City of Chattanooga

Mayor Andy Berke

September 8, 2017

VIA HAND DELIVERY

Ms. Corinne Hill
Library Director
Chattanooga-Hamilton County Public Library
1001 Broad Street
Chattanooga, TN 37402

Subject: ***United States of America et. al. v. City of Chattanooga, No. 1:12-cv-00245***
Consent Decree Public Document Repository
Additional Operational Plan for Chattanooga Creek CSO Outfalls (AOP)

Dear Ms. Hill:

On behalf of the City of Chattanooga, Tennessee ("City"), and in accordance with the consent decree entered by the United States District Court for the Eastern District of Tennessee (Southern Division), on April 24, 2013, in the case styled the *United States of America et. al. v. City of Chattanooga, No. 1:12-cv-00245* ("Consent Decree"), we are providing the Chattanooga-Hamilton County Public Library with the Additional Operational Plan for Chattanooga Creek CSO Outfalls ("AOP") for submission to the City's Public Document Repository ("PDR"). The purpose of the AOP is to recommend additional long term combined sewer overflow ("CSO") controls at Central Avenue CSO treatment facility ("CSOTF") and Williams Street CSOTF that will ensure compliance of the discharges from the outfalls on Chattanooga Creek with State of Tennessee water quality standards for dissolved oxygen and Escherichia coli established for the protection of designated uses.

We are providing a copy of the AOP to the PDR for public review and comment, prior to final submission of the AOP to the EPA and the State of Tennessee. Thus, we ask that you make this document available to the public for review for thirty (30) days. The public can provide comments to the City by sending comments to the following address:

City of Chattanooga: Waste Resources Divisions
RE: Consent Decree Public Comments
c/o Jacobs Engineering Group
4510 Turntable Road, Suite 110
Chattanooga, TN 37421

An electronic copy of this document is also available for review and comment on the City's Consent Decree website at the following location:

http://www.chattanooga.gov/public-works/waste-resources/consent-decree/44-public-works/1050-consent-decree-document-repository

We look forward to receiving comments from the public on this important document.

Sincerely,

Michael C. Patrick, P.E.
Director, Waste Resources Division

Enclosure

cc: Justin Holland, Administrator, Public Works, City of Chattanooga
Mike Marino, P.E., Jacobs
Adam Sowatzka, King & Spalding

Additional Operational Plan for Chattanooga Creek CSO Outfalls

Prepared for

United States Environmental Protection Agency and Tennessee Department of Environment and Conservation

City of Chattanooga
Waste Resources Division
Consent Decree Program
Case No. 1:12-cv-00245

Prepared by

City of Chattanooga

Waste Resources Division

Submitted by

Jacobs Engineering Group Inc.
Consent Decree Program Manager

Chattanooga, Tennessee

September 8, 2017

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Acronyms and Abbreviations

AOP	Additional Operation Plan
CD	Consent Decree
City	City of Chattanooga
COC	Chain-of-Custody
Cormix	Cornell Mixing Zone Expert System
CSO	Combined Sewer Overflow
CSOTF	Combined Sewer Overflow Treatment Facility
DO	Dissolved Oxygen
DR	Wet Weather after a CSOTF Discharge
DW	Dry Weather
E. coli	Escherichia coli
EPA	United States Environmental Protection Agency
FAL	Fish and Aquatic Life
IRR	Irrigation
ISS	Interceptor Sewer System
IWS	Industrial Supply
LTCP	Long Term Control Plan
LWW	Livestock Watering and Wildlife
NPDES	National Pollutant Discharge Elimination System
PAA	Peracetic Acid
PCCMP	Post Construction Compliance Monitoring Program
PDR	Public Document Repository
pH	Hydrogen Ion Concentration
PS	Pump Station
REC	Recreation
State	State of Tennessee
TDEC	Tennessee Department of Environment and Conservation
TKN	Total Kjeldahl Nitrogen

TN	Total Nitrogen
TDP	Total Dissolved Phosphorous
TP	Total Phosphorous
TSS	Total Suspended Solids
UV	Ultraviolet
UVT	Ultraviolet Transmittance
WCTS	Wastewater Collection and Transmission System
WQS	Water Quality Standards
WQMP	Water Quality Monitoring Plan
WRD	Waste Resources Division
WW	Wet Weather
WWTP	Wastewater Treatment Plant
MBWWTP	Moccasin Bend Wastewater Treatment Plant

Definitions

City: The City of Chattanooga, Tennessee as well as its Department of Public Works and the Waste Resources Division.

