recovered algae biomass into biofertilizer, biofuel, or other beneficial uses could also offset treatment costs by reducing the algae biomass disposal costs.

Other factors, such as costs to move the barge and the barge distance to land support would have little influence on the cost. The estimated costs include boats needed to shuttle staff and equipment to and from the barge and to move the barge to a new location. Moving the barge would reduce operational time (likely by only one or two days depending on the travel distance) and would incur additional costs for fuel. Nevertheless, moving the barge to treat localized areas of significant HAB activity would lower the cost per mass of algae and nutrients removed. This is because a larger mass of algae and nutrients could be extracted at the same operational flow rate compared to areas with lower algal and nutrient concentrations.

Cost effectiveness in terms of the cost per pound of nutrients removed is ultimately dependent on the concentrations of algae in the water being treated. Due to the low algae and nutrient levels in the IRL at the time of operations, coupled with periods of low dissolved oxygen and floc carryover that reduced performance (but that can be addressed), a price per pound of phosphorus, nitrogen and total suspended solids removal cannot be realistically estimated at this time. Additional research is required to confirm performance of the algae harvester under more characteristic conditions in the IRL and with modifications of the system to address issues with periods of low dissolved oxygen and wave action on stability of the float blanket.

9. Next Steps

To further advance understanding and optimize the effectiveness of the HFT algae harvesting system, additional research is recommended. This research should focus on confirming the system's performance under conditions more representative of the typical algae concentrations found in the IRL. Additionally, modifications to the system should be explored and tested to address the challenges posed by periods of low dissolved oxygen and the impact of wave action on the stability of the float blanket. By addressing these factors, future iterations of the algae harvester can be better tailored to the specific environmental conditions of the IRL, thereby enhancing its potential efficacy in mitigating HABs and improving overall water quality.

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Appendix A Algae Harvester Specifications

Model HF-1016 S Hydronucleation Flotation Technology

Nutrient Export for Waterbody Restoration



BEFORE



AFTER

Nutrient reduction is the best long-term solution to break the cycle of nutrient pollution and prevent harmful levels of algae growth that impair surface water. Unlike other methods that mask the 'symptoms', the Hydronucleation Flotation Technology (HFT) algae harvesting system gets to the root of the problem, by physically removing nutrients from waterbodies.

The technology uses nanobubbles to gently separate and remove nutrient rich algae and other solids from water producing clear, low-nutrient, and highly oxygenated water. The gentle separation process does not damage the algae cells, so toxins if they are present, are also removed and not released back to the water. The recovered algae can be used as a source of nutrients and carbon for fertilizers, fuel, and other products, which would otherwise settle to the sediments and create a continued source of nutrients fueling algae growth.

With a modular, mobile design, the system can be customized for small ponds to large lakes and reservoirs to restore natural nutrient and algae levels, promoting a healthy aquatic ecosystem.

KEY FEATURES

- ◆ Physically removes excess nutrients (phosphorus and nitrogen) from water
- ◆ Modular design can be expanded to any size
- ◆ Mobile, self-contained units
- ◆ Treatment Flow Rate - 700 gpm (1 MGD) per unit
- ◆ Automated operations with remote system control capabilities
- ◆ SCADA system integration
- ◆ Air emissions - contained (GAC unit available for treatment option)
- ◆ Noise Level: <50 dB at 10-ft away
- ◆ Power requirement: 3 Phase, 480 VAC, 60 Hz
- ◆ Optional ozone disinfection

BENEFITS

- ◆ Reduces the risk of Harmful Algal Blooms
- ◆ Process is protective of human health and the environment
- ◆ Returns highly oxygenated and clear water to improve aquatic habitat
- ◆ Reduces greenhouse gas emissions by removing organic carbon
- ◆ Recovered algae can be used to create sustainable green products
- ◆ Reduces sediment nutrient flux

APPLICATIONS

- ◆ Restoration of nutrient rich waterbodies
- ◆ In lake nutrient reduction
- ◆ Compliance with TMDL
- ◆ Full lake treatment
- ◆ Improves water quality





Technical Specifications		Control Architecture	
Overall Length	48'-0"	• Integrated and automated through SCADA • Local HMI touch screen control • Remote operation via secure login through computer or handheld device • Automated data logging and transmission • Continuous operations and water quality analyses	
Overall Width	10'-8"		
Overall Height	10'-0"		
On-road Height	13'-0"		
Empty Weight	30,000 lbs		
Operating Weight	200,000 lbs		
Design Loading		Monitored Water Quality Parameters	Monitored Operating Parameters
Flotation Surface Area	160 ft²	• Temperature • Specific conductance • pH • Turbidity • Total suspended solids • Chlorophyll-a • Dissolved oxygen • Phycocyanin	• Energy usage • Processing hours • Processing flow rate • Totalized effluent flow • Recycle flow rate • Recycle rate • Number of skim cycles • Slurry transfer cycles • Slurry mass transfer
Design Recycle Flow Rate	140 GPM		
Nominal Process Flow Rate	700 GPM		
Combined Flow Rate	840 GPM		
Nominal Hydraulic Loading Rate	5.25 GPM/ft²		
Hydraulic Capacity	>1,000 GPM		
Power & Energy		Process Connections	
Operating Voltage	460 VAC, 3-Phase, 60 Hz	• Water inlet - 6" flange • Water outlet -12" flange • Product outlet -4" flange • Utility water outlet - 1" NPT	
Maximum Power Consumption	65 kVA (100 A main circuit breaker)		
Average Power Consumption	15 - 25 kVA (estimated)		
Annual Energy Consumption	165,000 kWh (estimated)		
Power Cable	Included 50 ft		
Material of Construction			
Wetted Components	Type-304 stainless steel		
Skid	Type-304 stainless steel		

Effluent Quality

- ≤ 0.015 mg/L for total phosphorus
- ≤ 0.65 mg/L for total nitrogen

Average among previous projects. Results may vary based on waterbody-specific characteristics.

Appendix B Dewatering Product Information Sheets

DEWATERING SUPER SACK® CONTAINER FEATURES

The DeWatering Super Sack® container facilitates filtration of a fluid mixture allowing the solid materials to be retained as the liquid drains. Made with special porous polypropylene fabric with warp and weft tensile strengths greater than those of conventional 8 oz. polypropylene, the DeWatering Super Sack® container is a tough container with a wide variety of uses. Applications include cake filtering, dewatering sludge, clarifying water or other liquids, biotreatment projects, product washing, product collecting, and more.



CAPACITY

- Volume: 15ft³ to 60ft³
- Up to: 3,000 lb (1,360kg)

FEATURES

- Heavy-duty construction
- 5: 1 safety factor
- Airflow = 230ft³/min
- Smallest particle retained during filtration is 460 microns
- UV treated for extended outdoor use
- Super strong lift loop construction available
- Wide range of filling and discharging options for efficient product handling



IDEAL TO FILTER,
WASH OR COLLECT
PRODUCT



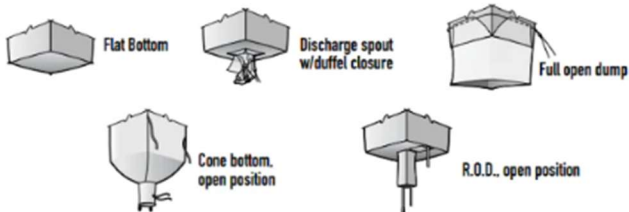
UP TO 3,000 LB.
(1,360kg) CAPACITY



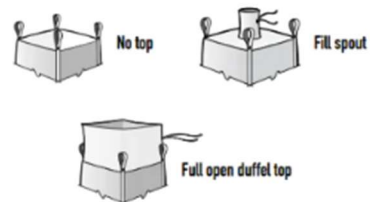
CAN BE REUSED
MULTIPLE TIMES WITH
PROPER CARE

DEWATERING SUPER SACK® CONTAINER

BOTTOM DESIGNS



TOP DESIGNS



BAGCORP.COM

Appendix C Monitoring Data

Appendix C1 - SCADA Process Control Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Current Draw (Amps)	Power Use (kW)	Processing Hours	Influent Rate (GPM)	Volume Treated (gallons)	Recycle Flow (GPM)	Recycle Rate (%)	Number of Skim Cycles	Mixer Tank 1 Speed %	Mixer Tank 2 Speed %	Skimmer Drive Speed %
1	1	2023-09-11	10:45:00	28.31	21.16	0.25	700.21	10,503	145.78	20.82	0	40	20	80
2	1	2023-09-11	11:00:00	25.09	18.73	0.50	699.59	10,494	110.81	15.84	1	40	20	80
3	1	2023-09-11	11:15:00	25.93	19.38	0.75	700.76	10,511	126.19	18.01	1	40	20	80
4	1	2023-09-11	11:30:00	21.66	16.19	1.00	499.87	7,498	153.76	30.76	1	40	20	80
5	1	2023-09-11	11:45:00	0.43	0.32	1.25	1.68	25	12.01	0.00	2	50	30	80
6	1	2023-09-11	12:00:00	23.08	17.26	1.50	518.12	7,772	154.46	29.81	2	50	30	80
7	1	2023-09-11	12:15:00	21.88	16.37	1.75	500.17	7,503	154.94	30.98	2	50	30	80
8	1	2023-09-11	12:30:00	21.89	16.37	2.00	500.29	7,504	155.03	30.99	2	50	30	80
9	1	2023-09-11	12:45:00	21.92	16.36	2.25	500.39	7,506	155.05	30.99	2	50	30	80
10	1	2023-09-11	13:00:00	21.90	16.37	2.50	500.39	7,506	155.05	30.99	2	50	30	80
11	1	2023-09-11	13:15:00	21.95	16.40	2.75	500.46	7,507	155.01	30.97	2	50	30	80
12	1	2023-09-11	13:30:00	22.05	16.46	3.00	500.58	7,509	155.36	31.04	2	50	30	80
13	1	2023-09-11	13:45:00	22.09	16.51	3.25	500.43	7,506	155.37	31.05	2	50	30	80
14	1	2023-09-11	14:00:00	28.80	21.47	3.50	500.54	7,508	155.42	31.05	2	50	30	80
15	1	2023-09-11	14:15:00	22.08	16.50	3.75	498.96	7,484	155.38	31.14	2	50	30	80
16	1	2023-09-11	14:30:00	22.01	16.45	4.00	499.12	7,487	155.43	31.14	2	50	30	80
17	1	2023-09-11	14:45:00	22.43	16.75	4.25	500.65	7,510	155.40	31.04	2	50	30	80
18	1	2023-09-11	15:00:00	23.78	17.77	4.50	499.15	7,487	155.13	31.08	2	50	30	80
19	1	2023-09-11	15:15:00	22.45	16.79	4.75	499.18	7,488	155.47	31.14	2	50	30	80
20	1	2023-09-11	15:30:00	22.33	16.70	5.00	500.73	7,511	155.98	31.15	2	50	30	80
21	1	2023-09-11	15:45:00	27.74	20.73	5.25	700.59	10,509	156.09	22.28	3	50	30	80
22	1	2023-09-12	08:45:00	22.26	16.64	0.25	500.02	7,500	160.21	32.04	0	40	20	80
23	1	2023-09-12	09:00:00	22.14	16.58	0.50	500.11	7,502	160.36	32.07	0	40	20	80
24	1	2023-09-12	09:15:00	28.24	21.15	0.75	500.27	7,504	155.81	31.15	0	40	20	80
25	1	2023-09-12	09:30:00	22.71	16.97	1.00	498.26	7,474	155.74	31.26	0	40	20	80
26	1	2023-09-12	09:45:00	23.36	17.46	1.25	499.78	7,497	155.54	31.12	0	40	20	80
27	1	2023-09-12	10:00:00	23.49	17.55	1.50	499.92	7,499	155.49	31.10	0	40	20	80
28	1	2023-09-12	10:15:00	23.89	17.88	1.75	498.56	7,478	155.58	31.21	0	40	20	80
29	1	2023-09-12	10:30:00	23.93	17.91	2.00	499.94	7,499	155.85	31.17	0	40	20	80
30	1	2023-09-12	10:45:00	30.58	22.89	2.25	500.31	7,505	155.87	31.16	0	40	20	80
31	1	2023-09-12	11:00:00	23.95	17.89	2.50	500.32	7,505	155.89	31.16	0	40	20	80
32	1	2023-09-12	11:15:00	23.95	17.91	2.75	500.28	7,504	156.24	31.23	0	40	20	80
33	1	2023-09-12	11:30:00	24.05	17.96	3.00	499.09	7,486	156.18	31.29	0	40	20	80
34	1	2023-09-12	11:45:00	24.45	18.28	3.25	500.54	7,508	156.05	31.18	0	40	20	80
35	1	2023-09-12	12:00:00	24.23	18.09	3.50	477.68	7,165	156.05	32.67	0	40	20	80
36	1	2023-09-12	12:15:00	0.83	0.62	3.75	244.70	3,671	26.51	10.83	0	40	20	80
37	1	2023-09-12	12:30:00	20.89	15.62	4.00	285.10	4,277	157.16	55.12	0	40	20	80
42	1	2023-09-12	13:45:00	21.25	15.88	5.25	499.01	37,426	155.10	31.08	0	40	20	80
43	1	2023-09-12	14:00:00	28.00	20.93	5.50	500.44	7,507	154.21	30.82	0	40	20	80
44	1	2023-09-12	14:15:00	21.08	15.75	5.75	500.53	7,508	153.91	30.75	0	40	20	80
45	1	2023-09-12	14:30:00	21.26	15.88	6.00	499.03	7,485	153.75	30.81	0	40	20	80
46	1	2023-09-12	14:45:00	28.93	21.62	6.25	499.16	7,487	153.46	30.74	1	40	20	80
47	1	2023-09-13	08:15:00	21.72	16.23	0.25	499.86	7,498	155.75	31.16	0	40	20	80
48	1	2023-09-13	08:30:00	21.88	16.31	0.50	500.00	7,500	161.36	32.27	0	40	20	80
49	1	2023-09-13	08:45:00	21.89	16.36	0.75	500.15	7,502	160.80	32.15	0	40	20	80
50	1	2023-09-13	09:00:00	21.16	15.81	1.00	500.17	7,503	147.83	29.56	0	40	20	80
51	1	2023-09-13	09:15:00	13.54	10.12	1.25	500.40	7,506	65.55	13.11	0	40	20	80
52	1	2023-09-13	09:30:00	19.58	14.63	1.50	400.36	6,005	142.12	35.50	0	40	20	80
53	1	2023-09-13	09:45:00	19.81	14.79	1.75	400.49	6,007	147.25	36.77	0	40	100	80
54	1	2023-09-13	10:00:00	20.16	15.07	2.00	399.72	5,996	154.16	38.57	0	40	20	80
55	1	2023-09-13	10:15:00	22.12	16.53	2.25	498.68	7,480	151.11	30.30	0	40	20	80
56	1	2023-09-13	10:30:00	23.68	17.70	2.50	698.54	10,478	132.64	18.99	0	40	20	80
57	1	2023-09-13	10:45:00	22.52	16.79	2.75	500.17	7,503	177.79	35.54	0	40	20	80
58	1	2023-09-13	11:00:00	22.50	16.83	3.00	500.31	7,505	176.93	35.37	0	40	20	80
59	1	2023-09-13	11:15:00	22.55	16.86	3.25	500.27	7,504	177.00	35.38	0	40	20	80
60	1	2023-09-13	11:30:00	21.67	16.20	3.50	500.25	7,504	160.74	32.13	0	40	20	80
61	1	2023-09-13	11:45:00	21.64	16.19	3.75	500.43	7,506	160.74	32.12	0	40	20	80
62	1	2023-09-13	12:00:00	21.69	16.24	4.00	498.98	7,485	160.48	32.16	0	40	20	80
63	1	2023-09-13	12:15:00	21.70	16.22	4.25	499.01	7,485	160.21	32.11	0	40	20	80
64	1	2023-09-13	12:30:00	21.61	16.15	4.50	500.54	7,508	160.28	32.02	0	40	20	80
65	1	2023-09-13	12:45:00	28.27	21.13	4.75	499.20	7,488	160.27	32.11	0	40	20	80
66	1	2023-09-13	13:00:00	20.74	15.49	5.00	500.80	7,512	143.20	28.60	1	40	20	80
67	1	2023-09-13	13:15:00	20.76	15.52	5.25	499.35	7,490	142.63	28.56	1	40	20	80
68	1	2023-09-13	13:30:00	21.46	16.03	5.50	500.98	7,515	156.92	31.32	1	40	20	80
69	1	2023-09-13	13:45:00	21.45	16.03	5.75	500.85	7,513	156.87	31.32	1	40	20	80
70	1	2023-09-13	14:00:00	21.63	16.18	6.00	499.28	7,489	156.92	31.44	1	40	20	80
71	1	2023-09-13	14:15:00	20.68	15.46	6.25	499.25	7,489	137.80	27.60	1	40	20	80
72	1	2023-09-13	14:30:00	20.67	15.45	6.50	499.33	7,490	137.57	27.55	1	40	20	80
73	1	2023-09-13	14:45:00	20.46	15.29	6.75	499.47	7,492	137.48	27.53	1	40	20	80
74	1	2023-09-13	15:00:00	20.33	15.20	7.00	500.95	7,514	136.34	27.21	1	40	20	80
75	1	2023-09-13	15:15:00	20.41	15.26	7.25	499.49	7,492	136.17	27.26	2	40	20	80
76	1	2023-09-13	15:30:00	20.74	15.44	7.50	500.78	7,512	135.76	27.10	2	40	20	80
77	1	2023-09-14	09:45:00	22.43	16.75	0.25	500.08	7,501	170.52	34.10	0	40	20	80
78	1	2023-09-14	10:00:00	22.46	16.78	0.50	499.97	7,500	170.63	34.13	1	40	20	80
79	1	2023-09-14	10:15:00	22.34	16.70	0.75	500.28	7,504	170.39	34.06	1	40	20	80
80	1	2023-09-14	10:30:00	22.29	16.65	1.00	499.54	7,493	170.13	34.06	1	40	20	80
81	1	2023-09-14	10:45:00	22.31	16.67	1.25	499.74	7,496	170.87	34.19	2	40	20	80
82	1	2023-09-14	11:00:00	22.30	16.66	1.50	499.88	7,498	170.66	34.14	2	40	20	80

Appendix C1 - SCADA Process Control Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Current Draw (Amps)	Power Use (kW)	Processing Hours	Influent Rate (GPM)	Volume Treated (gallons)	Recycle Flow (GPM)	Recycle Rate (%)	Number of Skim Cycles	Mixer Tank 1 Speed %	Mixer Tank 2 Speed %	Skimmer Drive Speed %
83	1	2023-09-14	11:15:00	22.31	16.67	1.75	500.15	7,502	170.76	34.15	2	40	20	80
84	1	2023-09-14	11:30:00	22.27	16.63	2.00	498.77	7,482	170.22	34.13	2	40	20	80
85	1	2023-09-14	11:45:00	22.38	16.75	2.25	500.40	7,506	170.15	34.00	2	40	20	80
86	1	2023-09-14	12:00:00	22.25	16.64	2.50	500.57	7,509	170.18	34.00	2	40	20	80
87	1	2023-09-14	12:15:00	22.24	16.62	2.75	500.40	7,506	171.04	34.18	2	40	20	80
88	1	2023-09-14	12:30:00	22.20	16.57	3.00	500.60	7,509	171.06	34.17	2	40	20	80
89	1	2023-09-14	12:45:00	22.19	16.60	3.25	499.14	7,487	171.01	34.26	2	40	20	80
90	1	2023-09-14	13:00:00	22.27	16.63	3.50	499.12	7,487	171.02	34.27	2	40	20	80
91	1	2023-09-14	13:15:00	22.17	16.57	3.75	500.87	7,513	171.05	34.15	2	40	20	80
92	1	2023-09-14	13:30:00	22.22	16.60	4.00	500.86	7,513	171.05	34.15	3	40	20	80
93	1	2023-09-14	13:45:00	22.21	16.61	4.25	500.97	7,515	171.05	34.14	3	40	20	80
94	1	2023-09-14	14:00:00	22.19	16.58	4.50	499.41	7,491	170.90	34.22	3	40	20	80
95	1	2023-09-14	14:15:00	22.28	16.65	4.75	499.35	7,490	170.90	34.23	3	40	20	80
96	1	2023-09-14	14:30:00	32.76	24.46	5.00	699.49	10,492	170.89	24.44	4	40	20	80
97	1	2023-09-14	14:45:00	22.33	16.69	5.25	500.92	7,514	171.09	34.15	4	50	30	80
98	1	2023-09-14	15:00:00	22.40	16.73	5.50	499.36	7,490	171.40	34.32	5	50	30	80
99	1	2023-09-15	12:00:00	22.89	17.09	0.25	500.07	7,501	172.25	34.44	0	50	30	80
100	1	2023-09-15	12:15:00	22.69	16.95	0.50	500.33	7,505	172.33	34.44	0	40	20	80
101	1	2023-09-15	12:30:00	22.57	16.87	0.75	500.07	7,501	172.02	34.40	0	40	20	80
102	1	2023-09-15	12:45:00	28.98	21.71	1.00	500.13	7,502	172.34	34.45	0	40	20	80
103	1	2023-09-15	13:00:00	22.37	16.72	1.25	500.54	7,508	172.37	34.44	0	40	20	80
104	1	2023-09-15	13:15:00	22.36	16.71	1.50	500.60	7,509	172.41	34.43	0	40	20	80
105	1	2023-09-15	13:30:00	22.32	16.68	1.75	498.90	7,484	172.13	34.50	0	40	20	80
106	1	2023-09-15	13:45:00	22.43	16.77	2.00	499.18	7,488	172.43	34.55	0	40	20	80
107	1	2023-09-15	14:00:00	22.36	16.71	2.25	499.35	7,490	172.18	34.48	0	40	20	80
108	1	2023-09-15	14:15:00	22.39	16.73	2.50	500.96	7,514	172.21	34.37	0	40	20	80
109	1	2023-09-15	14:30:00	22.42	16.75	2.75	499.25	7,489	172.48	34.54	0	40	20	80
110	1	2023-09-15	14:45:00	22.24	16.62	3.00	501.00	7,515	170.32	34.00	0	40	20	80
111	1	2023-09-15	15:00:00	22.28	16.64	3.25	500.00	7,500	170.58	34.09	0	40	20	80
112	1	2023-09-15	15:15:00	22.27	16.69	3.50	499.27	7,489	170.54	34.16	0	40	20	80
113	1	2023-09-15	15:30:00	22.28	16.65	3.75	501.27	7,519	170.55	34.02	0	40	20	80
114	1	2023-09-15	15:45:00	22.32	16.66	4.00	499.57	7,494	170.57	34.15	0	40	20	80
115	1	2023-09-15	16:00:00	22.32	16.67	4.25	499.39	7,491	170.62	34.17	0	40	20	80
116	1	2023-09-15	16:15:00	22.39	16.78	4.50	499.51	7,493	168.34	33.70	1	40	20	80
117	1	2023-09-15	16:30:00	22.18	16.55	4.75	499.63	7,494	168.35	33.69	2	40	20	80
118	2	2023-09-26	09:30:00	27.24	20.35	0.25	699.79	10,497	172.46	24.64	0	40	20	60
119	2	2023-09-26	09:45:00	23.06	17.22	0.50	500.24	7,504	172.57	34.50	0	40	20	60
120	2	2023-09-26	10:00:00	21.72	16.24	0.75	399.31	5,990	175.67	43.99	0	40	20	60
121	2	2023-09-26	10:15:00	21.63	16.16	1.00	400.50	6,008	173.77	43.39	0	40	20	60
122	2	2023-09-26	10:30:00	21.53	16.09	1.25	400.69	6,010	173.73	43.36	0	40	20	60
123	2	2023-09-26	10:45:00	21.58	16.13	1.50	399.83	5,997	173.75	43.46	0	40	20	60
124	2	2023-09-26	11:00:00	21.46	16.05	1.75	400.86	6,013	173.77	43.35	0	40	20	60
125	2	2023-09-26	11:15:00	21.50	16.07	2.00	400.11	6,002	173.87	43.45	0	40	20	60
126	2	2023-09-26	11:30:00	21.51	16.08	2.25	400.10	6,002	173.81	43.44	0	40	20	60
127	2	2023-09-26	11:45:00	21.49	16.06	2.50	400.24	6,004	173.92	43.44	0	40	20	60
128	2	2023-09-26	12:00:00	21.54	16.10	2.75	400.22	6,003	173.85	43.44	0	40	20	60
129	2	2023-09-26	12:15:00	21.47	16.05	3.00	397.62	5,964	173.89	43.73	0	40	20	60
130	2	2023-09-26	12:30:00	21.14	15.81	3.25	400.52	6,008	168.29	42.02	0	40	20	60
131	2	2023-09-26	12:45:00	21.15	15.81	3.50	400.47	6,007	168.30	42.02	0	40	20	60
132	2	2023-09-26	13:00:00	21.25	15.89	3.75	400.56	6,008	169.93	42.42	0	40	20	60
133	2	2023-09-26	13:15:00	22.72	16.98	4.00	499.32	7,490	169.67	33.98	0	40	20	60
134	2	2023-09-26	13:30:00	29.51	22.09	4.25	500.62	7,509	169.34	33.83	0	40	20	60
135	2	2023-09-26	13:45:00	24.19	18.07	4.50	499.27	7,489	172.19	34.49	0	40	20	60
136	2	2023-09-26	14:00:00	29.61	22.20	4.75	500.65	7,510	172.19	34.39	0	40	20	60
137	2	2023-09-26	14:15:00	23.14	17.29	5.00	499.26	7,489	175.09	35.07	0	40	20	60
138	2	2023-09-26	14:30:00	21.60	16.12	5.25	400.32	6,005	171.86	42.93	0	40	20	60
139	2	2023-09-26	14:45:00	21.42	16.00	5.50	400.33	6,005	170.76	42.66	0	40	20	60
140	2	2023-09-26	15:00:00	21.40	15.99	5.75	400.34	6,005	170.77	42.66	0	40	20	60
141	2	2023-09-26	15:15:00	22.46	16.79	6.00	419.02	6,285	170.55	40.70	0	40	20	60
142	2	2023-09-26	15:30:00	22.73	17.01	6.25	500.81	7,512	170.29	34.00	0	40	20	60
143	2	2023-09-26	15:45:00	22.76	17.02	6.50	499.34	7,490	169.44	33.93	0	40	20	60
144	2	2023-09-26	16:00:00	24.08	17.99	6.75	500.67	7,510	168.50	33.65	0	40	20	60
145	2	2023-09-26	16:15:00	22.72	16.96	7.00	500.77	7,512	168.52	33.65	1	40	20	60
146	2	2023-09-27	08:45:00	22.71	16.98	0.25	451.37	6,771	168.30	37.29	0	40	20	60
147	2	2023-09-27	09:00:00	21.44	16.02	0.50	399.87	5,998	167.18	41.81	0	40	20	60
148	2	2023-09-27	09:15:00	29.66	22.14	0.75	500.01	7,500	168.50	33.70	0	40	20	60
149	2	2023-09-27	09:30:00	21.40	16.00	1.00	398.99	5,985	167.77	42.05	0	40	20	60
150	2	2023-09-27	09:45:00	20.26	15.14	1.25	300.27	4,504	167.68	55.85	0	40	20	60
151	2	2023-09-27	10:00:00	20.58	15.39	1.50	299.49	4,492	173.42	57.90	0	40	20	60
152	2	2023-09-27	10:15:00	20.44	15.28	1.75	300.51	4,508	173.17	57.64	0	40	20	60
153	2	2023-09-27	10:30:00	20.61	15.39	2.00	299.79	4,497	172.97	57.71	0	40	20	60
154	2	2023-09-27	10:45:00	20.56	15.37	2.25	299.78	4,497	172.99	57.71	0	40	20	60
155	2	2023-09-27	11:00:00	20.51	15.32	2.50	298.45	4,477	173.20	58.04	0	40	20	60
156	2	2023-09-27	12:45:00	20.45	15.28	0.25	299.87	4,498	171.28	57.12	1	40	20	60
157	2	2023-09-27	13:00:00	20.43	15.27	0.50	299.76	4,496	171.55	57.23	1	40	20	60
158	2	2023-09-27	13:15:00	20.43	15.27	0.75	300.03	4,500	171.57	57.19	1	40	20	60
159	2	2023-09-27	13:30:00	20.44	15.27	1.00	298.59	4,479	171.57	57.46	1	40	20	60
160	2	2023-09-27	13:45:00	20.40	15.23	1.25	298.69	4,480	171.82	57.51	1	40	20	60

Appendix C1 - SCADA Process Control Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Current Draw (Amps)	Power Use (kW)	Processing Hours	Influent Rate (GPM)	Volume Treated (gallons)	Recycle Flow (GPM)	Recycle Rate (%)	Number of Skim Cycles	Mixer Tank 1 Speed %	Mixer Tank 2 Speed %	Skimmer Drive Speed %
161	2	2023-09-27	14:00:00	20.36	15.21	1.50	300.24	4,504	171.82	57.23	1	40	20	60
162	2	2023-09-27	14:15:00	20.43	15.27	1.75	300.14	4,502	171.84	57.26	1	40	20	60
163	2	2023-09-27	14:30:00	20.44	15.29	2.00	300.17	4,503	171.90	57.24	1	40	20	60
164	2	2023-09-27	14:45:00	20.44	15.27	2.25	301.23	4,518	171.82	57.05	1	40	20	60
165	2	2023-09-27	15:00:00	20.36	15.21	2.50	300.18	4,503	171.84	57.25	2	40	20	60
166	2	2023-09-27	15:15:00	20.49	15.31	2.75	300.46	4,507	173.56	57.76	2	40	20	60
167	2	2023-09-27	15:30:00	20.41	15.26	3.00	300.25	4,504	171.28	57.04	3	40	20	60
168	2	2023-09-28	08:45:00	23.15	17.30	0.25	499.87	7,498	111.84	22.37	0	40	20	60
169	2	2023-09-28	09:00:00	23.09	17.25	0.50	499.97	7,500	107.05	21.41	0	40	20	60
170	2	2023-09-28	09:15:00	20.81	15.56	0.75	299.22	4,488	113.95	38.08	0	40	20	60
171	2	2023-09-28	09:30:00	20.94	15.64	1.00	299.25	4,489	111.55	37.28	1	40	20	60
172	2	2023-09-28	09:45:00	20.78	15.53	1.25	299.49	4,492	116.18	38.79	1	40	20	60
173	2	2023-09-28	10:00:00	20.85	15.59	1.50	300.30	4,505	113.66	37.84	1	40	20	60
174	2	2023-09-28	10:15:00	20.53	15.33	1.75	299.61	4,494	115.38	38.52	1	40	20	60
175	2	2023-09-28	10:30:00	20.63	15.42	2.00	300.51	4,508	112.08	37.30	1	40	20	60
176	2	2023-09-28	10:45:00	27.21	20.39	2.25	299.74	4,496	111.71	37.27	1	40	20	60
177	2	2023-09-28	11:00:00	20.67	15.45	2.50	300.54	4,508	114.43	38.08	1	40	20	60
178	2	2023-09-28	11:15:00	20.52	15.35	2.75	299.87	4,498	119.35	39.75	1	40	20	60
179	2	2023-09-28	11:30:00	20.57	15.38	3.00	298.90	4,484	120.33	40.31	1	40	20	60
180	2	2023-09-28	11:45:00	20.62	15.38	3.25	300.14	4,502	112.79	37.55	1	40	20	60
181	2	2023-09-28	12:00:00	20.56	15.37	3.50	300.13	4,502	111.71	37.22	1	40	20	60
182	2	2023-09-28	12:15:00	20.50	15.32	3.75	300.35	4,505	119.71	39.86	1	40	20	60
183	2	2023-09-28	12:30:00	20.61	15.35	4.00	298.70	4,481	116.15	38.88	1	40	20	60
184	2	2023-09-28	12:45:00	20.57	15.37	4.25	300.48	4,507	126.40	42.07	1	40	20	60
185	2	2023-09-28	13:00:00	20.57	15.32	4.50	300.43	4,506	118.58	39.46	2	40	20	60
186	2	2023-09-28	13:15:00	20.55	15.34	4.75	300.59	4,509	117.86	39.22	2	40	20	60
187	2	2023-09-28	13:30:00	20.53	15.34	5.00	300.70	4,511	113.31	37.68	2	40	20	60
188	2	2023-09-28	13:45:00	20.58	15.38	5.25	299.01	4,485	118.96	39.78	2	40	20	60
189	2	2023-09-28	14:00:00	20.56	15.36	5.50	300.78	4,512	117.25	38.98	2	40	20	60
190	2	2023-09-28	14:15:00	20.50	15.32	5.75	300.85	4,513	114.12	37.94	2	40	20	60
191	2	2023-09-28	14:30:00	20.55	15.36	6.00	300.73	4,511	114.41	38.04	2	40	20	60
192	2	2023-09-28	14:45:00	20.56	15.37	6.25	300.73	4,511	114.18	37.97	2	40	20	60
193	2	2023-09-28	15:00:00	20.52	15.34	6.50	300.79	4,512	111.12	36.95	2	40	20	60
194	2	2023-09-28	15:15:00	20.54	15.35	6.75	300.60	4,509	116.71	38.83	2	40	20	60
195	2	2023-09-28	15:30:00	20.50	15.32	7.00	299.04	4,486	109.08	36.49	2	40	20	60
196	2	2023-09-28	15:45:00	20.51	15.33	7.25	301.30	4,520	112.82	37.45	2	40	20	60
197	2	2023-09-28	16:00:00	20.63	15.42	7.50	300.56	4,508	112.97	37.59	2	40	20	60
198	2	2023-09-28	16:15:00	20.61	15.40	7.75	299.02	4,485	113.55	37.97	2	40	20	60
199	2	2023-09-28	16:30:00	27.39	20.42	8.00	300.69	4,510	114.52	38.09	2	40	20	60
200	2	2023-09-28	16:45:00	20.58	15.38	8.25	300.49	4,507	115.55	38.45	2	40	20	60
201	2	2023-09-28	17:00:00	20.63	15.42	8.50	300.71	4,511	115.09	38.27	2	40	20	60
202	2	2023-09-28	17:15:00	20.82	15.56	8.75	300.62	4,509	116.43	38.73	3	40	20	60
203	2	2023-09-28	17:30:00	22.98	17.19	9.00	499.55	7,493	120.30	24.10	3	40	20	60
204	2	2023-09-28	17:45:00	29.85	22.38	9.25	500.61	7,509	112.23	22.42	4	40	20	60
205	2	2023-09-29	08:45:00	27.50	20.56	0.25	299.97	4,500	113.09	37.70	0	40	20	60
206	2	2023-09-29	09:00:00	20.80	15.55	0.50	299.90	4,499	114.45	38.16	0	40	20	60
207	2	2023-09-29	09:15:00	20.73	15.50	0.75	299.12	4,487	118.28	39.55	0	40	20	60
208	2	2023-09-29	09:30:00	20.67	15.45	1.00	300.15	4,502	118.48	39.47	0	40	20	60
209	2	2023-09-29	09:45:00	20.64	15.42	1.25	300.28	4,504	117.16	39.02	0	40	20	60
210	2	2023-09-29	10:00:00	20.63	15.39	1.50	299.49	4,492	116.26	38.82	0	40	20	60
211	2	2023-09-29	10:15:00	20.66	15.44	1.75	299.62	4,494	114.35	38.17	0	40	20	60
212	2	2023-09-29	10:30:00	21.92	16.40	2.00	299.72	4,496	116.28	38.77	0	40	20	60
213	2	2023-09-29	10:45:00	27.09	20.25	2.25	299.71	4,496	119.15	39.75	0	40	20	60
214	2	2023-09-29	11:00:00	20.49	15.32	2.50	299.68	4,495	114.56	38.23	1	40	20	60
215	2	2023-09-29	11:15:00	20.05	15.00	2.75	300.16	4,502	114.59	38.18	1	40	20	60
216	2	2023-09-29	11:30:00	19.77	14.77	3.00	298.52	4,478	107.87	36.13	2	40	20	60
217	2	2023-09-29	11:45:00	19.68	14.72	3.25	300.91	4,514	107.01	35.57	2	40	20	60
218	2	2023-09-29	12:00:00	19.68	14.70	3.50	300.32	4,505	108.38	36.08	2	40	20	60
219	2	2023-09-29	12:15:00	19.52	14.58	3.75	300.36	4,505	111.77	37.21	3	40	20	60
220	2	2023-09-29	12:30:00	19.57	14.63	4.00	300.51	4,508	108.67	36.16	3	40	20	60
221	2	2023-09-29	12:45:00	19.54	14.60	4.25	299.04	4,486	109.41	36.59	3	40	20	60
222	2	2023-09-29	13:00:00	19.57	14.63	4.50	300.51	4,508	105.67	35.16	3	40	20	60
223	2	2023-09-29	13:15:00	21.12	15.77	4.75	298.89	4,483	108.22	36.21	4	40	20	60
224	2	2023-09-29	13:30:00	19.60	14.64	5.00	298.90	4,484	106.76	35.72	4	40	20	60
225	2	2023-09-29	13:45:00	21.03	15.71	5.25	300.76	4,511	108.71	36.14	4	40	20	60
226	2	2023-09-29	14:00:00	19.55	14.65	5.50	300.67	4,510	107.32	35.70	4	40	20	60
227	2	2023-09-29	14:15:00	20.47	15.30	5.75	301.39	4,521	117.92	39.13	5	40	20	60
228	2	2023-09-29	14:30:00	20.38	15.23	6.00	300.54	4,508	118.97	39.59	5	40	20	60
229	2	2023-09-29	14:45:00	27.00	20.18	6.25	613.83	9,207	119.61	19.49	6	40	20	60
230	2	2023-09-29	15:00:00	23.22	17.34	6.50	500.37	7,506	118.48	23.68	7	40	20	60
231	3	2023-10-16	09:00:00	20.19	15.09	0.25	300.73	4,511	162.29	53.96	0	40	20	60
232	3	2023-10-16	09:15:00	20.15	15.05	0.50	299.45	4,492	162.05	54.12	0	40	20	60
233	3	2023-10-16	09:30:00	20.16	15.07	0.75	299.79	4,497	161.92	54.03	0	40	20	60
234	3	2023-10-16	09:45:00	20.06	15.00	1.00	299.88	4,498	161.93	54.00	0	40	20	60
235	3	2023-10-16	10:00:00	20.07	15.01	1.25	299.88	4,498	161.97	54.01	0	40	20	60
236	3	2023-10-16	10:15:00	20.02	14.97	1.50	299.89	4,498	162.12	54.05	0	40	20	60
237	3	2023-10-16	10:30:00	20.12	15.04	1.75	300.11	4,502	162.12	54.02	0	40	20	60
238	3	2023-10-16	10:45:00	20.06	14.99	2.00	300.00	4,500	161.97	53.99	0	40	20	60

Appendix C1 - SCADA Process Control Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Current Draw (Amps)	Power Use (kW)	Processing Hours	Influent Rate (GPM)	Volume Treated (gallons)	Recycle Flow (GPM)	Recycle Rate (%)	Number of Skim Cycles	Mixer Tank 1 Speed %	Mixer Tank 2 Speed %	Skimmer Drive Speed %
239	3	2023-10-16	11:00:00	20.08	15.01	2.25	299.85	4,498	162.12	54.07	0	40	20	60
240	3	2023-10-16	11:15:00	20.04	14.99	2.50	301.51	4,523	162.01	53.73	0	40	20	60
241	3	2023-10-16	11:30:00	20.03	14.98	2.75	300.00	4,500	161.97	54.00	0	40	20	60
242	3	2023-10-16	11:45:00	20.02	14.98	3.00	299.93	4,499	162.55	54.18	0	40	20	60
243	3	2023-10-16	12:00:00	20.05	14.96	3.25	300.21	4,503	162.56	54.17	0	40	20	60
244	3	2023-10-16	12:15:00	20.02	14.95	3.50	300.21	4,503	162.58	54.16	0	40	20	60
245	3	2023-10-16	12:30:00	20.02	14.97	3.75	299.12	4,487	162.74	54.41	0	40	20	60
246	3	2023-10-16	12:45:00	20.06	15.01	4.00	299.02	4,485	162.73	54.41	0	40	20	60
247	3	2023-10-16	13:00:00	20.04	14.98	4.25	300.11	4,502	162.74	54.23	0	40	20	60
248	3	2023-10-16	13:15:00	20.02	14.97	4.50	300.12	4,502	162.75	54.20	0	40	20	60
249	3	2023-10-16	13:30:00	20.07	15.00	4.75	300.12	4,502	162.75	54.23	0	40	20	60
250	3	2023-10-16	13:45:00	20.10	15.03	5.00	299.30	4,490	162.77	54.38	0	40	20	60
251	3	2023-10-16	14:00:00	27.33	20.33	5.25	300.37	4,506	162.78	54.19	1	40	20	60
252	3	2023-10-16	14:15:00	20.09	15.03	5.50	300.12	4,502	162.77	54.24	2	40	20	60
253	3	2023-10-16	14:30:00	20.14	15.04	5.75	300.20	4,503	162.76	54.20	2	40	20	60
254	3	2023-10-16	14:45:00	27.08	20.16	6.00	300.38	4,506	162.79	54.19	3	40	20	60
255	3	2023-10-17	08:30:00	20.64	15.41	0.25	298.93	4,484	164.04	54.89	0	40	20	60
256	3	2023-10-17	08:45:00	20.50	15.34	0.50	300.51	4,508	163.77	54.50	0	40	20	60
257	3	2023-10-17	09:00:00	20.35	15.22	0.75	300.59	4,509	164.14	54.61	0	40	20	60
258	3	2023-10-17	09:15:00	20.33	15.20	1.00	299.53	4,493	164.63	54.96	0	40	20	60
259	3	2023-10-17	09:30:00	20.29	15.17	1.25	299.55	4,493	164.64	54.95	0	40	20	60
260	3	2023-10-17	09:45:00	20.22	15.12	1.50	301.53	4,523	164.67	54.61	0	40	20	60
261	3	2023-10-17	10:00:00	20.33	15.19	1.75	299.83	4,497	164.81	54.97	0	40	20	60
262	3	2023-10-17	10:15:00	20.32	15.19	2.00	301.42	4,521	164.84	54.69	0	40	20	60
263	3	2023-10-17	10:30:00	20.36	15.22	2.25	299.99	4,500	164.73	54.92	0	40	20	60
264	3	2023-10-17	10:45:00	20.26	15.13	2.50	300.04	4,501	164.71	54.91	0	40	20	60
265	3	2023-10-17	11:00:00	20.37	15.22	2.75	298.82	4,482	164.71	55.12	0	40	20	60
266	3	2023-10-17	11:15:00	20.34	15.20	3.00	300.13	4,502	164.70	54.87	0	40	20	60
267	3	2023-10-17	11:30:00	20.30	15.17	3.25	300.00	4,500	164.42	54.81	0	40	20	60
268	3	2023-10-17	11:45:00	20.26	15.13	3.50	300.00	4,500	164.51	54.85	0	40	20	60
269	3	2023-10-17	12:00:00	20.26	15.17	3.75	301.61	4,524	164.71	54.62	0	40	20	60
270	3	2023-10-17	12:15:00	20.18	15.09	4.00	299.92	4,499	164.54	54.87	0	40	20	60
271	3	2023-10-17	12:30:00	20.31	15.18	4.25	299.16	4,487	164.56	55.01	0	40	20	60
272	3	2023-10-17	12:45:00	20.25	15.14	4.50	299.25	4,489	164.76	55.06	0	40	20	60
273	3	2023-10-17	13:00:00	27.40	20.33	4.75	300.05	4,501	164.55	54.82	0	40	20	60
274	3	2023-10-17	13:15:00	20.29	15.17	5.00	300.22	4,503	164.55	54.81	0	40	20	60
275	3	2023-10-17	13:30:00	20.28	15.16	5.25	299.33	4,490	164.77	55.06	0	40	20	60
276	3	2023-10-17	13:45:00	20.28	15.16	5.50	302.00	4,530	164.79	54.57	0	40	20	60
277	3	2023-10-17	14:00:00	20.29	15.16	5.75	300.19	4,503	164.57	54.82	0	40	20	60
278	3	2023-10-17	14:15:00	20.30	15.15	6.00	299.40	4,491	164.57	54.96	0	40	20	60
279	3	2023-10-17	14:30:00	20.22	15.12	6.25	300.37	4,506	164.60	54.81	0	40	20	60
280	3	2023-10-17	14:45:00	20.27	15.14	6.50	299.54	4,493	164.79	55.02	1	40	20	60
281	3	2023-10-18	08:45:00	20.54	15.36	0.25	299.06	4,486	164.13	54.89	0	40	20	60
282	3	2023-10-18	09:00:00	20.41	15.26	0.50	299.47	4,492	164.41	54.90	0	40	20	60
283	3	2023-10-18	09:15:00	20.36	15.22	0.75	299.46	4,492	164.79	55.03	0	40	30	60
284	3	2023-10-18	09:30:00	20.42	15.26	1.00	299.63	4,494	164.82	55.00	0	40	30	60
285	3	2023-10-18	09:45:00	20.38	15.23	1.25	299.95	4,499	164.84	54.98	0	40	30	60
286	3	2023-10-18	10:00:00	20.33	15.19	1.50	301.41	4,521	164.73	54.65	0	40	30	60
287	3	2023-10-18	10:15:00	20.34	15.20	1.75	300.08	4,501	164.54	54.83	0	40	30	60
288	3	2023-10-18	10:30:00	20.39	15.24	2.00	299.88	4,498	164.53	54.86	0	40	30	60
289	3	2023-10-18	10:45:00	20.35	15.21	2.25	299.06	4,486	164.58	55.04	0	40	30	60
290	3	2023-10-18	11:00:00	20.33	15.20	2.50	301.45	4,522	164.55	54.58	0	40	30	60
291	3	2023-10-18	11:15:00	20.33	15.18	2.75	300.02	4,500	164.56	54.83	0	40	30	60
292	3	2023-10-18	11:30:00	20.36	15.20	3.00	299.90	4,499	164.56	54.86	0	40	30	60
293	3	2023-10-18	11:45:00	27.60	20.51	3.25	297.63	4,464	164.47	55.28	0	40	30	60
294	3	2023-10-18	12:00:00	20.35	15.21	3.50	300.17	4,503	164.47	54.82	0	40	30	60
295	3	2023-10-18	12:15:00	20.37	15.21	3.75	300.31	4,505	164.50	54.80	0	40	30	60
296	3	2023-10-18	12:30:00	20.38	15.23	4.00	300.19	4,503	164.49	54.79	0	40	30	60
297	3	2023-10-18	12:45:00	20.26	15.15	4.25	300.28	4,504	164.57	54.79	0	40	30	60
298	3	2023-10-18	13:00:00	20.36	15.22	4.50	300.27	4,504	164.59	54.83	0	40	30	60
299	3	2023-10-18	13:15:00	20.35	15.21	4.75	301.93	4,529	164.50	54.48	0	40	30	60
300	3	2023-10-18	13:30:00	20.31	15.18	5.00	300.42	4,506	164.59	54.79	0	40	30	60
301	3	2023-10-18	13:45:00	20.26	15.15	5.25	300.22	4,503	164.58	54.82	0	40	30	60
302	3	2023-10-18	14:00:00	20.30	15.17	5.50	300.23	4,503	164.62	54.83	0	40	30	60
303	3	2023-10-18	14:15:00	27.56	20.60	5.75	300.33	4,505	164.61	54.81	0	40	30	60
304	3	2023-10-18	14:30:00	20.48	15.30	6.00	301.95	4,529	164.80	54.57	0	40	30	60
305	3	2023-10-18	14:45:00	20.34	15.18	6.25	299.35	4,490	164.82	55.07	2	40	30	60
306	3	2023-10-18	15:00:00	20.31	15.19	6.50	299.38	4,491	164.61	54.98	3	40	30	60
307	3	2023-10-19	09:15:00	20.58	15.38	0.25	299.58	4,494	164.47	54.90	0	40	30	60
308	3	2023-10-19	09:30:00	20.48	15.31	0.50	298.84	4,483	164.83	55.15	0	40	30	60
309	3	2023-10-19	09:45:00	20.86	15.58	0.75	298.82	4,482	164.72	55.13	0	40	60	60
310	3	2023-10-19	10:00:00	20.68	15.42	1.00	300.05	4,501	164.73	54.92	0	40	60	60
311	3	2023-10-19	10:15:00	20.61	15.42	1.25	300.10	4,502	164.74	54.89	0	40	60	60
312	3	2023-10-19	10:30:00	20.67	15.45	1.50	299.98	4,500	164.75	54.91	0	40	60	60
313	3	2023-10-19	10:45:00	20.65	15.44	1.75	300.25	4,504	164.56	54.82	0	40	60	60
314	3	2023-10-19	11:00:00	20.62	15.42	2.00	300.17	4,503	164.47	54.79	0	40	60	60
315	3	2023-10-19	11:15:00	20.61	15.42	2.25	300.37	4,506	164.31	54.71	0	40	60	60
316	3	2023-10-19	11:30:00	17.87	13.36	2.50	1.24	19	164.48	0.00	0	40	60	60

Appendix C1 - SCADA Process Control Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Current Draw (Amps)	Power Use (kW)	Processing Hours	Influent Rate (GPM)	Volume Treated (gallons)	Recycle Flow (GPM)	Recycle Rate (%)	Number of Skim Cycles	Mixer Tank 1 Speed %	Mixer Tank 2 Speed %	Skimmer Drive Speed %
317	3	2023-10-19	11:45:00	20.55	15.37	2.75	300.28	4,504	164.48	54.77	0	40	60	60
318	3	2023-10-19	12:00:00	20.30	15.16	3.00	299.34	4,490	164.31	54.89	0	40	20	60
319	3	2023-10-19	12:15:00	20.21	15.11	3.25	300.31	4,505	163.18	54.33	0	40	20	60
320	3	2023-10-19	12:30:00	20.17	15.07	3.50	300.49	4,507	163.07	54.28	0	40	20	60
321	3	2023-10-19	12:45:00	20.12	15.04	3.75	299.51	4,493	163.08	54.44	0	40	20	60
322	3	2023-10-19	13:00:00	20.16	15.06	4.00	300.55	4,508	163.10	54.25	0	40	20	60
323	3	2023-10-19	13:15:00	20.13	15.04	4.25	300.43	4,506	163.10	54.29	0	40	20	60
324	3	2023-10-19	13:30:00	20.15	15.06	4.50	299.70	4,496	163.11	54.42	0	40	20	60
325	3	2023-10-19	13:45:00	20.15	15.06	4.75	300.56	4,508	163.24	54.31	0	40	20	60
326	3	2023-10-19	14:00:00	27.08	20.25	5.00	300.78	4,512	163.21	54.27	0	40	20	60
327	3	2023-10-19	14:15:00	20.26	15.12	5.25	299.83	4,497	163.24	54.46	0	40	20	60
328	3	2023-10-19	14:30:00	20.18	15.07	5.50	299.86	4,498	163.24	54.44	0	40	20	60
329	3	2023-10-19	14:45:00	20.12	15.05	5.75	299.83	4,497	163.24	54.45	0	40	20	60
330	3	2023-10-19	15:00:00	20.14	15.05	6.00	300.76	4,511	163.51	54.37	1	40	20	50
331	3	2023-10-20	08:30:00	20.54	15.35	0.25	299.14	4,487	163.61	54.69	0	40	20	50
332	3	2023-10-20	08:45:00	20.47	15.28	0.50	299.56	4,493	163.31	54.54	0	40	30	50
333	3	2023-10-20	09:00:00	20.42	15.26	0.75	299.62	4,494	163.68	54.63	0	40	30	50
334	3	2023-10-20	09:15:00	20.43	15.27	1.00	299.95	4,499	163.70	54.56	0	40	30	50
335	3	2023-10-20	09:30:00	20.42	15.27	1.25	300.16	4,502	163.72	54.56	0	40	30	50
336	3	2023-10-20	09:45:00	20.36	15.21	1.50	299.95	4,499	163.87	54.63	0	40	30	50
337	3	2023-10-20	10:00:00	20.32	15.20	1.75	299.01	4,485	163.75	54.76	0	40	30	50
338	3	2023-10-20	10:15:00	20.31	15.17	2.00	299.29	4,489	163.77	54.73	0	40	30	50
339	3	2023-10-20	10:30:00	20.30	15.17	2.25	299.38	4,491	163.47	54.60	0	40	30	50
340	3	2023-10-20	10:45:00	20.27	15.14	2.50	300.30	4,505	163.68	54.49	0	40	30	50
341	3	2023-10-20	11:00:00	20.36	15.21	2.75	299.60	4,494	163.49	54.57	0	40	30	50
342	3	2023-10-20	11:15:00	20.18	15.08	3.00	300.50	4,508	163.48	54.40	0	40	30	50
343	3	2023-10-20	11:30:00	20.24	15.13	3.25	299.61	4,494	163.50	54.57	0	40	30	50
344	3	2023-10-20	11:45:00	20.20	15.09	3.50	299.76	4,496	163.51	54.55	0	40	30	50
345	3	2023-10-20	12:00:00	20.29	15.16	3.75	299.58	4,494	163.53	54.58	0	40	30	50
346	3	2023-10-20	12:15:00	20.22	15.10	4.00	299.87	4,498	163.55	54.55	0	40	30	50
347	3	2023-10-20	12:30:00	20.24	15.13	4.25	299.85	4,498	163.46	54.51	0	40	30	50
348	3	2023-10-20	12:45:00	20.27	15.14	4.50	300.58	4,509	163.55	54.41	0	40	30	50
349	3	2023-10-20	13:00:00	20.21	15.10	4.75	299.84	4,498	163.46	54.51	0	40	30	50
350	3	2023-10-20	13:15:00	20.25	15.12	5.00	299.89	4,498	163.47	54.52	0	40	30	50
351	3	2023-10-20	13:30:00	20.21	15.13	5.25	298.25	4,474	163.29	54.72	0	40	30	50
352	3	2023-10-20	13:45:00	22.65	16.93	5.50	499.84	7,498	163.48	32.71	1	40	30	50
353	3	2023-10-20	14:00:00	22.18	16.58	5.75	499.94	7,499	162.43	32.49	1	40	30	50
354	4	2023-10-23	09:30:00	20.87	15.60	0.25	299.43	4,491	164.78	55.04	0	50	30	50
355	4	2023-10-23	09:45:00	21.31	15.91	0.50	299.72	4,496	172.92	57.69	0	50	30	50
356	4	2023-10-23	10:00:00	21.14	15.79	0.75	299.83	4,497	172.82	57.62	0	50	30	50
357	4	2023-10-23	10:15:00	21.04	15.72	1.00	299.90	4,499	172.54	57.56	0	50	30	50
358	4	2023-10-23	10:30:00	20.99	15.69	1.25	300.11	4,502	172.46	57.47	0	50	30	50
359	4	2023-10-23	10:45:00	20.95	15.65	1.50	299.30	4,490	172.48	57.63	0	50	30	50
360	4	2023-10-23	11:00:00	20.87	15.60	1.75	300.12	4,502	172.20	57.38	0	50	30	50
361	4	2023-10-23	11:15:00	20.91	15.62	2.00	300.19	4,503	171.96	57.28	0	50	30	50
362	4	2023-10-23	11:30:00	20.84	15.58	2.25	299.64	4,495	171.93	57.38	0	50	30	50
363	4	2023-10-23	11:45:00	20.79	15.54	2.50	300.31	4,505	171.95	57.26	0	50	30	50
364	4	2023-10-23	12:00:00	20.86	15.59	2.75	299.71	4,496	171.97	57.37	0	50	30	50
365	4	2023-10-23	12:15:00	27.50	20.46	3.00	300.02	4,500	171.96	57.32	0	50	30	50
366	4	2023-10-23	12:30:00	20.73	15.50	3.25	299.92	4,499	171.98	57.34	0	50	30	50
367	4	2023-10-23	12:45:00	20.74	15.52	3.50	299.93	4,499	172.01	57.35	0	50	30	50
368	4	2023-10-23	13:00:00	20.79	15.54	3.75	300.09	4,501	171.82	57.26	0	50	30	50
369	4	2023-10-23	13:15:00	20.75	15.51	4.00	298.52	4,478	171.83	57.54	0	50	30	50
370	4	2023-10-23	13:30:00	20.71	15.49	4.25	300.15	4,502	171.83	57.24	0	50	30	50
371	4	2023-10-23	13:45:00	20.78	15.53	4.50	300.19	4,503	172.03	57.30	0	50	30	50
372	4	2023-10-23	14:00:00	20.79	15.53	4.75	300.94	4,514	171.86	57.11	0	50	30	50
373	4	2023-10-23	14:15:00	20.77	15.52	5.00	298.75	4,481	171.80	57.50	0	50	30	50
374	4	2023-10-23	14:30:00	20.71	15.50	5.25	300.38	4,506	171.86	57.23	0	50	30	50
375	4	2023-10-23	14:45:00	27.56	20.57	5.50	300.20	4,503	171.79	57.23	0	50	30	50
376	4	2023-10-23	15:00:00	20.72	15.48	5.75	300.14	4,502	171.84	57.25	0	50	30	50
377	4	2023-10-23	15:15:00	20.76	15.51	6.00	300.04	4,501	171.78	57.25	0	50	30	50
378	4	2023-10-23	15:30:00	26.23	19.55	6.25	699.83	10,497	171.83	24.55	1	50	30	50
379	4	2023-10-24	09:00:00	23.49	17.56	0.25	500.04	7,501	174.99	35.00	1	50	30	50
380	4	2023-10-24	09:15:00	23.04	17.22	0.50	500.14	7,502	172.78	34.55	1	50	30	50
381	4	2023-10-24	09:30:00	23.09	17.26	0.75	499.44	7,492	172.61	34.56	1	50	30	50
382	4	2023-10-24	09:45:00	23.06	17.24	1.00	499.71	7,496	172.25	34.47	1	50	30	50
383	4	2023-10-24	10:00:00	22.18	16.58	1.25	499.78	7,497	157.48	31.51	2	50	30	50
384	4	2023-10-24	10:15:00	22.20	16.59	1.50	499.97	7,500	157.12	31.43	2	50	30	50
385	4	2023-10-24	10:30:00	22.15	16.56	1.75	500.11	7,502	156.89	31.37	2	50	30	50
386	4	2023-10-24	10:45:00	22.16	16.56	2.00	499.84	7,498	156.88	31.39	2	50	30	50
387	4	2023-10-24	11:00:00	22.21	16.60	2.25	499.02	7,485	156.70	31.40	2	50	30	50
388	4	2023-10-24	11:15:00	29.05	21.72	2.50	500.65	7,510	156.70	31.30	2	50	30	50
389	4	2023-10-24	11:30:00	22.12	16.53	2.75	499.72	7,496	156.69	31.36	2	50	30	50
390	4	2023-10-24	11:45:00	22.24	16.63	3.00	499.80	7,497	156.62	31.33	2	50	30	50
391	4	2023-10-24	12:00:00	22.15	16.55	3.25	498.39	7,476	156.62	31.43	2	50	30	50
392	4	2023-10-24	12:15:00	22.05	16.47	3.50	500.61	7,509	156.65	31.29	2	50	30	50
393	4	2023-10-24	12:30:00	22.82	17.05	3.75	500.68	7,510	170.42	34.03	2	50	30	50
394	4	2023-10-24	12:45:00	20.76	15.52	4.00	298.33	4,475	168.46	56.46	2	50	30	50

Appendix C1 - SCADA Process Control Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Current Draw (Amps)	Power Use (kW)	Processing Hours	Influent Rate (GPM)	Volume Treated (gallons)	Recycle Flow (GPM)	Recycle Rate (%)	Number of Skim Cycles	Mixer Tank 1 Speed %	Mixer Tank 2 Speed %	Skimmer Drive Speed %
395	4	2023-10-24	13:00:00	20.74	15.49	4.25	300.70	4,511	168.43	56.03	2	50	30	50
396	4	2023-10-24	13:15:00	20.81	15.54	4.50	300.60	4,509	168.42	56.03	2	50	30	50
397	4	2023-10-24	13:30:00	20.76	15.51	4.75	300.68	4,510	168.59	56.07	2	50	30	50
398	4	2023-10-24	13:45:00	20.75	15.50	5.00	300.81	4,512	168.44	55.99	2	50	30	50
399	4	2023-10-24	14:00:00	20.77	15.52	5.25	300.74	4,511	168.32	55.97	2	50	30	50
400	4	2023-10-24	14:15:00	20.78	15.52	5.50	299.90	4,499	168.09	56.04	2	50	30	50
401	4	2023-10-24	14:30:00	27.66	20.72	5.75	300.76	4,511	168.02	55.87	2	50	30	50
402	4	2023-10-24	14:45:00	22.92	17.11	6.00	500.68	7,510	168.03	33.57	2	50	30	50
403	4	2023-10-24	15:00:00	20.79	15.54	6.25	299.77	4,497	167.71	55.94	2	50	30	50
404	4	2023-10-25	10:15:00	27.89	20.85	0.25	300.51	4,508	169.43	56.38	0	50	30	50
405	4	2023-10-25	10:30:00	20.81	15.54	0.50	299.60	4,494	168.54	56.25	0	50	30	50
406	4	2023-10-25	10:45:00	20.77	15.54	0.75	299.65	4,495	168.40	56.19	0	50	30	50
407	4	2023-10-25	11:00:00	20.80	15.54	1.00	299.59	4,494	168.30	56.18	0	50	30	50
408	4	2023-10-25	11:15:00	27.78	20.76	1.25	300.60	4,509	167.47	55.71	0	50	30	50
409	4	2023-10-25	11:30:00	20.54	15.35	1.50	300.44	4,507	165.00	54.92	0	50	30	50
410	4	2023-10-25	11:45:00	20.45	15.28	1.75	299.69	4,495	162.91	54.36	1	50	30	50
411	4	2023-10-25	12:00:00	20.47	15.31	2.00	299.87	4,498	162.93	54.33	1	50	30	50
412	4	2023-10-25	12:15:00	20.43	15.28	2.25	299.90	4,499	162.94	54.33	1	50	30	50
413	4	2023-10-25	12:30:00	27.73	20.72	2.50	300.69	4,510	162.85	54.15	2	50	30	50
414	4	2023-10-26	08:30:00	23.38	17.47	0.25	499.66	7,495	168.78	33.78	1	50	30	50
415	4	2023-10-26	08:45:00	23.19	17.33	0.50	499.86	7,498	169.11	33.83	2	50	30	50
416	4	2023-10-26	09:00:00	23.23	17.33	0.75	500.01	7,500	169.04	33.81	2	50	30	50
417	4	2023-10-26	09:15:00	23.33	17.41	1.00	499.45	7,492	169.10	33.87	2	50	30	50
418	4	2023-10-26	09:30:00	23.16	17.31	1.25	500.37	7,506	168.86	33.75	2	50	30	50
419	4	2023-10-26	09:45:00	22.57	16.90	1.50	499.81	7,497	154.71	30.95	2	50	30	50
420	4	2023-10-26	10:00:00	23.45	17.53	1.75	499.85	7,498	168.88	33.79	2	60	40	50
421	4	2023-10-26	10:15:00	23.46	17.54	2.00	500.12	7,502	168.02	33.60	2	60	40	50
422	4	2023-10-26	10:30:00	22.60	16.89	2.25	498.62	7,479	167.84	33.66	2	60	30	50
423	4	2023-10-26	10:45:00	20.78	15.53	2.50	299.98	4,500	167.72	55.91	2	40	20	50
424	4	2023-10-26	11:00:00	20.78	15.53	2.75	300.12	4,502	167.75	55.89	2	40	20	50
425	4	2023-10-26	11:15:00	20.81	15.55	3.00	298.53	4,478	168.05	56.29	2	40	20	50
426	4	2023-10-26	11:30:00	20.75	15.51	3.25	300.02	4,500	168.14	56.04	2	40	20	50
427	4	2023-10-27	08:00:00	24.81	18.57	0.25	500.80	7,512	171.42	34.23	0	40	20	50
428	4	2023-10-27	08:15:00	23.53	17.58	0.50	499.45	7,492	172.07	34.45	1	40	20	30
429	4	2023-10-27	08:30:00	23.46	17.53	0.75	499.88	7,498	171.85	34.38	1	40	20	30
430	4	2023-10-27	08:45:00	23.33	17.44	1.00	499.93	7,499	171.69	34.34	1	40	20	30
431	4	2023-10-27	09:00:00	23.39	17.48	1.25	500.08	7,501	172.19	34.43	1	40	20	30
432	4	2023-10-27	09:15:00	30.00	22.42	1.50	500.28	7,504	171.96	34.37	1	40	35	30
433	4	2023-10-27	09:30:00	23.35	17.45	1.75	500.40	7,506	172.33	34.44	1	40	35	30
434	4	2023-10-27	09:45:00	23.39	17.50	2.00	499.70	7,496	172.27	34.47	1	40	35	30
435	4	2023-10-27	10:00:00	23.26	17.38	2.25	499.87	7,498	172.98	34.60	1	40	35	30
436	4	2023-10-27	10:15:00	22.41	16.85	2.50	499.94	7,499	157.03	31.41	1	40	35	30
437	4	2023-10-27	10:30:00	22.33	16.69	2.75	500.04	7,501	156.66	31.33	1	40	35	30
438	4	2023-10-27	10:45:00	22.67	16.95	3.00	500.25	7,504	164.94	32.97	1	40	20	30
439	4	2023-10-27	11:00:00	22.55	16.85	3.25	498.85	7,483	164.97	33.07	1	40	20	30
440	4	2023-10-27	11:15:00	22.48	16.80	3.50	500.35	7,505	164.98	32.97	1	40	20	30
441	4	2023-10-27	11:30:00	22.48	16.80	3.75	500.19	7,503	164.97	32.99	1	40	20	30
442	4	2023-10-27	11:45:00	17.60	13.15	4.00	1.89	28	164.96		1	40	20	30
443	4	2023-10-27	12:00:00	22.73	16.98	4.25	498.86	7,483	169.29	33.94	1	40	20	30
444	4	2023-10-27	12:15:00	22.72	16.97	4.50	500.13	7,502	169.24	33.84	1	40	20	30
445	4	2023-10-27	12:30:00	22.71	16.97	4.75	499.86	7,498	169.22	33.85	2	40	20	30
446	4	2023-10-27	12:45:00	22.78	17.03	5.00	500.18	7,503	169.24	33.84	2	40	20	30
447	4	2023-10-27	13:00:00	22.86	17.09	5.25	499.98	7,500	169.08	33.82	3	40	20	30
448	5	2023-11-08	12:15:00	26.09	19.50	0.25	500.79	7,512	164.84	32.92	0	40	20	30
449	5	2023-11-08	12:30:00	26.01	19.45	0.50	499.92	7,499	164.87	32.98	0	40	20	30
450	5	2023-11-08	12:45:00	25.88	19.35	0.75	500.83	7,512	164.40	32.82	0	40	20	30
451	5	2023-11-08	13:00:00	21.34	15.99	1.00	298.59	4,479	163.76	54.86	0	40	30	30
452	5	2023-11-08	13:15:00	21.45	16.03	1.25	299.96	4,499	163.56	54.53	0	40	30	30
453	5	2023-11-08	13:30:00	28.28	21.06	1.50	300.10	4,502	163.56	54.50	0	40	30	30
454	5	2023-11-08	13:45:00	21.31	15.93	1.75	300.21	4,503	164.05	54.66	0	40	30	30
455	5	2023-11-08	14:00:00	21.35	15.94	2.00	298.52	4,478	164.05	54.95	1	40	30	75
456	5	2023-11-08	14:15:00	21.32	15.94	2.25	299.97	4,500	163.79	54.61	1	40	30	75
457	5	2023-11-08	14:30:00	21.33	15.96	2.50	300.01	4,500	163.82	54.60	1	40	30	75
458	5	2023-11-08	14:45:00	21.38	15.98	2.75	300.09	4,501	163.80	54.58	1	40	30	75
459	5	2023-11-08	15:00:00	28.09	21.02	3.00	300.06	4,501	163.82	54.60	1	40	30	75
460	5	2023-11-08	15:15:00	21.39	16.00	3.25	300.27	4,504	163.85	54.55	1	40	30	75
461	5	2023-11-08	15:30:00	21.34	15.98	3.50	300.25	4,504	163.64	54.49	1	40	30	75
462	5	2023-11-08	15:45:00	21.45	16.03	3.75	300.10	4,502	163.84	54.61	1	40	30	75
463	5	2023-11-08	16:00:00	21.37	15.99	4.00	298.80	4,482	163.63	54.77	1	40	30	75
464	5	2023-11-08	16:15:00	21.60	16.15	4.25	303.88	4,558	163.64	53.85	1	40	30	75
465	5	2023-11-08	16:30:00	21.44	16.01	4.50	300.36	4,505	163.60	54.49	2	40	30	75
466	5	2023-11-08	16:45:00	21.70	16.21	4.75	298.55	4,478	163.51	54.76	3	40	30	75
467	5	2023-11-08	17:00:00	21.66	16.12	5.00	300.22	4,503	163.49	54.48	3	40	30	75
468	5	2023-11-08	17:15:00	21.62	16.15	5.25	300.00	4,500	163.49	54.50	3	40	30	75
469	5	2023-11-08	17:30:00	21.46	16.05	5.50	300.02	4,500	163.30	54.44	3	40	30	75
470	5	2023-11-08	17:45:00	28.33	21.05	5.75	300.16	4,502	163.30	54.40	3	40	30	75
471	5	2023-11-08	18:00:00	21.37	15.96	6.00	299.80	4,497	163.45	54.52	3	40	30	75
472	5	2023-11-08	18:15:00	21.41	15.99	6.25	299.83	4,497	163.56	54.55	3	40	30	75

Appendix C1 - SCADA Process Control Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Current Draw (Amps)	Power Use (kW)	Processing Hours	Influent Rate (GPM)	Volume Treated (gallons)	Recycle Flow (GPM)	Recycle Rate (%)	Number of Skim Cycles	Mixer Tank 1 Speed %	Mixer Tank 2 Speed %	Skimmer Drive Speed %
473	5	2023-11-08	18:30:00	21.39	15.98	6.50	299.93	4,499	163.73	54.60	3	40	30	75
474	5	2023-11-08	18:45:00	21.41	16.01	6.75	299.97	4,500	163.52	54.51	3	40	30	75
475	5	2023-11-08	19:00:00	21.51	16.04	7.00	299.59	4,494	163.53	54.58	3	40	30	75
476	5	2023-11-08	19:15:00	21.47	16.04	7.25	299.60	4,494	163.53	54.59	3	40	30	75
477	5	2023-11-08	19:30:00	21.46	16.03	7.50	299.62	4,494	163.51	54.57	3	40	30	75
478	5	2023-11-08	19:45:00	21.45	16.03	7.75	299.65	4,495	163.42	54.53	3	40	30	75
479	5	2023-11-08	20:00:00	21.49	16.06	8.00	299.72	4,496	163.40	54.52	3	40	30	75
480	5	2023-11-08	20:15:00	21.43	16.00	8.25	300.74	4,511	163.41	54.34	3	40	30	75
481	5	2023-11-08	20:30:00	21.51	16.07	8.50	300.58	4,509	163.25	54.31	3	40	30	75
482	5	2023-11-08	20:45:00	21.47	16.04	8.75	299.86	4,498	163.21	54.43	3	40	30	75
483	5	2023-11-08	21:00:00	21.46	15.98	9.00	300.64	4,510	163.40	54.36	3	40	30	75
484	5	2023-11-08	21:15:00	21.51	16.07	9.25	300.75	4,511	163.24	54.30	3	40	30	75
485	5	2023-11-08	21:30:00	21.44	16.06	9.50	298.23	4,473	163.11	54.69	3	40	30	75
486	5	2023-11-08	21:45:00	21.56	16.11	9.75	299.78	4,497	163.22	54.44	3	40	30	75
487	5	2023-11-08	22:00:00	21.45	16.03	10.00	300.58	4,509	163.22	54.30	3	40	30	75
488	5	2023-11-08	22:15:00	21.44	16.06	10.25	299.76	4,496	163.24	54.45	3	40	30	75
489	5	2023-11-08	22:30:00	21.49	16.08	10.50	300.67	4,510	163.13	54.24	3	40	30	75
490	5	2023-11-08	22:45:00	21.48	16.05	10.75	300.60	4,509	163.12	54.26	3	40	30	75
491	5	2023-11-08	23:00:00	21.54	16.10	11.00	299.69	4,495	163.12	54.43	3	40	30	75
492	5	2023-11-08	23:15:00	21.49	16.05	11.25	299.70	4,496	163.15	54.44	3	40	30	75
493	5	2023-11-08	23:30:00	21.53	16.08	11.50	300.41	4,506	163.12	54.30	3	40	30	75
494	5	2023-11-08	23:45:00	21.49	16.05	11.75	299.59	4,494	163.13	54.43	3	40	30	75
495	5	2023-11-08	23:59:00	21.46	16.09	12.00	299.50	4,493	163.13	54.46	3	40	30	75
496	5	2023-11-09	00:15:00	21.57	16.07	0.25	300.45	4,507	162.92	54.20	0	40	30	75
497	5	2023-11-09	00:30:00	21.54	16.07	0.50	299.76	4,496	163.13	54.43	0	40	30	75
498	5	2023-11-09	00:45:00	21.51	16.06	0.75	299.69	4,495	163.12	54.43	0	40	30	75
499	5	2023-11-09	01:00:00	21.52	16.09	1.00	299.61	4,494	163.14	54.46	0	40	30	75
500	5	2023-11-09	01:15:00	21.43	16.04	1.25	300.47	4,507	163.11	54.28	0	40	30	75
501	5	2023-11-09	01:30:00	21.45	16.04	1.50	300.38	4,506	162.90	54.21	0	40	30	75
502	5	2023-11-09	01:45:00	21.47	16.04	1.75	300.42	4,506	162.90	54.21	0	40	30	75
503	5	2023-11-09	02:00:00	21.53	16.06	2.00	300.52	4,508	163.13	54.29	0	40	30	75
504	5	2023-11-09	02:15:00	21.48	16.05	2.25	300.44	4,507	162.92	54.24	0	40	30	75
505	5	2023-11-09	02:30:00	28.35	21.13	2.50	299.67	4,495	162.92	54.36	0	40	30	75
506	5	2023-11-09	02:45:00	21.50	16.07	2.75	299.67	4,495	162.92	54.36	0	40	30	75
507	5	2023-11-09	03:00:00	21.49	16.08	3.00	299.72	4,496	162.93	54.36	0	40	30	75
508	5	2023-11-09	03:15:00	21.44	16.04	3.25	300.46	4,507	162.91	54.23	0	40	30	75
509	5	2023-11-09	03:30:00	21.50	16.05	3.50	299.67	4,495	162.84	54.33	0	40	30	75
510	5	2023-11-09	03:45:00	21.50	16.07	3.75	300.50	4,508	162.91	54.21	0	40	30	75
511	5	2023-11-09	04:00:00	21.50	16.07	4.00	302.23	4,533	162.83	53.87	0	40	30	75
512	5	2023-11-09	04:15:00	21.51	16.07	4.25	302.32	4,535	162.83	53.86	0	40	30	75
513	5	2023-11-09	04:30:00	21.59	16.15	4.50	301.88	4,528	162.83	53.93	0	40	30	75
514	5	2023-11-09	04:45:00	21.63	16.16	4.75	299.36	4,490	162.90	54.41	0	40	30	75
515	5	2023-11-09	05:00:00	21.55	16.11	5.00	300.34	4,505	162.83	54.21	0	40	30	75
516	5	2023-11-09	05:15:00	21.49	16.09	5.25	300.48	4,507	162.81	54.18	0	40	30	75
517	5	2023-11-09	05:30:00	21.42	16.00	5.50	300.25	4,504	162.90	54.25	0	40	30	75
518	5	2023-11-09	05:45:00	21.57	16.08	5.75	302.04	4,531	162.68	53.86	0	40	30	75
519	5	2023-11-09	06:00:00	21.55	16.10	6.00	301.84	4,528	162.82	53.94	0	40	30	75
520	5	2023-11-09	06:15:00	21.51	16.08	6.25	303.15	4,547	162.65	53.66	0	40	30	75
521	5	2023-11-09	06:30:00	21.57	16.13	6.50	300.39	4,506	162.82	54.20	0	40	30	75
522	5	2023-11-09	06:45:00	21.60	16.16	6.75	300.46	4,507	162.67	54.14	0	40	30	75
523	5	2023-11-09	07:00:00	28.31	21.16	7.00	300.22	4,503	162.81	54.23	0	40	30	75
524	5	2023-11-09	07:15:00	21.63	16.17	7.25	303.18	4,548	162.67	53.66	0	40	30	75
525	5	2023-11-09	07:30:00	21.52	16.07	7.50	299.54	4,493	162.68	54.34	0	40	30	75
526	5	2023-11-09	07:45:00	21.65	16.16	7.75	299.65	4,495	162.87	54.34	0	40	30	75
527	5	2023-11-09	08:00:00	21.52	16.09	8.00	300.62	4,509	162.88	54.18	0	40	30	75
528	5	2023-11-09	08:15:00	21.48	16.09	8.25	300.04	4,501	162.93	54.30	0	40	30	75
529	5	2023-11-09	08:30:00	21.51	16.07	8.50	299.99	4,500	162.96	54.31	0	40	30	75
530	5	2023-11-09	08:45:00	21.16	15.82	8.75	300.35	4,505	162.97	54.26	1	40	30	75
531	5	2023-11-09	09:00:00	21.66	16.16	9.00	298.76	4,481	163.00	54.57	1	40	30	75
532	5	2023-11-09	09:15:00	21.72	16.18	9.25	299.04	4,486	162.82	54.46	1	40	30	75
533	5	2023-11-09	09:30:00	21.71	16.10	9.50	300.76	4,511	162.86	54.15	1	40	30	75
534	5	2023-11-09	09:45:00	21.49	16.00	9.75	299.24	4,489	163.09	54.48	1	40	30	75
535	5	2023-11-09	10:00:00	21.38	15.98	10.00	301.04	4,516	163.14	54.21	1	40	30	75
536	5	2023-11-09	10:15:00	21.39	15.97	10.25	299.60	4,494	163.13	54.47	1	40	30	75
537	5	2023-11-09	10:30:00	28.00	20.96	10.50	299.44	4,492	163.15	54.48	1	40	30	75
538	5	2023-11-09	10:45:00	21.30	15.91	10.75	299.56	4,493	163.15	54.47	2	40	30	75
539	5	2023-11-09	11:00:00	21.33	15.96	11.00	301.11	4,517	163.11	54.16	2	40	30	75
540	5	2023-11-09	11:15:00	21.29	15.94	11.25	301.10	4,517	163.14	54.18	2	40	30	75
541	5	2023-11-09	11:30:00	21.25	15.88	11.50	298.65	4,480	163.16	54.63	2	40	30	75
542	5	2023-11-09	11:45:00	22.01	16.46	11.75	299.64	4,495	173.71	57.96	2	40	30	75
543	5	2023-11-09	12:00:00	21.93	16.41	12.00	299.36	4,490	173.44	57.92	2	40	30	75
544	5	2023-11-09	12:15:00	21.92	16.38	12.25	298.64	4,480	173.24	58.01	2	40	30	75
545	5	2023-11-09	12:30:00	21.91	16.40	12.50	299.60	4,494	173.14	57.80	2	40	30	75
546	5	2023-11-09	12:45:00	21.42	16.04	12.75	299.59	4,494	164.26	54.84	2	40	30	75
547	5	2023-11-09	13:00:00	28.05	21.03	13.00	299.61	4,494	164.12	54.77	2	40	30	75
548	5	2023-11-09	13:15:00	21.44	16.02	13.25	299.48	4,492	164.12	54.81	2	40	30	75
549	5	2023-11-09	13:30:00	21.46	16.01	13.50	299.58	4,494	164.12	54.78	2	40	30	75
550	5	2023-11-09	13:45:00	21.48	16.05	13.75	299.20	4,488	163.99	54.81	2	40	30	75

Appendix C1 - SCADA Process Control Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Current Draw (Amps)	Power Use (kW)	Processing Hours	Influent Rate (GPM)	Volume Treated (gallons)	Recycle Flow (GPM)	Recycle Rate (%)	Number of Skim Cycles	Mixer Tank 1 Speed %	Mixer Tank 2 Speed %	Skimmer Drive Speed %
551	5	2023-11-09	14:00:00	21.35	15.95	14.00	299.16	4,487	163.41	54.62	3	40	30	75
552	5	2023-11-09	14:15:00	27.98	20.91	14.25	299.49	4,492	163.08	54.45	3	40	30	75
553	5	2023-11-09	14:30:00	21.39	15.99	14.50	299.54	4,493	163.09	54.45	3	40	30	75
554	5	2023-11-09	14:45:00	21.30	15.92	14.75	299.29	4,489	163.08	54.49	3	40	30	75
555	5	2023-11-09	15:00:00	21.19	15.87	15.00	299.24	4,489	163.08	54.49	3	40	30	75
556	5	2023-11-09	15:15:00	21.13	15.83	15.25	299.20	4,488	162.89	54.44	3	40	30	75
557	5	2023-11-09	15:30:00	27.78	20.79	15.50	298.99	4,485	163.08	54.54	3	40	30	75
558	5	2023-11-09	15:45:00	21.19	15.83	15.75	299.21	4,488	162.87	54.42	3	40	30	75
559	5	2023-11-09	16:00:00	21.15	15.79	16.00	300.59	4,509	163.05	54.24	3	40	30	75
560	5	2023-11-09	16:15:00	21.19	15.84	16.25	299.16	4,487	163.03	54.51	3	40	30	75
561	5	2023-11-09	16:30:00	21.44	16.00	16.50	300.45	4,507	162.82	54.19	3	40	30	75
562	5	2023-11-09	16:45:00	31.12	23.25	16.75	555.39	8,331	163.03	29.35	6	40	30	75
563	5	2023-11-09	17:00:00	21.12	15.77	17.00	300.25	4,504	162.97	54.28	6	40	30	75
564	5	2023-11-09	17:15:00	21.14	15.80	17.25	300.10	4,502	162.94	54.29	6	40	30	75
565	5	2023-11-09	17:30:00	21.06	15.72	17.50	300.03	4,500	162.22	54.41	6	40	30	75
566	5	2023-11-09	17:45:00	21.12	15.78	17.75	299.93	4,499	163.31	54.44	6	40	30	75
567	5	2023-11-09	18:00:00	21.12	15.77	18.00	299.95	4,499	163.30	54.44	6	40	30	75
568	5	2023-11-09	18:15:00	21.18	15.85	18.25	300.06	4,501	163.31	54.43	6	40	30	75
569	5	2023-11-09	18:30:00	21.19	15.81	18.50	300.53	4,508	163.19	54.29	6	40	30	75
570	5	2023-11-09	18:45:00	21.08	15.76	18.75	299.70	4,496	163.18	54.45	6	40	30	75
571	5	2023-11-09	19:00:00	21.14	15.81	19.00	300.56	4,508	162.95	54.19	6	40	30	75
572	5	2023-11-09	19:15:00	21.10	15.80	19.25	300.33	4,505	162.88	54.22	6	40	30	75
573	5	2023-11-09	19:30:00	21.15	15.81	19.50	300.21	4,503	162.94	54.27	6	40	30	75
574	5	2023-11-09	19:45:00	21.17	15.82	19.75	299.57	4,494	162.86	54.36	6	40	30	75
575	5	2023-11-09	20:00:00	21.20	15.84	20.00	300.26	4,504	162.85	54.24	6	40	30	75
576	5	2023-11-09	20:15:00	21.17	15.82	20.25	299.46	4,492	162.85	54.39	6	40	30	75
577	5	2023-11-09	20:30:00	21.08	15.76	20.50	300.27	4,504	162.85	54.24	6	40	30	75
578	5	2023-11-09	20:45:00	21.12	15.83	20.75	299.40	4,491	162.93	54.41	6	40	30	75
579	5	2023-11-09	21:00:00	21.15	15.81	21.00	299.49	4,492	162.85	54.38	6	40	30	75
580	5	2023-11-09	21:15:00	27.92	20.87	21.25	300.17	4,503	162.85	54.25	6	40	30	75
581	5	2023-11-09	21:30:00	21.11	15.79	21.50	300.39	4,506	162.85	54.23	6	40	30	75
582	5	2023-11-09	21:45:00	21.22	15.86	21.75	299.51	4,493	162.85	54.37	6	40	30	75
583	5	2023-11-09	22:00:00	21.21	15.87	22.00	300.09	4,501	162.86	54.26	6	40	30	75
584	5	2023-11-09	22:15:00	21.12	15.80	22.25	300.39	4,506	162.85	54.20	6	40	30	75
585	5	2023-11-09	22:30:00	21.22	15.84	22.50	300.34	4,505	162.84	54.21	6	40	30	75
586	5	2023-11-09	22:45:00	21.15	15.79	22.75	300.32	4,505	162.85	54.23	6	40	30	75
587	5	2023-11-09	23:00:00	21.16	15.82	23.00	300.36	4,505	162.68	54.15	6	40	30	75
588	5	2023-11-09	23:15:00	21.22	15.88	23.25	300.35	4,505	162.69	54.17	6	40	30	75
589	5	2023-11-09	23:30:00	28.06	20.97	23.50	300.31	4,505	162.67	54.17	6	40	30	75
590	5	2023-11-09	23:45:00	21.17	15.81	23.75	300.40	4,506	162.66	54.16	6	40	30	75
591	5	2023-11-09	23:59:00	21.19	15.85	24.00	300.32	4,505	162.84	54.21	6	40	30	75
592	5	2023-11-10	00:15:00	21.07	15.75	0.25	300.36	4,505	162.82	54.21	0	40	30	75
593	5	2023-11-10	00:30:00	21.31	15.92	0.50	300.34	4,505	162.82	54.20	0	40	30	75
594	5	2023-11-10	00:45:00	21.21	15.82	0.75	299.57	4,494	162.82	54.36	0	40	30	75
595	5	2023-11-10	01:00:00	21.21	15.88	1.00	300.42	4,506	162.66	54.13	0	40	30	75
596	5	2023-11-10	01:15:00	21.20	15.84	1.25	299.57	4,494	162.83	54.36	0	40	30	75
597	5	2023-11-10	01:30:00	21.22	15.85	1.50	300.35	4,505	162.67	54.15	0	40	30	75
598	5	2023-11-10	01:45:00	27.87	20.98	1.75	300.29	4,504	162.56	54.14	0	40	30	75
599	5	2023-11-10	02:00:00	21.22	15.86	2.00	300.30	4,505	162.66	54.16	0	40	30	75
600	5	2023-11-10	02:15:00	21.16	15.80	2.25	300.33	4,505	162.85	54.22	0	40	30	75
601	5	2023-11-10	02:30:00	21.20	15.83	2.50	300.42	4,506	162.67	54.15	0	40	30	75
602	5	2023-11-10	02:45:00	21.18	15.84	2.75	300.20	4,503	162.83	54.23	0	40	30	75
603	5	2023-11-10	03:00:00	21.28	15.90	3.00	300.38	4,506	162.68	54.16	0	40	30	75
604	5	2023-11-10	03:15:00	21.19	15.84	3.25	299.48	4,492	162.68	54.31	0	40	30	75
605	5	2023-11-10	03:30:00	21.23	15.87	3.50	300.19	4,503	162.57	54.16	0	40	30	75
606	5	2023-11-10	03:45:00	21.20	15.84	3.75	300.34	4,505	162.67	54.16	0	40	30	75
607	5	2023-11-10	04:00:00	21.22	15.87	4.00	299.62	4,494	162.57	54.27	0	40	30	75
608	5	2023-11-10	04:15:00	21.26	15.90	4.25	299.65	4,495	162.58	54.26	0	40	30	75
609	5	2023-11-10	04:30:00	21.27	15.89	4.50	300.44	4,507	162.39	54.05	0	40	30	75
610	5	2023-11-10	04:45:00	21.22	15.86	4.75	299.74	4,496	162.39	54.17	0	40	30	75
611	5	2023-11-10	05:00:00	21.28	15.91	5.00	299.65	4,495	162.29	54.16	0	40	30	75
612	5	2023-11-10	05:15:00	21.34	15.95	5.25	299.66	4,495	162.31	54.16	0	40	30	75
613	5	2023-11-10	05:30:00	21.32	15.94	5.50	299.65	4,495	162.40	54.20	0	40	30	75
614	5	2023-11-10	05:45:00	21.23	15.86	5.75	299.82	4,497	162.40	54.17	0	40	30	75
615	5	2023-11-10	06:00:00	21.27	15.89	6.00	299.69	4,495	162.39	54.19	0	40	30	75
616	5	2023-11-10	06:15:00	21.22	15.87	6.25	299.75	4,496	162.37	54.17	0	40	30	75
617	5	2023-11-10	06:30:00	21.22	15.87	6.50	300.66	4,510	162.41	54.03	0	40	30	75
618	5	2023-11-10	06:45:00	27.79	20.77	6.75	299.78	4,497	162.40	54.17	0	40	30	75
619	5	2023-11-10	07:00:00	21.16	15.83	7.00	299.61	4,494	162.39	54.21	0	40	30	75
620	5	2023-11-10	07:15:00	21.20	15.85	7.25	299.67	4,495	162.38	54.19	0	40	30	75
621	5	2023-11-10	07:30:00	21.36	15.96	7.50	300.35	4,505	162.41	54.07	0	40	30	75
622	5	2023-11-10	07:45:00	21.30	15.95	7.75	299.83	4,497	162.43	54.18	0	40	30	75
623	5	2023-11-10	08:00:00	21.18	15.83	8.00	300.86	4,513	162.43	53.99	0	40	30	75
624	5	2023-11-10	08:15:00	21.31	15.90	8.25	300.04	4,501	162.46	54.13	0	40	30	75
625	5	2023-11-10	08:30:00	21.23	15.86	8.50	298.87	4,483	162.68	54.44	0	40	30	75
626	5	2023-11-10	08:45:00	21.25	15.88	8.75	300.50	4,508	162.73	54.15	0	40	30	75
627	5	2023-11-10	09:00:00	21.20	15.84	9.00	300.69	4,510	162.75	54.14	0	40	30	75
628	5	2023-11-10	09:15:00	27.39	20.47	9.25	521.84	7,828	162.79	31.19	1	40	30	75

Appendix C1 - SCADA Process Control Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Current Draw (Amps)	Power Use (kW)	Processing Hours	Influent Rate (GPM)	Volume Treated (gallons)	Recycle Flow (GPM)	Recycle Rate (%)	Number of Skim Cycles	Mixer Tank 1 Speed %	Mixer Tank 2 Speed %	Skimmer Drive Speed %
629	5	2023-11-10	09:30:00	21.22	15.86	9.50	301.01	4,515	162.86	54.11	1	40	30	75
630	5	2023-11-10	09:45:00	21.37	15.97	9.75	301.08	4,516	162.84	54.08	1	40	30	75
631	5	2023-11-10	10:00:00	21.33	15.94	10.00	299.61	4,494	162.92	54.38	1	40	30	75
632	5	2023-11-10	10:15:00	21.05	15.74	10.25	299.62	4,494	163.44	54.55	2	40	30	40
633	5	2023-11-10	10:30:00	21.00	15.69	10.50	299.89	4,498	163.54	54.55	2	40	30	40
634	5	2023-11-10	10:45:00	20.99	15.68	10.75	298.76	4,481	163.74	54.81	2	40	30	40
635	5	2023-11-10	11:00:00	27.49	20.64	11.00	298.64	4,480	163.74	54.83	2	40	30	40
636	5	2023-11-10	11:15:00	20.87	15.61	11.25	299.68	4,495	163.74	54.64	2	40	30	40
637	5	2023-11-10	11:30:00	17.33	12.95	11.50	3.01	45	162.93	0.00	2	40	30	40
638	5	2023-11-10	11:45:00	19.99	14.94	11.75	207.44	3,112	162.56	78.37	2	40	30	40
639	5	2023-11-10	12:00:00	23.72	17.70	12.00	300.98	4,515	161.42	53.64	2	40	30	40
640	5	2023-11-10	12:15:00	17.29	12.92	12.25	2.61	39	160.86	0.00	2	40	30	40
641	5	2023-11-10	12:30:00	17.23	12.88	12.50	2.54	38	160.79	0.00	2	40	30	40
642	5	2023-11-10	12:45:00	20.15	15.05	12.75	359.73	5,396	160.75	44.69	2	40	30	40
643	5	2023-11-10	13:00:00	19.91	14.88	13.00	300.54	4,508	159.98	53.23	3	40	30	80
644	5	2023-11-10	13:15:00	20.71	15.48	13.25	299.10	4,487	170.98	57.16	3	40	30	80
645	5	2023-11-10	13:30:00	20.66	15.44	13.50	300.63	4,509	170.60	56.74	3	40	30	80
646	5	2023-11-10	13:45:00	20.71	15.46	13.75	299.04	4,486	170.52	57.01	3	40	30	80
647	5	2023-11-10	14:00:00	20.62	15.37	14.00	300.71	4,511	170.29	56.64	3	40	30	80
648	5	2023-11-10	14:15:00	20.69	15.48	14.25	299.13	4,487	170.55	57.01	3	40	30	80
649	5	2023-11-10	14:30:00	20.73	15.49	14.50	300.79	4,512	170.55	56.70	3	40	30	80
650	5	2023-11-10	14:45:00	20.65	15.44	14.75	299.37	4,491	170.55	56.97	4	40	30	40
651	5	2023-11-10	15:00:00	20.66	15.44	15.00	299.45	4,492	170.35	56.88	4	40	30	40
652	5	2023-11-10	15:15:00	20.69	15.46	15.25	301.08	4,516	170.29	56.56	4	40	30	40
653	5	2023-11-10	15:30:00	20.69	15.46	15.50	300.96	4,514	170.03	56.51	4	40	30	40
654	5	2023-11-10	15:45:00	20.67	15.44	15.75	300.78	4,512	170.26	56.61	4	40	30	40
655	5	2023-11-10	16:00:00	20.58	15.38	16.00	301.54	4,523	170.00	56.38	5	40	30	40
656	5	2023-11-14	10:45:00	20.28	15.16	0.25	299.14	4,487	160.29	53.56	0	40	30	40
657	5	2023-11-14	11:00:00	20.22	15.11	0.50	300.23	4,503	159.74	53.22	0	40	30	40
658	5	2023-11-14	11:15:00	19.99	14.94	0.75	299.41	4,491	159.66	53.34	0	40	30	40
659	5	2023-11-14	11:30:00	20.19	15.09	1.00	300.35	4,505	159.37	53.05	0	40	30	40
660	5	2023-11-14	11:45:00	20.43	15.26	1.25	299.68	4,495	164.36	54.84	0	40	30	40
661	5	2023-11-14	12:00:00	20.33	15.18	1.50	308.49	4,627	164.05	53.17	0	40	30	40
662	5	2023-11-14	12:15:00	20.39	15.23	1.75	299.65	4,495	163.85	54.68	0	40	30	40
663	5	2023-11-14	12:30:00	20.48	15.30	2.00	300.55	4,508	163.52	54.41	0	40	30	75
664	5	2023-11-14	12:45:00	20.41	15.25	2.25	300.73	4,511	163.14	54.25	0	40	30	75
665	5	2023-11-14	13:00:00	20.88	15.61	2.50	303.42	4,551	170.88	56.31	0	40	30	75
666	5	2023-11-14	13:15:00	20.73	15.47	2.75	300.14	4,502	170.40	56.77	0	40	30	75
667	5	2023-11-14	13:30:00	20.82	15.56	3.00	300.16	4,502	170.34	56.76	0	40	30	75
668	5	2023-11-14	13:45:00	27.55	20.62	3.25	300.15	4,502	169.86	56.59	0	40	30	75
669	5	2023-11-14	14:00:00	20.72	15.48	3.50	300.13	4,502	169.85	56.60	0	40	30	75
670	5	2023-11-14	14:15:00	20.78	15.54	3.75	295.88	4,438	169.86	57.39	0	40	30	75
671	5	2023-11-14	14:30:00	20.75	15.51	4.00	299.99	4,500	169.79	56.61	0	40	30	75
672	5	2023-11-14	14:45:00	22.53	16.65	4.25	300.22	4,503	169.23	56.39	0	40	30	75
673	5	2023-11-14	15:00:00	20.90	15.62	4.50	299.89	4,498	169.03	56.38	1	40	30	75
674	5	2023-11-14	15:15:00	20.98	15.65	4.75	300.83	4,512	168.56	56.04	1	40	30	75
675	5	2023-11-14	15:30:00	20.96	15.65	5.00	289.91	4,349	168.33	58.05	1	40	30	75
676	5	2023-11-14	15:45:00	20.64	15.42	5.25	299.94	4,499	168.30	56.12	1	40	30	75
677	5	2023-11-14	16:00:00	20.69	15.45	5.50	299.92	4,499	168.33	56.14	1	40	30	75
678	5	2023-11-14	16:15:00	27.66	20.59	5.75	299.89	4,498	168.32	56.14	1	40	30	75
679	5	2023-11-14	16:30:00	20.72	15.49	6.00	299.76	4,496	168.43	56.19	1	40	30	75
680	5	2023-11-14	16:45:00	20.61	15.41	6.25	299.81	4,497	168.31	56.14	1	40	30	75
681	5	2023-11-14	17:00:00	20.69	15.46	6.50	299.82	4,497	168.43	56.18	1	40	30	75
682	5	2023-11-14	17:15:00	20.60	15.41	6.75	300.59	4,509	168.44	56.03	1	40	30	75
683	5	2023-11-14	17:30:00	20.67	15.45	7.00	300.58	4,509	168.30	55.99	1	40	30	75
684	5	2023-11-14	17:45:00	20.61	15.41	7.25	299.63	4,494	168.07	56.09	1	40	30	75
685	5	2023-11-14	18:00:00	20.72	15.48	7.50	299.62	4,494	168.29	56.15	1	40	30	75
686	5	2023-11-14	18:15:00	20.67	15.45	7.75	299.58	4,494	168.28	56.17	1	40	30	75
687	5	2023-11-14	18:30:00	20.62	15.41	8.00	299.88	4,498	168.26	56.11	1	40	30	75
688	5	2023-11-14	18:45:00	20.64	15.43	8.25	300.36	4,505	168.28	56.03	1	40	30	75
689	5	2023-11-14	19:00:00	20.64	15.43	8.50	300.57	4,509	168.07	55.93	1	40	30	75
690	5	2023-11-14	19:15:00	20.66	15.44	8.75	300.51	4,508	168.06	55.93	1	40	30	75
691	5	2023-11-14	19:30:00	20.76	15.51	9.00	300.54	4,508	168.24	55.98	1	40	30	75
692	5	2023-11-14	19:45:00	20.69	15.46	9.25	300.56	4,508	168.24	55.98	1	40	30	75
693	5	2023-11-14	20:00:00	20.71	15.47	9.50	300.30	4,505	168.05	55.96	1	40	30	75
694	5	2023-11-14	20:15:00	20.70	15.50	9.75	300.36	4,505	168.03	55.94	1	40	30	75
695	5	2023-11-14	20:30:00	20.72	15.49	10.00	300.17	4,503	168.04	55.98	1	40	30	75
696	5	2023-11-14	20:45:00	27.78	20.73	10.25	300.15	4,502	167.95	55.95	1	40	30	75
697	5	2023-11-14	21:00:00	20.71	15.47	10.50	299.45	4,492	167.94	56.07	1	40	30	75
698	5	2023-11-14	21:15:00	20.79	15.53	10.75	300.25	4,504	167.96	55.93	1	40	30	75
699	5	2023-11-14	21:30:00	20.69	15.44	11.00	300.31	4,505	167.94	55.92	1	40	30	75
700	5	2023-11-14	21:45:00	27.82	20.78	11.25	299.50	4,493	167.95	56.08	1	40	30	75
701	5	2023-11-14	22:00:00	20.73	15.49	11.50	300.22	4,503	167.80	55.89	1	40	30	75
702	5	2023-11-14	22:15:00	20.76	15.52	11.75	300.32	4,505	167.45	55.76	1	40	30	75
703	5	2023-11-14	22:30:00	20.78	15.53	12.00	300.25	4,504	167.45	55.77	1	40	30	75
704	5	2023-11-14	22:45:00	27.67	20.74	12.25	300.19	4,503	167.34	55.78	1	40	30	75
705	5	2023-11-14	23:00:00	20.60	15.39	12.50	300.07	4,501	167.34	55.76	1	40	30	75
706	5	2023-11-14	23:15:00	20.52	15.34	12.75	300.16	4,502	167.35	55.75	1	40	30	75