Combined Sewer System (CSS): The combined sewer system shall mean the portion of the City's WCTS designed to convey municipal sewage (domestic, commercial, and industrial wastewater) and stormwater runoff through a single-pipe system to the WWTP or a CSOTF Outfall.

Combined Sewer Overflow Treatment Facility (CSOTF): These are permitted primary treatment facilities in the City's CSS that treat combined stormwater and sanitary sewage and discharge through the CSOTF Outfalls during heavy wet weather events.

Combined Sewer Overflow Treatment Facility Outfall or CSOTF Outfall: The outfalls currently identified, or identified in the future, as a permitted CSOTF Outfall in any Chattanooga NPDES permit from which CSOs are discharged to waters of the United States or the State.

Combined Sewer Overflow (CSO): Any discharge from the CSS from any outfall currently identified, or identified in the future, as a permitted combined sewer overflow outfall in any Chattanooga NPDES permit

Director: The Director of Waste Resources Division is responsible for the oversight and management of the Waste Resources Division of the Department of Public Works of the City.

Discharge: A discharge is any release of untreated wastewaters (including that combined with stormwaters) induced by infiltration and inflow (I&I) from a sanitary sewer system or a combined sewer system.

EPA: United States Environmental Protection Agency.

Force Main: A pressurized line that conveys wastewater from a pump station.

Gravity Lines: Gravity or "main" lines represent the largest portion of the WCTS. They use changes in elevation to transport sewage between points (typically manholes or junction boxes).

Manhole or Junction Box: A manhole or junction box provides a connection point for gravity lines, private service laterals, or force mains, as well as an access point for maintenance and repair activities.

Post Construction Compliance Monitoring Program (PCCMP): The PCCMP provides compliance verification of the discharges from the CSOTFs on Chattanooga Creek with State water quality standards established for the protection of designated uses and also ascertains the effectiveness of CSO controls.

Private Service Lateral: Private service lateral shall mean that portion of a sanitary sewer conveyance pipe that extends from the wastewater main to the single-family, multi-family,

apartment, or other dwelling unit or commercial or industrial structure to which wastewater service is or has been provided.

Pump Station: A pump or lift station shall mean facilities owned or operated by Chattanooga that are comprised of pumps which lift wastewater to a higher hydraulic elevation, including all related electrical, mechanical, and structural systems necessary to the operation of that pump station; provided, however, this definition shall not include any residential grinder pumps.

TDEC: TDEC shall mean the Tennessee Department of Environment and Conservation and any successor departments or agencies of the State, and any successor departments or agencies.

User: Any person that contributes, causes, or permits the contribution or introduction of wastewater or pollutants into the WCTS, whether intentional or unintentional, and whether direct or indirect.

Wastewater Collection and Transmission System (WCTS): The WCTS is the wastewater collection, retention, and transmission systems, including all gravity sewer lines, force mains, pump stations, manholes, and other related appurtenances designed to collect and convey domestic, commercial, industrial wastewaters and combined sewer to the WWTP or CSOTFs.

Waste Resources Division (WRD): Waste Resources Division is responsible for the planning, management, operation, and maintenance of the WCTS and WWTP for the City.

Wastewater Treatment Plant or WWTP: WWTP shall mean devices or systems used in the storage, treatment, recycling, and reclamation of municipal wastewater at the Moccasin Bend WWTP located at 455 Moccasin Bend Road, Chattanooga, TN 37405-4403.

1.0 Executive Summary

1.1 Background and Purpose

As part of the requirements of the Consent Decree, the City of Chattanooga is to develop and submit Long Term Control Plan Updates as set forth in Section VI ("Compliance Requirements"), Paragraph 24 of the Consent Decree. The Post Construction Compliance Monitoring Program (PCCMP), required under Paragraph 24 (b) of this provision was submitted to United States Environmental Protection Agency (EPA) on November 18, 2014 and approved on March 12, 2015. The PCCMP was used to determine any potential impact of combined sewer overflow (CSO) discharges on Chattanooga Creek via monitoring and modeling programs and subsequently determine if additional CSO controls are required.

Based on the results of the PCCMP, Paragraph 24 (a) of the CD requires the City to develop an Additional Operation Plan (AOP) to provide additional long term CSO controls for the Central Avenue and William Street CSO outfalls that will ensure discharges from these outfalls comply with State of Tennessee water quality standards should additional control measures be required. The AOP was prepared in accordance with the requirement Section VI, Paragraph 24 (a) of the CD, and will be submitted by the City prior to October 24, 2017.