Appendix C1 - SCADA Process Control Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Current Draw (Amps)	Power Use (kW)	Processing Hours	Influent Rate (GPM)	Volume Treated (gallons)	Recycle Flow (GPM)	Recycle Rate (%)	Number of Skim Cycles	Mixer Tank 1 Speed %	Mixer Tank 2 Speed %	Skimmer Drive Speed %
707	5	2023-11-14	23:30:00	20.55	15.35	13.00	299.26	4,489	167.77	56.06	1	40	30	75
708	5	2023-11-14	23:45:00	20.59	15.39	13.25	300.26	4,504	167.44	55.76	1	40	30	75
709	5	2023-11-14	23:59:00	20.54	15.36	13.50	300.19	4,503	167.44	55.93	2	40	30	75
710	5	2023-11-15	00:15:00	20.51	15.33	13.75	300.08	4,501	167.44	55.79	0	40	30	75
711	5	2023-11-15	00:30:00	20.60	15.39	14.00	299.32	4,490	167.35	55.91	0	40	30	75
712	5	2023-11-15	00:45:00	20.60	15.39	14.25	300.22	4,503	167.34	55.75	0	40	30	75
713	5	2023-11-15	01:00:00	20.52	15.34	14.50	300.05	4,501	167.22	55.73	0	40	30	75
714	5	2023-11-15	01:15:00	20.54	15.37	14.75	299.22	4,488	167.22	55.89	0	40	30	75
715	5	2023-11-15	01:30:00	20.54	15.35	15.00	299.27	4,489	167.35	55.92	0	40	30	75
716	5	2023-11-15	01:45:00	20.56	15.37	15.25	300.24	4,504	167.35	55.74	0	40	30	75
717	5	2023-11-15	02:00:00	20.55	15.36	15.50	299.16	4,487	167.36	55.95	0	40	30	75
718	5	2023-11-15	02:15:00	20.54	15.35	15.75	300.22	4,503	167.41	55.76	0	40	30	75
719	5	2023-11-15	02:30:00	20.56	15.36	16.00	299.42	4,491	167.23	55.85	0	40	30	75
720	5	2023-11-15	02:45:00	20.51	15.33	16.25	300.31	4,505	167.38	55.75	0	40	30	75
721	5	2023-11-15	03:00:00	20.55	15.32	16.50	299.13	4,487	167.23	55.91	0	40	30	75
722	5	2023-11-15	03:15:00	20.52	15.34	16.75	300.25	4,504	167.36	55.74	0	40	30	75
723	5	2023-11-15	03:30:00	20.55	15.36	17.00	299.22	4,488	167.23	55.89	0	40	30	75
724	5	2023-11-15	03:45:00	20.51	15.34	17.25	299.32	4,490	167.38	55.92	0	40	30	75
725	5	2023-11-15	04:00:00	20.57	15.36	17.50	299.34	4,490	167.38	55.91	0	40	30	75
726	5	2023-11-15	04:15:00	20.56	15.37	17.75	300.08	4,501	167.24	55.73	0	40	30	75
727	5	2023-11-15	04:30:00	27.51	20.56	18.00	300.29	4,504	167.36	55.73	0	40	30	75
728	5	2023-11-15	04:45:00	20.53	15.34	18.25	299.34	4,490	167.37	55.91	0	40	30	75
729	5	2023-11-15	05:00:00	20.50	15.35	18.50	300.26	4,504	167.39	55.74	0	40	30	75
730	5	2023-11-15	05:15:00	20.57	15.34	18.75	299.57	4,494	167.23	55.82	0	40	30	75
731	5	2023-11-15	05:30:00	20.55	15.36	19.00	299.99	4,500	167.38	55.80	0	40	30	75
732	5	2023-11-15	05:45:00	20.61	15.41	19.25	300.44	4,507	167.38	55.72	0	40	30	75
733	5	2023-11-15	06:00:00	20.61	15.41	19.50	300.20	4,503	167.38	55.76	0	40	30	75
734	5	2023-11-15	06:15:00	20.55	15.36	19.75	299.24	4,489	167.38	55.93	0	40	30	75
735	5	2023-11-15	06:30:00	20.44	15.27	20.00	301.85	4,528	167.21	55.40	0	40	30	75
736	5	2023-11-15	06:45:00	20.57	15.34	20.25	300.20	4,503	167.38	55.75	0	40	30	75
737	5	2023-11-15	07:00:00	20.47	15.30	20.50	299.38	4,491	167.22	55.86	0	40	30	75
738	5	2023-11-15	07:15:00	20.54	15.36	20.75	300.33	4,505	167.24	55.69	0	40	30	75
739	5	2023-11-15	07:30:00	27.54	20.58	21.00	294.26	4,414	167.21	56.84	0	40	30	75
740	5	2023-11-15	07:45:00	20.56	15.37	21.25	299.37	4,491	167.12	55.82	0	40	30	75
741	5	2023-11-15	08:00:00	20.52	15.32	21.50	299.63	4,494	167.21	55.82	0	40	30	75
742	5	2023-11-15	08:15:00	20.50	15.31	21.75	300.16	4,502	167.23	55.70	0	40	30	75
743	5	2023-11-15	08:30:00	20.50	15.32	22.00	304.41	4,566	167.11	54.89	1	40	30	75
744	5	2023-11-15	08:45:00	20.75	15.51	22.25	300.40	4,506	167.13	55.64	1	40	30	75
745	5	2023-11-15	09:00:00	20.69	15.46	22.50	300.38	4,506	167.12	55.64	1	40	30	75
746	5	2023-11-15	09:15:00	20.71	15.48	22.75	300.16	4,502	166.90	55.60	1	40	30	75
747	5	2023-11-15	09:30:00	20.58	15.35	23.00	299.42	4,491	167.10	55.82	1	40	30	75
748	5	2023-11-15	09:45:00	20.49	15.30	23.25	299.43	4,491	167.24	55.85	1	40	30	75
749	5	2023-11-15	10:00:00	20.53	15.36	23.50	300.14	4,502	167.11	55.67	1	40	30	75
750	5	2023-11-15	10:15:00	20.44	15.32	23.75	300.43	4,506	167.38	55.72	1	40	30	75
751	5	2023-11-15	10:30:00	20.48	15.31	24.00	300.24	4,504	167.49	55.78	1	40	30	75
752	5	2023-11-15	10:45:00	20.50	15.33	24.25	299.60	4,494	167.51	55.91	1	40	30	75
753	5	2023-11-15	11:00:00	20.58	15.35	24.50	299.54	4,493	167.47	55.91	1	40	30	75
754	5	2023-11-15	11:15:00	20.51	15.33	24.75	300.38	4,506	167.39	55.73	1	40	30	75
755	5	2023-11-15	11:30:00	27.52	20.47	25.00	299.54	4,493	167.39	55.88	1	40	30	75
756	5	2023-11-15	11:45:00	20.56	15.37	25.25	300.25	4,504	167.39	55.75	1	40	30	75
757	5	2023-11-15	12:00:00	20.49	15.31	25.50	300.33	4,505	167.41	55.74	2	40	30	75
758	5	2023-11-15	12:15:00	20.51	15.33	25.75	300.56	4,508	167.14	55.61	2	40	30	75
759	5	2023-11-15	12:30:00	20.48	15.31	26.00	300.32	4,505	167.15	55.66	2	40	30	75
760	5	2023-11-15	12:45:00	20.51	15.30	26.25	299.61	4,494	166.93	55.73	2	40	30	75
761	5	2023-11-15	13:00:00	20.50	15.33	26.50	299.52	4,493	166.93	55.72	2	40	30	75
762	5	2023-11-15	13:15:00	20.53	15.32	26.75	300.32	4,505	166.93	55.59	2	40	30	75
763	5	2023-11-15	13:30:00	20.31	15.18	27.00	300.35	4,505	167.24	55.69	2	40	30	75
764	5	2023-11-15	13:45:00	20.53	15.31	27.25	300.35	4,505	167.11	55.64	2	40	30	75
765	5	2023-11-15	14:00:00	20.50	15.33	27.50	299.55	4,493	167.14	55.80	2	40	30	75
766	5	2023-11-15	14:15:00	20.56	15.37	27.75	300.15	4,502	166.79	55.56	3	40	30	75
Notes:														
kW = kilowatts														
GPM = gallons per minute														

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Influent Temperature (°C)	Effluent Temperature (°C)	Influent Temperature (°F)	Effluent Temperature (°F)	Influent Specific Conductivity (µS/cm)	Effluent Specific Conductivity (µS/cm)	Influent pH (SU)	Influent pH Qualifier
1	1	2023-09-11	10:45:00	30.40	29.68	86.72	85.43	21,387	29,960	8.37	J
2	1	2023-09-11	11:00:00	30.85	29.92	87.53	85.86	28,951	29,792	8.47	J
3	1	2023-09-11	11:15:00	30.86	30.56	87.55	87.00	28,907	29,281	8.48	J
4	1	2023-09-11	11:30:00	30.86	30.88	87.55	87.59	28,871	29,022	8.49	J
5	1	2023-09-11	11:45:00	30.94	30.99	87.70	87.77	27,594	28,938	8.49	J
6	1	2023-09-11	12:00:00	31.20	31.18	88.15	88.13	28,884	28,940	8.47	J
7	1	2023-09-11	12:15:00	31.22	31.09	88.19	87.96	28,854	28,921	8.52	J
8	1	2023-09-11	12:30:00	31.20	31.14	88.17	88.05	28,871	28,905	8.51	J
9	1	2023-09-11	12:45:00	31.32	31.23	88.38	88.21	28,900	28,886	8.52	J
10	1	2023-09-11	13:00:00	31.44	31.33	88.60	88.40	28,895	28,863	8.52	J
11	1	2023-09-11	13:15:00	31.57	31.44	88.82	88.60	28,913	28,888	8.54	J
12	1	2023-09-11	13:30:00	31.72	31.56	89.09	88.82	28,968	28,902	8.55	J
13	1	2023-09-11	13:45:00	31.83	31.69	89.30	89.04	28,992	28,919	8.56	J
14	1	2023-09-11	14:00:00	31.98	31.81	89.57	89.26	29,049	28,944	8.58	J
15	1	2023-09-11	14:15:00	32.20	31.93	89.96	89.48	29,107	28,998	8.61	J
16	1	2023-09-11	14:30:00	32.40	32.09	90.31	89.77	29,118	29,066	8.62	J
17	1	2023-09-11	14:45:00	32.48	32.25	90.47	90.06	29,102	29,092	8.64	J
18	1	2023-09-11	15:00:00	32.52	32.37	90.54	90.27	29,087	29,093	8.65	J
19	1	2023-09-11	15:15:00	32.64	32.43	90.76	90.37	29,085	29,095	8.66	J
20	1	2023-09-11	15:30:00	32.68	32.46	90.82	90.43	29,094	29,088	8.68	J
21	1	2023-09-11	15:45:00	32.78	32.51	91.01	90.51	29,111	29,087	8.67	J
22	1	2023-09-12	08:45:00	28.67	30.93	83.61	87.68	29,005	29,105	8.35	J
23	1	2023-09-12	09:00:00	30.56	31.03	87.01	87.86	28,700	29,088	8.31	J
24	1	2023-09-12	09:15:00	30.86	30.99	87.55	87.78	28,758	28,625	8.32	J
25	1	2023-09-12	09:30:00	30.88	31.02	87.58	87.83	28,690	28,832	8.31	J
26	1	2023-09-12	09:45:00	30.94	31.05	87.68	87.88	28,586	28,756	8.31	J
27	1	2023-09-12	10:00:00	31.00	31.07	87.80	87.92	28,588	28,669	8.32	J
28	1	2023-09-12	10:15:00	31.08	31.10	87.95	87.97	28,735	28,621	8.34	J
29	1	2023-09-12	10:30:00	31.14	31.15	88.06	88.07	28,810	28,639	8.36	J
30	1	2023-09-12	10:45:00	31.20	31.21	88.17	88.18	28,851	28,691	8.36	J
31	1	2023-09-12	11:00:00	31.26	31.27	88.28	88.28	28,879	28,739	8.37	J
32	1	2023-09-12	11:15:00	31.34	31.33	88.40	88.39	28,922	28,844	8.36	J
33	1	2023-09-12	11:30:00	31.40	31.38	88.52	88.49	28,919	28,876	8.36	J
34	1	2023-09-12	11:45:00	31.48	31.43	88.66	88.58	28,905	28,930	8.37	J
35	1	2023-09-12	12:00:00	31.59	31.50	88.87	88.69	24,698	28,914	8.40	J
36	1	2023-09-12	12:15:00	31.69	31.57	89.04	88.82	8,024	28,910	8.39	J
37	1	2023-09-12	12:30:00	31.92	31.63	89.45	88.94	15,695	28,915	8.42	J
42	1	2023-09-12	13:45:00	32.53	31.99	90.55	89.59	28,692	28,717	8.59	J
43	1	2023-09-12	14:00:00	32.47	31.95	90.45	89.51	28,720	28,684	8.43	J
44	1	2023-09-12	14:15:00	32.73	32.11	90.92	89.80	28,762	28,723	8.45	J
45	1	2023-09-12	14:30:00	33.04	32.36	91.47	90.25	28,811	28,785	8.46	J
46	1	2023-09-12	14:45:00	33.44	32.69	92.19	90.84	28,885	28,852	8.47	J
47	1	2023-09-13	08:15:00	27.21	31.69	80.97	89.04	28,828	28,939	8.10	J
48	1	2023-09-13	08:30:00	28.63	31.74	83.54	89.13	28,650	28,922	8.07	J
49	1	2023-09-13	08:45:00	30.16	31.39	86.30	88.50	28,484	28,770	8.19	J
50	1	2023-09-13	09:00:00	30.60	31.17	87.07	88.11	28,485	28,599	8.22	J
51	1	2023-09-13	09:15:00	30.75	31.08	87.35	87.94	28,494	28,509	8.24	J
52	1	2023-09-13	09:30:00	30.79	31.05	87.42	87.90	28,508	28,472	8.24	J
53	1	2023-09-13	09:45:00	30.77	31.06	87.39	87.91	28,526	28,475	8.19	J
54	1	2023-09-13	10:00:00	30.76	31.07	87.38	87.93	28,528	28,516	8.21	J
55	1	2023-09-13	10:15:00	30.79	31.08	87.43	87.95	28,519	28,510	8.18	J
56	1	2023-09-13	10:30:00	30.91	31.10	87.64	87.98	28,529	28,498	8.23	J
57	1	2023-09-13	10:45:00	31.05	31.14	87.90	88.05	28,571	28,500	8.18	J
58	1	2023-09-13	11:00:00	31.09	31.20	87.97	88.16	28,562	28,491	8.23	J
59	1	2023-09-13	11:15:00	31.24	31.27	88.23	88.29	28,547	28,507	8.25	J
60	1	2023-09-13	11:30:00	31.39	31.35	88.51	88.43	28,553	28,471	8.26	J
61	1	2023-09-13	11:45:00	31.50	31.44	88.70	88.59	28,613	28,474	8.26	J
62	1	2023-09-13	12:00:00	31.64	31.53	88.96	88.75	28,642	28,551	8.27	J
63	1	2023-09-13	12:15:00	31.80	31.62	89.24	88.92	28,660	28,601	8.28	J
64	1	2023-09-13	12:30:00	31.96	31.73	89.53	89.11	28,654	28,606	8.27	J
65	1	2023-09-13	12:45:00	32.10	31.85	89.79	89.33	28,650	28,576	8.27	J
66	1	2023-09-13	13:00:00	32.12	31.93	89.81	89.48	28,653	28,614	8.28	J
67	1	2023-09-13	13:15:00	32.13	31.94	89.83	89.49	28,654	28,626	8.30	J
68	1	2023-09-13	13:30:00	32.18	31.95	89.93	89.52	28,664	28,628	8.31	J
69	1	2023-09-13	13:45:00	32.34	32.01	90.22	89.61	28,682	28,659	8.30	J
70	1	2023-09-13	14:00:00	32.60	32.09	90.67	89.77	28,699	28,641	8.30	J
71	1	2023-09-13	14:15:00	32.83	32.20	91.09	89.96	28,716	28,673	8.30	J
72	1	2023-09-13	14:30:00	33.02	32.33	91.44	90.19	28,736	28,687	8.32	J
73	1	2023-09-13	14:45:00	33.06	32.39	91.50	90.31	28,731	28,672	8.32	J
74	1	2023-09-13	15:00:00	32.82	32.43	91.07	90.37	28,729	28,615	8.32	J
75	1	2023-09-13	15:15:00	32.72	32.47	90.90	90.44	28,745	28,697	8.32	J
76	1	2023-09-13	15:30:00	32.97	32.52	91.35	90.54	28,768	28,721	8.33	J
77	1	2023-09-14	09:45:00	27.99	30.94	82.37	87.70	28,790	28,787	8.01	J
78	1	2023-09-14	10:00:00	30.02	30.98	86.04	87.77	28,744	28,774	8.15	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Influent Temperature (°C)	Effluent Temperature (°C)	Influent Temperature (°F)	Effluent Temperature (°F)	Influent Specific Conductivity (µS/cm)	Effluent Specific Conductivity (µS/cm)	Influent pH (SU)	Influent pH Qualifier
79	1	2023-09-14	10:15:00	30.82	31.03	87.47	87.86	28,676	28,759	8.24	J
80	1	2023-09-14	10:30:00	31.07	31.13	87.92	88.04	28,643	28,718	8.26	J
81	1	2023-09-14	10:45:00	31.23	31.22	88.22	88.19	28,627	28,687	8.26	J
82	1	2023-09-14	11:00:00	31.32	31.30	88.38	88.33	28,639	28,675	8.27	J
83	1	2023-09-14	11:15:00	31.42	31.38	88.55	88.48	28,672	28,670	8.27	J
84	1	2023-09-14	11:30:00	31.53	31.47	88.75	88.65	28,727	28,378	8.27	J
85	1	2023-09-14	11:45:00	31.66	31.57	88.99	88.82	28,773	28,737	8.28	J
86	1	2023-09-14	12:00:00	31.82	31.67	89.27	89.01	28,792	28,785	8.28	J
87	1	2023-09-14	12:15:00	31.95	31.78	89.52	89.21	28,774	28,800	8.29	J
88	1	2023-09-14	12:30:00	32.10	31.90	89.77	89.42	28,763	28,798	8.29	J
89	1	2023-09-14	12:45:00	32.25	32.03	90.04	89.65	28,758	28,791	8.29	J
90	1	2023-09-14	13:00:00	32.40	32.14	90.32	89.86	28,767	28,785	8.30	J
91	1	2023-09-14	13:15:00	32.51	32.24	90.53	90.04	28,788	28,779	8.30	J
92	1	2023-09-14	13:30:00	32.63	32.33	90.73	90.20	28,820	28,799	8.30	J
93	1	2023-09-14	13:45:00	32.76	32.41	90.98	90.34	28,839	28,834	8.31	J
94	1	2023-09-14	14:00:00	32.87	32.48	91.17	90.46	28,865	28,850	8.34	J
95	1	2023-09-14	14:15:00	32.99	32.54	91.38	90.57	28,874	28,875	8.36	J
96	1	2023-09-14	14:30:00	33.02	32.58	91.44	90.64	28,823	28,872	8.37	J
97	1	2023-09-14	14:45:00	32.53	32.56	90.55	90.62	28,680	28,822	8.38	J
98	1	2023-09-14	15:00:00	32.88	32.53	91.18	90.56	28,687	28,748	8.37	J
99	1	2023-09-15	12:00:00	31.19	31.60	88.14	88.88	28,617	28,717	8.10	J
100	1	2023-09-15	12:15:00	32.04	31.58	89.67	88.84	28,706	28,710	8.17	J
101	1	2023-09-15	12:30:00	32.47	31.87	90.44	89.36	28,850	28,783	8.32	J
102	1	2023-09-15	12:45:00	32.70	32.28	90.87	90.10	28,905	28,835	8.38	J
103	1	2023-09-15	13:00:00	32.87	32.57	91.17	90.63	28,935	28,881	8.37	J
104	1	2023-09-15	13:15:00	32.99	32.74	91.39	90.93	28,946	28,935	8.37	J
105	1	2023-09-15	13:30:00	33.00	32.82	91.40	91.08	28,960	28,956	8.37	J
106	1	2023-09-15	13:45:00	32.98	32.84	91.37	91.11	28,966	28,961	8.37	J
107	1	2023-09-15	14:00:00	33.02	32.83	91.43	91.10	28,974	28,972	8.38	J
108	1	2023-09-15	14:15:00	33.16	32.82	91.69	91.08	28,983	29,000	8.40	J
109	1	2023-09-15	14:30:00	33.22	32.80	91.79	91.05	28,982	29,002	8.41	J
110	1	2023-09-15	14:45:00	33.27	32.80	91.88	91.04	28,978	29,003	8.42	J
111	1	2023-09-15	15:00:00	33.34	32.81	92.02	91.06	28,982	28,994	8.42	J
112	1	2023-09-15	15:15:00	33.53	32.84	92.35	91.11	28,982	28,995	8.43	J
113	1	2023-09-15	15:30:00	33.75	32.88	92.76	91.19	28,982	28,983	8.44	J
114	1	2023-09-15	15:45:00	34.01	32.93	93.23	91.27	28,989	28,976	8.44	J
115	1	2023-09-15	16:00:00	34.22	32.98	93.60	91.36	28,984	28,996	8.45	J
116	1	2023-09-15	16:15:00	34.10	33.02	93.38	91.43	28,970	28,983	8.46	J
117	1	2023-09-15	16:30:00	33.32	33.05	91.97	91.50	28,943	28,970	8.46	J
118	2	2023-09-26	09:30:00	28.54	29.18	83.38	84.52	29,217	28,798	7.86	J
119	2	2023-09-26	09:45:00	29.03	29.08	84.26	84.34	29,495	28,974	7.88	J
120	2	2023-09-26	10:00:00	29.13	29.10	84.43	84.39	29,394	29,262	7.88	J
121	2	2023-09-26	10:15:00	29.24	29.14	84.63	84.46	29,396	29,374	7.87	J
122	2	2023-09-26	10:30:00	29.49	29.19	85.07	84.54	29,417	29,496	7.88	J
123	2	2023-09-26	10:45:00	29.75	29.23	85.55	84.62	29,432	29,558	7.88	J
124	2	2023-09-26	11:00:00	30.05	29.29	86.09	84.72	29,450	29,542	7.89	J
125	2	2023-09-26	11:15:00	30.39	29.35	86.71	84.82	29,471	29,573	7.90	J
126	2	2023-09-26	11:30:00	30.77	29.40	87.38	84.92	29,490	29,567	7.91	J
127	2	2023-09-26	11:45:00	31.13	29.46	88.03	85.03	29,502	29,539	7.92	J
128	2	2023-09-26	12:00:00	31.47	29.52	88.64	85.14	29,515	29,539	7.92	J
129	2	2023-09-26	12:15:00	31.80	29.57	89.24	85.23	29,533	29,561	7.93	J
130	2	2023-09-26	12:30:00	32.13	29.63	89.84	85.33	29,548	29,564	7.94	J
131	2	2023-09-26	12:45:00	32.46	29.72	90.43	85.49	29,565	29,532	7.95	J
132	2	2023-09-26	13:00:00	32.73	29.82	90.91	85.67	29,578	29,493	7.96	J
133	2	2023-09-26	13:15:00	32.84	29.90	91.12	85.82	29,582	29,398	7.96	J
134	2	2023-09-26	13:30:00	30.90	29.95	87.62	85.91	29,053	29,279	8.05	J
135	2	2023-09-26	13:45:00	29.87	30.00	85.77	86.01	28,857	29,104	7.99	J
136	2	2023-09-26	14:00:00	29.83	30.08	85.70	86.14	28,898	29,021	7.98	J
137	2	2023-09-26	14:15:00	29.93	30.11	85.88	86.20	28,969	28,989	7.99	J
138	2	2023-09-26	14:30:00	30.03	30.13	86.06	86.23	29,023	29,041	7.99	J
139	2	2023-09-26	14:45:00	30.26	30.15	86.47	86.27	29,041	29,063	7.99	J
140	2	2023-09-26	15:00:00	30.54	30.20	86.98	86.36	29,058	29,110	7.99	J
141	2	2023-09-26	15:15:00	31.02	30.28	87.83	86.50	29,084	29,136	8.00	J
142	2	2023-09-26	15:30:00	31.07	30.35	87.92	86.64	29,056	29,147	8.02	J
143	2	2023-09-26	15:45:00	30.98	30.40	87.76	86.73	28,947	29,153	8.03	J
144	2	2023-09-26	16:00:00	30.76	30.48	87.36	86.87	28,931	29,091	8.02	J
145	2	2023-09-26	16:15:00	30.64	30.51	87.15	86.92	28,952	29,043	7.98	J
146	2	2023-09-27	08:45:00	25.66	28.88	78.18	83.98	28,738	28,929	7.65	J
147	2	2023-09-27	09:00:00	27.10	28.95	80.78	84.12	28,682	28,934	7.65	J
148	2	2023-09-27	09:15:00	28.24	28.89	82.82	84.00	28,624	28,879	7.74	J
149	2	2023-09-27	09:30:00	28.57	28.81	83.43	83.86	28,671	28,784	7.76	J
150	2	2023-09-27	09:45:00	28.52	28.80	83.34	83.84	28,673	28,750	7.75	J
151	2	2023-09-27	10:00:00	28.43	28.82	83.18	83.88	28,687	28,726	7.69	J
152	2	2023-09-27	10:15:00	28.46	28.85	83.23	83.93	23,025	28,810	7.59	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Influent Temperature (°C)	Effluent Temperature (°C)	Influent Temperature (°F)	Effluent Temperature (°F)	Influent Specific Conductivity (µS/cm)	Effluent Specific Conductivity (µS/cm)	Influent pH (SU)	Influent pH Qualifier
153	2	2023-09-27	10:30:00	28.73	28.87	83.71	83.96	28,794	28,847	7.54	J
154	2	2023-09-27	10:45:00	28.75	28.89	83.75	84.00	28,809	28,858	7.54	J
155	2	2023-09-27	11:00:00	28.78	28.91	83.81	84.04	28,827	28,861	7.53	J
156	2	2023-09-27	12:45:00	29.03	29.39	84.26	84.90	28,969	28,920	7.62	J
157	2	2023-09-27	13:00:00	29.04	29.32	84.27	84.77	29,032	28,949	7.60	J
158	2	2023-09-27	13:15:00	29.05	29.28	84.29	84.71	29,068	29,011	7.59	J
159	2	2023-09-27	13:30:00	29.04	29.27	84.28	84.69	29,132	29,070	7.60	J
160	2	2023-09-27	13:45:00	29.04	29.27	84.27	84.69	29,264	29,124	7.60	J
161	2	2023-09-27	14:00:00	29.09	29.28	84.36	84.71	29,364	29,199	7.58	J
162	2	2023-09-27	14:15:00	29.20	29.30	84.56	84.73	29,279	29,283	7.59	J
163	2	2023-09-27	14:30:00	29.25	29.32	84.65	84.78	29,259	29,352	7.58	J
164	2	2023-09-27	14:45:00	29.27	29.37	84.68	84.86	29,293	29,366	7.58	J
165	2	2023-09-27	15:00:00	29.28	29.41	84.71	84.93	29,321	29,366	7.60	J
166	2	2023-09-27	15:15:00	29.31	29.43	84.76	84.98	29,363	29,383	7.60	J
167	2	2023-09-27	15:30:00	29.32	29.46	84.78	85.02	29,342	29,418	7.63	J
168	2	2023-09-28	08:45:00	28.08	28.45	82.55	83.21	29,096	29,306	7.57	J
169	2	2023-09-28	09:00:00	28.23	28.43	82.82	83.18	28,778	29,246	7.64	J
170	2	2023-09-28	09:15:00	28.37	28.38	83.06	83.08	28,707	29,111	7.62	J
171	2	2023-09-28	09:30:00	28.41	28.43	83.13	83.18	28,696	28,980	7.63	J
172	2	2023-09-28	09:45:00	28.40	28.48	83.12	83.26	28,700	28,896	7.61	J
173	2	2023-09-28	10:00:00	28.41	28.52	83.14	83.34	28,696	28,857	7.60	J
174	2	2023-09-28	10:15:00	28.43	28.56	83.18	83.40	28,707	28,835	7.61	J
175	2	2023-09-28	10:30:00	28.46	28.58	83.23	83.44	28,701	28,816	7.62	J
176	2	2023-09-28	10:45:00	28.50	28.61	83.30	83.49	28,686	28,808	7.63	J
177	2	2023-09-28	11:00:00	28.59	28.65	83.47	83.56	28,687	28,799	7.63	J
178	2	2023-09-28	11:15:00	28.68	28.70	83.62	83.65	28,686	28,799	7.65	J
179	2	2023-09-28	11:30:00	28.71	28.76	83.67	83.77	28,688	28,804	7.66	J
180	2	2023-09-28	11:45:00	28.67	28.83	83.60	83.89	28,690	28,791	7.64	J
181	2	2023-09-28	12:00:00	28.70	28.87	83.67	83.97	28,701	28,778	7.64	J
182	2	2023-09-28	12:15:00	28.75	28.92	83.76	84.05	28,717	28,781	7.64	J
183	2	2023-09-28	12:30:00	28.90	28.95	84.02	84.11	28,744	28,794	7.65	J
184	2	2023-09-28	12:45:00	28.87	28.98	83.97	84.17	28,788	28,804	7.65	J
185	2	2023-09-28	13:00:00	28.91	29.03	84.04	84.26	28,798	28,817	7.65	J
186	2	2023-09-28	13:15:00	29.01	29.08	84.22	84.34	28,805	28,832	7.68	J
187	2	2023-09-28	13:30:00	29.08	29.12	84.34	84.41	28,814	28,864	7.69	J
188	2	2023-09-28	13:45:00	29.21	29.19	84.58	84.54	28,835	28,886	7.71	J
189	2	2023-09-28	14:00:00	29.27	29.27	84.69	84.68	28,856	28,902	7.74	J
190	2	2023-09-28	14:15:00	29.35	29.33	84.83	84.80	28,860	28,920	7.76	J
191	2	2023-09-28	14:30:00	29.39	29.40	84.91	84.93	28,846	28,934	7.77	J
192	2	2023-09-28	14:45:00	29.44	29.47	84.99	85.05	28,871	28,941	7.77	J
193	2	2023-09-28	15:00:00	29.52	29.53	85.13	85.15	28,925	28,947	7.79	J
194	2	2023-09-28	15:15:00	29.53	29.57	85.15	85.23	28,921	28,956	7.79	J
195	2	2023-09-28	15:30:00	29.52	29.63	85.14	85.33	28,886	28,969	7.80	J
196	2	2023-09-28	15:45:00	29.52	29.67	85.14	85.41	28,882	28,984	7.80	J
197	2	2023-09-28	16:00:00	29.54	29.69	85.18	85.45	28,871	28,991	7.81	J
198	2	2023-09-28	16:15:00	29.57	29.71	85.22	85.48	28,885	28,992	7.81	J
199	2	2023-09-28	16:30:00	29.54	29.73	85.18	85.51	28,905	28,993	7.82	J
200	2	2023-09-28	16:45:00	29.53	29.74	85.16	85.53	28,925	28,996	7.83	J
201	2	2023-09-28	17:00:00	29.56	29.74	85.22	85.54	28,934	29,005	7.84	J
202	2	2023-09-28	17:15:00	29.63	29.76	85.34	85.56	28,949	28,997	7.87	J
203	2	2023-09-28	17:30:00	29.85	29.76	85.73	85.57	28,968	29,013	7.94	J
204	2	2023-09-28	17:45:00	29.95	29.75	85.92	85.55	28,948	29,036	7.99	J
205	2	2023-09-29	08:45:00	25.43	28.99	77.78	84.18	28,868	29,041	7.53	J
206	2	2023-09-29	09:00:00	25.46	28.99	77.82	84.19	28,844	28,994	7.55	J
207	2	2023-09-29	09:15:00	25.64	28.88	78.15	83.98	28,764	28,739	7.54	J
208	2	2023-09-29	09:30:00	25.90	28.80	78.61	83.84	28,677	28,337	7.55	J
209	2	2023-09-29	09:45:00	26.12	28.78	79.01	83.80	28,613	27,976	7.56	J
210	2	2023-09-29	10:00:00	26.26	28.80	79.26	83.83	28,584	27,745	7.56	J
211	2	2023-09-29	10:15:00	26.39	28.83	79.50	83.90	28,561	27,618	7.57	J
212	2	2023-09-29	10:30:00	26.54	28.88	79.77	83.99	28,543	27,560	7.57	J
213	2	2023-09-29	10:45:00	26.73	28.94	80.12	84.10	28,529	27,565	7.57	J
214	2	2023-09-29	11:00:00	28.02	29.02	82.43	84.23	28,126	27,601	7.63	J
215	2	2023-09-29	11:15:00	29.13	29.09	84.44	84.36	27,779	27,658	7.73	J
216	2	2023-09-29	11:30:00	29.20	29.18	84.56	84.53	27,805	27,714	7.72	J
217	2	2023-09-29	11:45:00	29.21	29.27	84.59	84.68	27,867	27,763	7.71	J
218	2	2023-09-29	12:00:00	29.29	29.35	84.73	84.83	27,945	27,814	7.71	J
219	2	2023-09-29	12:15:00	29.34	29.43	84.81	84.97	28,009	27,865	7.70	J
220	2	2023-09-29	12:30:00	29.38	29.49	84.88	85.09	28,037	27,920	7.70	J
221	2	2023-09-29	12:45:00	29.38	29.56	84.89	85.21	28,126	27,975	7.69	J
222	2	2023-09-29	13:00:00	29.41	29.62	84.95	85.32	28,171	28,038	7.70	J
223	2	2023-09-29	13:15:00	29.49	29.65	85.09	85.38	28,185	28,096	7.72	J
224	2	2023-09-29	13:30:00	29.57	29.66	85.22	85.39	28,166	28,161	7.72	J
225	2	2023-09-29	13:45:00	29.64	29.68	85.35	85.43	28,157	28,214	7.72	J
226	2	2023-09-29	14:00:00	29.70	29.71	85.45	85.48	28,151	28,238	7.77	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Influent Temperature (°C)	Effluent Temperature (°C)	Influent Temperature (°F)	Effluent Temperature (°F)	Influent Specific Conductivity (µS/cm)	Effluent Specific Conductivity (µS/cm)	Influent pH (SU)	Influent pH Qualifier
227	2	2023-09-29	14:15:00	29.76	29.75	85.56	85.55	28,171	28,247	7.78	J
228	2	2023-09-29	14:30:00	29.79	29.79	85.63	85.63	28,175	28,254	7.81	J
229	2	2023-09-29	14:45:00	29.76	29.83	85.58	85.70	28,175	28,262	7.82	J
230	2	2023-09-29	15:00:00	29.79	29.85	85.62	85.73	28,198	28,255	7.92	J
231	3	2023-10-16	09:00:00	23.84	23.48	74.91	74.27	27,374	22,190	7.99	J
232	3	2023-10-16	09:15:00	24.27	23.94	75.68	75.09	29,078	24,635	7.99	J
233	3	2023-10-16	09:30:00	24.45	24.02	76.00	75.23	29,782	26,049	7.97	J
234	3	2023-10-16	09:45:00	24.52	24.18	76.13	75.52	30,054	27,410	7.98	J
235	3	2023-10-16	10:00:00	24.55	24.34	76.19	75.81	30,168	28,417	7.96	J
236	3	2023-10-16	10:15:00	24.55	24.47	76.19	76.04	30,213	29,144	7.94	J
237	3	2023-10-16	10:30:00	24.55	24.56	76.19	76.20	30,232	29,620	7.92	J
238	3	2023-10-16	10:45:00	24.57	24.61	76.22	76.29	30,242	29,888	7.88	J
239	3	2023-10-16	11:00:00	24.60	24.64	76.28	76.36	30,246	30,036	7.86	J
240	3	2023-10-16	11:15:00	24.63	24.67	76.33	76.41	30,248	30,113	7.87	J
241	3	2023-10-16	11:30:00	24.64	24.71	76.36	76.47	30,250	30,153	7.86	J
242	3	2023-10-16	11:45:00	24.68	24.73	76.42	76.52	30,253	30,173	7.85	J
243	3	2023-10-16	12:00:00	24.66	24.75	76.39	76.56	30,260	30,182	7.86	J
244	3	2023-10-16	12:15:00	24.65	24.78	76.36	76.60	30,271	30,190	7.89	J
245	3	2023-10-16	12:30:00	24.66	24.79	76.39	76.63	30,273	30,196	7.89	J
246	3	2023-10-16	12:45:00	24.70	24.79	76.47	76.63	30,275	30,203	7.89	J
247	3	2023-10-16	13:00:00	24.74	24.81	76.53	76.65	30,274	30,209	7.88	J
248	3	2023-10-16	13:15:00	24.78	24.83	76.61	76.70	30,275	30,211	7.88	J
249	3	2023-10-16	13:30:00	24.79	24.87	76.62	76.77	30,274	30,214	7.86	J
250	3	2023-10-16	13:45:00	24.81	24.92	76.65	76.85	30,275	30,216	7.86	J
251	3	2023-10-16	14:00:00	24.83	24.95	76.69	76.91	30,277	30,217	7.84	J
252	3	2023-10-16	14:15:00	24.87	24.97	76.77	76.94	30,281	30,218	7.84	J
253	3	2023-10-16	14:30:00	24.90	24.99	76.82	76.97	30,284	30,221	7.86	J
254	3	2023-10-16	14:45:00	24.94	25.01	76.88	77.02	30,290	30,223	7.88	J
255	3	2023-10-17	08:30:00	21.11	21.73	69.99	71.11	30,307	30,221	7.83	J
256	3	2023-10-17	08:45:00	21.65	21.85	70.98	71.34	30,443	30,224	7.80	J
257	3	2023-10-17	09:00:00	22.01	21.77	71.62	71.19	30,519	30,248	7.80	J
258	3	2023-10-17	09:15:00	22.14	21.79	71.86	71.21	30,554	30,322	7.80	J
259	3	2023-10-17	09:30:00	22.21	21.92	71.99	71.45	30,576	30,395	7.81	J
260	3	2023-10-17	09:45:00	22.23	22.06	72.02	71.71	30,584	30,451	7.81	J
261	3	2023-10-17	10:00:00	22.24	22.18	72.04	71.93	30,588	30,491	7.81	J
262	3	2023-10-17	10:15:00	22.23	22.25	72.02	72.06	30,587	30,514	7.81	J
263	3	2023-10-17	10:30:00	22.24	22.30	72.03	72.15	30,589	30,528	7.80	J
264	3	2023-10-17	10:45:00	22.29	22.33	72.12	72.19	30,601	30,533	7.80	J
265	3	2023-10-17	11:00:00	22.33	22.35	72.20	72.23	30,614	30,537	7.80	J
266	3	2023-10-17	11:15:00	22.39	22.38	72.30	72.28	30,628	30,548	7.81	J
267	3	2023-10-17	11:30:00	22.42	22.42	72.35	72.36	30,631	30,557	7.81	J
268	3	2023-10-17	11:45:00	22.45	22.47	72.40	72.45	30,636	30,565	7.81	J
269	3	2023-10-17	12:00:00	22.48	22.51	72.47	72.52	30,646	30,572	7.80	J
270	3	2023-10-17	12:15:00	22.53	22.56	72.56	72.61	30,659	30,582	7.80	J
271	3	2023-10-17	12:30:00	22.58	22.61	72.64	72.70	30,668	30,591	7.80	J
272	3	2023-10-17	12:45:00	22.63	22.67	72.74	72.80	30,676	30,600	7.80	J
273	3	2023-10-17	13:00:00	22.69	22.72	72.84	72.90	30,680	30,609	7.81	J
274	3	2023-10-17	13:15:00	22.75	22.79	72.96	73.02	30,685	30,618	7.82	J
275	3	2023-10-17	13:30:00	22.78	22.85	73.01	73.13	30,669	30,625	7.83	J
276	3	2023-10-17	13:45:00	22.79	22.91	73.02	73.23	30,643	30,628	7.83	J
277	3	2023-10-17	14:00:00	22.82	22.95	73.08	73.32	30,639	30,621	7.82	J
278	3	2023-10-17	14:15:00	22.87	22.98	73.16	73.37	30,639	30,613	7.83	J
279	3	2023-10-17	14:30:00	22.92	23.01	73.25	73.43	30,616	30,605	7.84	J
280	3	2023-10-17	14:45:00	22.97	23.05	73.35	73.48	30,611	30,594	7.84	J
281	3	2023-10-18	08:45:00	20.97	21.10	69.75	69.98	30,496	30,594	7.78	J
282	3	2023-10-18	09:00:00	21.25	21.07	70.25	69.93	30,444	30,575	7.79	J
283	3	2023-10-18	09:15:00	21.41	21.12	70.53	70.02	30,430	30,521	7.80	J
284	3	2023-10-18	09:30:00	21.48	21.26	70.67	70.26	30,417	30,465	7.80	J
285	3	2023-10-18	09:45:00	21.52	21.39	70.74	70.50	30,396	30,425	7.80	J
286	3	2023-10-18	10:00:00	21.54	21.51	70.78	70.72	30,372	30,393	7.80	J
287	3	2023-10-18	10:15:00	21.55	21.59	70.80	70.86	30,356	30,364	7.80	J
288	3	2023-10-18	10:30:00	21.56	21.65	70.81	70.96	30,345	30,352	7.80	J
289	3	2023-10-18	10:45:00	21.58	21.68	70.84	71.03	30,337	30,330	7.79	J
290	3	2023-10-18	11:00:00	21.59	21.71	70.86	71.08	30,331	30,315	7.79	J
291	3	2023-10-18	11:15:00	21.61	21.74	70.89	71.13	30,325	30,308	7.78	J
292	3	2023-10-18	11:30:00	21.70	21.76	71.06	71.16	30,342	30,298	7.78	J
293	3	2023-10-18	11:45:00	21.78	21.79	71.20	71.22	30,358	30,292	7.80	J
294	3	2023-10-18	12:00:00	21.72	21.85	71.09	71.33	30,288	30,295	7.83	J
295	3	2023-10-18	12:15:00	21.56	21.90	70.82	71.42	30,158	30,294	7.86	J
296	3	2023-10-18	12:30:00	21.49	21.90	70.68	71.42	30,102	30,256	7.86	J
297	3	2023-10-18	12:45:00	21.62	21.85	70.92	71.34	30,158	30,190	7.86	J
298	3	2023-10-18	13:00:00	21.78	21.83	71.20	71.30	30,227	30,140	7.86	J
299	3	2023-10-18	13:15:00	21.89	21.87	71.40	71.37	30,189	30,131	7.87	J
300	3	2023-10-18	13:30:00	21.94	21.96	71.50	71.53	30,093	30,144	7.89	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Influent Temperature (°C)	Effluent Temperature (°C)	Influent Temperature (°F)	Effluent Temperature (°F)	Influent Specific Conductivity (µS/cm)	Effluent Specific Conductivity (µS/cm)	Influent pH (SU)	Influent pH Qualifier
301	3	2023-10-18	13:45:00	21.95	22.06	71.50	71.70	30,005	30,134	7.92	J
302	3	2023-10-18	14:00:00	21.97	22.13	71.55	71.83	29,987	30,081	7.94	J
303	3	2023-10-18	14:15:00	22.04	22.18	71.68	71.92	30,045	30,022	7.95	J
304	3	2023-10-18	14:30:00	22.16	22.22	71.90	71.99	30,120	29,996	7.96	J
305	3	2023-10-18	14:45:00	22.33	22.29	72.20	72.12	30,166	30,005	7.97	J
306	3	2023-10-18	15:00:00	22.49	22.37	72.48	72.26	30,189	30,044	7.99	J
307	3	2023-10-19	09:15:00	21.70	21.75	71.06	71.15	30,360	30,133	7.87	J
308	3	2023-10-19	09:30:00	22.00	21.85	71.61	71.34	30,607	30,156	7.86	J
309	3	2023-10-19	09:45:00	22.13	21.92	71.84	71.45	30,703	30,260	7.86	J
310	3	2023-10-19	10:00:00	22.21	22.05	71.98	71.68	30,755	30,400	7.87	J
311	3	2023-10-19	10:15:00	22.27	22.18	72.08	71.93	30,791	30,521	7.87	J
312	3	2023-10-19	10:30:00	22.31	22.30	72.16	72.14	30,813	30,615	7.87	J
313	3	2023-10-19	10:45:00	22.35	22.39	72.22	72.30	30,848	30,676	7.87	J
314	3	2023-10-19	11:00:00	22.38	22.46	72.28	72.43	30,864	30,721	7.86	J
315	3	2023-10-19	11:15:00	22.43	22.52	72.37	72.53	30,863	30,755	7.85	J
316	3	2023-10-19	11:30:00	22.47	22.57	72.44	72.62	30,862	30,767	7.82	J
317	3	2023-10-19	11:45:00	22.53	22.63	72.55	72.74	30,858	30,778	7.80	J
318	3	2023-10-19	12:00:00	22.60	22.70	72.69	72.85	30,805	30,791	7.84	J
319	3	2023-10-19	12:15:00	22.65	22.75	72.76	72.95	30,706	30,796	7.87	J
320	3	2023-10-19	12:30:00	22.66	22.81	72.79	73.05	30,645	30,770	7.89	J
321	3	2023-10-19	12:45:00	22.69	22.86	72.84	73.15	30,617	30,709	7.90	J
322	3	2023-10-19	13:00:00	22.74	22.91	72.93	73.23	30,621	30,653	7.90	J
323	3	2023-10-19	13:15:00	22.88	22.95	73.18	73.31	30,647	30,593	7.90	J
324	3	2023-10-19	13:30:00	23.03	23.01	73.45	73.41	30,661	30,585	7.91	J
325	3	2023-10-19	13:45:00	23.16	23.10	73.69	73.58	30,640	30,583	7.92	J
326	3	2023-10-19	14:00:00	23.28	23.22	73.90	73.79	30,615	30,585	7.94	J
327	3	2023-10-19	14:15:00	23.39	23.34	74.11	74.01	30,587	30,585	7.96	J
328	3	2023-10-19	14:30:00	23.48	23.46	74.26	74.22	30,552	30,574	7.97	J
329	3	2023-10-19	14:45:00	23.55	23.57	74.39	74.43	30,527	30,551	7.98	J
330	3	2023-10-19	15:00:00	23.61	23.67	74.50	74.61	30,522	30,522	7.99	J
331	3	2023-10-20	08:30:00	22.75	22.87	72.95	73.17	31,019	30,504	7.89	J
332	3	2023-10-20	08:45:00	22.95	23.00	73.30	73.39	32,163	30,536	7.83	J
333	3	2023-10-20	09:00:00	23.07	23.01	73.52	73.43	32,765	30,884	7.81	J
334	3	2023-10-20	09:15:00	23.14	23.07	73.64	73.53	33,077	31,462	7.80	J
335	3	2023-10-20	09:30:00	23.19	23.15	73.75	73.67	33,350	32,029	7.79	J
336	3	2023-10-20	09:45:00	23.21	23.23	73.78	73.82	33,447	32,492	7.81	J
337	3	2023-10-20	10:00:00	23.22	23.30	73.79	73.94	33,505	32,854	7.83	J
338	3	2023-10-20	10:15:00	23.22	23.35	73.80	74.03	33,538	33,098	7.85	J
339	3	2023-10-20	10:30:00	23.23	23.39	73.82	74.10	33,573	33,265	7.87	J
340	3	2023-10-20	10:45:00	23.26	23.41	73.86	74.15	33,574	33,372	7.88	J
341	3	2023-10-20	11:00:00	23.28	23.44	73.91	74.19	33,591	33,437	7.89	J
342	3	2023-10-20	11:15:00	23.31	23.46	73.95	74.23	33,573	33,471	7.89	J
343	3	2023-10-20	11:30:00	23.33	23.49	74.00	74.28	33,614	33,492	7.89	J
344	3	2023-10-20	11:45:00	23.35	23.52	74.04	74.33	33,652	33,501	7.90	J
345	3	2023-10-20	12:00:00	23.39	23.55	74.09	74.38	33,661	33,523	7.90	J
346	3	2023-10-20	12:15:00	23.41	23.58	74.14	74.45	33,722	33,549	7.91	J
347	3	2023-10-20	12:30:00	23.43	23.62	74.18	74.51	33,780	33,576	7.92	J
348	3	2023-10-20	12:45:00	23.46	23.66	74.22	74.58	33,836	33,617	7.92	J
349	3	2023-10-20	13:00:00	23.49	23.69	74.28	74.64	33,891	33,660	7.93	J
350	3	2023-10-20	13:15:00	23.53	23.72	74.35	74.69	33,982	33,710	7.93	J
351	3	2023-10-20	13:30:00	23.58	23.75	74.44	74.75	34,139	33,767	7.93	J
352	3	2023-10-20	13:45:00	23.63	23.77	74.54	74.79	34,499	33,850	7.92	J
353	3	2023-10-20	14:00:00	23.68	23.77	74.62	74.78	35,032	34,149	7.93	J
354	4	2023-10-23	09:30:00	22.81	23.19	73.06	73.74	35,148	34,667	7.91	J
355	4	2023-10-23	09:45:00	23.27	23.16	73.89	73.68	34,232	34,785	8.04	J
356	4	2023-10-23	10:00:00	23.50	23.17	74.31	73.71	33,725	34,395	8.12	J
357	4	2023-10-23	10:15:00	23.62	23.31	74.51	73.96	33,481	34,497	8.14	J
358	4	2023-10-23	10:30:00	23.61	23.51	74.51	74.32	33,263	34,102	8.16	J
359	4	2023-10-23	10:45:00	23.58	23.66	74.45	74.59	33,100	33,757	8.17	J
360	4	2023-10-23	11:00:00	23.61	23.75	74.49	74.75	33,037	33,463	8.18	J
361	4	2023-10-23	11:15:00	23.58	23.80	74.45	74.84	32,921	33,271	8.18	J
362	4	2023-10-23	11:30:00	23.52	23.82	74.33	74.88	32,780	33,112	8.20	J
363	4	2023-10-23	11:45:00	23.51	23.82	74.32	74.87	32,625	32,976	8.22	J
364	4	2023-10-23	12:00:00	23.56	23.80	74.40	74.84	32,500	32,843	8.23	J
365	4	2023-10-23	12:15:00	23.61	23.81	74.50	74.85	32,449	32,705	8.24	J
366	4	2023-10-23	12:30:00	23.66	23.82	74.59	74.88	32,424	32,576	8.24	J
367	4	2023-10-23	12:45:00	23.73	23.86	74.71	74.95	32,420	32,480	8.24	J
368	4	2023-10-23	13:00:00	23.82	23.91	74.88	75.04	32,440	32,426	8.24	J
369	4	2023-10-23	13:15:00	23.89	23.98	75.00	75.16	32,447	32,393	8.24	J
370	4	2023-10-23	13:30:00	23.97	24.05	75.14	75.29	32,455	32,382	8.24	J
371	4	2023-10-23	13:45:00	24.03	24.12	75.25	75.42	32,462	32,381	8.24	J
372	4	2023-10-23	14:00:00	24.10	24.18	75.37	75.53	32,468	32,385	8.25	J
373	4	2023-10-23	14:15:00	24.18	24.24	75.52	75.63	32,480	32,391	8.25	J
374	4	2023-10-23	14:30:00	24.24	24.30	75.64	75.75	32,499	32,398	8.25	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Influent Temperature (°C)	Effluent Temperature (°C)	Influent Temperature (°F)	Effluent Temperature (°F)	Influent Specific Conductivity (µS/cm)	Effluent Specific Conductivity (µS/cm)	Influent pH (SU)	Influent pH Qualifier
375	4	2023-10-23	14:45:00	24.28	24.37	75.70	75.87	32,531	32,407	8.25	J
376	4	2023-10-23	15:00:00	24.25	24.43	75.65	75.97	32,535	32,419	8.25	J
377	4	2023-10-23	15:15:00	24.27	24.47	75.68	76.04	32,551	32,439	8.24	J
378	4	2023-10-23	15:30:00	24.31	24.49	75.75	76.09	32,561	32,455	8.22	J
379	4	2023-10-24	09:00:00	23.23	23.69	73.81	74.64	32,666	32,521	8.00	J
380	4	2023-10-24	09:15:00	23.42	23.60	74.16	74.49	32,684	32,538	8.24	J
381	4	2023-10-24	09:30:00	23.45	23.53	74.21	74.35	32,683	32,570	8.24	J
382	4	2023-10-24	09:45:00	23.50	23.53	74.29	74.36	32,687	32,597	8.23	J
383	4	2023-10-24	10:00:00	23.47	23.55	74.25	74.39	32,683	32,598	8.22	J
384	4	2023-10-24	10:15:00	23.48	23.56	74.26	74.40	32,683	32,614	8.22	J
385	4	2023-10-24	10:30:00	23.49	23.56	74.29	74.40	32,682	32,609	8.21	J
386	4	2023-10-24	10:45:00	23.47	23.56	74.24	74.40	32,680	32,601	8.21	J
387	4	2023-10-24	11:00:00	23.51	23.55	74.31	74.40	32,692	32,595	8.21	J
388	4	2023-10-24	11:15:00	23.58	23.58	74.44	74.45	32,708	32,617	8.22	J
389	4	2023-10-24	11:30:00	23.58	23.62	74.45	74.51	32,711	32,611	8.23	J
390	4	2023-10-24	11:45:00	23.57	23.63	74.42	74.54	32,719	32,614	8.22	J
391	4	2023-10-24	12:00:00	23.58	23.65	74.45	74.58	32,725	32,631	8.22	J
392	4	2023-10-24	12:15:00	23.64	23.67	74.56	74.61	32,741	32,652	8.22	J
393	4	2023-10-24	12:30:00	23.70	23.71	74.65	74.67	32,759	32,673	8.22	J
394	4	2023-10-24	12:45:00	23.75	23.76	74.75	74.76	32,794	32,681	8.22	J
395	4	2023-10-24	13:00:00	23.84	23.81	74.92	74.87	32,814	32,682	8.21	J
396	4	2023-10-24	13:15:00	23.95	23.88	75.11	74.99	32,824	32,701	8.21	J
397	4	2023-10-24	13:30:00	24.06	23.96	75.31	75.12	32,832	32,735	8.21	J
398	4	2023-10-24	13:45:00	24.19	24.01	75.54	75.23	32,842	32,779	8.21	J
399	4	2023-10-24	14:00:00	24.31	24.03	75.75	75.25	32,850	32,816	8.22	J
400	4	2023-10-24	14:15:00	24.40	24.02	75.91	75.24	32,858	32,838	8.22	J
401	4	2023-10-24	14:30:00	23.89	24.01	75.01	75.22	33,094	32,867	7.96	J
402	4	2023-10-24	14:45:00	23.94	24.04	75.10	75.26	33,177	32,899	8.01	J
403	4	2023-10-24	15:00:00	23.97	24.04	75.14	75.28	33,233	32,960	7.97	J
404	4	2023-10-25	10:15:00	23.15	23.59	73.67	74.47	33,440	33,158	7.94	J
405	4	2023-10-25	10:30:00	23.11	23.55	73.59	74.40	33,677	33,229	7.93	J
406	4	2023-10-25	10:45:00	23.13	23.46	73.63	74.24	33,671	33,347	7.87	J
407	4	2023-10-25	11:00:00	23.14	23.42	73.66	74.16	33,662	33,447	7.87	J
408	4	2023-10-25	11:15:00	23.17	23.40	73.71	74.12	33,622	33,509	7.88	J
409	4	2023-10-25	11:30:00	23.21	23.39	73.77	74.11	33,597	33,540	7.92	J
410	4	2023-10-25	11:45:00	23.25	23.40	73.85	74.13	33,567	33,553	7.90	J
411	4	2023-10-25	12:00:00	23.27	23.44	73.88	74.19	33,610	33,543	7.84	J
412	4	2023-10-25	12:15:00	23.33	23.47	73.99	74.25	33,565	33,536	7.88	J
413	4	2023-10-25	12:30:00	23.37	23.51	74.07	74.33	33,572	33,531	7.91	J
414	4	2023-10-26	08:30:00	22.95	23.13	73.32	73.64	33,350	33,788	8.12	J
415	4	2023-10-26	08:45:00	22.93	23.12	73.28	73.61	34,191	33,988	8.12	J
416	4	2023-10-26	09:00:00	22.94	23.07	73.28	73.52	34,127	33,704	8.10	J
417	4	2023-10-26	09:15:00	23.03	23.05	73.45	73.50	34,142	34,100	8.10	J
418	4	2023-10-26	09:30:00	23.05	23.06	73.48	73.51	34,173	33,708	8.10	J
419	4	2023-10-26	09:45:00	23.05	23.08	73.49	73.55	34,116	34,104	8.09	J
420	4	2023-10-26	10:00:00	23.05	23.11	73.49	73.60	34,087	34,078	8.08	J
421	4	2023-10-26	10:15:00	23.06	23.14	73.52	73.65	34,045	34,055	8.08	J
422	4	2023-10-26	10:30:00	23.07	23.16	73.52	73.68	34,036	34,029	8.07	J
423	4	2023-10-26	10:45:00	23.13	23.16	73.63	73.68	33,683	32,488	7.97	J
424	4	2023-10-26	11:00:00	23.07	23.22	73.53	73.80	34,065	33,983	7.70	J
425	4	2023-10-26	11:15:00	23.10	23.27	73.59	73.88	34,042	33,980	7.70	J
426	4	2023-10-26	11:30:00	23.17	23.33	73.71	73.99	34,052	33,979	7.67	J
427	4	2023-10-27	08:00:00	23.60	23.65	74.49	74.57	34,324	34,014	7.98	J
428	4	2023-10-27	08:15:00	23.75	23.64	74.76	74.54	34,353	34,055	8.13	J
429	4	2023-10-27	08:30:00	23.71	23.70	74.69	74.67	34,153	34,133	8.13	J
430	4	2023-10-27	08:45:00	23.64	23.77	74.56	74.79	33,944	34,183	8.13	J
431	4	2023-10-27	09:00:00	23.55	23.77	74.39	74.79	33,860	34,089	8.12	J
432	4	2023-10-27	09:15:00	23.62	23.72	74.52	74.70	34,111	33,926	8.11	J
433	4	2023-10-27	09:30:00	23.67	23.71	74.61	74.67	34,334	33,898	8.13	J
434	4	2023-10-27	09:45:00	23.70	23.74	74.66	74.74	34,480	34,032	8.13	J
435	4	2023-10-27	10:00:00	23.77	23.79	74.78	74.82	34,592	34,192	8.12	J
436	4	2023-10-27	10:15:00	23.82	23.84	74.88	74.91	34,804	34,329	8.13	J
437	4	2023-10-27	10:30:00	23.67	23.89	74.61	75.01	34,825	34,484	8.14	J
438	4	2023-10-27	10:45:00	23.54	23.90	74.38	75.02	34,769	34,614	8.14	J
439	4	2023-10-27	11:00:00	23.57	23.84	74.42	74.90	34,703	34,687	8.14	J
440	4	2023-10-27	11:15:00	23.62	23.76	74.52	74.77	34,685	34,675	8.14	J
441	4	2023-10-27	11:30:00	23.64	23.73	74.56	74.71	34,660	34,640	8.14	J
442	4	2023-10-27	11:45:00	23.73	23.77	74.72	74.78	34,583	34,623	8.14	J
443	4	2023-10-27	12:00:00	24.01	23.89	75.22	75.01	23,994	34,624	8.14	J
444	4	2023-10-27	12:15:00	23.95	23.96	75.11	75.13	34,604	34,600	8.14	J
445	4	2023-10-27	12:30:00	23.97	23.98	75.14	75.16	34,589	34,561	8.15	J
446	4	2023-10-27	12:45:00	23.97	24.04	75.15	75.27	34,592	34,536	8.15	J
447	4	2023-10-27	13:00:00	24.00	24.09	75.20	75.35	34,617	34,519	8.15	J
448	5	2023-11-08	12:15:00		22.95		73.31		28,096		J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Influent Temperature (°C)	Effluent Temperature (°C)	Influent Temperature (°F)	Effluent Temperature (°F)	Influent Specific Conductivity (µS/cm)	Effluent Specific Conductivity (µS/cm)	Influent pH (SU)	Influent pH Qualifier
449	5	2023-11-08	12:30:00	22.86	23.00	73.14	73.39	28,131	28,080	8.29	J
450	5	2023-11-08	12:45:00	22.96	23.01	73.33	73.42	28,062	28,049	8.31	J
451	5	2023-11-08	13:00:00	23.06	23.05	73.51	73.49	27,998	28,006	8.32	J
452	5	2023-11-08	13:15:00	23.07	23.12	73.52	73.62	28,074	27,987	8.31	J
453	5	2023-11-08	13:30:00	23.10	23.21	73.59	73.77	28,131	27,969	8.32	J
454	5	2023-11-08	13:45:00	23.10	23.27	73.59	73.88	28,167	27,961	8.32	J
455	5	2023-11-08	14:00:00	23.11	23.30	73.60	73.94	28,158	27,973	8.32	J
456	5	2023-11-08	14:15:00	23.12	23.31	73.61	73.97	28,148	27,996	8.32	J
457	5	2023-11-08	14:30:00	23.12	23.33	73.62	74.00	28,153	28,017	8.32	J
458	5	2023-11-08	14:45:00	23.13	23.35	73.63	74.04	28,176	28,030	8.31	J
459	5	2023-11-08	15:00:00	23.17	23.39	73.71	74.09	28,201	28,041	8.30	J
460	5	2023-11-08	15:15:00	23.19	23.42	73.74	74.15	28,190	28,049	8.31	J
461	5	2023-11-08	15:30:00	23.20	23.43	73.76	74.18	28,167	28,060	8.31	J
462	5	2023-11-08	15:45:00	23.23	23.45	73.82	74.21	28,148	28,067	8.32	J
463	5	2023-11-08	16:00:00	23.24	23.47	73.83	74.24	28,144	28,072	8.31	J
464	5	2023-11-08	16:15:00	23.25	23.48	73.86	74.27	28,154	28,063	8.31	J
465	5	2023-11-08	16:30:00	23.33	23.49	74.00	74.29	28,142	28,057	8.31	J
466	5	2023-11-08	16:45:00	23.33	23.50	74.00	74.30	28,169	28,051	8.29	J
467	5	2023-11-08	17:00:00	23.31	23.52	73.96	74.34	28,217	28,048	8.27	J
468	5	2023-11-08	17:15:00	23.32	23.53	73.97	74.35	28,260	28,052	8.26	J
469	5	2023-11-08	17:30:00	23.30	23.53	73.95	74.35	28,289	28,067	8.27	J
470	5	2023-11-08	17:45:00	23.29	23.51	73.93	74.32	28,296	28,094	8.26	J
471	5	2023-11-08	18:00:00	23.27	23.49	73.89	74.29	28,294	28,125	8.26	J
472	5	2023-11-08	18:15:00	23.26	23.48	73.87	74.26	28,291	28,152	8.26	J
473	5	2023-11-08	18:30:00	23.28	23.46	73.91	74.23	28,302	28,167	8.26	J
474	5	2023-11-08	18:45:00	23.24	23.45	73.83	74.20	28,283	28,179	8.26	J
475	5	2023-11-08	19:00:00	23.20	23.44	73.75	74.19	28,259	28,184	8.26	J
476	5	2023-11-08	19:15:00	23.21	23.42	73.78	74.16	28,259	28,185	8.26	J
477	5	2023-11-08	19:30:00	23.18	23.40	73.73	74.13	28,236	28,175	8.26	J
478	5	2023-11-08	19:45:00	23.21	23.39	73.78	74.09	28,223	28,168	8.26	J
479	5	2023-11-08	20:00:00	23.23	23.37	73.81	74.07	28,219	28,155	8.26	J
480	5	2023-11-08	20:15:00	23.22	23.37	73.79	74.06	28,211	28,134	8.27	J
481	5	2023-11-08	20:30:00	23.21	23.37	73.78	74.07	28,203	28,130	8.27	J
482	5	2023-11-08	20:45:00	23.20	23.37	73.76	74.07	28,199	28,131	8.27	J
483	5	2023-11-08	21:00:00	23.18	23.37	73.72	74.07	28,195	28,116	8.26	J
484	5	2023-11-08	21:15:00	23.16	23.37	73.69	74.06	28,196	28,105	8.26	J
485	5	2023-11-08	21:30:00	23.15	23.36	73.67	74.04	28,195	28,102	8.26	J
486	5	2023-11-08	21:45:00	23.14	23.34	73.66	74.02	28,191	28,095	8.25	J
487	5	2023-11-08	22:00:00	23.14	23.33	73.64	73.99	28,192	28,093	8.25	J
488	5	2023-11-08	22:15:00	23.13	23.32	73.63	73.97	28,186	28,094	8.25	J
489	5	2023-11-08	22:30:00	23.12	23.31	73.62	73.95	28,188	28,090	8.24	J
490	5	2023-11-08	22:45:00	23.11	23.30	73.60	73.93	28,195	28,089	8.23	J
491	5	2023-11-08	23:00:00	23.11	23.29	73.59	73.92	28,194	28,091	8.23	J
492	5	2023-11-08	23:15:00	23.09	23.28	73.56	73.90	28,210	28,088	8.20	J
493	5	2023-11-08	23:30:00	23.08	23.27	73.55	73.89	28,197	28,090	8.21	J
494	5	2023-11-08	23:45:00	23.07	23.26	73.53	73.87	28,199	28,094	8.20	J
495	5	2023-11-08	23:59:00	23.06	23.25	73.51	73.86	28,198	28,109	8.17	J
496	5	2023-11-09	00:15:00	23.04	23.24	73.46	73.84	28,191	28,107	8.16	J
497	5	2023-11-09	00:30:00	23.02	23.23	73.43	73.82	28,188	28,108	8.20	J
498	5	2023-11-09	00:45:00	22.99	23.22	73.38	73.79	28,187	28,108	8.21	J
499	5	2023-11-09	01:00:00	22.94	23.20	73.29	73.76	28,203	28,116	8.19	J
500	5	2023-11-09	01:15:00	22.88	23.18	73.18	73.72	28,212	28,113	8.17	J
501	5	2023-11-09	01:30:00	22.83	23.15	73.10	73.67	28,216	28,125	8.15	J
502	5	2023-11-09	01:45:00	22.83	23.11	73.09	73.59	28,214	28,128	8.16	J
503	5	2023-11-09	02:00:00	22.81	23.07	73.05	73.52	28,163	28,096	8.17	J
504	5	2023-11-09	02:15:00	22.79	23.03	73.01	73.46	28,118	28,097	8.14	J
505	5	2023-11-09	02:30:00	22.79	23.00	73.03	73.41	28,110	28,096	8.15	J
506	5	2023-11-09	02:45:00	22.79	22.98	73.03	73.36	28,106	28,084	8.16	J
507	5	2023-11-09	03:00:00	22.81	22.96	73.06	73.34	28,119	28,056	8.15	J
508	5	2023-11-09	03:15:00	22.83	22.96	73.10	73.32	28,137	28,047	8.13	J
509	5	2023-11-09	03:30:00	22.85	22.96	73.13	73.32	28,152	28,041	8.11	J
510	5	2023-11-09	03:45:00	22.85	22.96	73.13	73.33	28,159	28,043	8.11	J
511	5	2023-11-09	04:00:00	22.85	22.97	73.13	73.35	28,162	28,051	8.11	J
512	5	2023-11-09	04:15:00	22.85	22.98	73.13	73.36	28,185	28,056	8.10	J
513	5	2023-11-09	04:30:00	22.85	22.99	73.13	73.38	28,185	28,060	8.08	J
514	5	2023-11-09	04:45:00	22.82	22.99	73.07	73.38	28,182	28,068	8.05	J
515	5	2023-11-09	05:00:00	22.77	22.99	72.98	73.38	28,176	28,071	8.04	J
516	5	2023-11-09	05:15:00	22.73	22.98	72.92	73.36	28,167	28,069	8.04	J
517	5	2023-11-09	05:30:00	22.71	22.96	72.87	73.32	28,164	28,067	8.06	J
518	5	2023-11-09	05:45:00	22.69	22.93	72.85	73.27	28,174	28,061	8.09	J
519	5	2023-11-09	06:00:00	22.73	22.90	72.91	73.21	28,191	28,048	8.12	J
520	5	2023-11-09	06:15:00	22.75	22.87	72.95	73.17	28,195	28,042	8.11	J
521	5	2023-11-09	06:30:00	22.77	22.86	72.98	73.15	28,188	28,058	8.11	J
522	5	2023-11-09	06:45:00	22.75	22.87	72.96	73.16	28,149	28,074	8.11	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Influent Temperature (°C)	Effluent Temperature (°C)	Influent Temperature (°F)	Effluent Temperature (°F)	Influent Specific Conductivity (µS/cm)	Effluent Specific Conductivity (µS/cm)	Influent pH (SU)	Influent pH Qualifier
523	5	2023-11-09	07:00:00	22.77	22.88	72.99	73.18	28,179	28,074	8.11	J
524	5	2023-11-09	07:15:00	22.74	22.89	72.93	73.19	28,087	28,068	8.10	J
525	5	2023-11-09	07:30:00	22.68	22.90	72.82	73.22	27,888	28,062	8.10	J
526	5	2023-11-09	07:45:00	22.76	22.90	72.98	73.22	28,089	28,029	8.09	J
527	5	2023-11-09	08:00:00	22.77	22.90	72.98	73.22	28,045	27,976	8.10	J
528	5	2023-11-09	08:15:00	22.83	22.91	73.10	73.23	28,172	27,949	8.10	J
529	5	2023-11-09	08:30:00	22.85	22.93	73.13	73.27	28,191	27,947	8.10	J
530	5	2023-11-09	08:45:00	22.84	22.96	73.10	73.33	28,140	27,973	8.10	J
531	5	2023-11-09	09:00:00	22.79	22.99	73.03	73.39	28,019	28,011	8.12	J
532	5	2023-11-09	09:15:00	22.80	23.02	73.03	73.44	27,995	28,014	8.11	J
533	5	2023-11-09	09:30:00	22.83	23.04	73.09	73.47	28,004	27,991	8.11	J
534	5	2023-11-09	09:45:00	22.87	23.05	73.16	73.50	28,072	27,952	8.11	J
535	5	2023-11-09	10:00:00	22.87	23.08	73.17	73.54	28,082	27,933	8.11	J
536	5	2023-11-09	10:15:00	22.90	23.11	73.23	73.59	28,095	27,939	8.11	J
537	5	2023-11-09	10:30:00	22.97	23.14	73.35	73.65	28,099	27,954	8.13	J
538	5	2023-11-09	10:45:00	23.02	23.17	73.44	73.71	28,095	27,967	8.14	J
539	5	2023-11-09	11:00:00	23.04	23.21	73.47	73.78	28,109	27,978	8.16	J
540	5	2023-11-09	11:15:00	23.06	23.27	73.52	73.88	28,155	27,988	8.16	J
541	5	2023-11-09	11:30:00	23.09	23.32	73.56	73.97	28,152	28,000	8.16	J
542	5	2023-11-09	11:45:00	23.12	23.36	73.62	74.05	28,158	28,016	8.16	J
543	5	2023-11-09	12:00:00	23.13	23.40	73.64	74.12	28,166	28,030	8.17	J
544	5	2023-11-09	12:15:00	23.15	23.43	73.67	74.17	28,168	28,039	8.17	J
545	5	2023-11-09	12:30:00	23.16	23.46	73.70	74.22	28,156	28,050	8.18	J
546	5	2023-11-09	12:45:00	23.16	23.48	73.69	74.27	28,130	28,055	8.17	J
547	5	2023-11-09	13:00:00	23.18	23.50	73.72	74.31	28,165	28,056	8.17	J
548	5	2023-11-09	13:15:00	23.23	23.52	73.81	74.33	28,182	28,050	8.17	J
549	5	2023-11-09	13:30:00	23.28	23.54	73.90	74.36	28,167	28,053	8.17	J
550	5	2023-11-09	13:45:00	23.31	23.56	73.96	74.40	28,187	28,057	8.17	J
551	5	2023-11-09	14:00:00	23.33	23.58	74.00	74.45	28,197	28,062	8.17	J
552	5	2023-11-09	14:15:00	23.36	23.59	74.06	74.47	28,213	28,071	8.17	J
553	5	2023-11-09	14:30:00	23.43	23.64	74.17	74.54	28,196	28,080	8.17	J
554	5	2023-11-09	14:45:00	23.45	23.67	74.22	74.61	28,216	28,087	8.16	J
555	5	2023-11-09	15:00:00	23.52	23.70	74.34	74.66	28,209	28,092	8.18	J
556	5	2023-11-09	15:15:00	23.66	23.72	74.59	74.70	28,187	28,099	8.18	J
557	5	2023-11-09	15:30:00	23.63	23.76	74.53	74.77	28,245	28,100	8.18	J
558	5	2023-11-09	15:45:00	23.67	23.82	74.61	74.87	28,264	28,100	8.18	J
559	5	2023-11-09	16:00:00	23.68	23.86	74.63	74.95	28,317	28,109	8.17	J
560	5	2023-11-09	16:15:00	23.68	23.90	74.63	75.01	28,311	28,127	8.17	J
561	5	2023-11-09	16:30:00	23.71	23.92	74.68	75.06	28,311	28,150	8.18	J
562	5	2023-11-09	16:45:00	23.70	23.94	74.65	75.08	28,269	28,170	8.19	J
563	5	2023-11-09	17:00:00	23.72	23.90	74.69	75.02	28,214	28,176	8.19	J
564	5	2023-11-09	17:15:00	23.72	23.89	74.69	75.00	28,198	28,176	8.20	J
565	5	2023-11-09	17:30:00	23.70	23.90	74.66	75.02	28,204	28,160	8.21	J
566	5	2023-11-09	17:45:00	23.64	23.90	74.55	75.02	28,223	28,137	8.20	J
567	5	2023-11-09	18:00:00	23.65	23.89	74.58	74.99	28,250	28,120	8.20	J
568	5	2023-11-09	18:15:00	23.69	23.87	74.64	74.96	28,284	28,114	8.20	J
569	5	2023-11-09	18:30:00	23.68	23.85	74.63	74.93	28,320	28,127	8.20	J
570	5	2023-11-09	18:45:00	23.66	23.85	74.59	74.92	28,319	28,141	8.19	J
571	5	2023-11-09	19:00:00	23.68	23.84	74.62	74.92	28,311	28,158	8.18	J
572	5	2023-11-09	19:15:00	23.69	23.84	74.64	74.92	28,308	28,177	8.18	J
573	5	2023-11-09	19:30:00	23.68	23.84	74.63	74.92	28,320	28,188	8.17	J
574	5	2023-11-09	19:45:00	23.62	23.85	74.52	74.93	28,300	28,193	8.14	J
575	5	2023-11-09	20:00:00	23.64	23.85	74.55	74.93	28,315	28,198	8.14	J
576	5	2023-11-09	20:15:00	23.62	23.84	74.52	74.91	28,322	28,197	8.14	J
577	5	2023-11-09	20:30:00	23.63	23.83	74.53	74.89	28,300	28,199	8.14	J
578	5	2023-11-09	20:45:00	23.67	23.82	74.61	74.87	28,281	28,200	8.15	J
579	5	2023-11-09	21:00:00	23.72	23.82	74.69	74.87	28,267	28,197	8.15	J
580	5	2023-11-09	21:15:00	23.75	23.82	74.75	74.88	28,250	28,189	8.16	J
581	5	2023-11-09	21:30:00	23.76	23.84	74.76	74.92	28,249	28,178	8.16	J
582	5	2023-11-09	21:45:00	23.76	23.87	74.77	74.96	28,243	28,166	8.16	J
583	5	2023-11-09	22:00:00	23.76	23.89	74.77	75.00	28,232	28,153	8.16	J
584	5	2023-11-09	22:15:00	23.74	23.90	74.74	75.03	28,150	28,142	8.17	J
585	5	2023-11-09	22:30:00	23.73	23.91	74.71	75.04	28,114	28,130	8.18	J
586	5	2023-11-09	22:45:00	23.72	23.91	74.70	75.04	28,102	28,104	8.18	J
587	5	2023-11-09	23:00:00	23.71	23.91	74.68	75.03	28,095	28,072	8.18	J
588	5	2023-11-09	23:15:00	23.70	23.90	74.66	75.02	28,106	28,039	8.17	J
589	5	2023-11-09	23:30:00	23.69	23.89	74.64	75.01	28,115	28,016	8.16	J
590	5	2023-11-09	23:45:00	23.68	23.88	74.62	74.99	28,109	28,004	8.16	J
591	5	2023-11-09	23:59:00	23.67	23.87	74.60	74.97	28,101	27,997	8.16	J
592	5	2023-11-10	00:15:00	23.65	23.86	74.58	74.95	28,107	27,986	8.15	J
593	5	2023-11-10	00:30:00	23.64	23.85	74.55	74.93	28,111	27,975	8.14	J
594	5	2023-11-10	00:45:00	23.63	23.84	74.53	74.91	28,106	27,981	8.13	J
595	5	2023-11-10	01:00:00	23.60	23.83	74.48	74.89	28,113	27,991	8.12	J
596	5	2023-11-10	01:15:00	23.57	23.81	74.42	74.87	28,119	27,990	8.11	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Influent Temperature (°C)	Effluent Temperature (°C)	Influent Temperature (°F)	Effluent Temperature (°F)	Influent Specific Conductivity (µS/cm)	Effluent Specific Conductivity (µS/cm)	Influent pH (SU)	Influent pH Qualifier
597	5	2023-11-10	01:30:00	23.54	23.80	74.38	74.84	28,119	27,987	8.11	J
598	5	2023-11-10	01:45:00	23.50	23.78	74.30	74.80	28,139	27,991	8.11	J
599	5	2023-11-10	02:00:00	23.43	23.75	74.18	74.76	28,166	28,001	8.10	J
600	5	2023-11-10	02:15:00	23.38	23.72	74.08	74.70	28,190	28,001	8.09	J
601	5	2023-11-10	02:30:00	23.34	23.68	74.01	74.63	28,226	28,011	8.08	J
602	5	2023-11-10	02:45:00	23.29	23.64	73.92	74.55	28,261	28,029	8.06	J
603	5	2023-11-10	03:00:00	23.24	23.59	73.83	74.46	28,221	28,051	8.04	J
604	5	2023-11-10	03:15:00	23.28	23.54	73.90	74.37	28,128	28,071	8.02	J
605	5	2023-11-10	03:30:00	23.31	23.50	73.96	74.30	28,108	28,084	8.02	J
606	5	2023-11-10	03:45:00	23.39	23.47	74.11	74.25	28,051	28,066	8.07	J
607	5	2023-11-10	04:00:00	23.38	23.47	74.09	74.24	28,056	28,026	8.07	J
608	5	2023-11-10	04:15:00	23.37	23.49	74.07	74.27	28,066	28,029	8.06	J
609	5	2023-11-10	04:30:00	23.35	23.51	74.03	74.31	28,079	28,006	8.04	J
610	5	2023-11-10	04:45:00	23.34	23.52	74.01	74.33	28,085	27,984	8.02	J
611	5	2023-11-10	05:00:00	23.33	23.52	73.99	74.33	28,090	27,973	8.01	J
612	5	2023-11-10	05:15:00	23.30	23.51	73.94	74.32	28,095	27,976	8.00	J
613	5	2023-11-10	05:30:00	23.30	23.50	73.94	74.31	28,101	27,977	8.00	J
614	5	2023-11-10	05:45:00	23.28	23.49	73.90	74.28	28,105	27,982	7.97	J
615	5	2023-11-10	06:00:00	23.24	23.48	73.83	74.26	28,098	27,987	7.96	J
616	5	2023-11-10	06:15:00	23.19	23.46	73.74	74.23	28,072	27,990	7.94	J
617	5	2023-11-10	06:30:00	23.23	23.44	73.81	74.19	27,996	27,991	8.06	J
618	5	2023-11-10	06:45:00	23.25	23.41	73.84	74.14	27,912	27,983	8.09	J
619	5	2023-11-10	07:00:00	23.25	23.40	73.84	74.12	27,811	27,955	8.08	J
620	5	2023-11-10	07:15:00	23.26	23.40	73.87	74.12	27,752	27,902	8.08	J
621	5	2023-11-10	07:30:00	23.28	23.41	73.91	74.13	27,730	27,840	8.08	J
622	5	2023-11-10	07:45:00	23.30	23.42	73.94	74.16	27,793	27,779	8.07	J
623	5	2023-11-10	08:00:00	23.32	23.44	73.98	74.19	27,873	27,726	8.06	J
624	5	2023-11-10	08:15:00	23.37	23.47	74.07	74.24	27,824	27,703	8.07	J
625	5	2023-11-10	08:30:00	23.39	23.49	74.10	74.29	27,917	27,712	8.05	J
626	5	2023-11-10	08:45:00	23.43	23.53	74.17	74.35	27,940	27,726	8.05	J
627	5	2023-11-10	09:00:00	23.47	23.57	74.25	74.42	27,918	27,750	8.07	J
628	5	2023-11-10	09:15:00	23.51	23.61	74.31	74.49	27,920	27,780	8.07	J
629	5	2023-11-10	09:30:00	23.56	23.65	74.41	74.57	27,867	27,804	8.08	J
630	5	2023-11-10	09:45:00	23.61	23.70	74.50	74.66	27,806	27,812	8.09	J
631	5	2023-11-10	10:00:00	23.72	23.76	74.69	74.77	27,688	27,800	8.09	J
632	5	2023-11-10	10:15:00	23.93	23.83	75.07	74.89	27,602	27,761	8.11	J
633	5	2023-11-10	10:30:00	24.05	23.92	75.29	75.05	27,532	27,698	8.12	J
634	5	2023-11-10	10:45:00	24.01	24.04	75.22	75.27	27,561	27,629	8.12	J
635	5	2023-11-10	11:00:00	23.91	24.16	75.04	75.49	27,703	27,561	8.11	J
636	5	2023-11-10	11:15:00	23.90	24.25	75.03	75.65	27,746	27,524	8.10	J
637	5	2023-11-10	11:30:00	23.85	24.28	74.93	75.71	27,907	27,532	8.09	J
638	5	2023-11-10	11:45:00	23.82	24.32	74.88	75.78	27,985	27,557	8.07	J
639	5	2023-11-10	12:00:00	23.79	24.30	74.83	75.75	28,023	27,621	8.08	J
640	5	2023-11-10	12:15:00	23.83	24.24	74.90	75.63	28,037	27,701	8.06	J
641	5	2023-11-10	12:30:00	23.93	24.35	75.07	75.83	28,036	27,714	7.99	J
642	5	2023-11-10	12:45:00	24.25	24.53	75.65	76.16	27,854	27,723	8.01	J
643	5	2023-11-10	13:00:00	23.88	24.40	74.98	75.92	27,981	27,810	8.11	J
644	5	2023-11-10	13:15:00	23.90	24.28	75.02	75.71	28,008	27,870	8.09	J
645	5	2023-11-10	13:30:00	23.90	24.28	75.01	75.71	27,997	27,906	8.09	J
646	5	2023-11-10	13:45:00	23.88	24.29	74.99	75.72	27,963	27,933	8.10	J
647	5	2023-11-10	14:00:00	23.92	24.29	75.05	75.73	27,954	27,947	8.10	J
648	5	2023-11-10	14:15:00	23.91	24.30	75.05	75.74	27,965	27,954	8.11	J
649	5	2023-11-10	14:30:00	23.93	24.30	75.07	75.75	27,971	27,952	8.11	J
650	5	2023-11-10	14:45:00	23.94	24.31	75.09	75.75	27,995	27,951	8.11	J
651	5	2023-11-10	15:00:00	23.96	24.31	75.12	75.76	27,996	27,952	8.11	J
652	5	2023-11-10	15:15:00	23.96	24.32	75.13	75.77	28,004	27,955	8.11	J
653	5	2023-11-10	15:30:00	24.01	24.31	75.22	75.77	27,967	27,960	8.12	J
654	5	2023-11-10	15:45:00	24.07	24.32	75.32	75.77	27,938	27,961	8.13	J
655	5	2023-11-10	16:00:00	24.10	24.33	75.39	75.79	27,929	27,949	8.13	J
656	5	2023-11-14	10:45:00	25.22	25.31	77.40	77.56	27,449	27,851	8.16	J
657	5	2023-11-14	11:00:00	25.25	25.39	77.45	77.70	27,452	27,825	8.14	J
658	5	2023-11-14	11:15:00	25.28	25.40	77.50	77.72	27,441	27,719	8.15	J
659	5	2023-11-14	11:30:00	25.29	25.41	77.52	77.74	27,445	27,603	8.15	J
660	5	2023-11-14	11:45:00	25.29	25.43	77.53	77.78	27,439	27,512	8.14	J
661	5	2023-11-14	12:00:00	25.31	25.46	77.56	77.83	27,433	27,455	8.13	J
662	5	2023-11-14	12:15:00	25.32	25.49	77.58	77.89	27,427	27,421	8.11	J
663	5	2023-11-14	12:30:00	25.32	25.52	77.57	77.93	27,429	27,397	8.07	J
664	5	2023-11-14	12:45:00	25.35	25.53	77.64	77.96	27,431	27,382	8.09	J
665	5	2023-11-14	13:00:00	25.38	25.55	77.68	78.00	27,423	27,372	8.11	J
666	5	2023-11-14	13:15:00	25.40	25.59	77.72	78.06	27,419	27,371	8.11	J
667	5	2023-11-14	13:30:00	25.40	25.62	77.72	78.12	27,418	27,365	8.07	J
668	5	2023-11-14	13:45:00	25.41	25.64	77.73	78.15	27,372	27,357	8.09	J
669	5	2023-11-14	14:00:00	25.44	25.65	77.79	78.18	27,374	27,357	8.10	J
670	5	2023-11-14	14:15:00	25.45	25.65	77.81	78.17	27,430	27,355	8.11	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Influent Temperature (°C)	Effluent Temperature (°C)	Influent Temperature (°F)	Effluent Temperature (°F)	Influent Specific Conductivity (µS/cm)	Effluent Specific Conductivity (µS/cm)	Influent pH (SU)	Influent pH Qualifier
671	5	2023-11-14	14:30:00	25.46	25.64	77.82	78.16	27,443	27,352	8.11	J
672	5	2023-11-14	14:45:00	25.46	25.63	77.82	78.14	27,459	27,356	8.11	J
673	5	2023-11-14	15:00:00	25.45	25.63	77.82	78.13	27,480	27,362	8.11	J
674	5	2023-11-14	15:15:00	25.44	25.59	77.79	78.06	27,489	27,368	8.11	J
675	5	2023-11-14	15:30:00	25.43	25.60	77.78	78.08	27,490	27,375	8.11	J
676	5	2023-11-14	15:45:00	25.43	25.60	77.77	78.09	27,496	27,387	8.11	J
677	5	2023-11-14	16:00:00	25.42	25.60	77.76	78.08	27,497	27,397	8.12	J
678	5	2023-11-14	16:15:00	25.39	25.60	77.70	78.07	27,479	27,409	8.14	J
679	5	2023-11-14	16:30:00	25.40	25.58	77.73	78.05	27,465	27,416	8.16	J
680	5	2023-11-14	16:45:00	25.38	25.56	77.68	78.01	27,474	27,415	8.18	J
681	5	2023-11-14	17:00:00	25.35	25.55	77.62	77.98	27,477	27,408	8.17	J
682	5	2023-11-14	17:15:00	25.31	25.53	77.56	77.95	27,468	27,407	8.17	J
683	5	2023-11-14	17:30:00	25.25	25.51	77.44	77.91	27,493	27,405	8.14	J
684	5	2023-11-14	17:45:00	25.20	25.48	77.37	77.86	27,507	27,405	8.11	J
685	5	2023-11-14	18:00:00	25.21	25.43	77.38	77.77	27,490	27,408	8.13	J
686	5	2023-11-14	18:15:00	25.22	25.39	77.39	77.70	27,480	27,412	8.13	J
687	5	2023-11-14	18:30:00	25.20	25.37	77.36	77.66	27,478	27,418	8.11	J
688	5	2023-11-14	18:45:00	25.16	25.35	77.29	77.63	27,481	27,412	8.12	J
689	5	2023-11-14	19:00:00	25.12	25.34	77.21	77.60	27,482	27,414	8.12	J
690	5	2023-11-14	19:15:00	25.09	25.32	77.16	77.57	27,479	27,410	8.12	J
691	5	2023-11-14	19:30:00	25.05	25.28	77.10	77.51	27,479	27,412	8.11	J
692	5	2023-11-14	19:45:00	25.03	25.25	77.06	77.45	27,469	27,399	8.11	J
693	5	2023-11-14	20:00:00	25.01	25.21	77.02	77.38	27,454	27,393	8.08	J
694	5	2023-11-14	20:15:00	24.97	25.18	76.95	77.33	27,436	27,391	8.06	J
695	5	2023-11-14	20:30:00	24.96	25.15	76.92	77.27	27,405	27,383	8.05	J
696	5	2023-11-14	20:45:00	24.96	25.13	76.92	77.23	27,404	27,375	8.06	J
697	5	2023-11-14	21:00:00	24.94	25.10	76.89	77.18	27,407	27,359	8.07	J
698	5	2023-11-14	21:15:00	24.93	25.08	76.87	77.15	27,412	27,345	8.06	J
699	5	2023-11-14	21:30:00	24.91	25.07	76.84	77.12	27,414	27,337	8.06	J
700	5	2023-11-14	21:45:00	24.89	25.05	76.80	77.10	27,412	27,336	8.06	J
701	5	2023-11-14	22:00:00	24.85	25.04	76.73	77.07	27,412	27,331	8.06	J
702	5	2023-11-14	22:15:00	24.83	25.01	76.70	77.01	27,426	27,340	8.06	J
703	5	2023-11-14	22:30:00	24.81	24.98	76.66	76.96	27,488	27,339	8.06	J
704	5	2023-11-14	22:45:00	24.74	24.95	76.54	76.91	27,562	27,341	8.07	J
705	5	2023-11-14	23:00:00	24.72	24.93	76.49	76.87	27,594	27,332	8.06	J
706	5	2023-11-14	23:15:00	24.70	24.91	76.46	76.83	27,603	27,386	8.04	J
707	5	2023-11-14	23:30:00	24.67	24.87	76.41	76.77	27,611	27,425	8.04	J
708	5	2023-11-14	23:45:00	24.65	24.84	76.37	76.71	27,621	27,464	8.04	J
709	5	2023-11-14	23:59:00	24.62	24.81	76.32	76.67	27,642	27,493	8.04	J
710	5	2023-11-15	00:15:00	24.59	24.79	76.26	76.61	27,644	27,521	8.04	J
711	5	2023-11-15	00:30:00	24.57	24.75	76.22	76.55	27,643	27,543	8.04	J
712	5	2023-11-15	00:45:00	24.55	24.73	76.19	76.51	27,641	27,540	8.04	J
713	5	2023-11-15	01:00:00	24.54	24.70	76.17	76.47	27,644	27,543	8.02	J
714	5	2023-11-15	01:15:00	24.53	24.68	76.16	76.42	27,649	27,544	7.99	J
715	5	2023-11-15	01:30:00	24.51	24.66	76.11	76.40	27,673	27,541	8.00	J
716	5	2023-11-15	01:45:00	24.55	24.65	76.18	76.37	27,652	27,509	8.01	J
717	5	2023-11-15	02:00:00	24.55	24.64	76.20	76.35	27,667	27,505	8.02	J
718	5	2023-11-15	02:15:00	24.49	24.64	76.09	76.35	27,666	27,513	8.01	J
719	5	2023-11-15	02:30:00	24.39	24.64	75.90	76.36	27,662	27,508	8.00	J
720	5	2023-11-15	02:45:00	24.34	24.63	75.82	76.33	27,651	27,488	7.99	J
721	5	2023-11-15	03:00:00	24.31	24.59	75.76	76.27	27,641	27,504	7.99	J
722	5	2023-11-15	03:15:00	24.32	24.55	75.77	76.18	27,617	27,515	7.99	J
723	5	2023-11-15	03:30:00	24.30	24.50	75.74	76.10	27,570	27,512	7.99	J
724	5	2023-11-15	03:45:00	24.26	24.47	75.67	76.04	27,536	27,511	7.98	J
725	5	2023-11-15	04:00:00	24.22	24.44	75.60	76.00	27,529	27,455	7.98	J
726	5	2023-11-15	04:15:00	24.19	24.42	75.54	75.95	27,537	27,476	7.99	J
727	5	2023-11-15	04:30:00	24.15	24.39	75.48	75.89	27,581	27,460	7.99	J
728	5	2023-11-15	04:45:00	24.13	24.35	75.44	75.84	27,622	27,453	7.99	J
729	5	2023-11-15	05:00:00	24.12	24.32	75.42	75.78	27,635	27,466	7.99	J
730	5	2023-11-15	05:15:00	24.12	24.30	75.42	75.73	27,627	27,492	7.98	J
731	5	2023-11-15	05:30:00	24.09	24.28	75.36	75.70	27,572	27,508	7.97	J
732	5	2023-11-15	05:45:00	23.96	24.26	75.12	75.67	27,473	27,523	7.91	J
733	5	2023-11-15	06:00:00	23.95	24.24	75.11	75.63	27,478	27,522	7.90	J
734	5	2023-11-15	06:15:00	24.04	24.20	75.26	75.56	27,519	27,498	7.93	J
735	5	2023-11-15	06:30:00	24.03	24.16	75.25	75.49	27,540	27,466	7.93	J
736	5	2023-11-15	06:45:00	23.97	24.14	75.14	75.46	27,535	27,444	7.92	J
737	5	2023-11-15	07:00:00	23.95	24.14	75.11	75.45	27,540	27,439	7.91	J
738	5	2023-11-15	07:15:00	23.94	24.13	75.10	75.43	27,547	27,448	7.91	J
739	5	2023-11-15	07:30:00	23.89	24.11	75.00	75.40	27,534	27,442	7.91	J
740	5	2023-11-15	07:45:00	23.84	24.09	74.92	75.37	27,530	27,448	7.89	J
741	5	2023-11-15	08:00:00	23.81	24.07	74.85	75.32	27,532	27,451	7.88	J
742	5	2023-11-15	08:15:00	23.91	24.04	75.03	75.27	27,602	27,435	7.89	J
743	5	2023-11-15	08:30:00	23.99	24.01	75.19	75.22	27,708	27,440	7.91	J
744	5	2023-11-15	08:45:00	23.98	24.00	75.16	75.21	27,736	27,489	7.92	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Influent Temperature (°C)	Effluent Temperature (°C)	Influent Temperature (°F)	Effluent Temperature (°F)	Influent Specific Conductivity (µS/cm)	Effluent Specific Conductivity (µS/cm)	Influent pH (SU)	Influent pH Qualifier
745	5	2023-11-15	09:00:00	23.97	24.03	75.14	75.26	27,771	27,533	7.90	J
746	5	2023-11-15	09:15:00	23.97	24.06	75.14	75.32	27,804	27,579	7.91	J
747	5	2023-11-15	09:30:00	23.97	24.08	75.14	75.35	27,838	27,621	7.91	J
748	5	2023-11-15	09:45:00	23.94	24.10	75.09	75.38	27,817	27,660	7.92	J
749	5	2023-11-15	10:00:00	23.91	24.10	75.05	75.39	27,797	27,694	7.91	J
750	5	2023-11-15	10:15:00	23.90	24.10	75.02	75.38	27,787	27,718	7.90	J
751	5	2023-11-15	10:30:00	23.88	24.09	74.99	75.36	27,777	27,727	7.90	J
752	5	2023-11-15	10:45:00	23.84	24.07	74.90	75.33	27,729	27,728	7.89	J
753	5	2023-11-15	11:00:00	23.81	24.06	74.86	75.31	27,693	27,725	7.86	J
754	5	2023-11-15	11:15:00	23.76	24.04	74.76	75.27	27,628	27,704	7.86	J
755	5	2023-11-15	11:30:00	23.73	24.01	74.72	75.22	27,626	27,672	7.89	J
756	5	2023-11-15	11:45:00	23.74	23.98	74.74	75.16	27,633	27,639	7.90	J
757	5	2023-11-15	12:00:00	23.72	23.95	74.70	75.10	27,623	27,605	7.91	J
758	5	2023-11-15	12:15:00	23.71	23.90	74.68	75.02	27,627	27,587	7.92	J
759	5	2023-11-15	12:30:00	23.69	23.89	74.65	75.01	27,613	27,574	7.92	J
760	5	2023-11-15	12:45:00	23.66	23.89	74.60	74.99	27,587	27,564	7.92	J
761	5	2023-11-15	13:00:00	23.61	23.87	74.49	74.97	27,559	27,558	7.90	J
762	5	2023-11-15	13:15:00	23.57	23.85	74.42	74.93	27,556	27,547	7.89	J
763	5	2023-11-15	13:30:00	23.57	23.82	74.42	74.87	27,611	27,530	7.89	J
764	5	2023-11-15	13:45:00	23.58	23.78	74.44	74.81	27,707	27,517	7.90	J
765	5	2023-11-15	14:00:00	23.58	23.75	74.44	74.76	27,779	27,522	7.89	J
766	5	2023-11-15	14:15:00	23.56	23.73	74.40	74.71	24,125	24,810	7.90	J
Notes:											
°C = degree Celcius											
°F = degree Fahrenheit											
µS/cm = microSiemens per centimeter											
SU = standard unit											
NTU = Nephelometric Turbidity Unit											
RFU = Relative Fluorescence Unit											
%Sat = percent saturation											
mg/L = milligrams per liter											
BGAPC = bluegreen algae phycocyanin											
J = estimated value											