1.2 Study Approach

The City developed a Water Quality Monitoring Plan (WQMP) for the two (2) CSO treatment facilities (CSOTFs) that discharge into Chattanooga Creek in order to evaluate the impact of their discharges on water quality, specifically Escherichia coli (*E. coli*) and dissolved oxygen (DO). Implementation of the WQMP was intended to:

- Further characterize existing water quality conditions;
- Parameterize, calibrate and validate the water quality simulation model;
- Assess the impacts of CSOs on the water quality of Chattanooga Creek; and
- Enable additional evaluation as well as comparison with future conditions should additional control measures be required.

1.3 Results and Recommendations

Field sampling results prior to modeling were used to determine whether the CSOTF discharges were potentially impacting the stream. DO concentrations fell below acceptable levels during summer months due to temperature. There were no observed CSOTF discharge DO effects downstream of the outfalls. However, E. coli results showed elevated creek concentrations during dry and wet weather sampling events when there was not a CSOTF discharge indicating major upstream contributors of E. coli distinct from the City's outfalls. Additionally, there were observed CSOTF E. coli discharge effects that could potentially require additional CSO controls.

The data collected at CSOTF and receiving stream sampling points were used to develop the receiving water model. The results of each modeled scenario predicted near-field E. coli

concentrations significantly higher than the established limit. The field sampling and modeling results suggest additional CSO controls are needed at both Central and Williams CSOTFs.

The goal of the AOP was to complete a sampling plan to determine if the CSOTFs are a major cause of pollution to Chattanooga Creek. The field sampling data indicates the CSOTFs are not impacting the stream in terms of DO; however, sampling data and modeling results suggest the CSOTFs are potentially impacting the stream in terms of E. coli. For this reason, the City has begun evaluating additional treatment alternatives including sodium hypochlorite, ultraviolet disinfection, and peracetic acid (PAA). Based on further review and a lifecycle cost analysis, PAA has the potential to be the most cost-effective and safest alternative for the City's CSOTF application.

An estimated implementation schedule is included in this report. The proposed schedule is based on assumed EPA review and approval dates. Unexpected approval delays may require an extension of the project completion date.

2.0 Introduction

2.1 Purpose

The City of Chattanooga's (City), Waste Resources Division (WRD) has prepared an Additional Operational Plan for Chattanooga Creek Combined Sewer Overflow (CSO) Outfalls (AOP) for review and approval by the United States Environmental Protection Agency (EPA) and the Tennessee Department of Environment and Conservation (TDEC), as a condition of paragraph 24(a) of the Consent Decree (CD), which was effective on April 24, 2013.

The purpose of the AOP is to recommend additional long term CSO controls at Central Avenue CSO treatment facility (CSOTF) and Williams Street CSOTF that will ensure compliance of the discharges from the outfalls on Chattanooga Creek with State of Tennessee (State) water quality standards (WQS) for dissolved oxygen (DO) and Escherichia coli (E. coli) established for the protection of designated uses.

2.2 Background

In September 1989, the City developed and began to implement a CSO Facilities Plan. Part of the plan identified the construction of two (2) regional CSOTFs for the Chattanooga Creek combined sewer area. Both CSOTFs were constructed in 1998-1999. The CSO Facilities Plan predated EPA's 1994 CSO Control Policy (CSO Control Policy) and thus, while it may have contained many of the elements of a Long Term Control Plan (LTCP) as required in the CSO Control Policy, it may not adequately include or address all of the required components of a LTCP. However, both of the Chattanooga Creek CSOTFs were designed around the Presumption Approach, as identified in the CSO Control Policy, and instead of planning for four untreated overflow releases per year, the facilities were conservatively designed around one untreated overflow release per year. This conservative design approach would indicate that the City may have exceeded the requirements of the 1994 CSO Control Policy.

As part of the requirements of the CD, the City is to develop and submit LTCP Updates as set forth in Section VI ("Compliance Requirements"), Paragraph 24 of the CD. The Post Construction Compliance Monitoring Program (PCCMP), required under Paragraph 24 (b) of this provision was submitted to EPA on November 18, 2014 and approved on March 12, 2015.

In addition, Paragraph 24 (a) of the CD requires the City to develop an AOP to provide additional long term CSO controls for the Central Avenue and William Street CSO outfalls that will ensure discharges from these outfalls comply with State WQS in accordance with the CSO Control Policy. The AOP is to be prepared in accordance with the requirement Section VI, Paragraph 24 (a) of the CD, which requires the AOP to be submitted within 48 months of the Effective Date of the CD. The City requested a six (6) month extension to develop and submit the AOP due to a lack of rain which resulted in an inadequate number of sampling events available to calibrate and validate the model. EPA approved the extension on February 9, 2017. Thus, the AOP is to be prepared and submitted by the City prior to October 24, 2017.

The subject outfalls are identified in the City's National Pollutant Discharge Elimination System (NPDES) Permit TN0024210. These outfalls consist of the Central Avenue CSOTF Outfall (Outfall 002 in the NPDES Permit) and the Williams Street CSOTF Outfall (Outfall 003 in the NPDES Permit) both of which discharge into Chattanooga Creek. The CD asserts that the discharges from both of these CSOTF outfalls are not in compliance with State WQS for dissolved oxygen (DO) and Escherichia coli (*E. coli*), as set forth in the Tennessee Water Quality Criteria, Chapter 1200-4-3. The locations of the CSOTF Outfalls are shown on Figure 2-1.

2.3 Goal of AOP

The goal of the City's AOP is to evaluate and recommend alternatives for additional long term CSO controls for the aforementioned CSOTFs. There are currently no concentration limits for CSOTF discharges or a regulatory mixing zone in the receiving stream so the treatment goal will be directed towards a discharge that will be fully diluted in Chattanooga Creek by the end of the near-field mixing zone.

2.4 Scope of AOP

The scope of the City's AOP for the CSOTF Outfalls in the Chattanooga Creek area consists of the following major elements:

1. Post Construction Compliance Monitoring Program;
2. Receiving Water Modeling;
3. Alternatives Analysis and Recommendations;
4. Implementation Schedule;
5. Community Input Program; and
6. Distribution and Maintenance of the AOP.

The first three (3) of these elements are further detailed below. The last three (3) are considered self-explanatory.

2.4.1 Post Construction Compliance Monitoring Program (PCCMP)

This element of the AOP for the CSOTF Outfalls in the Chattanooga Creek area consists of the development, implementation, and results of the PCCMP. Of the City's eight (8) CSOTFs, six (6) discharge into the main stem of the Tennessee River. The remaining two CSOTFs discharge into Chattanooga Creek. The City developed a PCCMP for the two CSOTFs that discharge into Chattanooga Creek in order to evaluate the impact of their discharges on water quality. The PCCMP was submitted to EPA on November 18, 2014 and approved on March 12, 2015. An overview of the monitoring program, sampling sites, and analysis of the results is provided in Section 4.

2.4.2 Receiving Water Modeling

This element of the AOP details the receiving water model, Cormix, which was chosen to assess the impact of the two CSOTFs discharges on Chattanooga Creek, as proposed in the PCCMP. Modeling information is provided in Section 5 which includes the following information:

- Cormix Model Development;

- Results and Analysis; and
- Conclusions.

2.4.3 Alternatives Analysis and Recommendations

This element of the AOP consists of an analysis of the treatment alternatives available in order to meet compliance of E. coli and DO in the receiving stream. The most feasible options were explored further to select the final alternative. Implementation is scheduled, per the CD, to be completed by June 29, 2021, which is roughly three (3) years after EPA's anticipated approval of the AOP.

2.5 Authority

The City's legal authority for the development and implementation of this AOP is derived from the following federal, state and local laws, ordinances, regulations, and legal obligations:

- The U.S. Clean Water Act;
- NPDES Permit Number TN0024210;
- Tennessee Water Quality Control Act;
- City of Chattanooga Sewer Use Ordinance, City Code Chapter 31; and
- The CD (paragraph 24 (a) page 55), which was entered into with EPA and TDEC, Case No. 1:12 –CV-00245; which was consolidated with an action filed by the Tennessee Clean Water Network, Case No. 1:10-CV-281. This CD was effective on April 24, 2013.