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent pH (SU)	Influent Turbidity (NTU)	Effluent Turbidity (NTU)	Influent Chlorophyll-a (RFU)	Effluent Chlorophyll-a (RFU)	Influent Dissolved Oxygen (%Sat)	Effluent Dissolved Oxygen (%Sat)	Influent Dissolved Oxygen (mg/L)
1	1	2023-09-11	10:45:00	8.13	29.44	2.84	6.16	4.39	80.72	43.53	5.68
2	1	2023-09-11	11:00:00	8.12	6.63	5.03	6.86	4.74	73.80	65.74	4.99
3	1	2023-09-11	11:15:00	8.12	9.07	5.41	8.41	4.30	77.57	78.82	5.24
4	1	2023-09-11	11:30:00	8.14	15.91	5.21	10.08	4.29	81.09	81.74	5.48
5	1	2023-09-11	11:45:00	8.15	8.20	4.44	22.27	4.45	81.42	84.40	5.53
6	1	2023-09-11	12:00:00	8.16	11.79	3.27	27.59	4.16	83.05	86.23	5.58
7	1	2023-09-11	12:15:00	8.16	9.37	3.19	16.64	4.38	82.08	89.30	5.52
8	1	2023-09-11	12:30:00	8.15	2.46	2.47	13.54	4.41	82.19	92.93	5.53
9	1	2023-09-11	12:45:00	8.14	2.24	2.06	14.51	4.11	83.70	94.71	5.62
10	1	2023-09-11	13:00:00	8.17	2.07	2.03	18.39	3.88	85.50	95.65	5.73
11	1	2023-09-11	13:15:00	8.22	2.11	1.98	13.65	3.69	90.01	97.09	6.02
12	1	2023-09-11	13:30:00	8.25	2.08	1.89	8.20	3.57	94.83	99.02	6.32
13	1	2023-09-11	13:45:00	8.26	2.32	1.79	11.84	3.47	98.43	101.19	6.55
14	1	2023-09-11	14:00:00	8.27	4.39	1.79	17.48	3.46	105.32	103.69	6.99
15	1	2023-09-11	14:15:00	8.29	4.51	2.18	18.44	3.96	113.49	107.22	7.50
16	1	2023-09-11	14:30:00	8.31	3.92	2.74	13.42	5.20	115.17	111.30	7.59
17	1	2023-09-11	14:45:00	8.32	3.13	2.84	14.83	5.43	118.51	113.99	7.80
18	1	2023-09-11	15:00:00	8.33	2.80	2.81	15.84	6.24	121.83	115.84	8.01
19	1	2023-09-11	15:15:00	8.34	2.56	2.65	13.33	6.32	124.86	117.82	8.20
20	1	2023-09-11	15:30:00	8.35	2.95	2.60	15.92	6.28	127.52	119.62	8.37
21	1	2023-09-11	15:45:00	8.36	6.37	2.48	14.86	6.03	125.23	121.29	8.20
22	1	2023-09-12	08:45:00	8.21	4.64	2.78	7.51	4.71	51.64	77.44	3.62
23	1	2023-09-12	09:00:00	8.21	2.93	3.08	8.34	4.86	43.47	91.57	2.96
24	1	2023-09-12	09:15:00	8.18	2.03	3.10	7.94	4.59	36.63	84.92	2.48
25	1	2023-09-12	09:30:00	8.11	2.00	2.87	7.19	3.98	36.23	72.17	2.45
26	1	2023-09-12	09:45:00	8.06	1.98	2.63	7.94	3.58	38.97	65.20	2.63
27	1	2023-09-12	10:00:00	8.04	2.01	2.52	9.49	3.45	42.80	63.50	2.89
28	1	2023-09-12	10:15:00	8.03	2.03	2.42	7.24	3.44	44.18	64.62	2.98
29	1	2023-09-12	10:30:00	8.03	2.18	2.30	7.64	3.38	45.92	66.06	3.09
30	1	2023-09-12	10:45:00	8.06	2.09	2.53	7.16	3.33	47.41	67.45	3.19
31	1	2023-09-12	11:00:00	8.08	1.83	2.54	6.32	3.21	49.74	68.52	3.34
32	1	2023-09-12	11:15:00	8.09	1.98	2.43	7.21	3.08	47.64	69.50	3.20
33	1	2023-09-12	11:30:00	8.08	2.01	2.48	14.00	3.07	49.09	69.89	3.29
34	1	2023-09-12	11:45:00	8.08	2.22	2.58	10.87	3.19	50.53	70.28	3.38
35	1	2023-09-12	12:00:00	8.08	5.36	2.58	8.92	3.41	63.53	71.27	4.34
36	1	2023-09-12	12:15:00	8.09	2.27	2.33	6.94	3.54	89.26	73.68	6.44
37	1	2023-09-12	12:30:00	8.10	4.42	2.66	11.50	3.67	79.70	68.77	5.60
42	1	2023-09-12	13:45:00	8.09	20.71	2.19	20.21	3.79	78.01	86.04	5.14
43	1	2023-09-12	14:00:00	8.07	8.29	2.56	16.10	3.76	81.34	83.95	5.36
44	1	2023-09-12	14:15:00	8.11	3.40	2.49	9.72	3.69	77.70	85.43	5.10
45	1	2023-09-12	14:30:00	8.14	2.91	2.40	9.89	3.78	76.24	87.89	4.98
46	1	2023-09-12	14:45:00	8.16	2.88	2.40	7.89	4.06	76.59	90.17	4.97
47	1	2023-09-13	08:15:00	7.96	8.51	4.85	11.87	3.88	22.02	44.83	1.58
48	1	2023-09-13	08:30:00	8.00	11.77	5.20	7.59	4.37	22.10	75.05	1.55
49	1	2023-09-13	08:45:00	8.02	4.16	5.01	6.87	4.37	30.19	72.85	2.07
50	1	2023-09-13	09:00:00	8.01	2.71	5.36	9.70	4.24	31.17	67.49	2.12
51	1	2023-09-13	09:15:00	7.97	2.09	5.71	8.57	4.40	34.36	63.34	2.33
52	1	2023-09-13	09:30:00	7.96	2.03	3.90	10.10	4.17	35.37	62.78	2.40
53	1	2023-09-13	09:45:00	7.94	1.93	3.18	9.98	3.85	34.84	63.92	2.36
54	1	2023-09-13	10:00:00	7.93	1.96	3.04	7.93	3.82	35.07	66.45	2.38
55	1	2023-09-13	10:15:00	7.93	1.96	3.01	7.00	3.64	35.59	68.31	2.41
56	1	2023-09-13	10:30:00	7.93	2.10	2.96	7.35	3.61	35.92	66.71	2.43
57	1	2023-09-13	10:45:00	7.93	2.57	3.03	6.24	3.59	38.21	64.00	2.58
58	1	2023-09-13	11:00:00	7.93	2.37	3.21	6.40	3.45	37.59	67.56	2.53
59	1	2023-09-13	11:15:00	7.94	2.36	3.04	8.37	3.36	38.66	66.93	2.60
60	1	2023-09-13	11:30:00	7.95	2.46	2.80	17.13	3.34	39.03	66.64	2.62
61	1	2023-09-13	11:45:00	7.95	2.80	2.74	13.82	3.36	39.80	66.13	2.67
62	1	2023-09-13	12:00:00	7.95	2.69	2.95	18.06	3.41	39.82	66.25	2.66
63	1	2023-09-13	12:15:00	7.96	2.57	3.08	10.69	3.40	39.87	66.64	2.66
64	1	2023-09-13	12:30:00	7.96	2.36	2.99	10.96	3.33	39.69	67.44	2.64
65	1	2023-09-13	12:45:00	7.95	2.01	2.80	13.38	3.26	40.34	68.38	2.68
66	1	2023-09-13	13:00:00	7.95	1.92	2.73	10.02	3.24	40.35	69.35	2.68
67	1	2023-09-13	13:15:00	7.97	1.98	2.65	12.99	3.23	43.27	70.31	2.87
68	1	2023-09-13	13:30:00	7.99	2.38	3.38	18.14	3.33	44.62	72.29	2.96
69	1	2023-09-13	13:45:00	7.99	3.66	4.34	11.67	3.36	46.21	73.22	3.05
70	1	2023-09-13	14:00:00	7.98	4.18	4.75	8.98	3.30	42.60	72.61	2.80
71	1	2023-09-13	14:15:00	7.97	4.32	4.61	7.94	3.23	41.66	71.09	2.73
72	1	2023-09-13	14:30:00	7.96	3.96	4.33	9.51	3.17	42.70	70.29	2.79
73	1	2023-09-13	14:45:00	7.96	3.65	4.30	8.31	3.17	43.32	70.64	2.83
74	1	2023-09-13	15:00:00	7.96	3.45	4.01	7.65	3.10	45.19	71.60	2.96
75	1	2023-09-13	15:15:00	7.98	3.27	3.73	7.75	3.14	48.84	73.43	3.21
76	1	2023-09-13	15:30:00	7.99	3.11	3.59	7.24	3.33	54.12	76.04	3.54
77	1	2023-09-14	09:45:00	7.89	11.31	3.14	6.63	3.52	20.16	51.06	1.43
78	1	2023-09-14	10:00:00	7.92	6.90	3.36	7.13	3.72	34.95	68.56	2.40

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent pH (SU)	Influent Turbidity (NTU)	Effluent Turbidity (NTU)	Influent Chlorophyll-a (RFU)	Effluent Chlorophyll-a (RFU)	Influent Dissolved Oxygen (%Sat)	Effluent Dissolved Oxygen (%Sat)	Influent Dissolved Oxygen (mg/L)
79	1	2023-09-14	10:15:00	7.95	3.47	3.16	9.07	4.03	43.65	69.84	2.96
80	1	2023-09-14	10:30:00	7.96	2.79	2.98	16.32	4.32	47.11	70.83	3.18
81	1	2023-09-14	10:45:00	7.96	3.23	2.75	11.82	4.39	49.72	71.93	3.34
82	1	2023-09-14	11:00:00	7.96	2.61	2.51	17.48	4.13	49.47	73.42	3.32
83	1	2023-09-14	11:15:00	7.96	2.49	2.45	18.21	3.80	48.86	74.61	3.28
84	1	2023-09-14	11:30:00	7.96	2.61	2.76	20.06	3.50	48.08	74.90	3.22
85	1	2023-09-14	11:45:00	7.96	2.89	2.45	28.50	3.35	47.83	74.81	3.19
86	1	2023-09-14	12:00:00	7.97	2.85	2.48	13.37	3.38	49.33	74.89	3.29
87	1	2023-09-14	12:15:00	7.96	2.54	2.67	18.28	3.43	51.96	76.13	3.45
88	1	2023-09-14	12:30:00	7.97	2.44	2.38	13.47	3.36	52.47	77.38	3.48
89	1	2023-09-14	12:45:00	7.97	2.27	2.33	14.03	3.30	54.19	78.43	3.58
90	1	2023-09-14	13:00:00	7.97	2.17	2.28	22.36	3.27	55.52	79.61	3.66
91	1	2023-09-14	13:15:00	7.97	2.47	2.32	22.07	3.31	56.46	81.02	3.72
92	1	2023-09-14	13:30:00	7.98	2.62	2.37	24.37	3.39	56.57	82.13	3.72
93	1	2023-09-14	13:45:00	7.98	2.59	2.39	18.53	3.45	57.81	83.17	3.79
94	1	2023-09-14	14:00:00	7.99	2.61	2.30	14.20	3.44	61.26	84.98	4.01
95	1	2023-09-14	14:15:00	8.01	2.57	2.14	11.28	3.37	65.36	87.12	4.27
96	1	2023-09-14	14:30:00	8.02	2.48	2.00	10.25	3.34	67.73	88.65	4.42
97	1	2023-09-14	14:45:00	8.03	3.80	2.00	9.29	3.23	74.70	89.12	4.92
98	1	2023-09-14	15:00:00	8.04	2.36	1.84	11.77	3.23	73.31	89.55	4.80
99	1	2023-09-15	12:00:00	7.88	12.63	3.92	6.09	3.56	17.47	43.71	1.18
100	1	2023-09-15	12:15:00	7.91	9.08	3.62	21.03	3.33	35.63	76.55	2.36
101	1	2023-09-15	12:30:00	7.95	5.29	3.57	25.72	4.53	57.71	83.80	3.80
102	1	2023-09-15	12:45:00	7.99	3.78	3.73	27.77	5.40	72.53	89.62	4.76
103	1	2023-09-15	13:00:00	8.00	2.06	3.36	18.23	5.03	73.01	92.08	4.78
104	1	2023-09-15	13:15:00	8.00	1.77	2.62	11.39	4.13	71.80	91.51	4.69
105	1	2023-09-15	13:30:00	8.00	1.59	2.17	9.95	3.52	70.78	90.63	4.62
106	1	2023-09-15	13:45:00	7.99	1.46	1.96	7.28	3.21	70.24	90.25	4.59
107	1	2023-09-15	14:00:00	8.00	1.47	1.96	6.85	3.06	71.14	90.46	4.64
108	1	2023-09-15	14:15:00	8.01	1.53	1.87	8.06	3.04	75.07	92.07	4.89
109	1	2023-09-15	14:30:00	8.03	1.63	1.89	12.64	3.16	76.42	94.32	4.97
110	1	2023-09-15	14:45:00	8.04	1.79	1.97	14.74	3.32	78.41	96.07	5.10
111	1	2023-09-15	15:00:00	8.05	1.91	2.03	12.33	3.52	82.24	97.37	5.34
112	1	2023-09-15	15:15:00	8.06	1.82	2.02	11.91	3.62	84.46	98.51	5.47
113	1	2023-09-15	15:30:00	8.06	1.75	1.99	10.01	3.66	85.26	99.29	5.50
114	1	2023-09-15	15:45:00	8.07	1.87	1.93	8.89	3.64	86.43	99.88	5.55
115	1	2023-09-15	16:00:00	8.07	1.71	1.91	9.37	3.59	86.87	100.27	5.56
116	1	2023-09-15	16:15:00	8.07	1.78	1.94	7.08	3.57	87.73	100.53	5.63
117	1	2023-09-15	16:30:00	8.07	27.82	1.96	10.02	3.50	94.57	100.80	6.15
118	2	2023-09-26	09:30:00	7.84	4.73	1.72	9.67	4.30	41.32	87.94	2.91
119	2	2023-09-26	09:45:00	7.75	4.69	4.07	12.37	4.72	32.07	75.82	2.23
120	2	2023-09-26	10:00:00	7.66	3.24	5.08	15.23	4.55	33.17	63.83	2.30
121	2	2023-09-26	10:15:00	7.62	3.26	3.52	16.20	4.49	34.67	60.17	2.40
122	2	2023-09-26	10:30:00	7.61	3.37	3.09	17.29	4.50	36.05	61.89	2.49
123	2	2023-09-26	10:45:00	7.60	3.28	2.99	14.28	4.48	36.86	64.95	2.53
124	2	2023-09-26	11:00:00	7.59	2.98	2.83	14.13	4.47	36.35	66.75	2.49
125	2	2023-09-26	11:15:00	7.58	3.21	2.66	13.24	4.39	37.58	69.88	2.55
126	2	2023-09-26	11:30:00	7.58	2.72	2.53	11.55	4.32	37.01	71.84	2.50
127	2	2023-09-26	11:45:00	7.59	2.38	2.41	10.11	4.17	36.59	73.57	2.46
128	2	2023-09-26	12:00:00	7.61	2.27	2.38	11.32	4.07	36.36	74.90	2.43
129	2	2023-09-26	12:15:00	7.64	2.33	2.40	11.12	4.09	36.49	76.25	2.42
130	2	2023-09-26	12:30:00	7.66	2.21	2.49	10.97	4.07	36.58	77.07	2.42
131	2	2023-09-26	12:45:00	7.67	2.36	2.65	11.18	4.16	37.02	78.07	2.43
132	2	2023-09-26	13:00:00	7.68	2.41	2.69	14.67	4.45	36.70	78.91	2.40
133	2	2023-09-26	13:15:00	7.68	2.52	2.65	12.81	4.72	36.84	80.13	2.41
134	2	2023-09-26	13:30:00	7.68	2.91	2.77	10.91	4.36	50.29	80.06	3.41
135	2	2023-09-26	13:45:00	7.69	2.74	2.86	11.12	4.44	61.67	80.22	4.24
136	2	2023-09-26	14:00:00	7.72	3.78	2.80	13.31	4.38	59.94	82.01	4.12
137	2	2023-09-26	14:15:00	7.73	3.83	2.77	13.04	4.51	59.69	82.92	4.10
138	2	2023-09-26	14:30:00	7.71	4.17	2.57	13.68	4.58	58.90	82.55	4.04
139	2	2023-09-26	14:45:00	7.69	4.01	2.37	12.98	4.46	57.20	82.79	3.90
140	2	2023-09-26	15:00:00	7.69	4.05	2.29	12.92	4.53	56.75	83.62	3.86
141	2	2023-09-26	15:15:00	7.69	4.13	2.23	10.97	4.43	58.02	85.74	3.91
142	2	2023-09-26	15:30:00	7.71	3.76	2.37	12.42	4.44	57.55	86.11	3.88
143	2	2023-09-26	15:45:00	7.72	3.36	2.91	9.82	4.45	64.82	84.47	4.37
144	2	2023-09-26	16:00:00	7.73	3.18	2.70	10.41	4.34	64.69	84.62	4.38
145	2	2023-09-26	16:15:00	7.70	3.02	2.40	12.52	4.19	62.69	84.60	4.25
146	2	2023-09-27	08:45:00	7.51	10.44	2.54	15.37	4.39	14.77	41.22	1.09
147	2	2023-09-27	09:00:00	7.52	7.68	3.51	8.84	4.31	21.57	64.15	1.55
148	2	2023-09-27	09:15:00	7.54	3.51	3.49	9.66	4.29	29.98	68.53	2.12
149	2	2023-09-27	09:30:00	7.54	2.65	3.63	12.18	4.45	30.07	66.12	2.11
150	2	2023-09-27	09:45:00	7.54	2.52	3.23	12.61	4.44	30.24	65.88	2.13
151	2	2023-09-27	10:00:00	7.54	2.30	2.95	10.12	4.37	30.09	67.91	2.12
152	2	2023-09-27	10:15:00	7.51	8.58	2.54	7.40	4.27	41.64	67.90	3.06

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent pH (SU)	Influent Turbidity (NTU)	Effluent Turbidity (NTU)	Influent Chlorophyll-a (RFU)	Effluent Chlorophyll-a (RFU)	Influent Dissolved Oxygen (%Sat)	Effluent Dissolved Oxygen (%Sat)	Influent Dissolved Oxygen (mg/L)
153	2	2023-09-27	10:30:00	7.48	12.46	2.30	7.87	4.11	31.18	65.57	2.19
154	2	2023-09-27	10:45:00	7.45	12.49	2.16	7.42	3.96	31.16	64.99	2.18
155	2	2023-09-27	11:00:00	7.43	12.61	2.06	7.32	3.82	31.25	64.86	2.19
156	2	2023-09-27	12:45:00	7.42	14.35	1.70	7.71	3.55	44.60	86.89	3.11
157	2	2023-09-27	13:00:00	7.42	12.53	1.87	7.94	3.61	39.33	79.37	2.74
158	2	2023-09-27	13:15:00	7.44	13.17	2.16	7.72	3.63	38.39	74.48	2.67
159	2	2023-09-27	13:30:00	7.45	13.60	2.27	7.61	3.66	37.86	71.60	2.64
160	2	2023-09-27	13:45:00	7.45	14.60	2.28	7.37	3.54	34.82	70.11	2.42
161	2	2023-09-27	14:00:00	7.46	15.01	2.27	7.44	3.46	30.88	68.71	2.15
162	2	2023-09-27	14:15:00	7.46	14.64	2.31	7.49	3.44	35.30	66.99	2.45
163	2	2023-09-27	14:30:00	7.45	14.37	2.37	7.56	3.43	35.56	66.13	2.47
164	2	2023-09-27	14:45:00	7.45	14.40	2.36	7.75	3.54	35.53	66.55	2.46
165	2	2023-09-27	15:00:00	7.44	14.45	2.51	7.41	3.47	36.91	66.73	2.56
166	2	2023-09-27	15:15:00	7.45	16.52	2.77	7.60	3.66	37.34	67.49	2.59
167	2	2023-09-27	15:30:00	7.45	14.02	2.80	7.49	3.67	37.62	70.94	2.60
168	2	2023-09-28	08:45:00	7.35	12.59	3.74	7.12	3.40	33.82	63.19	2.39
169	2	2023-09-28	09:00:00	7.38	8.11	3.77	7.40	3.55	33.32	69.72	2.35
170	2	2023-09-28	09:15:00	7.42	9.29	3.61	7.93	3.64	33.75	64.62	2.38
171	2	2023-09-28	09:30:00	7.44	9.03	3.35	7.50	3.70	34.98	70.41	2.47
172	2	2023-09-28	09:45:00	7.46	9.53	3.09	7.33	3.73	35.75	69.46	2.52
173	2	2023-09-28	10:00:00	7.46	9.56	2.66	7.54	3.76	35.93	67.20	2.53
174	2	2023-09-28	10:15:00	7.46	8.53	2.45	7.10	3.78	36.28	66.88	2.56
175	2	2023-09-28	10:30:00	7.46	8.29	2.39	7.70	3.82	36.79	68.99	2.59
176	2	2023-09-28	10:45:00	7.46	8.29	2.39	7.60	3.91	38.81	70.79	2.73
177	2	2023-09-28	11:00:00	7.46	8.39	2.44	7.25	3.93	40.52	71.58	2.85
178	2	2023-09-28	11:15:00	7.47	8.09	2.48	7.58	3.98	42.36	72.35	2.97
179	2	2023-09-28	11:30:00	7.48	8.31	2.50	8.34	4.03	43.33	73.10	3.04
180	2	2023-09-28	11:45:00	7.49	9.31	2.55	9.15	4.15	42.86	73.87	3.01
181	2	2023-09-28	12:00:00	7.49	8.77	2.69	9.02	4.14	42.07	74.62	2.95
182	2	2023-09-28	12:15:00	7.50	8.84	2.81	8.91	4.23	41.99	75.06	2.94
183	2	2023-09-28	12:30:00	7.50	8.44	2.86	8.85	4.52	45.34	75.04	3.17
184	2	2023-09-28	12:45:00	7.50	8.38	2.89	9.00	4.70	43.21	75.17	3.02
185	2	2023-09-28	13:00:00	7.50	8.73	2.86	8.94	4.53	45.08	75.72	3.15
186	2	2023-09-28	13:15:00	7.50	8.39	2.84	10.24	4.83	50.11	75.94	3.49
187	2	2023-09-28	13:30:00	7.50	8.92	2.83	11.16	4.66	52.79	76.34	3.68
188	2	2023-09-28	13:45:00	7.51	8.69	2.83	10.51	4.59	55.09	77.11	3.83
189	2	2023-09-28	14:00:00	7.52	8.57	2.86	9.81	5.35	57.82	78.24	4.01
190	2	2023-09-28	14:15:00	7.54	8.83	2.96	10.28	5.30	61.15	80.13	4.24
191	2	2023-09-28	14:30:00	7.55	9.04	2.91	10.11	5.34	62.96	81.48	4.36
192	2	2023-09-28	14:45:00	7.57	8.49	2.88	9.18	5.38	63.25	82.77	4.38
193	2	2023-09-28	15:00:00	7.59	7.84	2.83	8.54	5.31	63.73	83.95	4.41
194	2	2023-09-28	15:15:00	7.60	8.06	2.68	8.59	5.25	64.71	84.82	4.47
195	2	2023-09-28	15:30:00	7.61	8.29	2.49	9.16	5.09	66.89	85.34	4.62
196	2	2023-09-28	15:45:00	7.62	8.46	2.34	8.77	4.97	66.19	85.94	4.58
197	2	2023-09-28	16:00:00	7.63	8.00	2.29	8.55	4.87	66.69	86.40	4.61
198	2	2023-09-28	16:15:00	7.64	8.05	2.26	8.27	4.84	66.98	86.80	4.63
199	2	2023-09-28	16:30:00	7.64	8.01	2.21	8.01	4.79	67.15	86.96	4.64
200	2	2023-09-28	16:45:00	7.65	7.93	2.15	7.91	4.77	66.98	86.76	4.63
201	2	2023-09-28	17:00:00	7.65	8.20	2.07	7.91	4.63	68.74	86.79	4.75
202	2	2023-09-28	17:15:00	7.66	7.99	2.01	7.57	4.53	71.07	86.96	4.90
203	2	2023-09-28	17:30:00	7.68	5.32	2.27	8.23	4.44	72.99	87.30	5.02
204	2	2023-09-28	17:45:00	7.70	2.38	2.33	9.28	4.23	71.55	86.72	4.91
205	2	2023-09-29	08:45:00	7.56	8.67	4.35	6.79	3.80	26.37	78.21	1.95
206	2	2023-09-29	09:00:00	7.58	11.98	3.72	6.81	3.86	25.07	85.53	1.86
207	2	2023-09-29	09:15:00	7.59	11.25	3.20	6.65	3.77	25.77	83.39	1.90
208	2	2023-09-29	09:30:00	7.59	10.49	2.73	6.60	3.62	26.79	82.09	1.97
209	2	2023-09-29	09:45:00	7.57	9.94	2.38	6.56	3.51	27.74	81.29	2.03
210	2	2023-09-29	10:00:00	7.56	9.28	2.10	6.48	3.40	27.96	81.34	2.05
211	2	2023-09-29	10:15:00	7.56	8.74	1.94	6.46	3.35	28.49	81.77	2.08
212	2	2023-09-29	10:30:00	7.56	8.31	1.87	6.30	3.33	28.87	82.10	2.10
213	2	2023-09-29	10:45:00	7.56	7.95	1.84	6.19	3.33	29.22	82.22	2.12
214	2	2023-09-29	11:00:00	7.55	7.36	1.87	6.06	3.34	43.16	81.97	3.06
215	2	2023-09-29	11:15:00	7.54	7.03	1.92	5.92	3.35	55.91	81.56	3.91
216	2	2023-09-29	11:30:00	7.54	6.96	1.82	5.95	3.35	56.36	81.63	3.93
217	2	2023-09-29	11:45:00	7.55	7.24	1.90	6.10	3.35	56.37	82.26	3.93
218	2	2023-09-29	12:00:00	7.55	7.34	2.01	6.46	3.31	56.43	82.45	3.93
219	2	2023-09-29	12:15:00	7.56	8.01	2.04	6.77	3.34	55.88	83.26	3.89
220	2	2023-09-29	12:30:00	7.56	8.17	2.09	6.96	3.38	56.39	83.60	3.92
221	2	2023-09-29	12:45:00	7.56	8.10	2.19	6.88	3.42	54.69	84.11	3.80
222	2	2023-09-29	13:00:00	7.56	8.06	2.30	6.95	3.50	55.71	84.38	3.87
223	2	2023-09-29	13:15:00	7.56	8.00	2.38	6.84	3.65	58.17	84.62	4.03
224	2	2023-09-29	13:30:00	7.56	7.88	2.45	6.76	3.71	60.08	84.62	4.16
225	2	2023-09-29	13:45:00	7.56	7.55	2.47	6.79	3.66	60.69	85.46	4.20
226	2	2023-09-29	14:00:00	7.57	7.51	2.44	6.96	3.74	66.65	86.08	4.61

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent pH (SU)	Influent Turbidity (NTU)	Effluent Turbidity (NTU)	Influent Chlorophyll-a (RFU)	Effluent Chlorophyll-a (RFU)	Influent Dissolved Oxygen (%Sat)	Effluent Dissolved Oxygen (%Sat)	Influent Dissolved Oxygen (mg/L)
227	2	2023-09-29	14:15:00	7.57	7.89	2.44	6.88	3.76	68.42	87.00	4.72
228	2	2023-09-29	14:30:00	7.58	7.64	2.32	6.92	3.77	70.76	89.02	4.88
229	2	2023-09-29	14:45:00	7.60	8.50	2.24	7.24	3.79	72.98	90.89	5.04
230	2	2023-09-29	15:00:00	7.62	5.81	2.61	7.97	3.81	74.22	90.39	5.12
231	3	2023-10-16	09:00:00	8.42	15.78	18.59	2.31	1.62	83.13	83.49	6.37
232	3	2023-10-16	09:15:00	8.39	9.62	5.63	2.38	1.66	82.53	88.72	6.24
233	3	2023-10-16	09:30:00	8.22	10.16	4.41	2.41	1.57	82.58	90.94	6.21
234	3	2023-10-16	09:45:00	8.09	9.34	3.61	2.45	1.55	82.78	91.95	6.21
235	3	2023-10-16	10:00:00	8.00	9.21	3.18	2.46	1.54	83.08	92.49	6.22
236	3	2023-10-16	10:15:00	7.94	9.47	2.94	2.45	1.55	83.40	93.70	6.25
237	3	2023-10-16	10:30:00	7.90	9.35	2.84	2.42	1.55	82.89	94.11	6.21
238	3	2023-10-16	10:45:00	7.88	9.29	2.78	2.29	1.54	79.55	94.11	5.95
239	3	2023-10-16	11:00:00	7.86	9.16	2.90	2.23	1.53	78.81	93.83	5.90
240	3	2023-10-16	11:15:00	7.84	9.20	2.73	2.26	1.51	80.31	93.45	6.00
241	3	2023-10-16	11:30:00	7.82	8.91	2.72	2.24	1.50	80.67	92.85	6.03
242	3	2023-10-16	11:45:00	7.81	8.78	2.72	2.18	1.48	79.93	92.89	5.97
243	3	2023-10-16	12:00:00	7.81	8.64	2.73	2.26	1.48	81.47	92.91	6.09
244	3	2023-10-16	12:15:00	7.80	8.64	2.72	2.40	1.48	85.41	93.07	6.38
245	3	2023-10-16	12:30:00	7.80	8.57	2.73	2.42	1.49	86.70	93.76	6.48
246	3	2023-10-16	12:45:00	7.80	8.64	2.73	2.40	1.51	86.98	94.91	6.49
247	3	2023-10-16	13:00:00	7.81	9.51	2.73	2.36	1.54	86.98	95.91	6.49
248	3	2023-10-16	13:15:00	7.81	10.75	2.75	2.43	1.54	88.85	96.88	6.62
249	3	2023-10-16	13:30:00	7.81	11.17	2.78	2.44	1.53	88.51	97.36	6.60
250	3	2023-10-16	13:45:00	7.81	11.18	2.80	2.46	1.53	88.58	97.99	6.60
251	3	2023-10-16	14:00:00	7.80	11.21	2.83	2.43	1.54	87.30	98.67	6.50
252	3	2023-10-16	14:15:00	7.79	11.90	2.84	2.49	1.55	88.68	98.94	6.60
253	3	2023-10-16	14:30:00	7.78	11.74	2.86	2.55	1.54	90.91	99.02	6.76
254	3	2023-10-16	14:45:00	7.77	11.37	2.86	2.62	1.55	93.01	98.75	6.92
255	3	2023-10-17	08:30:00	7.84	8.29	3.40	2.58	1.61	82.01	72.15	6.54
256	3	2023-10-17	08:45:00	7.83	10.14	3.78	2.46	1.72	82.86	86.39	6.53
257	3	2023-10-17	09:00:00	7.82	10.71	4.24	2.33	1.70	83.03	89.72	6.50
258	3	2023-10-17	09:15:00	7.81	10.94	4.19	2.27	1.62	83.37	92.40	6.51
259	3	2023-10-17	09:30:00	7.80	10.55	3.80	2.22	1.54	83.53	93.82	6.51
260	3	2023-10-17	09:45:00	7.79	10.36	3.42	2.21	1.48	83.69	94.54	6.52
261	3	2023-10-17	10:00:00	7.79	10.05	3.26	2.14	1.47	83.83	94.94	6.53
262	3	2023-10-17	10:15:00	7.79	9.78	3.09	2.18	1.42	84.04	95.47	6.55
263	3	2023-10-17	10:30:00	7.79	9.50	3.01	2.13	1.40	84.34	95.64	6.57
264	3	2023-10-17	10:45:00	7.79	9.61	2.97	2.10	1.38	84.73	95.78	6.60
265	3	2023-10-17	11:00:00	7.79	9.58	3.00	2.12	1.38	85.12	95.97	6.62
266	3	2023-10-17	11:15:00	7.79	9.38	2.99	2.12	1.37	85.58	96.62	6.65
267	3	2023-10-17	11:30:00	7.79	9.36	2.97	2.16	1.37	86.19	96.74	6.70
268	3	2023-10-17	11:45:00	7.80	9.32	2.97	2.11	1.38	86.34	96.91	6.70
269	3	2023-10-17	12:00:00	7.80	9.31	2.97	2.13	1.39	86.47	97.06	6.71
270	3	2023-10-17	12:15:00	7.80	9.36	2.97	2.16	1.39	86.82	97.75	6.73
271	3	2023-10-17	12:30:00	7.80	9.51	2.98	2.17	1.38	86.65	97.98	6.71
272	3	2023-10-17	12:45:00	7.80	9.87	2.98	2.19	1.38	87.92	97.97	6.80
273	3	2023-10-17	13:00:00	7.80	9.77	2.98	2.23	1.38	89.22	98.11	6.90
274	3	2023-10-17	13:15:00	7.80	9.53	2.96	2.25	1.39	90.56	98.81	6.99
275	3	2023-10-17	13:30:00	7.80	9.41	2.95	2.26	1.40	91.50	99.60	7.06
276	3	2023-10-17	13:45:00	7.81	9.38	2.93	2.26	1.42	92.13	100.32	7.11
277	3	2023-10-17	14:00:00	7.81	9.43	2.92	2.25	1.43	92.32	101.08	7.12
278	3	2023-10-17	14:15:00	7.82	9.46	2.92	2.26	1.43	92.86	102.29	7.15
279	3	2023-10-17	14:30:00	7.82	9.62	3.51	2.24	1.48	94.71	101.98	7.29
280	3	2023-10-17	14:45:00	7.82	9.85	3.34	2.25	1.46	95.84	102.74	7.37
281	3	2023-10-18	08:45:00	7.84	10.38	3.61	2.39	1.51	88.20	91.10	7.04
282	3	2023-10-18	09:00:00	7.83	9.93	4.14	2.32	1.51	89.08	94.97	7.08
283	3	2023-10-18	09:15:00	7.82	9.88	4.02	2.26	1.49	89.67	97.26	7.10
284	3	2023-10-18	09:30:00	7.82	9.76	3.68	2.24	1.47	90.10	98.57	7.13
285	3	2023-10-18	09:45:00	7.82	9.82	3.38	2.27	1.45	90.61	99.29	7.16
286	3	2023-10-18	10:00:00	7.82	9.75	3.18	2.28	1.44	91.21	99.99	7.21
287	3	2023-10-18	10:15:00	7.82	9.68	3.10	2.30	1.43	91.58	100.64	7.24
288	3	2023-10-18	10:30:00	7.82	9.66	3.04	2.30	1.44	91.96	100.87	7.27
289	3	2023-10-18	10:45:00	7.82	10.02	3.01	2.29	1.46	92.54	101.12	7.31
290	3	2023-10-18	11:00:00	7.82	10.05	3.02	2.25	1.46	92.81	101.55	7.33
291	3	2023-10-18	11:15:00	7.82	9.85	3.06	2.24	1.47	92.25	102.05	7.28
292	3	2023-10-18	11:30:00	7.82	10.08	3.08	2.21	1.47	93.25	102.09	7.35
293	3	2023-10-18	11:45:00	7.81	9.98	3.02	2.24	1.46	95.42	102.18	7.51
294	3	2023-10-18	12:00:00	7.82	9.93	3.02	2.40	1.46	98.43	102.72	7.76
295	3	2023-10-18	12:15:00	7.82	9.83	3.00	2.57	1.48	100.87	103.85	7.97
296	3	2023-10-18	12:30:00	7.84	9.66	3.01	2.69	1.52	101.67	105.19	8.05
297	3	2023-10-18	12:45:00	7.86	9.58	3.00	2.67	1.56	101.94	106.50	8.05
298	3	2023-10-18	13:00:00	7.88	9.44	3.02	2.68	1.60	102.45	107.40	8.07
299	3	2023-10-18	13:15:00	7.89	9.52	3.00	2.68	1.61	105.02	108.06	8.25
300	3	2023-10-18	13:30:00	7.89	9.49	2.96	2.70	1.62	107.96	108.68	8.48

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent pH (SU)	Influent Turbidity (NTU)	Effluent Turbidity (NTU)	Influent Chlorophyll-a (RFU)	Effluent Chlorophyll-a (RFU)	Influent Dissolved Oxygen (%Sat)	Effluent Dissolved Oxygen (%Sat)	Influent Dissolved Oxygen (mg/L)
301	3	2023-10-18	13:45:00	7.90	9.35	3.22	2.76	1.64	110.20	109.76	8.66
302	3	2023-10-18	14:00:00	7.91	9.45	3.15	2.81	1.64	111.99	111.29	8.79
303	3	2023-10-18	14:15:00	7.93	9.53	3.00	2.77	1.66	113.12	112.82	8.87
304	3	2023-10-18	14:30:00	7.95	9.52	2.96	2.71	1.68	113.93	113.89	8.91
305	3	2023-10-18	14:45:00	7.96	8.94	3.01	2.68	1.68	115.20	115.10	8.98
306	3	2023-10-18	15:00:00	7.97	8.77	3.14	2.68	1.67	116.24	116.42	9.03
307	3	2023-10-19	09:15:00	7.96	17.53	3.13	2.77	1.72	99.43	90.40	7.84
308	3	2023-10-19	09:30:00	7.94	23.90	3.98	3.03	1.69	96.70	100.22	7.57
309	3	2023-10-19	09:45:00	7.91	8.99	4.36	3.26	1.62	96.11	102.42	7.50
310	3	2023-10-19	10:00:00	7.89	9.55	4.02	3.45	1.55	95.67	102.56	7.46
311	3	2023-10-19	10:15:00	7.87	9.45	3.51	3.41	1.49	95.66	102.86	7.45
312	3	2023-10-19	10:30:00	7.87	9.55	3.27	3.59	1.47	95.90	102.77	7.46
313	3	2023-10-19	10:45:00	7.87	9.40	3.09	3.54	1.46	95.64	102.66	7.43
314	3	2023-10-19	11:00:00	7.86	9.50	3.00	3.44	1.46	95.04	102.51	7.38
315	3	2023-10-19	11:15:00	7.86	9.47	2.99	3.30	1.48	94.15	103.02	7.31
316	3	2023-10-19	11:30:00	7.86	11.10	3.15	3.23	1.44	94.10	102.29	7.30
317	3	2023-10-19	11:45:00	7.86	13.12	2.85	3.25	1.43	95.45	102.04	7.39
318	3	2023-10-19	12:00:00	7.84	10.72	2.84	3.21	1.45	97.39	102.26	7.54
319	3	2023-10-19	12:15:00	7.83	9.62	3.58	3.07	1.75	99.11	103.09	7.66
320	3	2023-10-19	12:30:00	7.84	9.39	3.58	3.03	1.69	100.18	103.00	7.75
321	3	2023-10-19	12:45:00	7.85	9.23	3.22	3.07	1.50	101.26	103.90	7.83
322	3	2023-10-19	13:00:00	7.86	9.24	3.10	3.09	1.47	102.35	104.74	7.90
323	3	2023-10-19	13:15:00	7.87	9.01	3.06	3.01	1.48	103.92	106.39	8.01
324	3	2023-10-19	13:30:00	7.88	8.84	3.04	2.96	1.49	105.75	107.00	8.12
325	3	2023-10-19	13:45:00	7.89	8.79	3.01	2.87	1.50	107.79	107.87	8.26
326	3	2023-10-19	14:00:00	7.89	8.84	2.97	2.79	1.49	110.18	109.32	8.43
327	3	2023-10-19	14:15:00	7.90	8.90	3.02	2.75	1.50	112.73	111.09	8.61
328	3	2023-10-19	14:30:00	7.91	8.81	2.90	2.69	1.50	114.66	111.65	8.74
329	3	2023-10-19	14:45:00	7.92	8.82	2.91	2.68	1.53	115.93	113.04	8.83
330	3	2023-10-19	15:00:00	7.93	8.90	2.86	2.72	1.53	116.78	114.37	8.88
331	3	2023-10-20	08:30:00	7.89	13.63	3.67	2.42	2.04	93.66	83.90	7.22
332	3	2023-10-20	08:45:00	7.88	8.80	4.21	2.79	1.68	78.83	96.23	6.03
333	3	2023-10-20	09:00:00	7.86	9.01	4.40	3.00	1.62	71.43	97.09	5.44
334	3	2023-10-20	09:15:00	7.82	9.15	4.11	3.17	1.59	68.34	94.36	5.19
335	3	2023-10-20	09:30:00	7.79	9.29	3.80	3.29	1.62	66.75	90.56	5.06
336	3	2023-10-20	09:45:00	7.77	9.14	3.66	3.33	1.67	68.73	87.32	5.20
337	3	2023-10-20	10:00:00	7.76	9.54	3.53	3.48	1.73	70.49	85.38	5.34
338	3	2023-10-20	10:15:00	7.76	9.40	3.46	3.38	1.79	72.70	85.27	5.50
339	3	2023-10-20	10:30:00	7.77	9.20	3.39	3.33	1.85	73.95	85.46	5.59
340	3	2023-10-20	10:45:00	7.78	8.98	3.34	3.20	1.87	75.11	86.04	5.68
341	3	2023-10-20	11:00:00	7.80	8.82	3.32	3.18	1.89	76.02	86.95	5.75
342	3	2023-10-20	11:15:00	7.81	8.88	3.25	3.08	1.87	76.93	88.25	5.81
343	3	2023-10-20	11:30:00	7.82	8.97	3.22	3.12	2.09	77.39	88.91	5.84
344	3	2023-10-20	11:45:00	7.83	8.88	3.23	3.15	1.92	78.48	89.38	5.92
345	3	2023-10-20	12:00:00	7.84	8.85	3.21	3.18	1.82	79.73	89.96	6.01
346	3	2023-10-20	12:15:00	7.84	8.78	3.19	3.23	1.84	80.95	90.99	6.10
347	3	2023-10-20	12:30:00	7.85	8.78	3.19	3.18	1.83	82.04	91.71	6.18
348	3	2023-10-20	12:45:00	7.85	8.77	3.16	3.27	1.82	82.89	92.26	6.24
349	3	2023-10-20	13:00:00	7.86	8.76	3.15	3.30	1.81	84.35	92.94	6.34
350	3	2023-10-20	13:15:00	7.86	8.63	3.13	3.44	1.84	86.33	93.84	6.49
351	3	2023-10-20	13:30:00	7.87	8.72	3.11	3.49	1.87	87.99	94.65	6.60
352	3	2023-10-20	13:45:00	7.87	8.64	3.10	3.59	1.92	88.50	95.47	6.62
353	3	2023-10-20	14:00:00	7.88	6.73	3.76	3.78	2.04	89.39	96.23	6.67
354	4	2023-10-23	09:30:00	7.95	14.92	3.61	2.77	1.93	83.08	53.26	6.29
355	4	2023-10-23	09:45:00	7.91	8.97	7.52	2.71	2.00	90.86	66.10	6.85
356	4	2023-10-23	10:00:00	7.86	7.19	8.38	2.55	1.90	95.12	82.92	7.16
357	4	2023-10-23	10:15:00	7.88	6.12	6.38	2.47	1.72	97.07	94.27	7.30
358	4	2023-10-23	10:30:00	7.92	5.84	4.69	2.42	1.57	99.52	99.50	7.49
359	4	2023-10-23	10:45:00	7.96	5.90	4.74	2.35	1.48	101.71	102.38	7.66
360	4	2023-10-23	11:00:00	7.99	5.60	2.78	2.31	1.42	102.03	104.28	7.68
361	4	2023-10-23	11:15:00	8.02	5.83	2.35	2.32	1.40	103.38	106.25	7.79
362	4	2023-10-23	11:30:00	8.03	5.17	2.38	2.33	1.39	105.74	106.93	7.98
363	4	2023-10-23	11:45:00	8.05	4.95	2.34	2.31	1.37	107.90	107.77	8.15
364	4	2023-10-23	12:00:00	8.07	4.66	2.21	2.24	1.41	109.45	109.16	8.27
365	4	2023-10-23	12:15:00	8.08	4.47	2.22	2.24	1.43	110.27	110.08	8.32
366	4	2023-10-23	12:30:00	8.10	4.35	2.13	2.26	1.40	110.66	110.90	8.35
367	4	2023-10-23	12:45:00	8.11	4.63	2.05	2.24	1.37	111.18	111.66	8.38
368	4	2023-10-23	13:00:00	8.12	4.72	2.04	2.24	1.36	112.12	112.16	8.43
369	4	2023-10-23	13:15:00	8.12	4.79	2.07	2.26	1.36	112.59	112.64	8.46
370	4	2023-10-23	13:30:00	8.13	4.85	2.09	2.28	1.35	113.18	112.99	8.49
371	4	2023-10-23	13:45:00	8.13	4.88	2.15	2.28	1.38	113.55	113.23	8.51
372	4	2023-10-23	14:00:00	8.13	4.80	2.19	2.26	1.40	114.03	113.44	8.53
373	4	2023-10-23	14:15:00	8.13	4.86	2.30	2.26	1.39	114.69	113.58	8.57
374	4	2023-10-23	14:30:00	8.13	4.84	2.35	2.29	1.42	115.31	113.73	8.60

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent pH (SU)	Influent Turbidity (NTU)	Effluent Turbidity (NTU)	Influent Chlorophyll-a (RFU)	Effluent Chlorophyll-a (RFU)	Influent Dissolved Oxygen (%Sat)	Effluent Dissolved Oxygen (%Sat)	Influent Dissolved Oxygen (mg/L)
375	4	2023-10-23	14:45:00	8.13	4.87	2.28	2.25	1.40	115.32	113.69	8.60
376	4	2023-10-23	15:00:00	8.13	4.88	2.12	2.23	1.35	114.48	113.95	8.54
377	4	2023-10-23	15:15:00	8.13	5.00	2.07	2.17	1.33	113.48	114.16	8.46
378	4	2023-10-23	15:30:00	8.13	4.95	2.14	2.09	1.33	111.80	113.94	8.33
379	4	2023-10-24	09:00:00	8.04	54.35	2.56	2.35	1.15	91.16	98.58	6.92
380	4	2023-10-24	09:15:00	8.05	2.74	3.44	2.44	1.19	95.15	102.42	7.20
381	4	2023-10-24	09:30:00	8.06	1.44	3.59	2.42	1.26	95.46	103.42	7.22
382	4	2023-10-24	09:45:00	8.07	1.56	3.12	2.20	1.26	95.21	104.10	7.20
383	4	2023-10-24	10:00:00	8.07	1.85	3.06	2.25	1.29	94.53	104.45	7.15
384	4	2023-10-24	10:15:00	8.07	1.92	3.11	2.31	1.30	95.10	104.16	7.19
385	4	2023-10-24	10:30:00	8.07	2.01	3.25	2.31	1.32	94.92	104.01	7.17
386	4	2023-10-24	10:45:00	8.06	2.26	3.29	2.39	1.34	94.61	104.00	7.15
387	4	2023-10-24	11:00:00	8.06	2.21	3.23	2.79	1.34	95.76	103.71	7.24
388	4	2023-10-24	11:15:00	8.06	2.53	3.32	2.70	1.36	98.01	104.30	7.39
389	4	2023-10-24	11:30:00	8.07	2.82	3.42	2.57	1.41	98.42	105.05	7.43
390	4	2023-10-24	11:45:00	8.07	3.22	3.61	2.74	1.47	98.84	105.71	7.46
391	4	2023-10-24	12:00:00	8.08	3.62	3.94	2.64	1.54	98.90	106.07	7.46
392	4	2023-10-24	12:15:00	8.08	3.54	3.92	2.65	1.54	99.95	106.50	7.53
393	4	2023-10-24	12:30:00	8.08	3.80	3.94	2.73	1.54	100.64	106.78	7.58
394	4	2023-10-24	12:45:00	8.08	3.89	4.37	2.59	1.53	100.55	107.34	7.56
395	4	2023-10-24	13:00:00	8.08	3.45	3.86	2.69	1.48	100.16	107.55	7.52
396	4	2023-10-24	13:15:00	8.07	2.98	3.44	2.70	1.43	99.93	107.64	7.49
397	4	2023-10-24	13:30:00	8.07	2.61	3.02	2.99	1.41	99.88	107.84	7.47
398	4	2023-10-24	13:45:00	8.06	2.49	2.82	2.99	1.42	99.72	107.75	7.44
399	4	2023-10-24	14:00:00	8.05	2.41	2.67	2.99	1.41	99.49	107.56	7.41
400	4	2023-10-24	14:15:00	8.05	2.27	2.78	2.92	1.40	99.45	107.72	7.39
401	4	2023-10-24	14:30:00	8.05	33.95	2.90	2.71	1.39	104.45	108.01	7.83
402	4	2023-10-24	14:45:00	8.05	22.43	2.85	2.73	1.38	105.30	108.25	7.88
403	4	2023-10-24	15:00:00	8.06	35.65	3.36	2.81	1.39	106.35	108.77	7.95
404	4	2023-10-25	10:15:00	7.95	62.88	3.42	2.59	1.08	94.58	104.95	7.17
405	4	2023-10-25	10:30:00	7.96	17.02	4.23	2.09	1.11	89.36	105.83	6.77
406	4	2023-10-25	10:45:00	7.97	26.24	4.64	2.06	1.14	88.19	105.49	6.68
407	4	2023-10-25	11:00:00	7.97	23.79	4.36	2.09	1.16	88.53	105.03	6.71
408	4	2023-10-25	11:15:00	7.97	19.20	4.00	2.05	1.16	89.34	104.67	6.77
409	4	2023-10-25	11:30:00	7.97	15.85	3.69	2.07	1.16	88.95	103.98	6.73
410	4	2023-10-25	11:45:00	7.97	25.21	3.47	2.14	1.17	91.16	103.99	6.89
411	4	2023-10-25	12:00:00	7.97	29.13	3.39	2.11	1.17	89.15	104.52	6.74
412	4	2023-10-25	12:15:00	7.98	22.65	3.38	2.18	1.18	92.19	104.88	6.96
413	4	2023-10-25	12:30:00	7.98	18.12	3.71	2.18	1.24	93.04	104.71	7.02
414	4	2023-10-26	08:30:00	7.92	8.51	6.04	2.75	1.18	92.38	99.90	7.04
415	4	2023-10-26	08:45:00	7.93	2.90	5.00	2.55	1.22	93.01	102.69	7.06
416	4	2023-10-26	09:00:00	7.94	2.90	8.24	2.95	1.27	90.79	101.68	6.89
417	4	2023-10-26	09:15:00	7.94	2.82	4.59	2.35	1.28	90.28	101.06	6.84
418	4	2023-10-26	09:30:00	7.94	2.87	4.67	2.28	1.28	89.76	100.23	6.80
419	4	2023-10-26	09:45:00	7.93	2.97	6.01	2.36	1.40	89.35	99.05	6.77
420	4	2023-10-26	10:00:00	7.93	2.93	10.92	2.50	1.31	88.76	98.79	6.72
421	4	2023-10-26	10:15:00	7.92	2.84	4.96	2.54	1.29	88.97	100.71	6.74
422	4	2023-10-26	10:30:00	7.92	2.71	5.34	2.79	1.47	89.19	100.65	6.76
423	4	2023-10-26	10:45:00	7.90	17.31	6.25	5.34	1.35	92.41	101.02	7.00
424	4	2023-10-26	11:00:00	7.91	44.66	2.82	2.30	1.21	93.90	103.48	7.11
425	4	2023-10-26	11:15:00	7.91	46.55	2.78	2.24	1.20	92.95	104.24	7.04
426	4	2023-10-26	11:30:00	7.91	60.52	3.36	2.27	1.21	92.33	104.17	6.98
427	4	2023-10-27	08:00:00	7.86	22.22	2.88	2.71	1.18	87.61	83.69	6.58
428	4	2023-10-27	08:15:00	7.84	2.95	6.46	3.19	1.23	87.35	97.12	6.53
429	4	2023-10-27	08:30:00	7.86	3.16	7.56	3.70	1.34	87.25	100.09	6.53
430	4	2023-10-27	08:45:00	7.88	3.38	10.94	3.77	1.46	87.68	100.51	6.58
431	4	2023-10-27	09:00:00	7.89	3.35	4.35	4.04	1.54	89.22	101.65	6.70
432	4	2023-10-27	09:15:00	7.90	3.24	4.13	3.62	1.57	87.62	101.33	6.57
433	4	2023-10-27	09:30:00	7.90	3.18	3.49	3.37	1.58	88.20	100.83	6.60
434	4	2023-10-27	09:45:00	7.90	3.13	3.17	3.39	1.58	88.40	101.03	6.61
435	4	2023-10-27	10:00:00	7.91	3.21	3.73	3.29	1.60	87.75	101.11	6.55
436	4	2023-10-27	10:15:00	7.92	3.19	4.04	3.25	1.63	87.17	100.78	6.49
437	4	2023-10-27	10:30:00	7.93	2.89	3.93	3.13	1.64	89.50	100.83	6.68
438	4	2023-10-27	10:45:00	7.93	2.60	3.99	3.00	1.60	94.08	101.30	7.04
439	4	2023-10-27	11:00:00	7.94	2.62	5.72	3.29	1.58	95.24	102.19	7.13
440	4	2023-10-27	11:15:00	7.95	2.65	4.91	3.37	1.59	95.38	103.71	7.13
441	4	2023-10-27	11:30:00	7.96	2.57	5.75	3.20	1.62	95.97	104.35	7.18
442	4	2023-10-27	11:45:00	7.97	7.24	5.20	4.52	1.58	96.27	105.69	7.19
443	4	2023-10-27	12:00:00	7.97	22.56	4.01	2.89	1.58	100.42	106.92	7.77
444	4	2023-10-27	12:15:00	7.97	3.38	4.57	3.34	1.65	98.83	105.92	7.35
445	4	2023-10-27	12:30:00	7.98	3.24	10.63	4.05	1.70	99.33	105.62	7.39
446	4	2023-10-27	12:45:00	7.98	3.25	11.63	4.39	1.79	99.69	106.43	7.41
447	4	2023-10-27	13:00:00	7.98	3.20	7.71	3.51	2.02	99.75	106.66	7.41
448	5	2023-11-08	12:15:00	8.16		6.99		1.96		94.22	

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent pH (SU)	Influent Turbidity (NTU)	Effluent Turbidity (NTU)	Influent Chlorophyll-a (RFU)	Effluent Chlorophyll-a (RFU)	Influent Dissolved Oxygen (%Sat)	Effluent Dissolved Oxygen (%Sat)	Influent Dissolved Oxygen (mg/L)
449	5	2023-11-08	12:30:00	8.20	6.99	5.26	4.18	1.84	89.24	96.45	6.95
450	5	2023-11-08	12:45:00	8.20	8.60	7.32	3.87	1.56	92.29	97.17	7.17
451	5	2023-11-08	13:00:00	8.20	6.14	13.68	3.20	1.29	95.92	99.01	7.44
452	5	2023-11-08	13:15:00	8.21	3.06	5.25	3.51	1.10	94.70	101.49	7.34
453	5	2023-11-08	13:30:00	8.21	3.26	4.27	3.78	0.80	93.64	103.16	7.25
454	5	2023-11-08	13:45:00	8.21	3.20	5.52	3.76	0.77	94.57	103.94	7.33
455	5	2023-11-08	14:00:00	8.20	3.42	1.85	3.55	0.85	96.70	104.27	7.49
456	5	2023-11-08	14:15:00	8.20	3.19	1.74	3.43	0.85	98.30	104.38	7.61
457	5	2023-11-08	14:30:00	8.21	2.94	1.66	3.37	0.80	98.68	104.48	7.64
458	5	2023-11-08	14:45:00	8.21	2.97	1.69	3.47	0.74	98.12	105.03	7.60
459	5	2023-11-08	15:00:00	8.22	3.35	1.72	3.64	0.76	96.60	105.41	7.47
460	5	2023-11-08	15:15:00	8.22	3.28	1.75	3.41	0.90	97.88	105.46	7.57
461	5	2023-11-08	15:30:00	8.22	3.81	1.86	2.97	0.97	100.38	105.33	7.76
462	5	2023-11-08	15:45:00	8.22	3.52	1.94	2.50	0.97	102.01	105.20	7.88
463	5	2023-11-08	16:00:00	8.23	3.84	1.98	2.45	0.92	101.75	105.61	7.86
464	5	2023-11-08	16:15:00	8.23	4.29	1.96	2.54	0.84	101.40	106.09	7.83
465	5	2023-11-08	16:30:00	8.23	4.70	1.97	2.59	0.78	102.93	106.27	7.94
466	5	2023-11-08	16:45:00	8.24	4.20	2.03	2.83	0.77	99.75	106.60	7.70
467	5	2023-11-08	17:00:00	8.24	4.91	2.11	3.41	0.70	96.08	106.71	7.41
468	5	2023-11-08	17:15:00	8.23	5.48	2.12	3.81	0.67	94.00	106.54	7.25
469	5	2023-11-08	17:30:00	8.23	5.37	2.17	4.01	0.69	93.86	105.73	7.24
470	5	2023-11-08	17:45:00	8.22	5.54	2.47	4.05	0.77	93.28	104.74	7.20
471	5	2023-11-08	18:00:00	8.21	5.66	2.52	4.02	0.88	91.85	104.11	7.09
472	5	2023-11-08	18:15:00	8.21	5.24	2.54	3.97	0.94	91.62	103.56	7.07
473	5	2023-11-08	18:30:00	8.20	4.77	3.31	3.85	0.97	92.90	103.20	7.17
474	5	2023-11-08	18:45:00	8.20	4.35	2.35	3.77	1.00	93.26	102.93	7.20
475	5	2023-11-08	19:00:00	8.20	3.99	2.31	3.67	1.02	93.42	102.92	7.22
476	5	2023-11-08	19:15:00	8.20	3.86	2.30	3.69	1.04	93.81	102.97	7.25
477	5	2023-11-08	19:30:00	8.20	3.32	2.25	3.53	1.04	95.11	103.09	7.36
478	5	2023-11-08	19:45:00	8.21	3.06	2.25	3.31	1.05	96.81	103.20	7.48
479	5	2023-11-08	20:00:00	8.21	2.94	2.27	3.24	1.07	97.16	103.53	7.51
480	5	2023-11-08	20:15:00	8.21	2.80	2.20	3.18	1.03	97.35	103.93	7.52
481	5	2023-11-08	20:30:00	8.21	2.64	2.14	3.07	0.97	97.74	104.34	7.56
482	5	2023-11-08	20:45:00	8.22	2.38	2.11	2.94	0.93	98.18	104.64	7.59
483	5	2023-11-08	21:00:00	8.22	2.58	2.13	2.97	0.93	97.35	104.72	7.53
484	5	2023-11-08	21:15:00	8.23	2.43	2.09	2.94	0.91	96.73	104.95	7.48
485	5	2023-11-08	21:30:00	8.23	2.29	2.18	2.76	0.90	97.03	105.02	7.51
486	5	2023-11-08	21:45:00	8.23	2.30	2.18	2.70	0.89	97.00	104.94	7.51
487	5	2023-11-08	22:00:00	8.23	2.38	2.11	2.73	0.87	96.07	104.98	7.44
488	5	2023-11-08	22:15:00	8.23	2.29	2.12	2.62	0.86	96.13	104.97	7.44
489	5	2023-11-08	22:30:00	8.23	2.36	2.10	2.63	0.84	95.10	104.82	7.36
490	5	2023-11-08	22:45:00	8.23	2.56	2.09	2.62	0.82	93.74	104.76	7.26
491	5	2023-11-08	23:00:00	8.23	2.46	2.13	2.56	0.81	93.31	104.50	7.23
492	5	2023-11-08	23:15:00	8.22	3.14	2.06	2.75	0.77	88.20	104.25	6.83
493	5	2023-11-08	23:30:00	8.21	2.75	2.13	2.50	0.75	91.31	103.82	7.08
494	5	2023-11-08	23:45:00	8.20	2.80	2.22	2.41	0.74	89.51	103.22	6.94
495	5	2023-11-08	23:59:00	8.20	2.50	2.16	2.14	0.74	86.05	102.77	6.67
496	5	2023-11-09	00:15:00	8.19	2.11	2.15	1.94	0.73	85.55	102.29	6.63
497	5	2023-11-09	00:30:00	8.18	2.23	2.15	2.32	0.70	91.46	101.64	7.10
498	5	2023-11-09	00:45:00	8.17	2.18	2.16	2.42	0.67	92.21	101.35	7.16
499	5	2023-11-09	01:00:00	8.17	2.42	2.42	2.62	0.67	89.19	101.89	6.93
500	5	2023-11-09	01:15:00	8.18	2.82	2.21	2.90	0.69	84.77	102.37	6.59
501	5	2023-11-09	01:30:00	8.18	3.06	2.16	2.82	0.72	83.39	102.32	6.49
502	5	2023-11-09	01:45:00	8.18	2.73	2.24	2.64	0.75	85.66	101.79	6.67
503	5	2023-11-09	02:00:00	8.17	2.30	2.27	2.35	0.78	88.20	101.08	6.87
504	5	2023-11-09	02:15:00	8.17	2.26	2.45	2.37	0.78	84.31	101.04	6.57
505	5	2023-11-09	02:30:00	8.17	2.26	2.28	2.39	0.77	85.62	100.96	6.67
506	5	2023-11-09	02:45:00	8.16	2.19	2.20	2.33	0.78	87.47	100.81	6.82
507	5	2023-11-09	03:00:00	8.16	2.33	2.18	2.36	0.78	86.11	100.90	6.71
508	5	2023-11-09	03:15:00	8.16	2.64	2.17	2.52	0.76	82.80	101.04	6.45
509	5	2023-11-09	03:30:00	8.16	2.75	2.16	2.64	0.77	79.95	101.01	6.22
510	5	2023-11-09	03:45:00	8.16	2.89	2.17	2.64	0.77	79.56	100.56	6.19
511	5	2023-11-09	04:00:00	8.15	2.94	2.21	2.68	0.81	79.37	99.65	6.18
512	5	2023-11-09	04:15:00	8.14	3.02	2.31	2.73	0.82	78.65	99.40	6.12
513	5	2023-11-09	04:30:00	8.14	3.25	2.36	2.77	0.84	76.01	99.05	5.92
514	5	2023-11-09	04:45:00	8.13	3.39	2.40	2.91	0.85	71.00	98.59	5.53
515	5	2023-11-09	05:00:00	8.12	3.28	2.41	2.87	0.87	70.24	97.98	5.47
516	5	2023-11-09	05:15:00	8.11	3.10	2.43	2.79	0.87	71.40	96.90	5.57
517	5	2023-11-09	05:30:00	8.09	2.77	2.52	2.74	0.89	72.97	96.00	5.69
518	5	2023-11-09	05:45:00	8.08	2.63	2.50	2.54	0.90	78.04	95.59	6.09
519	5	2023-11-09	06:00:00	8.08	2.63	2.46	2.44	0.89	81.86	95.59	6.38
520	5	2023-11-09	06:15:00	8.09	2.96	2.49	2.54	0.86	80.56	96.33	6.28
521	5	2023-11-09	06:30:00	8.10	2.85	2.48	2.64	0.82	80.41	97.44	6.27
522	5	2023-11-09	06:45:00	8.11	3.19	2.54	2.81	0.81	79.58	98.01	6.20

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent pH (SU)	Influent Turbidity (NTU)	Effluent Turbidity (NTU)	Influent Chlorophyll-a (RFU)	Effluent Chlorophyll-a (RFU)	Influent Dissolved Oxygen (%Sat)	Effluent Dissolved Oxygen (%Sat)	Influent Dissolved Oxygen (mg/L)
523	5	2023-11-09	07:00:00	8.12	3.20	2.61	2.82	0.85	79.56	98.33	6.20
524	5	2023-11-09	07:15:00	8.13	3.20	2.94	2.89	0.96	77.95	98.41	6.08
525	5	2023-11-09	07:30:00	8.13	3.11	2.59	2.79	1.03	78.55	98.24	6.14
526	5	2023-11-09	07:45:00	8.13	3.48	2.39	2.89	1.04	77.90	98.13	6.07
527	5	2023-11-09	08:00:00	8.13	3.47	2.35	2.84	1.03	78.76	98.09	6.14
528	5	2023-11-09	08:15:00	8.12	3.90	2.36	3.00	1.05	77.89	98.07	6.06
529	5	2023-11-09	08:30:00	8.12	4.53	2.53	2.79	1.04	78.24	98.16	6.09
530	5	2023-11-09	08:45:00	8.12	5.83	2.42	3.10	1.01	78.82	98.26	6.14
531	5	2023-11-09	09:00:00	8.12	3.78	2.44	3.05	0.97	79.86	98.21	6.23
532	5	2023-11-09	09:15:00	8.12	4.24	2.42	3.14	0.92	80.88	98.79	6.30
533	5	2023-11-09	09:30:00	8.12	4.32	2.33	3.19	0.91	81.38	98.97	6.34
534	5	2023-11-09	09:45:00	8.13	4.57	2.14	3.28	0.88	81.38	99.20	6.33
535	5	2023-11-09	10:00:00	8.14	5.15	2.11	3.35	0.92	81.42	99.33	6.34
536	5	2023-11-09	10:15:00	8.14	4.64	2.13	3.23	0.99	82.52	99.33	6.42
537	5	2023-11-09	10:30:00	8.15	4.07	2.13	2.88	1.02	85.12	99.31	6.61
538	5	2023-11-09	10:45:00	8.15	6.97	2.14	2.54	1.08	88.00	99.53	6.83
539	5	2023-11-09	11:00:00	8.16	3.33	2.20	2.50	1.10	90.69	99.79	7.04
540	5	2023-11-09	11:15:00	8.17	3.34	2.16	2.57	1.11	91.55	100.45	7.10
541	5	2023-11-09	11:30:00	8.18	3.42	2.16	2.73	1.07	91.56	101.46	7.09
542	5	2023-11-09	11:45:00	8.18	3.73	2.10	2.97	1.05	91.92	102.29	7.12
543	5	2023-11-09	12:00:00	8.19	3.90	2.00	3.14	0.98	92.53	103.01	7.16
544	5	2023-11-09	12:15:00	8.19	3.62	1.95	3.06	0.99	93.13	103.69	7.21
545	5	2023-11-09	12:30:00	8.20	4.04	1.94	2.79	1.03	93.91	104.04	7.27
546	5	2023-11-09	12:45:00	8.20	3.79	2.04	3.10	1.02	91.75	104.47	7.10
547	5	2023-11-09	13:00:00	8.21	3.80	1.98	3.23	0.98	91.40	104.63	7.07
548	5	2023-11-09	13:15:00	8.21	3.66	2.01	3.35	0.98	91.15	104.55	7.04
549	5	2023-11-09	13:30:00	8.20	3.50	2.00	3.24	1.01	92.18	104.30	7.12
550	5	2023-11-09	13:45:00	8.20	3.35	1.99	3.28	1.03	92.85	104.12	7.17
551	5	2023-11-09	14:00:00	8.20	5.36	2.00	3.50	1.08	91.79	104.03	7.08
552	5	2023-11-09	14:15:00	8.20	3.30	2.05	3.63	1.03	91.52	104.01	7.05
553	5	2023-11-09	14:30:00	8.20	3.05	2.00	3.55	1.04	92.12	103.57	7.09
554	5	2023-11-09	14:45:00	8.20	3.18	1.97	3.46	1.05	91.82	103.45	7.07
555	5	2023-11-09	15:00:00	8.20	2.90	1.95	3.32	1.06	94.66	103.34	7.28
556	5	2023-11-09	15:15:00	8.20	2.73	1.95	3.17	1.08	97.07	103.29	7.44
557	5	2023-11-09	15:30:00	8.20	3.06	1.96	3.48	1.07	94.58	103.64	7.26
558	5	2023-11-09	15:45:00	8.20	3.24	1.93	3.59	1.06	94.16	104.18	7.22
559	5	2023-11-09	16:00:00	8.20	3.49	1.94	3.81	1.06	91.65	104.40	7.02
560	5	2023-11-09	16:15:00	8.20	3.48	1.96	3.74	1.08	92.45	104.45	7.08
561	5	2023-11-09	16:30:00	8.20	3.39	2.08	3.64	1.11	93.29	104.08	7.14
562	5	2023-11-09	16:45:00	8.20	7.62	2.03	3.46	1.12	94.99	103.96	7.28
563	5	2023-11-09	17:00:00	8.20	6.84	2.38	3.22	1.11	97.81	103.76	7.49
564	5	2023-11-09	17:15:00	8.21	2.59	2.13	3.17	1.05	100.44	104.34	7.69
565	5	2023-11-09	17:30:00	8.21	2.56	2.00	3.13	1.02	101.15	104.98	7.75
566	5	2023-11-09	17:45:00	8.22	2.49	1.97	3.15	0.97	99.85	105.68	7.66
567	5	2023-11-09	18:00:00	8.22	2.64	1.93	3.23	0.95	99.31	106.22	7.62
568	5	2023-11-09	18:15:00	8.22	2.62	1.88	3.07	0.94	98.40	106.43	7.54
569	5	2023-11-09	18:30:00	8.23	2.89	1.86	3.08	0.93	96.55	106.45	7.40
570	5	2023-11-09	18:45:00	8.23	3.95	1.87	2.93	0.92	94.97	106.37	7.28
571	5	2023-11-09	19:00:00	8.23	4.10	1.95	2.81	0.91	94.82	105.94	7.27
572	5	2023-11-09	19:15:00	8.22	4.10	2.06	2.85	0.89	93.97	105.50	7.20
573	5	2023-11-09	19:30:00	8.22	4.73	2.15	2.86	0.88	90.75	105.19	6.95
574	5	2023-11-09	19:45:00	8.22	5.47	2.25	2.97	0.88	86.27	104.75	6.62
575	5	2023-11-09	20:00:00	8.21	5.67	2.31	2.91	0.86	85.64	104.14	6.57
576	5	2023-11-09	20:15:00	8.20	5.62	2.47	3.05	0.88	84.10	103.17	6.45
577	5	2023-11-09	20:30:00	8.20	5.27	2.57	2.96	0.88	84.98	102.32	6.52
578	5	2023-11-09	20:45:00	8.19	4.75	2.63	2.84	0.89	86.18	101.64	6.61
579	5	2023-11-09	21:00:00	8.18	4.20	2.59	2.68	0.88	87.91	101.33	6.73
580	5	2023-11-09	21:15:00	8.18	3.74	2.58	2.48	0.87	90.00	101.38	6.89
581	5	2023-11-09	21:30:00	8.18	3.63	2.52	2.47	0.84	90.04	101.83	6.89
582	5	2023-11-09	21:45:00	8.18	3.68	2.46	2.39	0.81	89.96	102.23	6.88
583	5	2023-11-09	22:00:00	8.18	3.68	2.38	2.33	0.77	90.35	102.65	6.92
584	5	2023-11-09	22:15:00	8.18	2.61	2.34	2.03	0.74	94.48	102.85	7.24
585	5	2023-11-09	22:30:00	8.18	2.18	2.30	1.93	0.71	95.79	103.06	7.34
586	5	2023-11-09	22:45:00	8.19	2.21	2.22	1.88	0.67	96.04	103.69	7.36
587	5	2023-11-09	23:00:00	8.19	2.16	2.14	1.81	0.63	96.07	104.26	7.36
588	5	2023-11-09	23:15:00	8.20	2.39	2.06	1.83	0.59	95.16	104.80	7.29
589	5	2023-11-09	23:30:00	8.20	2.48	2.02	1.85	0.56	93.90	105.09	7.20
590	5	2023-11-09	23:45:00	8.20	2.39	2.01	1.86	0.54	93.71	105.11	7.19
591	5	2023-11-09	23:59:00	8.20	2.29	2.03	1.86	0.53	92.92	104.98	7.13
592	5	2023-11-10	00:15:00	8.20	2.51	2.02	1.91	0.52	91.06	104.73	6.99
593	5	2023-11-10	00:30:00	8.20	2.58	2.04	1.89	0.52	90.18	104.45	6.92
594	5	2023-11-10	00:45:00	8.19	2.42	2.02	1.70	0.52	88.13	104.01	6.76
595	5	2023-11-10	01:00:00	8.19	2.41	2.04	1.68	0.52	85.45	103.59	6.56
596	5	2023-11-10	01:15:00	8.18	2.56	2.06	1.75	0.51	84.44	103.12	6.49

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent pH (SU)	Influent Turbidity (NTU)	Effluent Turbidity (NTU)	Influent Chlorophyll-a (RFU)	Effluent Chlorophyll-a (RFU)	Influent Dissolved Oxygen (%Sat)	Effluent Dissolved Oxygen (%Sat)	Influent Dissolved Oxygen (mg/L)
597	5	2023-11-10	01:30:00	8.17	2.41	2.08	1.81	0.50	85.22	102.43	6.55
598	5	2023-11-10	01:45:00	8.16	2.51	2.10	1.92	0.50	85.05	101.95	6.54
599	5	2023-11-10	02:00:00	8.16	2.57	2.15	1.99	0.51	81.95	101.61	6.31
600	5	2023-11-10	02:15:00	8.15	2.58	2.11	2.02	0.51	80.84	101.40	6.23
601	5	2023-11-10	02:30:00	8.15	2.65	2.08	2.15	0.52	78.66	100.89	6.07
602	5	2023-11-10	02:45:00	8.15	3.25	2.11	2.41	0.53	75.10	100.31	5.80
603	5	2023-11-10	03:00:00	8.14	2.79	2.16	2.32	0.54	73.53	99.64	5.68
604	5	2023-11-10	03:15:00	8.13	2.74	2.23	2.25	0.58	72.09	98.53	5.57
605	5	2023-11-10	03:30:00	8.12	2.51	2.27	2.18	0.60	72.62	97.44	5.61
606	5	2023-11-10	03:45:00	8.11	2.16	2.28	1.84	0.62	80.85	96.57	6.23
607	5	2023-11-10	04:00:00	8.10	2.30	2.29	1.91	0.63	79.30	96.57	6.12
608	5	2023-11-10	04:15:00	8.10	2.51	2.13	1.98	0.58	77.99	97.65	6.01
609	5	2023-11-10	04:30:00	8.10	2.71	2.07	2.14	0.55	74.68	98.31	5.76
610	5	2023-11-10	04:45:00	8.11	3.08	1.97	2.21	0.53	72.42	98.39	5.59
611	5	2023-11-10	05:00:00	8.10	3.33	1.93	2.32	0.53	69.82	98.04	5.39
612	5	2023-11-10	05:15:00	8.10	3.23	1.93	2.35	0.55	68.51	97.24	5.29
613	5	2023-11-10	05:30:00	8.09	3.20	2.05	2.37	0.57	67.42	96.42	5.21
614	5	2023-11-10	05:45:00	8.07	3.46	2.28	2.34	0.58	65.22	95.70	5.04
615	5	2023-11-10	06:00:00	8.06	3.01	2.49	2.28	0.60	63.18	95.03	4.88
616	5	2023-11-10	06:15:00	8.06	2.38	2.29	1.94	0.60	63.95	94.48	4.95
617	5	2023-11-10	06:30:00	8.05	1.70	2.37	1.52	0.62	81.21	93.68	6.28
618	5	2023-11-10	06:45:00	8.04	1.51	3.08	1.42	0.62	85.44	93.88	6.61
619	5	2023-11-10	07:00:00	8.06	1.48	2.91	1.41	0.59	85.04	95.95	6.58
620	5	2023-11-10	07:15:00	8.09	1.46	2.74	1.35	0.54	85.12	98.32	6.59
621	5	2023-11-10	07:30:00	8.11	1.33	1.97	1.25	0.48	86.58	99.85	6.70
622	5	2023-11-10	07:45:00	8.13	1.59	1.78	1.32	0.43	84.26	100.72	6.51
623	5	2023-11-10	08:00:00	8.13	1.85	1.77	1.41	0.39	81.64	101.36	6.31
624	5	2023-11-10	08:15:00	8.14	1.94	1.85	1.30	0.37	83.07	101.49	6.41
625	5	2023-11-10	08:30:00	8.13	2.38	1.83	1.45	0.36	79.10	101.21	6.10
626	5	2023-11-10	08:45:00	8.13	2.43	1.70	1.40	0.30	79.23	101.02	6.11
627	5	2023-11-10	09:00:00	8.13	2.53	1.68	1.26	0.32	81.49	100.64	6.28
628	5	2023-11-10	09:15:00	8.12	3.02	1.76	1.22	0.33	82.42	100.38	6.34
629	5	2023-11-10	09:30:00	8.12	4.82	2.04	1.14	0.37	83.85	100.16	6.45
630	5	2023-11-10	09:45:00	8.13	3.08	1.79	1.08	0.25	85.32	100.47	6.56
631	5	2023-11-10	10:00:00	8.13	2.71	1.70	0.96	0.22	88.23	100.79	6.77
632	5	2023-11-10	10:15:00	8.14	12.97	1.79	0.85	0.24	89.97	101.16	6.88
633	5	2023-11-10	10:30:00	8.15	2.06	1.89	0.75	0.25	92.88	101.86	7.09
634	5	2023-11-10	10:45:00	8.15	1.83	1.97	0.72	0.27	92.67	103.08	7.08
635	5	2023-11-10	11:00:00	8.16	2.38	2.15	0.99	0.26	88.90	104.06	6.80
636	5	2023-11-10	11:15:00	8.16	2.28	1.98	1.09	0.25	87.63	104.60	6.70
637	5	2023-11-10	11:30:00	8.16	19.06	1.93	1.79	0.27	83.10	104.36	6.36
638	5	2023-11-10	11:45:00	8.16	22.27	1.94	2.00	0.30	80.34	104.11	6.15
639	5	2023-11-10	12:00:00	8.15	34.76	2.12	2.16	0.34	78.55	103.76	6.01
640	5	2023-11-10	12:15:00	8.14	34.14	2.23	2.32	0.34	78.30	102.79	5.99
641	5	2023-11-10	12:30:00	8.14	10.54	2.09	2.01	0.31	83.30	102.24	6.36
642	5	2023-11-10	12:45:00	8.13	66.58	2.09	1.65	0.32	89.02	102.37	6.76
643	5	2023-11-10	13:00:00	8.13	57.52	2.61	1.80	0.57	81.50	102.77	6.23
644	5	2023-11-10	13:15:00	8.14	64.82	2.50	1.82	0.62	80.93	101.71	6.18
645	5	2023-11-10	13:30:00	8.15	72.86	2.32	1.75	0.61	81.79	101.77	6.25
646	5	2023-11-10	13:45:00	8.15	67.58	2.42	1.85	0.65	83.45	101.87	6.38
647	5	2023-11-10	14:00:00	8.14	66.07	2.52	1.95	0.68	84.18	102.14	6.43
648	5	2023-11-10	14:15:00	8.14	63.58	2.57	1.93	0.68	85.38	102.59	6.52
649	5	2023-11-10	14:30:00	8.14	97.51	2.61	1.91	0.68	86.06	102.83	6.57
650	5	2023-11-10	14:45:00	8.15	60.44	2.61	2.03	0.68	84.93	103.17	6.49
651	5	2023-11-10	15:00:00	8.15	53.01	2.63	1.98	0.68	85.25	103.44	6.51
652	5	2023-11-10	15:15:00	8.15	53.27	2.64	1.84	0.68	85.41	103.44	6.52
653	5	2023-11-10	15:30:00	8.15	56.95	2.66	1.65	0.68	87.52	103.48	6.68
654	5	2023-11-10	15:45:00	8.15	64.25	2.62	1.54	0.67	89.06	103.84	6.79
655	5	2023-11-10	16:00:00	8.16	64.48	2.59	1.60	0.65	89.17	104.14	6.79
656	5	2023-11-14	10:45:00	8.06	50.37	1.70	1.42	0.13	81.09	84.53	6.07
657	5	2023-11-14	11:00:00	8.06	28.43	1.65	1.80	0.12	79.46	92.35	5.94
658	5	2023-11-14	11:15:00	8.04	30.87	1.68	2.07	0.07	78.99	95.72	5.90
659	5	2023-11-14	11:30:00	8.02	28.43	1.85	1.83	0.04	82.68	97.34	6.18
660	5	2023-11-14	11:45:00	8.00	29.72	1.93	2.03	0.05	82.23	98.28	6.14
661	5	2023-11-14	12:00:00	8.00	36.55	1.91	1.58	0.04	82.18	99.49	6.14
662	5	2023-11-14	12:15:00	7.99	29.02	1.82	1.58	0.05	78.65	100.79	5.87
663	5	2023-11-14	12:30:00	7.99	35.93	1.83	1.04	0.07	76.64	101.29	5.72
664	5	2023-11-14	12:45:00	7.98	28.03	1.90	1.49	0.09	81.57	101.03	6.09
665	5	2023-11-14	13:00:00	7.97	34.18	1.96	1.79	0.10	84.97	100.92	6.34
666	5	2023-11-14	13:15:00	7.96	29.11	2.07	1.95	0.11	83.60	101.90	6.23
667	5	2023-11-14	13:30:00	7.97	24.91	2.09	1.53	0.14	81.22	102.50	6.06
668	5	2023-11-14	13:45:00	7.97	21.91	2.09	1.74	0.17	84.70	102.54	6.32
669	5	2023-11-14	14:00:00	7.97	30.98	2.10	1.75	0.19	86.94	102.44	6.48
670	5	2023-11-14	14:15:00	7.97	31.27	2.13	1.65	0.20	85.00	102.96	6.33

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent pH (SU)	Influent Turbidity (NTU)	Effluent Turbidity (NTU)	Influent Chlorophyll-a (RFU)	Effluent Chlorophyll-a (RFU)	Influent Dissolved Oxygen (%Sat)	Effluent Dissolved Oxygen (%Sat)	Influent Dissolved Oxygen (mg/L)
671	5	2023-11-14	14:30:00	7.97	28.32	2.13	1.63	0.22	87.02	103.12	6.48
672	5	2023-11-14	14:45:00	7.98	22.55	2.19	1.66	0.23	87.76	103.22	6.54
673	5	2023-11-14	15:00:00	7.99	19.75	2.39	1.70	0.24	86.60	103.66	6.45
674	5	2023-11-14	15:15:00	8.00	23.53	2.46	1.57	0.27	83.99	103.75	6.26
675	5	2023-11-14	15:30:00	8.00	30.09	2.34	1.71	0.22	86.74	103.47	6.46
676	5	2023-11-14	15:45:00	8.00	24.97	2.33	1.73	0.20	87.80	103.41	6.54
677	5	2023-11-14	16:00:00	8.00	27.45	2.31	1.87	0.20	89.39	103.57	6.66
678	5	2023-11-14	16:15:00	8.01	23.39	2.36	2.24	0.20	90.20	103.96	6.73
679	5	2023-11-14	16:30:00	8.01	28.51	2.31	2.60	0.22	95.12	104.21	7.09
680	5	2023-11-14	16:45:00	8.02	30.56	2.26	2.43	0.22	97.37	104.50	7.26
681	5	2023-11-14	17:00:00	8.03	30.00	2.21	2.42	0.26	97.06	105.12	7.24
682	5	2023-11-14	17:15:00	8.05	28.47	2.16	2.30	0.28	94.19	105.96	7.03
683	5	2023-11-14	17:30:00	8.06	20.66	2.17	2.24	0.27	92.09	106.30	6.88
684	5	2023-11-14	17:45:00	8.07	26.53	2.19	1.86	0.27	90.25	106.35	6.75
685	5	2023-11-14	18:00:00	8.07	28.93	2.18	2.17	0.28	92.03	105.92	6.88
686	5	2023-11-14	18:15:00	8.06	25.20	2.20	2.29	0.29	92.89	105.30	6.95
687	5	2023-11-14	18:30:00	8.05	31.36	2.22	1.93	0.29	91.01	105.21	6.81
688	5	2023-11-14	18:45:00	8.05	29.92	2.24	2.19	0.29	91.84	105.20	6.88
689	5	2023-11-14	19:00:00	8.05	29.57	2.23	2.25	0.29	92.49	105.08	6.93
690	5	2023-11-14	19:15:00	8.04	39.80	2.24	2.35	0.30	92.15	105.01	6.91
691	5	2023-11-14	19:30:00	8.04	38.82	2.31	2.18	0.30	90.96	105.07	6.82
692	5	2023-11-14	19:45:00	8.04	36.95	2.37	2.43	0.30	90.34	105.04	6.78
693	5	2023-11-14	20:00:00	8.04	45.92	2.38	2.29	0.30	88.13	105.07	6.62
694	5	2023-11-14	20:15:00	8.04	46.38	2.40	2.28	0.32	86.74	104.89	6.52
695	5	2023-11-14	20:30:00	8.03	43.24	2.50	2.81	0.33	87.48	104.70	6.58
696	5	2023-11-14	20:45:00	8.02	36.02	2.56	3.43	0.36	88.16	104.29	6.63
697	5	2023-11-14	21:00:00	8.01	42.43	2.68	3.70	0.40	88.66	103.93	6.67
698	5	2023-11-14	21:15:00	8.00	42.88	2.74	3.52	0.46	88.71	103.74	6.67
699	5	2023-11-14	21:30:00	8.00	45.17	2.73	3.60	0.50	88.49	103.65	6.66
700	5	2023-11-14	21:45:00	8.00	44.09	2.86	3.46	0.55	88.66	103.50	6.67
701	5	2023-11-14	22:00:00	8.00	37.40	2.95	3.58	0.61	88.88	103.56	6.69
702	5	2023-11-14	22:15:00	8.00	42.08	3.08	3.33	0.65	88.32	103.47	6.65
703	5	2023-11-14	22:30:00	8.00	45.47	3.09	2.51	0.68	86.16	103.63	6.49
704	5	2023-11-14	22:45:00	8.00	45.61	3.46	1.90	0.87	85.38	103.64	6.44
705	5	2023-11-14	23:00:00	8.00	44.36	3.62	1.68	0.93	84.59	103.34	6.38
706	5	2023-11-14	23:15:00	8.00	39.99	3.60	1.67	0.77	83.78	102.89	6.32
707	5	2023-11-14	23:30:00	8.01	39.28	3.21	1.66	0.60	84.04	102.48	6.34
708	5	2023-11-14	23:45:00	8.01	35.87	3.04	1.66	0.52	84.05	101.76	6.35
709	5	2023-11-14	23:59:00	8.00	41.09	2.86	1.61	0.48	83.67	101.72	6.32
710	5	2023-11-15	00:15:00	8.00	31.84	2.79	1.57	0.45	83.98	101.59	6.35
711	5	2023-11-15	00:30:00	8.00	38.72	2.82	1.60	0.45	84.21	101.40	6.37
712	5	2023-11-15	00:45:00	8.00	41.16	2.84	1.60	0.43	83.45	101.27	6.31
713	5	2023-11-15	01:00:00	8.00	34.67	2.79	1.68	0.42	82.66	100.90	6.25
714	5	2023-11-15	01:15:00	8.01	33.45	2.72	1.57	0.40	79.75	100.68	6.03
715	5	2023-11-15	01:30:00	8.00	40.75	2.69	1.68	0.35	80.63	100.40	6.10
716	5	2023-11-15	01:45:00	8.00	37.89	2.67	1.63	0.34	81.71	100.06	6.18
717	5	2023-11-15	02:00:00	7.99	36.04	2.62	1.83	0.31	82.45	99.82	6.24
718	5	2023-11-15	02:15:00	7.99	39.22	2.59	1.70	0.30	82.42	100.06	6.24
719	5	2023-11-15	02:30:00	7.99	40.71	2.59	1.71	0.29	82.40	100.42	6.25
720	5	2023-11-15	02:45:00	7.99	34.76	2.62	1.64	0.31	81.87	100.37	6.22
721	5	2023-11-15	03:00:00	7.99	30.53	2.62	1.71	0.32	81.86	100.16	6.22
722	5	2023-11-15	03:15:00	7.99	33.24	2.62	1.75	0.33	82.10	100.08	6.24
723	5	2023-11-15	03:30:00	7.99	33.46	2.63	1.84	0.34	82.26	100.13	6.25
724	5	2023-11-15	03:45:00	7.99	35.90	2.67	1.74	0.35	82.28	99.84	6.26
725	5	2023-11-15	04:00:00	7.98	39.77	2.73	1.78	0.38	82.37	99.83	6.27
726	5	2023-11-15	04:15:00	7.99	28.89	2.76	1.62	0.41	83.14	101.34	6.33
727	5	2023-11-15	04:30:00	7.99	30.09	2.71	1.63	0.43	85.33	101.44	6.50
728	5	2023-11-15	04:45:00	7.99	31.58	2.63	1.68	0.43	85.82	101.18	6.54
729	5	2023-11-15	05:00:00	7.99	33.48	2.54	1.71	0.45	85.54	101.13	6.52
730	5	2023-11-15	05:15:00	8.00	27.73	2.54	1.67	0.47	85.46	101.53	6.51
731	5	2023-11-15	05:30:00	8.00	28.46	2.52	1.73	0.48	84.24	101.71	6.43
732	5	2023-11-15	05:45:00	8.00	32.44	2.49	2.04	0.48	80.02	101.76	6.12
733	5	2023-11-15	06:00:00	8.00	27.87	2.57	2.14	0.48	80.72	101.53	6.17
734	5	2023-11-15	06:15:00	7.98	36.34	2.63	1.63	0.45	82.38	100.86	6.29
735	5	2023-11-15	06:30:00	7.97	33.86	2.75	1.57	0.42	81.94	100.31	6.26
736	5	2023-11-15	06:45:00	7.96	25.07	2.78	1.65	0.38	81.16	100.12	6.21
737	5	2023-11-15	07:00:00	7.95	24.92	2.80	1.68	0.36	81.39	100.31	6.23
738	5	2023-11-15	07:15:00	7.95	36.03	2.92	1.81	0.39	81.92	100.11	6.27
739	5	2023-11-15	07:30:00	7.95	36.75	2.90	1.98	0.41	81.37	99.93	6.23
740	5	2023-11-15	07:45:00	7.94	31.40	3.02	2.00	0.47	80.68	99.70	6.18
741	5	2023-11-15	08:00:00	7.94	27.99	3.05	1.73	0.48	79.57	99.70	6.10
742	5	2023-11-15	08:15:00	7.94	29.12	2.95	1.57	0.45	79.99	99.28	6.12
743	5	2023-11-15	08:30:00	7.93	27.77	3.21	1.61	0.40	80.92	99.05	6.18
744	5	2023-11-15	08:45:00	7.93	24.62	3.17	1.61	0.40	81.20	99.31	6.20

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent pH (SU)	Influent Turbidity (NTU)	Effluent Turbidity (NTU)	Influent Chlorophyll-a (RFU)	Effluent Chlorophyll-a (RFU)	Influent Dissolved Oxygen (%Sat)	Effluent Dissolved Oxygen (%Sat)	Influent Dissolved Oxygen (mg/L)
745	5	2023-11-15	09:00:00	7.93	31.23	2.91	1.34	0.33	80.36	99.12	6.14
746	5	2023-11-15	09:15:00	7.94	22.14	2.75	1.36	0.39	78.68	99.71	6.01
747	5	2023-11-15	09:30:00	7.95	22.89	2.93	1.35	0.42	80.60	99.84	6.16
748	5	2023-11-15	09:45:00	7.95	28.02	2.45	1.58	0.28	81.60	100.05	6.24
749	5	2023-11-15	10:00:00	7.96	24.55	2.35	1.53	0.27	81.63	100.25	6.24
750	5	2023-11-15	10:15:00	7.96	31.08	2.10	1.46	0.25	78.53	100.68	6.01
751	5	2023-11-15	10:30:00	7.97	28.99	2.11	1.45	0.25	79.01	100.77	6.04
752	5	2023-11-15	10:45:00	7.96	28.42	2.08	1.42	0.24	79.79	100.61	6.11
753	5	2023-11-15	11:00:00	7.96	32.32	2.12	1.26	0.25	77.43	100.52	5.93
754	5	2023-11-15	11:15:00	7.95	33.91	2.17	1.84	0.24	77.92	100.48	5.98
755	5	2023-11-15	11:30:00	7.94	28.65	2.23	2.28	0.25	81.37	100.14	6.25
756	5	2023-11-15	11:45:00	7.93	33.11	2.29	2.13	0.24	83.00	100.12	6.37
757	5	2023-11-15	12:00:00	7.93	30.67	2.46	2.07	0.28	83.84	100.63	6.44
758	5	2023-11-15	12:15:00	7.94	38.63	2.53	2.11	0.34	82.98	101.07	6.37
759	5	2023-11-15	12:30:00	7.96	32.83	2.38	2.20	0.37	84.33	101.45	6.48
760	5	2023-11-15	12:45:00	7.97	30.71	2.29	2.44	0.42	84.45	101.88	6.49
761	5	2023-11-15	13:00:00	7.98	38.01	2.26	2.63	0.49	84.66	102.31	6.51
762	5	2023-11-15	13:15:00	7.98	26.54	2.25	2.77	0.49	82.13	102.55	6.32
763	5	2023-11-15	13:30:00	7.98	26.96	2.32	2.82	0.51	82.80	102.47	6.37
764	5	2023-11-15	13:45:00	7.97	35.69	2.44	2.81	0.52	83.78	102.37	6.45
765	5	2023-11-15	14:00:00	7.96	29.99	2.33	3.24	0.55	84.62	102.30	6.51
766	5	2023-11-15	14:15:00	7.96	29.24	2.88	2.38	0.53	81.78	102.14	6.38
Notes:											
°C = degree Celcius											
°F = degree Fahrenheit											
µS/cm = microSiemens per centimeter											
SU = standard unit											
NTU = Nephelometric Turbidity Unit											
RFU = Relative Fluorescence Unit											
%Sat = percent saturation											
mg/L = milligrams per liter											
BGAPC = bluegreen algae phycocyanin											
J = estimated value											