Chattanooga Creek CSO Treatment Facilities

Figure 2-1

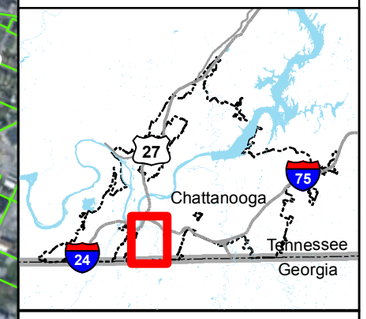
Legend

- CSO Facility
- Outfall Location
- Sewer Pressurized Mains
- Sewer Gravity Mains
- State Boundary
- River/Stream

0 350 700 1,400 Feet

N

NAD 1983 StatePlane Tennessee FIPS 4100 Feet



Map Created: 3/10/2014 9:26:50 AM

Project #: C6A02300

Author: Rogers, Jonathan

JACOBS

Williams Street CSO Treatment Facility

Outfall 003

Central Avenue CSO Treatment Facility

Outfall 002

Tennessee River

Chattanooga Creek

Dobbs Branch

Georgia

Tennessee

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Path: J:\C6A02300\GIS\MXD\Chattanooga Creek CSO Treatment Facilities - LTCP Figure 1-1.mxd

3.0 Overview

3.1 Description of the Wastewater Collection and Transmission System

As a regional wastewater utility, the City of Chattanooga, a Municipal Corporation, owns, operates, maintains, and manages a network of sewer pipes, manholes, pump stations (PSs), force mains, CSOTFs, and associated appurtenances that transport wastewater from homes, businesses, and industries to the Moccasin Bend Wastewater Treatment Plant (WWTP). All of this infrastructure is part of the Wastewater Collection and Transmission System (WCTS), as defined in the CD and herein, and managed by the WRD. The City has historically classified the WRD, WWTP and the WCTS as part of the Interceptor Sewer System (ISS). With the advent of the CD and recent reorganizations within the City, the term ISS is not recognized by all stakeholders; therefore, the City will refer to WCTS and WWTP as the infrastructure and WRD as the organization to manage this infrastructure going forward. Property owners own the private service laterals from the served residential, commercial, and industrial structures to the public main line in the street or right-of-way, including the connection.

The City's WCTS currently serves approximately 170,000 people with approximately 61,000 customers within the City including 80 permitted industries. It also provides treatment for eight (8) regional or satellite users comprised of approximately 25,000 customers. The WCTS is composed of:

- 1,263 miles of gravity sewers (approximate), including 70 miles of combined sewers;
- 30,000 manholes (approximate);
- 70 PSs;
- 53 miles of force main;
- Eight (8) CSOTFs;
- One (1) Combined Sewer Storage Facility;
- 192 (approximate) residential/grinder pumps; and
- One (1) Moccasin Bend WWTP

The WRD is responsible for implementing a PCCMP for the appropriate CSOTFs. An organizational chart for the WRD is provided in Appendix A.

3.2 Description of Chattanooga Creek

Chattanooga Creek starts at Hidden Hollow, GA, and flows approximately 24 miles downstream to the mouth of Tennessee River in Chattanooga, TN. Only the last 6 miles of the stream is actually located in TN. From 2010 to 2017 the City has conducted sampling of the creek at Burnt Mill Bridge located just downstream of the creek as it flows from GA into TN. Results

show DO and E. coli levels outside the acceptable ranges based on the creek's designated uses indicating poor upstream background water quality to begin with. These ranges are explained in more detail in Section 4.2.1 Concentration Limits. The results indicate potential point sources of pollution upstream of the City's CSOTFs. The results of City's Burnt Mill Bridge sampling efforts are located in Appendix B.

Chattanooga Creek was previously listed as a 303(d) listed stream for creosote, dioxin, DO, E. coli and polychlorinated biphenyls. Currently, the stream is only listed for creosote and DO potentially due to Chattanooga's industrial past. Just upstream of our monitoring area, there is an EPA superfund site which underwent a $25M federal cleanup in the early 2010s to remove the coal tar produced from Chattanooga Coke and Chemical during World War II. Tennessee Products, another superfund site just upstream of our monitoring area, operated a coal carbonization facility from 1918 to 1987 resulting in contaminated groundwater, sediment, soil and surface water. EPA's website states a fish advisory remains in effect for fish caught from Chattanooga Creek (Superfund, 2016). Lastly, Southern Wood Piedmont, a company which used to produce coal tar, is a superfund site just upstream of our monitoring area.

In addition, a significant amount of farmland is located upstream of our monitoring area which may potentially be contributing to the elevated E. coli levels.

4.0 Post Construction Compliance Monitoring Program

As part of the LTCP Updates set forth under the CD, the City developed and implemented a PCCMP in order to:

- Verify compliance of the discharges from the CSOTFs on Chattanooga Creek with State WQS established for the protection of designated uses and;
- Ascertain the effectiveness of CSO controls.