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent Dissolved Oxygen (mg/L)	Influent BGAPC (RFU)	Influent BGAPC Qualifier	Effluent BGAPC (RFU)	Effluent BGAPC Qualifier
1	1	2023-09-11	10:45:00	2.99	2.75		2.11	
2	1	2023-09-11	11:00:00	4.50	2.37		2.18	
3	1	2023-09-11	11:15:00	5.35	2.52		2.09	
4	1	2023-09-11	11:30:00	5.52	2.65		2.08	
5	1	2023-09-11	11:45:00	5.69	3.57		2.07	
6	1	2023-09-11	12:00:00	5.80	4.30		2.01	
7	1	2023-09-11	12:15:00	6.02	3.27		2.05	
8	1	2023-09-11	12:30:00	6.26	2.87		2.04	
9	1	2023-09-11	12:45:00	6.37	2.93		1.98	
10	1	2023-09-11	13:00:00	6.42	3.19		1.94	
11	1	2023-09-11	13:15:00	6.50	2.81		1.91	
12	1	2023-09-11	13:30:00	6.62	2.35		1.88	
13	1	2023-09-11	13:45:00	6.75	2.66		1.86	
14	1	2023-09-11	14:00:00	6.90	3.63		1.85	
15	1	2023-09-11	14:15:00	7.12	3.54		1.94	
16	1	2023-09-11	14:30:00	7.37	3.01		2.13	
17	1	2023-09-11	14:45:00	7.53	3.10		2.20	
18	1	2023-09-11	15:00:00	7.64	3.18		2.29	
19	1	2023-09-11	15:15:00	7.76	2.90		2.27	
20	1	2023-09-11	15:30:00	7.88	3.17		2.28	
21	1	2023-09-11	15:45:00	7.98	3.05		2.24	
22	1	2023-09-12	08:45:00	5.23	2.72		2.13	
23	1	2023-09-12	09:00:00	6.17	2.55		2.14	
24	1	2023-09-12	09:15:00	5.74	2.46		2.12	
25	1	2023-09-12	09:30:00	4.87	2.40		2.02	
26	1	2023-09-12	09:45:00	4.40	2.45		1.96	
27	1	2023-09-12	10:00:00	4.28	2.59		1.94	
28	1	2023-09-12	10:15:00	4.36	2.36		1.93	
29	1	2023-09-12	10:30:00	4.45	2.39		1.92	
30	1	2023-09-12	10:45:00	4.54	2.35		1.93	
31	1	2023-09-12	11:00:00	4.61	2.29		1.90	
32	1	2023-09-12	11:15:00	4.66	2.35		1.88	
33	1	2023-09-12	11:30:00	4.69	2.93		1.88	
34	1	2023-09-12	11:45:00	4.71	2.74		1.91	
35	1	2023-09-12	12:00:00	4.77	2.79		1.95	
36	1	2023-09-12	12:15:00	4.92	3.38		1.96	
37	1	2023-09-12	12:30:00	4.59	3.34		1.98	
42	1	2023-09-12	13:45:00	5.72	3.72		1.99	
43	1	2023-09-12	14:00:00	5.58	2.81		1.98	
44	1	2023-09-12	14:15:00	5.66	2.44		1.97	
45	1	2023-09-12	14:30:00	5.80	2.46		1.98	
46	1	2023-09-12	14:45:00	5.92	2.30		2.00	
47	1	2023-09-13	08:15:00	2.99	3.44		2.03	
48	1	2023-09-13	08:30:00	5.00	2.78		2.11	
49	1	2023-09-13	08:45:00	4.89	2.51		2.14	
50	1	2023-09-13	09:00:00	4.55	2.69		2.11	
51	1	2023-09-13	09:15:00	4.27	2.56		2.12	
52	1	2023-09-13	09:30:00	4.24	2.69		2.06	
53	1	2023-09-13	09:45:00	4.32	2.63		1.99	
54	1	2023-09-13	10:00:00	4.48	2.56		1.97	
55	1	2023-09-13	10:15:00	4.61	2.45		1.96	
56	1	2023-09-13	10:30:00	4.50	2.46		1.95	
57	1	2023-09-13	10:45:00	4.31	2.37		1.94	
58	1	2023-09-13	11:00:00	4.55	2.38		1.93	
59	1	2023-09-13	11:15:00	4.50	2.53		1.92	
60	1	2023-09-13	11:30:00	4.48	3.24		1.91	
61	1	2023-09-13	11:45:00	4.44	3.06		1.92	
62	1	2023-09-13	12:00:00	4.44	3.30		1.94	
63	1	2023-09-13	12:15:00	4.46	2.67		1.93	
64	1	2023-09-13	12:30:00	4.50	2.69		1.93	
65	1	2023-09-13	12:45:00	4.56	2.75		1.92	
66	1	2023-09-13	13:00:00	4.61	2.61		1.91	
67	1	2023-09-13	13:15:00	4.68	2.85		1.91	
68	1	2023-09-13	13:30:00	4.81	3.06		1.91	
69	1	2023-09-13	13:45:00	4.86	2.68		1.93	
70	1	2023-09-13	14:00:00	4.82	2.49		1.93	
71	1	2023-09-13	14:15:00	4.71	2.41		1.91	
72	1	2023-09-13	14:30:00	4.64	2.50		1.89	
73	1	2023-09-13	14:45:00	4.66	2.41		1.89	
74	1	2023-09-13	15:00:00	4.72	2.41		1.89	
75	1	2023-09-13	15:15:00	4.84	2.42		1.90	
76	1	2023-09-13	15:30:00	5.01	2.39		1.92	
77	1	2023-09-14	09:45:00	3.45	2.63		2.00	
78	1	2023-09-14	10:00:00	4.63	2.50		2.04	

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent Dissolved Oxygen (mg/L)	Influent BGAPC (RFU)	Influent BGAPC Qualifier	Effluent BGAPC (RFU)	Effluent BGAPC Qualifier
79	1	2023-09-14	10:15:00	4.71	2.59		2.07	
80	1	2023-09-14	10:30:00	4.77	3.15		2.09	
81	1	2023-09-14	10:45:00	4.84	2.76		2.08	
82	1	2023-09-14	11:00:00	4.93	3.69		2.03	
83	1	2023-09-14	11:15:00	5.01	3.53		1.99	
84	1	2023-09-14	11:30:00	5.02	3.68		1.94	
85	1	2023-09-14	11:45:00	5.00	4.22		1.87	
86	1	2023-09-14	12:00:00	5.00	2.87		1.87	
87	1	2023-09-14	12:15:00	5.07	3.16		1.90	
88	1	2023-09-14	12:30:00	5.15	2.83		1.90	
89	1	2023-09-14	12:45:00	5.21	2.89		1.90	
90	1	2023-09-14	13:00:00	5.27	3.45		1.90	
91	1	2023-09-14	13:15:00	5.36	3.50		1.89	
92	1	2023-09-14	13:30:00	5.42	3.59		1.90	
93	1	2023-09-14	13:45:00	5.49	3.17		1.92	
94	1	2023-09-14	14:00:00	5.60	2.87		1.92	
95	1	2023-09-14	14:15:00	5.73	2.64		1.91	
96	1	2023-09-14	14:30:00	5.83	2.59		1.89	
97	1	2023-09-14	14:45:00	5.86	2.42		1.88	
98	1	2023-09-14	15:00:00	5.90	2.60		1.87	
99	1	2023-09-15	12:00:00	2.92	2.42		2.02	
100	1	2023-09-15	12:15:00	5.12	3.68		2.01	
101	1	2023-09-15	12:30:00	5.58	4.29		2.16	
102	1	2023-09-15	12:45:00	5.92	4.10		2.27	
103	1	2023-09-15	13:00:00	6.06	3.26		2.18	
104	1	2023-09-15	13:15:00	6.00	2.71		2.01	
105	1	2023-09-15	13:30:00	5.94	2.56		1.91	
106	1	2023-09-15	13:45:00	5.91	2.35		1.86	
107	1	2023-09-15	14:00:00	5.92	2.30		1.84	
108	1	2023-09-15	14:15:00	6.03	2.40		1.84	
109	1	2023-09-15	14:30:00	6.18	2.77		1.85	
110	1	2023-09-15	14:45:00	6.29	2.98		1.87	
111	1	2023-09-15	15:00:00	6.38	2.71		1.91	
112	1	2023-09-15	15:15:00	6.45	2.62		1.93	
113	1	2023-09-15	15:30:00	6.50	2.53		1.93	
114	1	2023-09-15	15:45:00	6.53	2.47		1.93	
115	1	2023-09-15	16:00:00	6.55	2.50		1.92	
116	1	2023-09-15	16:15:00	6.56	2.30		1.92	
117	1	2023-09-15	16:30:00	6.58	2.75		1.91	
118	2	2023-09-26	09:30:00	6.12	2.66		2.02	
119	2	2023-09-26	09:45:00	5.28	2.82		2.09	
120	2	2023-09-26	10:00:00	4.44	3.10		2.07	
121	2	2023-09-26	10:15:00	4.18	3.17		2.05	
122	2	2023-09-26	10:30:00	4.29	3.20		2.05	
123	2	2023-09-26	10:45:00	4.50	2.99		2.06	
124	2	2023-09-26	11:00:00	4.62	2.96		2.05	
125	2	2023-09-26	11:15:00	4.83	2.93		2.03	
126	2	2023-09-26	11:30:00	4.96	2.70		2.02	
127	2	2023-09-26	11:45:00	5.08	2.57		1.99	
128	2	2023-09-26	12:00:00	5.16	2.63		1.98	
129	2	2023-09-26	12:15:00	5.25	2.59		1.98	
130	2	2023-09-26	12:30:00	5.30	2.56		1.97	
131	2	2023-09-26	12:45:00	5.37	2.62		1.99	
132	2	2023-09-26	13:00:00	5.42	2.89		2.02	
133	2	2023-09-26	13:15:00	5.49	2.77		2.04	
134	2	2023-09-26	13:30:00	5.49	2.65		1.99	
135	2	2023-09-26	13:45:00	5.50	2.75		2.00	
136	2	2023-09-26	14:00:00	5.61	2.88		2.00	
137	2	2023-09-26	14:15:00	5.67	2.89		2.00	
138	2	2023-09-26	14:30:00	5.65	2.88		2.00	
139	2	2023-09-26	14:45:00	5.66	2.83		1.98	
140	2	2023-09-26	15:00:00	5.71	2.82		1.99	
141	2	2023-09-26	15:15:00	5.85	2.68		1.98	
142	2	2023-09-26	15:30:00	5.87	2.91		1.98	
143	2	2023-09-26	15:45:00	5.75	2.67		2.00	
144	2	2023-09-26	16:00:00	5.75	2.76		1.98	
145	2	2023-09-26	16:15:00	5.75	2.93		1.94	
146	2	2023-09-27	08:45:00	2.88	3.43		2.07	
147	2	2023-09-27	09:00:00	4.48	2.75		2.07	
148	2	2023-09-27	09:15:00	4.79	2.74		2.07	
149	2	2023-09-27	09:30:00	4.63	2.95		2.09	
150	2	2023-09-27	09:45:00	4.61	3.02		2.09	
151	2	2023-09-27	10:00:00	4.75	2.79		2.12	
152	2	2023-09-27	10:15:00	4.75	2.87		2.12	

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent Dissolved Oxygen (mg/L)	Influent BGAPC (RFU)	Influent BGAPC Qualifier	Effluent BGAPC (RFU)	Effluent BGAPC Qualifier
153	2	2023-09-27	10:30:00	4.58	2.67		2.09	
154	2	2023-09-27	10:45:00	4.54	2.62		2.06	
155	2	2023-09-27	11:00:00	4.53	2.60		2.03	
156	2	2023-09-27	12:45:00	6.02	2.66		1.96	
157	2	2023-09-27	13:00:00	5.50	2.68		1.99	
158	2	2023-09-27	13:15:00	5.17	2.67		2.01	
159	2	2023-09-27	13:30:00	4.97	2.66		2.03	
160	2	2023-09-27	13:45:00	4.86	2.66		2.00	
161	2	2023-09-27	14:00:00	4.76	2.67		2.00	
162	2	2023-09-27	14:15:00	4.64	2.68		2.00	
163	2	2023-09-27	14:30:00	4.58	2.68		2.00	
164	2	2023-09-27	14:45:00	4.60	2.69		2.01	
165	2	2023-09-27	15:00:00	4.61	2.67		2.01	
166	2	2023-09-27	15:15:00	4.66	2.70		2.03	
167	2	2023-09-27	15:30:00	4.90	2.67		2.04	
168	2	2023-09-28	08:45:00	4.44	2.72		2.05	
169	2	2023-09-28	09:00:00	4.90	2.66		2.08	
170	2	2023-09-28	09:15:00	4.55	2.63		2.09	
171	2	2023-09-28	09:30:00	4.95	2.59		2.11	
172	2	2023-09-28	09:45:00	4.89	2.59		2.11	
173	2	2023-09-28	10:00:00	4.72	2.60		2.10	
174	2	2023-09-28	10:15:00	4.70	2.54		2.10	
175	2	2023-09-28	10:30:00	4.85	2.62		2.09	
176	2	2023-09-28	10:45:00	4.97	2.62		2.11	
177	2	2023-09-28	11:00:00	5.02	2.58		2.11	
178	2	2023-09-28	11:15:00	5.07	2.61		2.12	
179	2	2023-09-28	11:30:00	5.12	2.71		2.13	
180	2	2023-09-28	11:45:00	5.17	2.76		2.14	
181	2	2023-09-28	12:00:00	5.22	2.78		2.15	
182	2	2023-09-28	12:15:00	5.24	2.77		2.18	
183	2	2023-09-28	12:30:00	5.24	2.73		2.23	
184	2	2023-09-28	12:45:00	5.25	2.73		2.25	
185	2	2023-09-28	13:00:00	5.28	2.77		2.23	
186	2	2023-09-28	13:15:00	5.29	2.86		2.27	
187	2	2023-09-28	13:30:00	5.31	2.96		2.25	
188	2	2023-09-28	13:45:00	5.36	2.90		2.25	
189	2	2023-09-28	14:00:00	5.43	2.83		2.35	
190	2	2023-09-28	14:15:00	5.56	2.89		2.35	
191	2	2023-09-28	14:30:00	5.65	2.87		2.31	
192	2	2023-09-28	14:45:00	5.73	2.74		2.28	
193	2	2023-09-28	15:00:00	5.80	2.65		2.27	
194	2	2023-09-28	15:15:00	5.86	2.68		2.25	
195	2	2023-09-28	15:30:00	5.89	2.73		2.22	
196	2	2023-09-28	15:45:00	5.92	2.68		2.19	
197	2	2023-09-28	16:00:00	5.95	2.65		2.18	
198	2	2023-09-28	16:15:00	5.98	2.63		2.17	
199	2	2023-09-28	16:30:00	5.99	2.61		2.17	
200	2	2023-09-28	16:45:00	5.97	2.59		2.17	
201	2	2023-09-28	17:00:00	5.97	2.60		2.15	
202	2	2023-09-28	17:15:00	5.99	2.56		2.14	
203	2	2023-09-28	17:30:00	6.01	2.57		2.13	
204	2	2023-09-28	17:45:00	5.97	2.63		2.10	
205	2	2023-09-29	08:45:00	5.45	2.61		2.09	
206	2	2023-09-29	09:00:00	5.96	2.64		2.09	
207	2	2023-09-29	09:15:00	5.83	2.60		2.09	
208	2	2023-09-29	09:30:00	5.75	2.58		2.06	
209	2	2023-09-29	09:45:00	5.71	2.56		2.03	
210	2	2023-09-29	10:00:00	5.72	2.54		2.00	
211	2	2023-09-29	10:15:00	5.74	2.53		1.99	
212	2	2023-09-29	10:30:00	5.76	2.50		1.99	
213	2	2023-09-29	10:45:00	5.77	2.49		1.99	
214	2	2023-09-29	11:00:00	5.74	2.46		1.99	
215	2	2023-09-29	11:15:00	5.70	2.39		2.01	
216	2	2023-09-29	11:30:00	5.70	2.39		2.03	
217	2	2023-09-29	11:45:00	5.73	2.41		2.03	
218	2	2023-09-29	12:00:00	5.74	2.48		2.02	
219	2	2023-09-29	12:15:00	5.79	2.51		2.01	
220	2	2023-09-29	12:30:00	5.80	2.53		2.02	
221	2	2023-09-29	12:45:00	5.83	2.55		2.01	
222	2	2023-09-29	13:00:00	5.84	2.56		2.04	
223	2	2023-09-29	13:15:00	5.85	2.50		2.06	
224	2	2023-09-29	13:30:00	5.85	2.47		2.08	
225	2	2023-09-29	13:45:00	5.91	2.49		2.07	
226	2	2023-09-29	14:00:00	5.95	2.51		2.07	

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent Dissolved Oxygen (mg/L)	Influent BGAPC (RFU)	Influent BGAPC Qualifier	Effluent BGAPC (RFU)	Effluent BGAPC Qualifier
227	2	2023-09-29	14:15:00	6.01	2.49		2.08	
228	2	2023-09-29	14:30:00	6.14	2.49		2.08	
229	2	2023-09-29	14:45:00	6.27	2.57		2.09	
230	2	2023-09-29	15:00:00	6.23	2.68		2.10	
231	3	2023-10-16	09:00:00	6.60	-0.02	J	0.53	
232	3	2023-10-16	09:15:00	6.86	-0.24	J	0.40	
233	3	2023-10-16	09:30:00	6.99	-0.24	J	0.35	
234	3	2023-10-16	09:45:00	7.01	-0.27	J	0.31	
235	3	2023-10-16	10:00:00	7.00	-0.27	J	0.29	
236	3	2023-10-16	10:15:00	7.06	-0.28	J	0.28	
237	3	2023-10-16	10:30:00	7.06	-0.29	J	0.26	
238	3	2023-10-16	10:45:00	7.05	-0.32	J	0.25	
239	3	2023-10-16	11:00:00	7.02	-0.33	J	0.25	
240	3	2023-10-16	11:15:00	6.99	-0.32	J	0.25	
241	3	2023-10-16	11:30:00	6.94	-0.32	J	0.24	
242	3	2023-10-16	11:45:00	6.94	-0.34	J	0.22	
243	3	2023-10-16	12:00:00	6.93	-0.32	J	0.25	
244	3	2023-10-16	12:15:00	6.94	-0.29	J	0.26	
245	3	2023-10-16	12:30:00	6.99	-0.28	J	0.27	
246	3	2023-10-16	12:45:00	7.08	-0.29	J	0.29	
247	3	2023-10-16	13:00:00	7.15	-0.31	J	0.31	
248	3	2023-10-16	13:15:00	7.22	-0.28	J	0.31	
249	3	2023-10-16	13:30:00	7.25	-0.26	J	0.32	
250	3	2023-10-16	13:45:00	7.29	-0.26	J	0.33	
251	3	2023-10-16	14:00:00	7.34	-0.27	J	0.33	
252	3	2023-10-16	14:15:00	7.35	-0.26	J	0.33	
253	3	2023-10-16	14:30:00	7.36	-0.24	J	0.33	
254	3	2023-10-16	14:45:00	7.33	-0.22	J	0.33	
255	3	2023-10-17	08:30:00	5.69	0.02		0.46	
256	3	2023-10-17	08:45:00	6.79	-0.08	J	0.48	
257	3	2023-10-17	09:00:00	7.06	-0.16	J	0.49	
258	3	2023-10-17	09:15:00	7.27	-0.19	J	0.45	
259	3	2023-10-17	09:30:00	7.36	-0.22	J	0.40	
260	3	2023-10-17	09:45:00	7.40	-0.22	J	0.35	
261	3	2023-10-17	10:00:00	7.41	-0.23	J	0.33	
262	3	2023-10-17	10:15:00	7.44	-0.23	J	0.30	
263	3	2023-10-17	10:30:00	7.45	-0.23	J	0.29	
264	3	2023-10-17	10:45:00	7.46	-0.23	J	0.28	
265	3	2023-10-17	11:00:00	7.47	-0.23	J	0.28	
266	3	2023-10-17	11:15:00	7.51	-0.22	J	0.28	
267	3	2023-10-17	11:30:00	7.52	-0.21	J	0.28	
268	3	2023-10-17	11:45:00	7.52	-0.22	J	0.28	
269	3	2023-10-17	12:00:00	7.53	-0.24	J	0.27	
270	3	2023-10-17	12:15:00	7.58	-0.24	J	0.28	
271	3	2023-10-17	12:30:00	7.59	-0.24	J	0.29	
272	3	2023-10-17	12:45:00	7.58	-0.25	J	0.29	
273	3	2023-10-17	13:00:00	7.58	-0.22	J	0.29	
274	3	2023-10-17	13:15:00	7.62	-0.20	J	0.30	
275	3	2023-10-17	13:30:00	7.68	-0.27	J	0.31	
276	3	2023-10-17	13:45:00	7.72	-0.26	J	0.31	
277	3	2023-10-17	14:00:00	7.78	-0.26	J	0.32	
278	3	2023-10-17	14:15:00	7.87	-0.27	J	0.31	
279	3	2023-10-17	14:30:00	7.84	-0.27	J	0.34	
280	3	2023-10-17	14:45:00	7.89	-0.27	J	0.33	
281	3	2023-10-18	08:45:00	7.25	-0.13	J	0.39	
282	3	2023-10-18	09:00:00	7.56	-0.17	J	0.40	
283	3	2023-10-18	09:15:00	7.74	-0.19	J	0.40	
284	3	2023-10-18	09:30:00	7.83	-0.17	J	0.38	
285	3	2023-10-18	09:45:00	7.87	-0.17	J	0.37	
286	3	2023-10-18	10:00:00	7.91	-0.17	J	0.36	
287	3	2023-10-18	10:15:00	7.95	-0.17	J	0.36	
288	3	2023-10-18	10:30:00	7.96	-0.16	J	0.35	
289	3	2023-10-18	10:45:00	7.97	-0.17	J	0.36	
290	3	2023-10-18	11:00:00	8.00	-0.17	J	0.36	
291	3	2023-10-18	11:15:00	8.04	-0.16	J	0.36	
292	3	2023-10-18	11:30:00	8.04	-0.18	J	0.36	
293	3	2023-10-18	11:45:00	8.04	-0.17	J	0.36	
294	3	2023-10-18	12:00:00	8.07	-0.14	J	0.36	
295	3	2023-10-18	12:15:00	8.16	-0.11	J	0.37	
296	3	2023-10-18	12:30:00	8.26	-0.09	J	0.39	
297	3	2023-10-18	12:45:00	8.37	-0.10	J	0.41	
298	3	2023-10-18	13:00:00	8.45	-0.11	J	0.42	
299	3	2023-10-18	13:15:00	8.50	-0.13	J	0.43	
300	3	2023-10-18	13:30:00	8.53	-0.12	J	0.44	

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent Dissolved Oxygen (mg/L)	Influent BGAPC (RFU)	Influent BGAPC Qualifier	Effluent BGAPC (RFU)	Effluent BGAPC Qualifier
301	3	2023-10-18	13:45:00	8.60	-0.15	J	0.45	
302	3	2023-10-18	14:00:00	8.71	-0.15	J	0.44	
303	3	2023-10-18	14:15:00	8.82	-0.17	J	0.43	
304	3	2023-10-18	14:30:00	8.90	-0.19	J	0.43	
305	3	2023-10-18	14:45:00	8.98	-0.21	J	0.42	
306	3	2023-10-18	15:00:00	9.07	-0.21	J	0.41	
307	3	2023-10-19	09:15:00	7.12	-0.06	J	0.46	
308	3	2023-10-19	09:30:00	7.88	-0.07	J	0.45	
309	3	2023-10-19	09:45:00	8.04	-0.19	J	0.42	
310	3	2023-10-19	10:00:00	8.03	-0.18	J	0.36	
311	3	2023-10-19	10:15:00	8.03	-0.17	J	0.31	
312	3	2023-10-19	10:30:00	8.00	-0.17	J	0.28	
313	3	2023-10-19	10:45:00	7.98	-0.17	J	0.27	
314	3	2023-10-19	11:00:00	7.95	-0.17	J	0.26	
315	3	2023-10-19	11:15:00	7.98	-0.19	J	0.25	
316	3	2023-10-19	11:30:00	7.92	-0.18	J	0.34	
317	3	2023-10-19	11:45:00	7.89	-0.16	J	0.42	
318	3	2023-10-19	12:00:00	7.90	-0.18	J	0.52	
319	3	2023-10-19	12:15:00	7.96	-0.19	J	0.29	
320	3	2023-10-19	12:30:00	7.94	-0.20	J	0.29	
321	3	2023-10-19	12:45:00	8.00	-0.19	J	0.26	
322	3	2023-10-19	13:00:00	8.06	-0.19	J	0.26	
323	3	2023-10-19	13:15:00	8.19	-0.20	J	0.27	
324	3	2023-10-19	13:30:00	8.22	-0.21	J	0.28	
325	3	2023-10-19	13:45:00	8.28	-0.20	J	0.28	
326	3	2023-10-19	14:00:00	8.37	-0.19	J	0.28	
327	3	2023-10-19	14:15:00	8.49	-0.21	J	0.28	
328	3	2023-10-19	14:30:00	8.51	-0.23	J	0.28	
329	3	2023-10-19	14:45:00	8.60	-0.23	J	0.29	
330	3	2023-10-19	15:00:00	8.69	-0.21	J	0.28	
331	3	2023-10-20	08:30:00	6.47	-0.15	J	0.40	
332	3	2023-10-20	08:45:00	7.40	-0.16	J	0.34	
333	3	2023-10-20	09:00:00	7.45	-0.17	J	0.32	
334	3	2023-10-20	09:15:00	7.22	-0.13	J	0.30	
335	3	2023-10-20	09:30:00	6.90	-0.13	J	0.29	
336	3	2023-10-20	09:45:00	6.63	-0.13	J	0.29	
337	3	2023-10-20	10:00:00	6.47	-0.12	J	0.29	
338	3	2023-10-20	10:15:00	6.45	-0.12	J	0.29	
339	3	2023-10-20	10:30:00	6.46	-0.11	J	0.29	
340	3	2023-10-20	10:45:00	6.49	-0.11	J	0.30	
341	3	2023-10-20	11:00:00	6.56	-0.10	J	0.30	
342	3	2023-10-20	11:15:00	6.65	-0.11	J	0.31	
343	3	2023-10-20	11:30:00	6.70	-0.10	J	0.31	
344	3	2023-10-20	11:45:00	6.73	-0.10	J	0.32	
345	3	2023-10-20	12:00:00	6.77	-0.10	J	0.31	
346	3	2023-10-20	12:15:00	6.84	-0.09	J	0.31	
347	3	2023-10-20	12:30:00	6.89	-0.11	J	0.31	
348	3	2023-10-20	12:45:00	6.93	-0.11	J	0.32	
349	3	2023-10-20	13:00:00	6.97	-0.09	J	0.33	
350	3	2023-10-20	13:15:00	7.03	-0.10	J	0.33	
351	3	2023-10-20	13:30:00	7.09	-0.11	J	0.33	
352	3	2023-10-20	13:45:00	7.15	-0.12	J	0.34	
353	3	2023-10-20	14:00:00	7.20	-0.14	J	0.35	
354	4	2023-10-23	09:30:00	4.02	-0.08	J	0.36	
355	4	2023-10-23	09:45:00	4.98	-0.21	J	0.44	
356	4	2023-10-23	10:00:00	6.26	-0.30	J	0.42	
357	4	2023-10-23	10:15:00	7.10	-0.34	J	0.31	
358	4	2023-10-23	10:30:00	7.48	-0.36	J	0.22	
359	4	2023-10-23	10:45:00	7.68	-0.37	J	0.16	
360	4	2023-10-23	11:00:00	7.82	-0.37	J	0.12	
361	4	2023-10-23	11:15:00	7.97	-0.37	J	0.10	
362	4	2023-10-23	11:30:00	8.02	-0.38	J	0.09	
363	4	2023-10-23	11:45:00	8.09	-0.38	J	0.08	
364	4	2023-10-23	12:00:00	8.20	-0.40	J	0.10	
365	4	2023-10-23	12:15:00	8.27	-0.41	J	0.10	
366	4	2023-10-23	12:30:00	8.33	-0.42	J	0.10	
367	4	2023-10-23	12:45:00	8.39	-0.42	J	0.09	
368	4	2023-10-23	13:00:00	8.42	-0.43	J	0.08	
369	4	2023-10-23	13:15:00	8.45	-0.43	J	0.08	
370	4	2023-10-23	13:30:00	8.47	-0.43	J	0.08	
371	4	2023-10-23	13:45:00	8.47	-0.44	J	0.08	
372	4	2023-10-23	14:00:00	8.48	-0.45	J	0.08	
373	4	2023-10-23	14:15:00	8.48	-0.46	J	0.07	
374	4	2023-10-23	14:30:00	8.48	-0.46	J	0.07	

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent Dissolved Oxygen (mg/L)	Influent BGAPC (RFU)	Influent BGAPC Qualifier	Effluent BGAPC (RFU)	Effluent BGAPC Qualifier
375	4	2023-10-23	14:45:00	8.47	-0.46	J	0.06	
376	4	2023-10-23	15:00:00	8.48	-0.47	J	0.05	
377	4	2023-10-23	15:15:00	8.49	-0.47	J	0.05	
378	4	2023-10-23	15:30:00	8.47	-0.48	J	0.05	
379	4	2023-10-24	09:00:00	7.43	-0.24	J	0.04	
380	4	2023-10-24	09:15:00	7.73	-0.54	J	0.06	
381	4	2023-10-24	09:30:00	7.81	-0.56	J	0.07	
382	4	2023-10-24	09:45:00	7.86	-0.55	J	-0.03	J
383	4	2023-10-24	10:00:00	7.89	-0.55	J	-0.02	J
384	4	2023-10-24	10:15:00	7.87	-0.55	J	-0.04	J
385	4	2023-10-24	10:30:00	7.85	-0.55	J	-0.02	J
386	4	2023-10-24	10:45:00	7.85	-0.54	J	-0.02	J
387	4	2023-10-24	11:00:00	7.83	-0.54	J	-0.02	J
388	4	2023-10-24	11:15:00	7.87	-0.52	J	-0.02	J
389	4	2023-10-24	11:30:00	7.92	-0.52	J	0.00	
390	4	2023-10-24	11:45:00	7.97	-0.51	J	0.02	
391	4	2023-10-24	12:00:00	7.99	-0.51	J	0.04	
392	4	2023-10-24	12:15:00	8.02	-0.50	J	0.04	
393	4	2023-10-24	12:30:00	8.04	-0.52	J	0.03	
394	4	2023-10-24	12:45:00	8.07	-0.53	J	0.03	
395	4	2023-10-24	13:00:00	8.08	-0.53	J	0.01	
396	4	2023-10-24	13:15:00	8.08	-0.55	J	0.00	
397	4	2023-10-24	13:30:00	8.08	-0.54	J	-0.01	J
398	4	2023-10-24	13:45:00	8.06	-0.52	J	-0.01	J
399	4	2023-10-24	14:00:00	8.05	-0.45	J	-0.01	J
400	4	2023-10-24	14:15:00	8.06	-0.51	J	-0.02	J
401	4	2023-10-24	14:30:00	8.08	-0.27	J	-0.01	J
402	4	2023-10-24	14:45:00	8.10	-0.30	J	-0.02	J
403	4	2023-10-24	15:00:00	8.13	-0.24	J	-0.01	J
404	4	2023-10-25	10:15:00	7.90	-0.11	J	-0.04	J
405	4	2023-10-25	10:30:00	7.97	-0.44	J	-0.02	J
406	4	2023-10-25	10:45:00	7.96	-0.46	J	-0.01	J
407	4	2023-10-25	11:00:00	7.92	-0.49	J	-0.01	J
408	4	2023-10-25	11:15:00	7.90	-0.53	J	-0.03	J
409	4	2023-10-25	11:30:00	7.84	-0.55	J	-0.03	J
410	4	2023-10-25	11:45:00	7.84	-0.48	J	-0.03	J
411	4	2023-10-25	12:00:00	7.88	-0.43	J	-0.03	J
412	4	2023-10-25	12:15:00	7.90	-0.44	J	-0.04	J
413	4	2023-10-25	12:30:00	7.88	-0.45	J	-0.02	J
414	4	2023-10-26	08:30:00	7.57	-0.42	J	0.02	
415	4	2023-10-26	08:45:00	7.77	-0.53	J	0.03	
416	4	2023-10-26	09:00:00	7.71	-0.55	J	0.05	
417	4	2023-10-26	09:15:00	7.65	-0.53	J	0.00	
418	4	2023-10-26	09:30:00	7.60	-0.54	J	0.04	
419	4	2023-10-26	09:45:00	7.50	-0.54	J	0.07	
420	4	2023-10-26	10:00:00	7.48	-0.54	J	0.23	
421	4	2023-10-26	10:15:00	7.62	-0.54	J	0.05	
422	4	2023-10-26	10:30:00	7.61	-0.56	J	0.05	
423	4	2023-10-26	10:45:00	7.69	-0.49	J	0.11	
424	4	2023-10-26	11:00:00	7.82	-0.40	J	-0.03	J
425	4	2023-10-26	11:15:00	7.87	-0.42	J	-0.04	J
426	4	2023-10-26	11:30:00	7.86	-0.35	J	-0.02	J
427	4	2023-10-27	08:00:00	6.27	-0.49	J	-0.02	J
428	4	2023-10-27	08:15:00	7.28	-0.54	J	0.04	
429	4	2023-10-27	08:30:00	7.49	-0.50	J	0.09	
430	4	2023-10-27	08:45:00	7.51	-0.48	J	0.12	
431	4	2023-10-27	09:00:00	7.60	-0.45	J	0.09	
432	4	2023-10-27	09:15:00	7.59	-0.49	J	0.11	
433	4	2023-10-27	09:30:00	7.55	-0.51	J	0.10	
434	4	2023-10-27	09:45:00	7.56	-0.52	J	0.11	
435	4	2023-10-27	10:00:00	7.56	-0.52	J	0.12	
436	4	2023-10-27	10:15:00	7.52	-0.53	J	0.13	
437	4	2023-10-27	10:30:00	7.51	-0.55	J	0.14	
438	4	2023-10-27	10:45:00	7.54	-0.55	J	0.14	
439	4	2023-10-27	11:00:00	7.62	-0.54	J	0.33	
440	4	2023-10-27	11:15:00	7.74	-0.54	J	0.30	
441	4	2023-10-27	11:30:00	7.79	-0.55	J	0.18	
442	4	2023-10-27	11:45:00	7.89	-0.47	J	0.17	
443	4	2023-10-27	12:00:00	7.96	0.03		0.14	
444	4	2023-10-27	12:15:00	7.88	-0.51	J	0.14	
445	4	2023-10-27	12:30:00	7.85	-0.51	J	0.19	
446	4	2023-10-27	12:45:00	7.91	-0.51	J	0.23	
447	4	2023-10-27	13:00:00	7.92	-0.52	J	0.27	
448	5	2023-11-08	12:15:00	7.32			-1.23	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent Dissolved Oxygen (mg/L)	Influent BGAPC (RFU)	Influent BGAPC Qualifier	Effluent BGAPC (RFU)	Effluent BGAPC Qualifier
449	5	2023-11-08	12:30:00	7.49	-1.64	J	-1.27	J
450	5	2023-11-08	12:45:00	7.54	-1.66	J	-1.33	J
451	5	2023-11-08	13:00:00	7.68	-1.74	J	-1.37	J
452	5	2023-11-08	13:15:00	7.87	-1.71	J	-1.40	J
453	5	2023-11-08	13:30:00	7.98	-1.69	J	-1.46	J
454	5	2023-11-08	13:45:00	8.04	-1.69	J	-1.46	J
455	5	2023-11-08	14:00:00	8.05	-1.71	J	-1.45	J
456	5	2023-11-08	14:15:00	8.06	-1.72	J	-1.46	J
457	5	2023-11-08	14:30:00	8.07	-1.72	J	-1.47	J
458	5	2023-11-08	14:45:00	8.10	-1.71	J	-1.47	J
459	5	2023-11-08	15:00:00	8.13	-1.69	J	-1.48	J
460	5	2023-11-08	15:15:00	8.13	-1.71	J	-1.46	J
461	5	2023-11-08	15:30:00	8.11	-1.73	J	-1.45	J
462	5	2023-11-08	15:45:00	8.10	-1.78	J	-1.45	J
463	5	2023-11-08	16:00:00	8.13	-1.79	J	-1.45	J
464	5	2023-11-08	16:15:00	8.17	-1.77	J	-1.46	J
465	5	2023-11-08	16:30:00	8.18	-1.77	J	-1.47	J
466	5	2023-11-08	16:45:00	8.20	-1.70	J	-1.47	J
467	5	2023-11-08	17:00:00	8.21	-1.70	J	-1.48	J
468	5	2023-11-08	17:15:00	8.19	-1.67	J	-1.48	J
469	5	2023-11-08	17:30:00	8.13	-1.66	J	-1.48	J
470	5	2023-11-08	17:45:00	8.06	-1.66	J	-1.47	J
471	5	2023-11-08	18:00:00	8.01	-1.66	J	-1.45	J
472	5	2023-11-08	18:15:00	7.97	-1.67	J	-1.45	J
473	5	2023-11-08	18:30:00	7.94	-1.67	J	-1.44	J
474	5	2023-11-08	18:45:00	7.92	-1.68	J	-1.44	J
475	5	2023-11-08	19:00:00	7.92	-1.69	J	-1.43	J
476	5	2023-11-08	19:15:00	7.93	-1.69	J	-1.43	J
477	5	2023-11-08	19:30:00	7.94	-1.71	J	-1.43	J
478	5	2023-11-08	19:45:00	7.95	-1.74	J	-1.43	J
479	5	2023-11-08	20:00:00	7.98	-1.74	J	-1.43	J
480	5	2023-11-08	20:15:00	8.01	-1.75	J	-1.43	J
481	5	2023-11-08	20:30:00	8.05	-1.76	J	-1.44	J
482	5	2023-11-08	20:45:00	8.07	-1.77	J	-1.45	J
483	5	2023-11-08	21:00:00	8.07	-1.77	J	-1.45	J
484	5	2023-11-08	21:15:00	8.09	-1.77	J	-1.45	J
485	5	2023-11-08	21:30:00	8.10	-1.80	J	-1.45	J
486	5	2023-11-08	21:45:00	8.10	-1.80	J	-1.45	J
487	5	2023-11-08	22:00:00	8.10	-1.80	J	-1.45	J
488	5	2023-11-08	22:15:00	8.10	-1.81	J	-1.45	J
489	5	2023-11-08	22:30:00	8.09	-1.81	J	-1.46	J
490	5	2023-11-08	22:45:00	8.09	-1.81	J	-1.46	J
491	5	2023-11-08	23:00:00	8.07	-1.82	J	-1.46	J
492	5	2023-11-08	23:15:00	8.05	-1.80	J	-1.46	J
493	5	2023-11-08	23:30:00	8.02	-1.82	J	-1.47	J
494	5	2023-11-08	23:45:00	7.98	-1.83	J	-1.47	J
495	5	2023-11-08	23:59:00	7.94	-1.85	J	-1.46	J
496	5	2023-11-09	00:15:00	7.91	-1.87	J	-1.46	J
497	5	2023-11-09	00:30:00	7.86	-1.85	J	-1.47	J
498	5	2023-11-09	00:45:00	7.84	-1.84	J	-1.47	J
499	5	2023-11-09	01:00:00	7.88	-1.82	J	-1.47	J
500	5	2023-11-09	01:15:00	7.92	-1.80	J	-1.46	J
501	5	2023-11-09	01:30:00	7.92	-1.79	J	-1.45	J
502	5	2023-11-09	01:45:00	7.89	-1.80	J	-1.43	J
503	5	2023-11-09	02:00:00	7.84	-1.82	J	-1.43	J
504	5	2023-11-09	02:15:00	7.84	-1.81	J	-1.42	J
505	5	2023-11-09	02:30:00	7.84	-1.81	J	-1.42	J
506	5	2023-11-09	02:45:00	7.83	-1.81	J	-1.41	J
507	5	2023-11-09	03:00:00	7.84	-1.82	J	-1.40	J
508	5	2023-11-09	03:15:00	7.85	-1.76	J	-1.44	J
509	5	2023-11-09	03:30:00	7.85	-1.75	J	-1.45	J
510	5	2023-11-09	03:45:00	7.81	-1.73	J	-1.45	J
511	5	2023-11-09	04:00:00	7.74	-1.74	J	-1.44	J
512	5	2023-11-09	04:15:00	7.72	-1.72	J	-1.44	J
513	5	2023-11-09	04:30:00	7.69	-1.72	J	-1.44	J
514	5	2023-11-09	04:45:00	7.66	-1.71	J	-1.44	J
515	5	2023-11-09	05:00:00	7.61	-1.70	J	-1.44	J
516	5	2023-11-09	05:15:00	7.53	-1.69	J	-1.44	J
517	5	2023-11-09	05:30:00	7.46	-1.70	J	-1.43	J
518	5	2023-11-09	05:45:00	7.43	-1.72	J	-1.43	J
519	5	2023-11-09	06:00:00	7.44	-1.74	J	-1.43	J
520	5	2023-11-09	06:15:00	7.50	-1.73	J	-1.43	J
521	5	2023-11-09	06:30:00	7.58	-1.72	J	-1.44	J
522	5	2023-11-09	06:45:00	7.63	-1.73	J	-1.44	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent Dissolved Oxygen (mg/L)	Influent BGAPC (RFU)	Influent BGAPC Qualifier	Effluent BGAPC (RFU)	Effluent BGAPC Qualifier
523	5	2023-11-09	07:00:00	7.65	-1.74	J	-1.45	J
524	5	2023-11-09	07:15:00	7.66	-1.73	J	-1.43	J
525	5	2023-11-09	07:30:00	7.64	-1.74	J	-1.41	J
526	5	2023-11-09	07:45:00	7.63	-1.74	J	-1.40	J
527	5	2023-11-09	08:00:00	7.63	-1.75	J	-1.39	J
528	5	2023-11-09	08:15:00	7.63	-1.74	J	-1.39	J
529	5	2023-11-09	08:30:00	7.64	-1.72	J	-1.39	J
530	5	2023-11-09	08:45:00	7.64	-1.70	J	-1.43	J
531	5	2023-11-09	09:00:00	7.63	-1.72	J	-1.46	J
532	5	2023-11-09	09:15:00	7.67	-1.71	J	-1.46	J
533	5	2023-11-09	09:30:00	7.68	-1.70	J	-1.46	J
534	5	2023-11-09	09:45:00	7.70	-1.70	J	-1.47	J
535	5	2023-11-09	10:00:00	7.71	-1.68	J	-1.46	J
536	5	2023-11-09	10:15:00	7.70	-1.68	J	-1.45	J
537	5	2023-11-09	10:30:00	7.69	-1.72	J	-1.45	J
538	5	2023-11-09	10:45:00	7.71	-1.73	J	-1.44	J
539	5	2023-11-09	11:00:00	7.72	-1.76	J	-1.44	J
540	5	2023-11-09	11:15:00	7.76	-1.74	J	-1.45	J
541	5	2023-11-09	11:30:00	7.83	-1.73	J	-1.46	J
542	5	2023-11-09	11:45:00	7.89	-1.70	J	-1.45	J
543	5	2023-11-09	12:00:00	7.94	-1.69	J	-1.45	J
544	5	2023-11-09	12:15:00	7.99	-1.69	J	-1.45	J
545	5	2023-11-09	12:30:00	8.01	-1.72	J	-1.44	J
546	5	2023-11-09	12:45:00	8.04	-1.68	J	-1.47	J
547	5	2023-11-09	13:00:00	8.05	-1.67	J	-1.49	J
548	5	2023-11-09	13:15:00	8.04	-1.66	J	-1.49	J
549	5	2023-11-09	13:30:00	8.02	-1.67	J	-1.48	J
550	5	2023-11-09	13:45:00	8.00	-1.68	J	-1.47	J
551	5	2023-11-09	14:00:00	7.99	-1.64	J	-1.47	J
552	5	2023-11-09	14:15:00	7.99	-1.64	J	-1.46	J
553	5	2023-11-09	14:30:00	7.95	-1.66	J	-1.47	J
554	5	2023-11-09	14:45:00	7.93	-1.67	J	-1.47	J
555	5	2023-11-09	15:00:00	7.92	-1.68	J	-1.47	J
556	5	2023-11-09	15:15:00	7.91	-1.70	J	-1.47	J
557	5	2023-11-09	15:30:00	7.94	-1.68	J	-1.46	J
558	5	2023-11-09	15:45:00	7.97	-1.68	J	-1.48	J
559	5	2023-11-09	16:00:00	7.98	-1.66	J	-1.48	J
560	5	2023-11-09	16:15:00	7.98	-1.66	J	-1.48	J
561	5	2023-11-09	16:30:00	7.95	-1.67	J	-1.46	J
562	5	2023-11-09	16:45:00	7.93	-1.66	J	-1.45	J
563	5	2023-11-09	17:00:00	7.92	-1.70	J	-1.45	J
564	5	2023-11-09	17:15:00	7.97	-1.72	J	-1.46	J
565	5	2023-11-09	17:30:00	8.02	-1.73	J	-1.46	J
566	5	2023-11-09	17:45:00	8.07	-1.73	J	-1.48	J
567	5	2023-11-09	18:00:00	8.11	-1.72	J	-1.48	J
568	5	2023-11-09	18:15:00	8.13	-1.73	J	-1.48	J
569	5	2023-11-09	18:30:00	8.14	-1.72	J	-1.48	J
570	5	2023-11-09	18:45:00	8.13	-1.72	J	-1.49	J
571	5	2023-11-09	19:00:00	8.10	-1.72	J	-1.48	J
572	5	2023-11-09	19:15:00	8.06	-1.71	J	-1.48	J
573	5	2023-11-09	19:30:00	8.04	-1.71	J	-1.48	J
574	5	2023-11-09	19:45:00	8.01	-1.69	J	-1.48	J
575	5	2023-11-09	20:00:00	7.96	-1.69	J	-1.47	J
576	5	2023-11-09	20:15:00	7.89	-1.69	J	-1.47	J
577	5	2023-11-09	20:30:00	7.82	-1.70	J	-1.47	J
578	5	2023-11-09	20:45:00	7.77	-1.71	J	-1.47	J
579	5	2023-11-09	21:00:00	7.75	-1.73	J	-1.47	J
580	5	2023-11-09	21:15:00	7.75	-1.76	J	-1.47	J
581	5	2023-11-09	21:30:00	7.78	-1.76	J	-1.47	J
582	5	2023-11-09	21:45:00	7.81	-1.77	J	-1.48	J
583	5	2023-11-09	22:00:00	7.84	-1.78	J	-1.48	J
584	5	2023-11-09	22:15:00	7.85	-1.81	J	-1.49	J
585	5	2023-11-09	22:30:00	7.87	-1.83	J	-1.49	J
586	5	2023-11-09	22:45:00	7.92	-1.83	J	-1.50	J
587	5	2023-11-09	23:00:00	7.96	-1.82	J	-1.51	J
588	5	2023-11-09	23:15:00	8.01	-1.83	J	-1.52	J
589	5	2023-11-09	23:30:00	8.03	-1.83	J	-1.52	J
590	5	2023-11-09	23:45:00	8.03	-1.84	J	-1.52	J
591	5	2023-11-09	23:59:00	8.03	-1.84	J	-1.52	J
592	5	2023-11-10	00:15:00	8.01	-1.83	J	-1.53	J
593	5	2023-11-10	00:30:00	7.99	-1.84	J	-1.53	J
594	5	2023-11-10	00:45:00	7.96	-1.85	J	-1.53	J
595	5	2023-11-10	01:00:00	7.93	-1.85	J	-1.52	J
596	5	2023-11-10	01:15:00	7.89	-1.84	J	-1.52	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent Dissolved Oxygen (mg/L)	Influent BGAPC (RFU)	Influent BGAPC Qualifier	Effluent BGAPC (RFU)	Effluent BGAPC Qualifier
597	5	2023-11-10	01:30:00	7.84	-1.84	J	-1.52	J
598	5	2023-11-10	01:45:00	7.81	-1.83	J	-1.52	J
599	5	2023-11-10	02:00:00	7.78	-1.81	J	-1.51	J
600	5	2023-11-10	02:15:00	7.77	-1.82	J	-1.51	J
601	5	2023-11-10	02:30:00	7.74	-1.81	J	-1.51	J
602	5	2023-11-10	02:45:00	7.70	-1.77	J	-1.50	J
603	5	2023-11-10	03:00:00	7.65	-1.79	J	-1.50	J
604	5	2023-11-10	03:15:00	7.58	-1.80	J	-1.49	J
605	5	2023-11-10	03:30:00	7.50	-1.80	J	-1.48	J
606	5	2023-11-10	03:45:00	7.43	-1.85	J	-1.47	J
607	5	2023-11-10	04:00:00	7.44	-1.84	J	-1.46	J
608	5	2023-11-10	04:15:00	7.52	-1.82	J	-1.49	J
609	5	2023-11-10	04:30:00	7.57	-1.80	J	-1.50	J
610	5	2023-11-10	04:45:00	7.57	-1.78	J	-1.50	J
611	5	2023-11-10	05:00:00	7.54	-1.77	J	-1.50	J
612	5	2023-11-10	05:15:00	7.48	-1.76	J	-1.51	J
613	5	2023-11-10	05:30:00	7.42	-1.76	J	-1.50	J
614	5	2023-11-10	05:45:00	7.37	-1.74	J	-1.49	J
615	5	2023-11-10	06:00:00	7.32	-1.75	J	-1.49	J
616	5	2023-11-10	06:15:00	7.28	-1.77	J	-1.49	J
617	5	2023-11-10	06:30:00	7.22	-1.83	J	-1.49	J
618	5	2023-11-10	06:45:00	7.24	-1.80	J	-1.48	J
619	5	2023-11-10	07:00:00	7.40	-1.83	J	-1.50	J
620	5	2023-11-10	07:15:00	7.58	-1.86	J	-1.50	J
621	5	2023-11-10	07:30:00	7.70	-1.87	J	-1.52	J
622	5	2023-11-10	07:45:00	7.77	-1.85	J	-1.53	J
623	5	2023-11-10	08:00:00	7.82	-1.85	J	-1.54	J
624	5	2023-11-10	08:15:00	7.83	-1.86	J	-1.54	J
625	5	2023-11-10	08:30:00	7.80	-1.84	J	-1.54	J
626	5	2023-11-10	08:45:00	7.78	-1.84	J	-1.55	J
627	5	2023-11-10	09:00:00	7.74	-1.86	J	-1.55	J
628	5	2023-11-10	09:15:00	7.72	-1.79	J	-1.56	J
629	5	2023-11-10	09:30:00	7.69	-1.84	J	-1.54	J
630	5	2023-11-10	09:45:00	7.71	-1.87	J	-1.56	J
631	5	2023-11-10	10:00:00	7.73	-1.88	J	-1.57	J
632	5	2023-11-10	10:15:00	7.75	-1.84	J	-1.57	J
633	5	2023-11-10	10:30:00	7.79	-1.91	J	-1.57	J
634	5	2023-11-10	10:45:00	7.87	-1.92	J	-1.56	J
635	5	2023-11-10	11:00:00	7.93	-1.88	J	-1.57	J
636	5	2023-11-10	11:15:00	7.96	-1.87	J	-1.57	J
637	5	2023-11-10	11:30:00	7.93	-1.70	J	-1.57	J
638	5	2023-11-10	11:45:00	7.91	-1.64	J	-1.57	J
639	5	2023-11-10	12:00:00	7.88	-1.56	J	-1.56	J
640	5	2023-11-10	12:15:00	7.82	-1.54	J	-1.55	J
641	5	2023-11-10	12:30:00	7.76	-1.69	J	-1.57	J
642	5	2023-11-10	12:45:00	7.74	-1.44	J	-1.57	J
643	5	2023-11-10	13:00:00	7.79	-1.55	J	-1.53	J
644	5	2023-11-10	13:15:00	7.72	-1.38	J	-1.52	J
645	5	2023-11-10	13:30:00	7.73	-1.45	J	-1.51	J
646	5	2023-11-10	13:45:00	7.73	-1.44	J	-1.51	J
647	5	2023-11-10	14:00:00	7.75	-1.32	J	-1.51	J
648	5	2023-11-10	14:15:00	7.78	-1.26	J	-1.50	J
649	5	2023-11-10	14:30:00	7.80	-1.29	J	-1.50	J
650	5	2023-11-10	14:45:00	7.83	-1.25	J	-1.50	J
651	5	2023-11-10	15:00:00	7.85	-1.22	J	-1.51	J
652	5	2023-11-10	15:15:00	7.85	-1.44	J	-1.51	J
653	5	2023-11-10	15:30:00	7.85	-1.43	J	-1.51	J
654	5	2023-11-10	15:45:00	7.88	-1.47	J	-1.51	J
655	5	2023-11-10	16:00:00	7.90	-1.42	J	-1.51	J
656	5	2023-11-14	10:45:00	6.30	-1.37	J	-1.56	J
657	5	2023-11-14	11:00:00	6.88	-1.49	J	-1.57	J
658	5	2023-11-14	11:15:00	7.13	-1.45	J	-1.59	J
659	5	2023-11-14	11:30:00	7.25	-1.40	J	-1.60	J
660	5	2023-11-14	11:45:00	7.32	-1.39	J	-1.60	J
661	5	2023-11-14	12:00:00	7.41	-1.41	J	-1.60	J
662	5	2023-11-14	12:15:00	7.50	-1.43	J	-1.61	J
663	5	2023-11-14	12:30:00	7.54	-1.47	J	-1.61	J
664	5	2023-11-14	12:45:00	7.52	-1.38	J	-1.60	J
665	5	2023-11-14	13:00:00	7.51	-1.34	J	-1.60	J
666	5	2023-11-14	13:15:00	7.58	-1.29	J	-1.60	J
667	5	2023-11-14	13:30:00	7.62	-1.25	J	-1.59	J
668	5	2023-11-14	13:45:00	7.62	-1.23	J	-1.59	J
669	5	2023-11-14	14:00:00	7.61	-1.26	J	-1.58	J
670	5	2023-11-14	14:15:00	7.65	-1.42	J	-1.59	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent Dissolved Oxygen (mg/L)	Influent BGAPC (RFU)	Influent BGAPC Qualifier	Effluent BGAPC (RFU)	Effluent BGAPC Qualifier
671	5	2023-11-14	14:30:00	7.66	-1.31	J	-1.58	J
672	5	2023-11-14	14:45:00	7.67	-1.25	J	-1.58	J
673	5	2023-11-14	15:00:00	7.70	-1.34	J	-1.58	J
674	5	2023-11-14	15:15:00	7.71	-1.47	J	-1.57	J
675	5	2023-11-14	15:30:00	7.69	-1.46	J	-1.58	J
676	5	2023-11-14	15:45:00	7.69	-1.47	J	-1.59	J
677	5	2023-11-14	16:00:00	7.70	-1.39	J	-1.59	J
678	5	2023-11-14	16:15:00	7.73	-1.42	J	-1.59	J
679	5	2023-11-14	16:30:00	7.75	-1.34	J	-1.59	J
680	5	2023-11-14	16:45:00	7.77	-1.38	J	-1.59	J
681	5	2023-11-14	17:00:00	7.82	-1.38	J	-1.58	J
682	5	2023-11-14	17:15:00	7.88	-1.43	J	-1.58	J
683	5	2023-11-14	17:30:00	7.91	-1.47	J	-1.58	J
684	5	2023-11-14	17:45:00	7.92	-1.48	J	-1.58	J
685	5	2023-11-14	18:00:00	7.90	-1.46	J	-1.57	J
686	5	2023-11-14	18:15:00	7.85	-1.43	J	-1.57	J
687	5	2023-11-14	18:30:00	7.85	-1.49	J	-1.57	J
688	5	2023-11-14	18:45:00	7.85	-1.41	J	-1.57	J
689	5	2023-11-14	19:00:00	7.85	-1.43	J	-1.57	J
690	5	2023-11-14	19:15:00	7.84	-1.38	J	-1.56	J
691	5	2023-11-14	19:30:00	7.85	-1.38	J	-1.56	J
692	5	2023-11-14	19:45:00	7.85	-1.38	J	-1.57	J
693	5	2023-11-14	20:00:00	7.86	-1.36	J	-1.56	J
694	5	2023-11-14	20:15:00	7.85	-1.36	J	-1.55	J
695	5	2023-11-14	20:30:00	7.84	-1.28	J	-1.55	J
696	5	2023-11-14	20:45:00	7.82	-1.22	J	-1.54	J
697	5	2023-11-14	21:00:00	7.79	-1.18	J	-1.54	J
698	5	2023-11-14	21:15:00	7.78	-1.17	J	-1.53	J
699	5	2023-11-14	21:30:00	7.78	-1.19	J	-1.52	J
700	5	2023-11-14	21:45:00	7.77	-1.21	J	-1.51	J
701	5	2023-11-14	22:00:00	7.78	-1.20	J	-1.50	J
702	5	2023-11-14	22:15:00	7.77	-1.23	J	-1.49	J
703	5	2023-11-14	22:30:00	7.79	-1.26	J	-1.48	J
704	5	2023-11-14	22:45:00	7.79	-1.37	J	-1.46	J
705	5	2023-11-14	23:00:00	7.77	-1.35	J	-1.44	J
706	5	2023-11-14	23:15:00	7.74	-1.37	J	-1.46	J
707	5	2023-11-14	23:30:00	7.71	-1.39	J	-1.49	J
708	5	2023-11-14	23:45:00	7.66	-1.36	J	-1.51	J
709	5	2023-11-14	23:59:00	7.66	-1.35	J	-1.51	J
710	5	2023-11-15	00:15:00	7.66	-1.35	J	-1.51	J
711	5	2023-11-15	00:30:00	7.64	-1.37	J	-1.51	J
712	5	2023-11-15	00:45:00	7.64	-1.36	J	-1.51	J
713	5	2023-11-15	01:00:00	7.61	-1.39	J	-1.51	J
714	5	2023-11-15	01:15:00	7.60	-1.41	J	-1.52	J
715	5	2023-11-15	01:30:00	7.58	-1.39	J	-1.53	J
716	5	2023-11-15	01:45:00	7.56	-1.42	J	-1.53	J
717	5	2023-11-15	02:00:00	7.54	-1.41	J	-1.53	J
718	5	2023-11-15	02:15:00	7.56	-1.43	J	-1.53	J
719	5	2023-11-15	02:30:00	7.59	-1.44	J	-1.53	J
720	5	2023-11-15	02:45:00	7.59	-1.47	J	-1.53	J
721	5	2023-11-15	03:00:00	7.57	-1.43	J	-1.52	J
722	5	2023-11-15	03:15:00	7.57	-1.43	J	-1.52	J
723	5	2023-11-15	03:30:00	7.58	-1.40	J	-1.52	J
724	5	2023-11-15	03:45:00	7.57	-1.42	J	-1.51	J
725	5	2023-11-15	04:00:00	7.57	-1.41	J	-1.51	J
726	5	2023-11-15	04:15:00	7.69	-1.51	J	-1.50	J
727	5	2023-11-15	04:30:00	7.70	-1.53	J	-1.50	J
728	5	2023-11-15	04:45:00	7.69	-1.49	J	-1.50	J
729	5	2023-11-15	05:00:00	7.69	-1.48	J	-1.49	J
730	5	2023-11-15	05:15:00	7.72	-1.50	J	-1.49	J
731	5	2023-11-15	05:30:00	7.73	-1.49	J	-1.49	J
732	5	2023-11-15	05:45:00	7.74	-1.43	J	-1.49	J
733	5	2023-11-15	06:00:00	7.73	-1.45	J	-1.49	J
734	5	2023-11-15	06:15:00	7.68	-1.46	J	-1.49	J
735	5	2023-11-15	06:30:00	7.65	-1.48	J	-1.49	J
736	5	2023-11-15	06:45:00	7.63	-1.47	J	-1.49	J
737	5	2023-11-15	07:00:00	7.65	-1.47	J	-1.50	J
738	5	2023-11-15	07:15:00	7.63	-1.49	J	-1.49	J
739	5	2023-11-15	07:30:00	7.62	-1.43	J	-1.48	J
740	5	2023-11-15	07:45:00	7.61	-1.42	J	-1.47	J
741	5	2023-11-15	08:00:00	7.61	-1.42	J	-1.47	J
742	5	2023-11-15	08:15:00	7.58	-1.46	J	-1.47	J
743	5	2023-11-15	08:30:00	7.57	-1.47	J	-1.48	J
744	5	2023-11-15	08:45:00	7.59	-1.50	J	-1.55	J

Appendix C2 - Field Water Quality Data

Record #	Week	Date (yyyy-mm-dd)	Interval Time End	Effluent Dissolved Oxygen (mg/L)	Influent BGAPC (RFU)	Influent BGAPC Qualifier	Effluent BGAPC (RFU)	Effluent BGAPC Qualifier
745	5	2023-11-15	09:00:00	7.57	-1.51	J	-1.56	J
746	5	2023-11-15	09:15:00	7.61	-1.52	J	-1.55	J
747	5	2023-11-15	09:30:00	7.62	-1.49	J	-1.54	J
748	5	2023-11-15	09:45:00	7.63	-1.44	J	-1.54	J
749	5	2023-11-15	10:00:00	7.64	-1.47	J	-1.54	J
750	5	2023-11-15	10:15:00	7.67	-1.46	J	-1.54	J
751	5	2023-11-15	10:30:00	7.68	-1.46	J	-1.54	J
752	5	2023-11-15	10:45:00	7.67	-1.48	J	-1.53	J
753	5	2023-11-15	11:00:00	7.67	-1.52	J	-1.54	J
754	5	2023-11-15	11:15:00	7.67	-1.47	J	-1.54	J
755	5	2023-11-15	11:30:00	7.65	-1.41	J	-1.54	J
756	5	2023-11-15	11:45:00	7.65	-1.43	J	-1.53	J
757	5	2023-11-15	12:00:00	7.69	-1.44	J	-1.52	J
758	5	2023-11-15	12:15:00	7.74	-1.44	J	-1.51	J
759	5	2023-11-15	12:30:00	7.77	-1.46	J	-1.51	J
760	5	2023-11-15	12:45:00	7.80	-1.44	J	-1.50	J
761	5	2023-11-15	13:00:00	7.84	-1.37	J	-1.49	J
762	5	2023-11-15	13:15:00	7.86	-1.37	J	-1.49	J
763	5	2023-11-15	13:30:00	7.86	-1.35	J	-1.48	J
764	5	2023-11-15	13:45:00	7.85	-1.34	J	-1.48	J
765	5	2023-11-15	14:00:00	7.85	-1.33	J	-1.47	J
766	5	2023-11-15	14:15:00	7.92	-1.23	J	-1.41	J
Notes:								
°C = degree Celcius								
°F = degree Fahrenheit								
µS/cm = microSiemens per centimeter								
SU = standard unit								
NTU = Nephelometric Turbidity Unit								
RFU = Relative Fluorescence Unit								
%Sat = percent saturation								
mg/L = milligrams per liter								
BGAPC = bluegreen algae phycocyanin								
J = estimated value								

Appendix C3 - Tabulated Laboratory Results

Date	Method Detection Limit	Units	2023-09-11				2023-09-12				2023-09-13				2023-09-14			
Time			13:30		14:00		13:30		14:00		13:00		13:30		14:00		14:30	
Analyte			Influent		Effluent		Influent		Effluent		Influent		Effluent		Influent		Effluent	
Aluminum	30.7	µg/L	68.8	I	546		82.9	I	633		84.4	I	1400		62.1	I	851	
Aluminum, Dissolved	30.7	µg/L	30.7	U	154	U	30.7	U	79.3	I	30.7	U	51.2	I	30.7	U	154	U
Iron	25.0	µg/L	DNS				DNS				DNS				83.5		DNS	
Total Suspended Solids	1.0	mg/L	14		34		31.0		32		15.0		42.0		27.5		24.5	
Alkalinity, Total as CaCO ₃	5.0	mg/L	126		121		123		122		124		122		125		123	
Alkalinity, Bicarbonate (CaCO ₃)	5.0	mg/L	126		121		121		122		124		122		125		123	
Alkalinity, Carbonate (CaCO ₃)	5.0	mg/L	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloride		mg/L	9,880		9,780		10,000		9,680		9,730		9,890		9,810		9,740	
Salinity		ppt	18.8		19.2		19.4		19.5		19.0		19.3		19.2		19.3	
Organic Carbon, Total	0.50	mg/L	10.8		10.0						11.4		11.4		11.2		9.9	
Organic Carbon, Dissolved	0.50	mg/L	NA				NA				NA				NA			
Total Carbon		mg/L	33.1		32.5		33.2		33.1		35.6		34.9		34.8		33.7	
Chlorophyll a	1.0	mg/m3	4.3	I	9.0		8.4		9.9	I	6.0		2.3	I	8.9		9.8	I
Chlorophyll a - Corrected	1.0	mg/m3	4.6	I	9.8		7.5		8.5	I	5.7		1.8	I	8.7		8.1	I
Chlorophyll b	1.0	mg/m3	1.0	U	1.0	U	1.0	U	2.4	U	1.0	U	1.2	U	1.0	U	2.2	U
Chlorophyll c	1.0	mg/m3	1.5	I	2.4	I	1.9	I	2.4	U	1.0	I	1.2	U	1.0	U	2.2	U
Pheophytin	1.0	mg/m3	1.0	U	1.0	U	1.0	U	2.4	U	1.0	U	1.2	U	1.0	U	2.2	U
Nitrogen, Kjeldahl	0.80	mg/L	0.75	Rw	0.81		0.79		0.98		0.85		0.86		0.67		0.87	
Nitrogen, Kjeldahl, Dissolved	0.20	mg/L	1.1	Rw	0.69		0.79		0.98		0.89		0.87		0.68		0.95	
Nitrate Nitrite as N	0.015	mg/L	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U
Nitrate Nitrite as N, Dissolved	0.015	mg/L	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U
Ammonia as N	0.035	mg/L	0.035	U, Rw	0.035	U	0.035	U	0.035	U	0.035	U, Rw	0.035	U, Rw	0.035	U	0.092	Rw
Ammonia as N, Dissolved	0.020	mg/L	0.053	Rw	0.035	U	0.020	U	0.020	U	0.150	I, Rw	0.050	I, Rw	0.020	U	0.13	Rw
Nitrogen, Total	--	mg/L	0.75	Rw	0.81		0.79		0.98		0.85		0.86		0.67		0.87	
Nitrogen, Total Dissolved	--	mg/L	1.1	Rw	0.69		0.79		0.98		0.89		0.87		0.68		0.96	
Phosphorus as P, Total	0.0028	mg/L	0.075		0.081		0.026	Rw	0.016		0.068		0.054		0.064		0.052	
Phosphorus as P, Total Dissolved	0.0028	mg/L	0.020	Rw	0.013	Rw	0.027	Rw	0.014	Rw	0.036	Rw	0.016		0.029		0.020	
Orthophosphate as P, Dissolved	0.0038	mg/L	0.035	Rw	0.027	Rw	0.037	Rw	0.020	Rw	0.035	Rw	0.018		0.043		0.022	

I: The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

J: The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Q: Sample held beyond the accepted holding time

U: Indicates that the compound was analyzed for but not detected

Rw: Rejected; sum of reported parts or fractions for the associated sample analyte results exceeds 120% of the corresponding reported or calculated whole

Rp: Rejected; parts or fractions of the associated sample analyte results are missing (not analyzed or rejected)

Bold: Result above Method Detection Limit

DNS: Did not sample

NA: Not Analyzed

Week 1 Operations

Week 2 Operations

Week 3 Operations

Week 4 Operations

Week 5 Operations

Appendix C3 - Tabulated Laboratory Results

Date	Method Detection Limit	Units	2023-09-15				2023-09-26				2023-09-27				2023-09-28			
Time			13:30		14:00		14:30		15:00		15:00		15:30		15:00		15:30	
Analyte			Influent		Effluent		Influent		Effluent		Influent		Effluent		Influent		Effluent	
Aluminum	30.7	µg/L	32.2	I	767		145		709		92.2	I	780		61.4	U	745	
Aluminum, Dissolved	30.7	µg/L	30.7	U	82.3	I	154	U	657		30.7	U	154	U	30.7	U	154	U
Iron	25.0	µg/L	DNS				DNS				DNS				90.2		DNS	
Total Suspended Solids	1.0	mg/L	8.5		27.0		40.0		33.5		31.5				31.5		39.5	
Alkalinity, Total as CaCO3	5.0	mg/L	125		123		130		128		131		127		131		130	
Alkalinity, Bicarbonate (CaCO3)	5.0	mg/L	125		123		130		128		131		127		131		130	
Alkalinity, Carbonate (CaCO3)	5.0	mg/L	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloride		mg/L	10,200		9,570		9,990		10,200		10,300		9,730		9,510		9,360	
Salinity		ppt	19.6		19.5		18.9		19.6		20.0		19.7		19.3		19.4	
Organic Carbon, Total	0.50	mg/L	9.7		9.1		10.7		9.5		10.6		9.6		10.2		9.8	
Organic Carbon, Dissolved	0.50	mg/L	NA				5.7		5.5		5.6		4.8		5.7		5.2	
Total Carbon		mg/L	34.2		32.6		37.4		34.9		37.2		34.9		36.5		34.0	
Chlorophyll a	1.0	mg/m3	3.3	I	5.2		18.6		11.5		13.4		5.7		20.1		14.4	
Chlorophyll a - Corrected	1.0	mg/m3	3.3	I	6.1		16.8		9.4		12.7		5.5		19.2		14.5	
Chlorophyll b	1.0	mg/m3	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorophyll c	1.0	mg/m3	1.0	U	1.0	U	4.4	I	1.7	I	3.5	I	1.1	I	4.5	I	3.1	I
Pheophytin	1.0	mg/m3	1.0	U	1.0	U	2.0	I	2.8	I	1.0	U	1.0	U	1.0	U	1.0	U
Nitrogen, Kjeldahl	0.80	mg/L	0.73		0.91		1.1		0.94		0.58	Rw	0.91		0.53		1.0	
Nitrogen, Kjeldahl, Dissolved	0.20	mg/L	0.67		0.90		0.65		0.68		1.1	Rw	0.81		0.60		0.77	
Nitrate Nitrite as N	0.015	mg/L	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U
Nitrate Nitrite as N, Dissolved	0.015	mg/L	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U
Ammonia as N	0.035	mg/L	0.035	U	0.048	I	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Ammonia as N, Dissolved	0.020	mg/L	0.030	I	0.026	I	0.020	U	0.041	I	0.020	U	0.020	U	0.020	U	0.020	U
Nitrogen, Total	--	mg/L	0.74		0.91		1.1		0.94		0.59	Rw	0.91		0.53		1.0	
Nitrogen, Total Dissolved	--	mg/L	0.68		0.90		0.65		0.68		1.1	Rw	0.81		0.60		0.77	
Phosphorus as P, Total	0.0028	mg/L	0.016	Rw	0.016	Rw	0.14		0.086		0.16		0.069		0.075		0.10	
Phosphorus as P, Total Dissolved	0.0028	mg/L	0.043		0.025		0.066		0.028		0.073		0.026		0.072		0.038	
Orthophosphate as P, Dissolved	0.0038	mg/L	0.032		0.021		0.079		0.029		0.073		0.021		0.082		0.036	

I: The reported value is between the laboratory method detection

J: The result is an estimated quantity. The associated numerical

Q: Sample held beyond the accepted holding time

U: Indicates that the compound was analyzed for but not detected

Rw: Rejected; sum of reported parts or fractions for the associated

Rp: Rejected; parts or fractions of the associated sample analysis

Bold: Result above Method Detection Limit

DNS: Did not sample

NA: Not Analyzed

Week 1 Operations

Week 2 Operations

Week 3 Operations

Week 4 Operations

Week 5 Operations

Appendix C3 - Tabulated Laboratory Results

Date	Method Detection Limit	Units	2023-09-29				2023-10-16				2023-10-17				2023-10-18			
Time			13:00		13:30		11:00		11:30		11:00		11:30		11:00		11:30	
Analyte			Influent		Effluent		Influent		Effluent		Influent		Effluent		Influent		Effluent	
Aluminum	30.7	µg/L	61.4	U	748		92.9	I	774		87.4	I	848		109		997	
Aluminum, Dissolved	30.7	µg/L	30.7	U	61.4	U	30.7	U	62.2	I	30.7	U	76.7	I	30.7	U	30.7	U
Iron	25.0	µg/L	DNS				DNS				DNS				DNS			
Total Suspended Solids	1.0	mg/L	16.0		31.0		37.0		25.5		14.5		7.5		10.5		20.5	
Alkalinity, Total as CaCO3	5.0	mg/L	130		128		115		114		117		115		118		115	
Alkalinity, Bicarbonate (CaCO3)	5.0	mg/L	130		128		115		114						118		115	
Alkalinity, Carbonate (CaCO3)	5.0	mg/L	5.0	U	5.0	U	5.0	U	5.0	U					5.0	U	5.0	U
Chloride		mg/L	9,440		9,580		10,500		10,000		11,300		10,300		10,900		10,700	
Salinity		ppt	18.5		18.2		20.6		20.3		21.1		20.9		20.7		20.2	
Organic Carbon, Total	0.50	mg/L	10.0		9.8		6.0	Rw	5.6	Rw	11.7		11.5		11.4		11.2	
Organic Carbon, Dissolved	0.50	mg/L	5.4		4.9		11.6	Rw	11.3	Rw	12.0		11.6		12.0		12.1	
Total Carbon		mg/L	37.8		35.6		32.5		32.4		31.8		31.4		33.1		31.5	
Chlorophyll a	1.0	mg/m3	7.8		4.9	I	2.3	I	2.1	I	2.4	I	2.0	U	1.0	U	1.7	I
Chlorophyll a - Corrected	1.0	mg/m3	6.9		3.8	I	1.8	I	1.8	I	1.9	I	2.0	U	1.0	U	1.0	I
Chlorophyll b	1.0	mg/m3	1.0	U	1.0	U	1.0	U	1.7	U	1.0	U	2.0	U	1.0	U	1.0	U
Chlorophyll c	1.0	mg/m3	1.0	U	1.2	I	1.0	U	1.7	U	1.0	U	2.0	U	1.0	U	1.0	U
Pheophytin	1.0	mg/m3	1.0	U	1.6	I	1.0	U	1.7	U	1.0	U	2.0	U	1.0	U	1.0	U
Nitrogen, Kjeldahl	0.80	mg/L	0.56	Rw	0.85		0.80		0.75		0.95		0.89		1.1		0.95	
Nitrogen, Kjeldahl, Dissolved	0.20	mg/L	0.77	Rw	0.57		0.82		0.74		0.77		0.74		0.79		0.43	I
Nitrate Nitrite as N	0.015	mg/L	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	I	0.015	U
Nitrate Nitrite as N, Dissolved	0.015	mg/L	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.017	I	0.016	I
Ammonia as N	0.035	mg/L	0.035	U	0.035	U	0.053	Rw	0.050	Rw	0.17	U	0.069		0.035	U	0.035	U
Ammonia as N, Dissolved	0.020	mg/L	0.021	I	0.040	I	0.090	Rw	0.10	Rw	0.050		0.025	I	0.020	U	0.034	I
Nitrogen, Total	--	mg/L	0.56	Rw	0.85		0.80		0.75		0.95		0.89		1.1		0.96	
Nitrogen, Total Dissolved	--	mg/L	0.77	Rw	0.57		0.82		0.74		0.77		0.74		0.80		0.44	I
Phosphorus as P, Total	0.0028	mg/L	0.11		0.071		0.032		0.024		0.032		0.023		0.030		0.0065	
Phosphorus as P, Total Dissolved	0.0028	mg/L	0.070		0.033		0.011		0.0071		0.0089		0.0084		0.0087		0.0085	Rw
Orthophosphate as P, Dissolved	0.0038	mg/L	0.072		0.036		0.0070		0.0048		0.0083		0.0043		0.0038		0.11	U Rw

I: The reported value is between the laboratory method detection

J: The result is an estimated quantity. The associated numerical

Q: Sample held beyond the accepted holding time

U: Indicates that the compound was analyzed for but not detected

Rw: Rejected; sum of reported parts or fractions for the associated

Rp: Rejected; parts or fractions of the associated sample analyzed

Bold: Result above Method Detection Limit

DNS: Did not sample

NA: Not Analyzed

Week 1 Operations

Week 2 Operations

Week 3 Operations

Week 4 Operations

Week 5 Operations

Appendix C3 - Tabulated Laboratory Results

Date	Method Detection Limit	Units	2023-10-19				2023-10-20				2023-10-23				2023-10-24			
Time			11:00		11:30		11:00		11:30		11:00		11:30		11:00		11:30	
Analyte			Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
Aluminum	30.7	µg/L	61.4	U	976		154	U	986		30.7	U	637		282		1,050	
Aluminum, Dissolved	30.7	µg/L	30.7	U	30.7	U	30.7	U	30.7	U	30.7	U	30.7	U	30.7	U	56.2	I
Iron	25.0	µg/L	DNS				DNS				DNS				DNS			
Total Suspended Solids	1.0	mg/L	32.5		34.5		7.0		18.0		7.0		24.0		21.0		24.0	
Alkalinity, Total as CaCO3	5.0	mg/L	116		114		123		120		124		122		123		119	
Alkalinity, Bicarbonate (CaCO3)	5.0	mg/L	116		114		123		120		124		122		123		119	
Alkalinity, Carbonate (CaCO3)	5.0	mg/L	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloride		mg/L	12,400		12,000		12,700		13,100		12,100		11,900		11,800		12,000	
Salinity		ppt	20.9		20.7		23.2		22.6		22.7		22.3		22.7		22.6	
Organic Carbon, Total	0.50	mg/L	11.8		11.3		11.3		11.0		11.4		11.2		11.2		11.3	
Organic Carbon, Dissolved	0.50	mg/L	11.1		10.7		10.9		10.6		10.3		10.1		5.6		5.3	
Total Carbon		mg/L	32.7		31.0		33.1		31.9		32.8		32.1		32.2		31.8	
Chlorophyll a	1.0	mg/m3	3.2	I	2.1	I	5.4		3.1	I	2.8	I	1.9	I	3.8	I	2.1	I
Chlorophyll a - Corrected	1.0	mg/m3	3.1	I	2.0	I	5.2		3.7	I	2.6	I	1.7	I	4.0	I	1.7	I
Chlorophyll b	1.0	mg/m3	1.0	U	1.0	U	1.0	U	1.6	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorophyll c	1.0	mg/m3	1.0	U	1.0	U	1.1	I	1.6	U	1.0	U	1.0	U	1.7	I	1.0	U
Pheophytin	1.0	mg/m3	1.0	U	1.0	U	1.0	U	1.6	U	1.0	U	1.0	U	1.0	U	1.0	U
Nitrogen, Kjeldahl	0.80	mg/L	0.73		0.79		0.74		0.97		0.84		0.86		1.0		0.92	
Nitrogen, Kjeldahl, Dissolved	0.20	mg/L	0.72		0.72		0.74		0.80		0.72		0.75		0.70		0.79	
Nitrate Nitrite as N	0.015	mg/L	0.015	U	0.015	U	0.015	U	0.015	U, Rw	0.015	U	0.015	U	0.015	U	0.015	U
Nitrate Nitrite as N, Dissolved	0.015	mg/L	0.015	U	0.015	U	0.015	U	0.019	I, Rw	0.015	U	0.015	U	0.015	U	0.015	U
Ammonia as N	0.035	mg/L	0.035	U	0.035	U	0.047	I	0.16		0.099		0.050	I	0.15		0.050	Rw
Ammonia as N, Dissolved	0.020	mg/L	0.020	U	0.042	I	0.047	I	0.090		0.022	I	0.054		0.040	I	0.13	Rw
Nitrogen, Total	--	mg/L	0.73		0.79		0.75		0.98	Rp	0.84		0.86		1.0		0.92	
Nitrogen, Total Dissolved	--	mg/L	0.72		0.72		0.74		0.82	Rp	0.72		0.75		0.71		0.79	
Phosphorus as P, Total	0.0028	mg/L	0.028		0.018		0.0075	Rw	0.026		0.022		0.020		0.035		0.023	
Phosphorus as P, Total Dissolved	0.0028	mg/L	0.0077		0.0066	Rw	0.0084		0.0061		0.0076		0.0059		0.0066		0.0064	
Orthophosphate as P, Dissolved	0.0038	mg/L	0.0038	U	0.011	Rw	0.010	Rw	0.0044		0.0038	U	0.0038	U	0.0038	U	0.0038	U

I: The reported value is between the laboratory method detection

J: The result is an estimated quantity. The associated numerical

Q: Sample held beyond the accepted holding time

U: Indicates that the compound was analyzed for but not detected

Rw: Rejected; sum of reported parts or fractions for the associated

Rp: Rejected; parts or fractions of the associated sample analyzed

Bold: Result above Method Detection Limit

DNS: Did not sample

NA: Not Analyzed

Week 1 Operations

Week 2 Operations

Week 3 Operations

Week 4 Operations

Week 5 Operations

Appendix C3 - Tabulated Laboratory Results

Date	Method Detection Limit	Units	2023-10-25				2023-10-26				2023-10-27				2023-11-08			
Time			11:00		11:30		11:00		11:30		11:00		11:30		16:00		16:30	
Analyte			Influent		Effluent		Influent		Effluent		Influent		Effluent		Influent		Effluent	
Aluminum	30.7	µg/L	132		827		123		919		124		1,120		316		773	
Aluminum, Dissolved	30.7	µg/L	30.7	U	32.2	I	30.7	U	50.1	I	30.7	U	41.1	I	30.7	U	49.5	I
Iron	25.0	µg/L	DNS				DNS				DNS				DNS			
Total Suspended Solids	1.0	mg/L	10.5		16.5		26.0		41.0		17.5		34.0		27.0		27.0	
Alkalinity, Total as CaCO3	5.0	mg/L	119		118		121		119		123		124		133		132	
Alkalinity, Bicarbonate (CaCO3)	5.0	mg/L	119		118		121		119		123		124		124		127	
Alkalinity, Carbonate (CaCO3)	5.0	mg/L	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	9.0		5.1	
Chloride		mg/L	13,200		13,000		12,700		12,300		12,700		13,700		10,300		10,100	
Salinity		ppt	22.9		23.2		23.9		23.3		24.0		23.2		19.6		19.4	
Organic Carbon, Total	0.50	mg/L	11.1		11.1		11.1		11.4		11.5		11.5		11.1		10.5	
Organic Carbon, Dissolved	0.50	mg/L	5.4		5.2		7.7		6.7		6.9		2.9		11.2		10.5	
Total Carbon		mg/L	32.0		31.8		33.9		32.3		34.0		33.5		35.5		34.4	
Chlorophyll a	1.0	mg/m3	1.9	I	1.5	I	1.9	I	1.5	I	3.4	I	2.2	I	5.0		2.3	I
Chlorophyll a - Corrected	1.0	mg/m3	1.2	I	2.0	I	1.8	I	1.6	I	3.0	I	2.0	I	4.3	I	2.3	I
Chlorophyll b	1.0	mg/m3	1.1	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorophyll c	1.0	mg/m3	1.1	U	1.0	U	1.0	U	1.0	U	1.4	I	1.0	I	1.0	U	1.0	U
Pheophytin	1.0	mg/m3	1.1	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nitrogen, Kjeldahl	0.80	mg/L	0.93		0.87		0.77		0.87		1.6		0.93		0.79		0.64	
Nitrogen, Kjeldahl, Dissolved	0.20	mg/L	0.77		0.90		0.70		0.87		0.71		0.75		0.67		0.65	
Nitrate Nitrite as N	0.015	mg/L	0.015	U	0.015	U	0.015	U	0.015	U	0.020	I	0.015	U	0.015	U	0.015	U
Nitrate Nitrite as N, Dissolved	0.015	mg/L	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U
Ammonia as N	0.035	mg/L	0.089		0.089	Rw	0.082		0.043	I, Rw	0.035	U	0.11		0.063	Rw	0.035	U
Ammonia as N, Dissolved	0.020	mg/L	0.060		0.22	Rw	0.042	I	0.066	Rw	0.020	U	0.020	U	0.082	Rw	0.020	U
Nitrogen, Total	--	mg/L	0.93		0.88		0.77		0.87		1.60		0.93		0.80		0.64	
Nitrogen, Total Dissolved	--	mg/L	0.78		0.90		0.71		0.87		0.72		0.75		0.68		0.65	
Phosphorus as P, Total	0.0028	mg/L	0.028		0.018		0.026		0.019		0.025		0.017		0.011		0.0093	
Phosphorus as P, Total Dissolved	0.0028	mg/L	0.011		0.0078		0.0084	Rw	0.0060		0.0063		0.0053		0.0092	Rw	0.0085	
Orthophosphate as P, Dissolved	0.0038	mg/L	0.012		0.0056		0.011	Rw	0.0061		0.0071		0.0049		0.013	Rw	0.0045	

I: The reported value is between the laboratory method detection

J: The result is an estimated quantity. The associated numerical

Q: Sample held beyond the accepted holding time

U: Indicates that the compound was analyzed for but not detected

Rw: Rejected; sum of reported parts or fractions for the associated

Rp: Rejected; parts or fractions of the associated sample analyzed

Bold: Result above Method Detection Limit

DNS: Did not sample

NA: Not Analyzed

Week 1 Operations
Week 2 Operations
Week 3 Operations
Week 4 Operations
Week 5 Operations

Appendix C3 - Tabulated Laboratory Results

Date	Method Detection Limit	Units	2023-11-09				2023-11-10				2023-11-14				2023-11-15			
Time			16:00		16:30		15:30		16:00		14:00		14:30		13:30		14:00	
Analyte			Influent		Effluent		Influent		Effluent		Influent		Effluent		Influent		Effluent	
Aluminum	30.7	µg/L	114		851		121		1,140		234		1,490		312		1,030	
Aluminum, Dissolved	30.7	µg/L	30.7	U	50.7	I	30.7	U	69.5	I	30.7	U	62.3	I	30.7	U	154.0	U
Iron	25.0	µg/L	DNS				DNS											
Total Suspended Solids	1.0	mg/L	23.0		35.0		26.0		31.0		12.5		23.0		16.5		17.0	
Alkalinity, Total as CaCO ₃	5.0	mg/L	134		132		141		133		129		140		146		132	
Alkalinity, Bicarbonate (CaCO ₃)	5.0	mg/L	126		130		135		133		129		140		146		132	
Alkalinity, Carbonate (CaCO ₃)	5.0	mg/L	7.3		5.0	U	6.2		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloride		mg/L	11,000		10,200		10,100		10,500		9,330		9,370		9,030		9,470	
Salinity		ppt	19.4		19.1		19.4		19.5		18.9		19.4		19.5		19.1	
Organic Carbon, Total	0.50	mg/L	11.6		11.2		11.1		11.2		10.6		10.6		11.2		10.8	
Organic Carbon, Dissolved	0.50	mg/L	10.6		10.8		10.7		10.7		10.9		10.3		10.9		10.8	
Total Carbon		mg/L	35.7		35.7		35.1		34.5		36.4		35.3		36.1		34.9	
Chlorophyll a	1.0	mg/m3	1.5	I	3.3	I	1.9	I	1.8	U	3.3	I	2.5	U	6.9		3.3	I
Chlorophyll a - Corrected	1.0	mg/m3	1.1	I	3.2	I	1.8	I	2.0	I	3.5	I	2.5	U	6.3		3.6	I
Chlorophyll b	1.0	mg/m3	1.0	U	1.0	U	1.0	U	1.8	U	1.0	U	2.5	U	1.0	U	1.0	U
Chlorophyll c	1.0	mg/m3	1.0	U	1.0	U	1.0	U	1.8	U	1.0	U	2.5	U	1.2	I	1.0	U
Pheophytin	1.0	mg/m3	1.0	U	1.0	U	1.0	U	1.8	U	1.0	U	2.5	U	1.0	U	1.0	U
Nitrogen, Kjeldahl	0.80	mg/L	0.75		0.80		0.79		0.77		0.76		0.75		0.88		0.87	
Nitrogen, Kjeldahl, Dissolved	0.20	mg/L	0.62		0.67		0.66		0.49	I	0.65		0.75		0.61		0.64	
Nitrate Nitrite as N	0.015	mg/L	0.015	U	0.015	U	0.015	U	0.015	U	0.030	U	0.015	U	0.015	U	0.015	U
Nitrate Nitrite as N, Dissolved	0.015	mg/L	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U
Ammonia as N	0.035	mg/L	0.035	U	0.035	U	0.039	I	0.035	U	0.061		0.035	I, R	0.041	I, Rw	0.038	I
Ammonia as N, Dissolved	0.020	mg/L	0.020	U	0.033	I	0.022	I	0.020	U	0.031	I	0.076	Rw	0.097	Rw	0.043	I
Nitrogen, Total	--	mg/L	0.75		0.81		0.79		0.77		0.76		0.75		0.88		0.87	
Nitrogen, Total Dissolved	--	mg/L	0.64		0.68		0.67		0.49	I	0.67		0.76		0.61		0.64	
Phosphorus as P, Total	0.0028	mg/L	0.011		0.0081		0.031		0.0240		0.035		0.020		0.037		0.021	
Phosphorus as P, Total Dissolved	0.0028	mg/L	0.0110		0.0086		0.0120		0.0086		0.0150		0.0110		0.0120		0.0086	
Orthophosphate as P, Dissolved	0.0038	mg/L	0.013		0.0038	U	0.0061		0.0038	U	0.0140		0.0048		0.0140		0.0038	U

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Rw: Rejected; sum of reported parts or fractions for the associated

Rp: Rejected; parts or fractions of the associated sample analysis

Bold: Result above Method Detection Limit

DNS: Did not sample

NA: Not Analyzed

Week 1 Operations

Week 2 Operations

Week 3 Operations

Week 4 Operations

Week 5 Operations

Appendix C4 - Tabulated Laboratory Results - Phytoplankton Counts (Greenwater)

Sample ID	Sample Site	Sampling Date	Taxa	Algal Group	Counting Unit	Cells/Unit	Cell Biovolume (um3)	Species Cells/mL	Species Biovolume/mL	Group Total Cells/mL	Group Total Biovolume/mL	Sample Total Cells/mL	Sample Total Biovolume/mL
IRL-INF-20231109	IRL	11/9/2023	Pseudonitzschia sp./spp.	Bacillariophyta	chain	4	300.2	14,617	4,388,029	15,772	6,569,863	16,869	6,799,995
IRL-INF-20231109	IRL	11/9/2023	Odontella sinensis	Bacillariophyta	cell	1	516,525.2	3	1,721,751				
IRL-INF-20231109	IRL	11/9/2023	Pseudonitzschia sp./spp.	Bacillariophyta	cell	1	300.2	1,036	311,092				
IRL-INF-20231109	IRL	11/9/2023	Rhizosolenia sp.	Bacillariophyta	cell	1	109,900.0	0.3	36,633				
IRL-INF-20231109	IRL	11/9/2023	pennate diatom sp.	Bacillariophyta	cell	1	2,406.5	14	32,813				
IRL-INF-20231109	IRL	11/9/2023	Amphora sp.	Bacillariophyta	cell	1	476.7	55	26,000				
IRL-INF-20231109	IRL	11/9/2023	pennate diatom sp.	Bacillariophyta	cell	1	1,351.5	14	18,428				
IRL-INF-20231109	IRL	11/9/2023	Gyrosigma sp.	Bacillariophyta	cell	1	10,185.4	1	13,581				
IRL-INF-20231109	IRL	11/9/2023	Cylindrotheca closterium/Nitzschia longissima	Bacillariophyta	cell	1	646.3	14	8,812				
IRL-INF-20231109	IRL	11/9/2023	Rhizosolenia setigera	Bacillariophyta	cell	1	7,837.4	1	5,225				
IRL-INF-20231109	IRL	11/9/2023	centric diatom sp.	Bacillariophyta	cell	1	12,438.8	0.3	4,146				
IRL-INF-20231109	IRL	11/9/2023	Thalassionema sp.	Bacillariophyta	colony	3	611.5	2	1,223				
IRL-INF-20231109	IRL	11/9/2023	centric diatom sp.	Bacillariophyta	cell	1	86.8	14	1,184				
IRL-INF-20231109	IRL	11/9/2023	Thalassionema sp.	Bacillariophyta	cell	1	611.5	1	612				
IRL-INF-20231109	IRL	11/9/2023	pennate diatom sp.	Bacillariophyta	cell	1	1,004.8	0.3	335				
IRL-INF-20231109	IRL	11/9/2023	chlorophyte filament sp.	Chlorophyta	filament	24	74.6	8	597	8	597		
IRL-INF-20231109	IRL	11/9/2023	Johannesbaptistia sp.	Cyanobacteria	colony	24	8.5	327	2,782	756	6,513		
IRL-INF-20231109	IRL	11/9/2023	Phormidium sp.	Cyanobacteria	filament	45	67.9	30	2,037				
IRL-INF-20231109	IRL	11/9/2023	oscillatorialean filament sp.	Cyanobacteria	filament	8	7.9	109	862				
IRL-INF-20231109	IRL	11/9/2023	cyanophyte colony sp.	Cyanobacteria	colony	19	1.2	259	311				
IRL-INF-20231109	IRL	11/9/2023	cf. Phormidium sp.	Cyanobacteria	filament	39	21.2	13	276				
IRL-INF-20231109	IRL	11/9/2023	Raphidiopsis raciborskii (coiled)	Cyanobacteria	filament	18	16.0	12	192				
IRL-INF-20231109	IRL	11/9/2023	oscillatorialean filament sp.	Cyanobacteria	filament	16	10.2	5	54				
IRL-INF-20231109	IRL	11/9/2023	Dinophysis caudata	Dinophyceae	cell	1	32,504.2	2	65,008	20	193,644		
IRL-INF-20231109	IRL	11/9/2023	Ceratium hircus	Dinophyceae	cell	1	74,847.7	1	49,898				
IRL-INF-20231109	IRL	11/9/2023	Prorocentrum micans	Dinophyceae	cell	1	14,860.3	2	34,674				
IRL-INF-20231109	IRL	11/9/2023	Ceratium fusus	Dinophyceae	cell	1	63,469.5	0.3	21,157				
IRL-INF-20231109	IRL	11/9/2023	Prorocentrum minimum	Dinophyceae	cell	1	1,193.1	14	16,268				
IRL-INF-20231109	IRL	11/9/2023	dinoflagellate sp.	Dinophyceae	cell	1	13,603.8	0.3	4,535				
IRL-INF-20231109	IRL	11/9/2023	Protoperdinium sp.	Dinophyceae	cell	1	6,310.1	0.3	2,103				
IRL-INF-20231109	IRL	11/9/2023	raphidophyte sp.	Raphidophyceae	cell	1	816.1	14	11,128	14	11,128		
IRL-INF-20231109	IRL	11/9/2023	unknown unicell sp.	Unknown	cell	1	544.5	14	7,424	300	18,251		
IRL-INF-20231109	IRL	11/9/2023	unknown unicell, sphere spp.	Unknown	cell	1	36.1	164	5,907				
IRL-INF-20231109	IRL	11/9/2023	unknown flagellate sp.	Unknown	cell	1	78.0	27	2,127				
IRL-INF-20231109	IRL	11/9/2023	unknown flagellate sp.	Unknown	cell	1	107.4	14	1,464				
IRL-INF-20231109	IRL	11/9/2023	unknown unicell sp.	Unknown	cell	1	17.4	55	949				
IRL-INF-20231109	IRL	11/9/2023	unknown cell pair sp.	Unknown	colony	2	13.9	27	379				