The following subsections briefly detail the development, implementation, and results of the Water Quality Monitoring Plan (WQMP) introduced and fully detailed in the PCCMP.

4.1 Development and Implementation

Of the City's eight (8) CSOTFs, six (6) discharge into the main stem of the Tennessee River. The remaining two (2) CSOTFs discharge into Chattanooga Creek. The City developed a WQMP for the two CSOTFs that discharge into Chattanooga Creek in order to evaluate the impact of their discharges on water quality, specifically E. coli and DO. Implementation of the WQMP was intended to:

- Further characterize existing water quality conditions;
- Parameterize, calibrate and validate the water quality simulation model;
- Assess the impacts of CSOs on the water quality of Chattanooga Creek; and
- Enable additional evaluation as well as comparison with future conditions should additional control measures be required.

Chattanooga Creek currently does not meet the assigned State WQS and designated uses in part because of natural background conditions and pollution sources other than CSOs. A "Demonstration" Approach is being used to assess the impacts of CSO control measures. The City conducted performance monitoring of the CSOTF Outfalls in the Chattanooga Creek area (Outfalls 002 and 003) in order to evaluate compliance of any discharges into Chattanooga Creek with State WQS and ascertain the effectiveness of existing CSO controls. Prior to PCCMP implementation, only limited data was available relative to the impact that the two CSOTFs that discharge into Chattanooga Creek have on water quality. Gathering additional monitoring data of both the CSOTF discharge characteristics and the water quality in Chattanooga Creek allowed additional evaluation as well as a baseline comparison with future conditions should additional control measures be required. Sampling from Chattanooga Creek was performed by collecting a surface grab near the mid-point of the stream flow according to the guidance in the TDEC document *Quality System Standard Operating Procedure for Chemical and Bacteriological Sampling of Surface Water*, August 2011. Refer to the PCCMP for additional information regarding the development of the program as the subsections below provide only brief details.

4.1.1 Sampling Locations

Six sites were strategically chosen along Chattanooga Creek in order to assess the near-field and far-field impacts of the discharges from Outfalls 002 and 003 and to take into account a related tributary, Dobbs Branch Creek. Each site is described below in order of location upstream to downstream:

- PCCMP-1: This site is 6,113' upstream of Outfall 002 and also 5,535' upstream of adjoining tributary Dobbs Branch Creek;
- PCCMP-2: This site is 200' upstream of Outfall 002;
- PCCMP-3: This site is 2,054' downstream of Outfall 002 and 1,751' upstream of Outfall 003; and
- PCCMP-4, 5, 6: These sites are 749', 2,210', and 2,365' downstream of Outfall 003, respectively.

Effluent sampling from the CSOTFs occurred at the facilities using automatic samplers. Figure 4-1 demonstrates the relationship of these sampling locations to the outfalls and Dobbs Branch Creek.

4.1.2 Sampling Parameters

Several parameters shown below were analyzed in the field and at the MBWWTP lab. Oil and Grease (O&G), Total Nitrogen (TN), and Suspended Solids (SS) were not needed for the sampling program, but the City was already sampling for their TDEC permit so we included them. Only DO, E. coli, and temperature were intended to be model inputs, while the other parameters would be used to assess their impact on DO, if needed.

Table 4-1

Parameter List

Parameter	Lab Analysis	Field Analysis
BOD_5	Yes	
E. coli	Yes	
O&G	Yes	
TP	Yes	
TN	Yes	
Settleable Solids	Yes	
TSS	Yes	
Conductivity	Yes	
DO		Yes
pH		Yes
Temperature		Yes
Ammonia	Yes	
Nitrate/Nitrite	Yes	

Parameter	Lab Analysis	Field Analysis
TKN	Yes	
TDP	Yes	

An additional lab analysis, UV transmittance, was added to the list after the PCCMP was approved and towards the end of the sampling program when the monitoring data for E. coli suggested additional CSO controls would potentially be required.

Quality assurance field sampling was also conducted to evaluate the quality of the data. A field duplicate sample, annotated in the tables below with a 'D', was taken at a frequency of 10% of samples per event to measure the precision and representativeness of field sampling and/or laboratory analytical methods. A field blank sample, annotated in the tables below with a 'B', was also taken at a frequency of 10% of samples per event to measure method accuracy and field effects. To further the quality assessment, a chain-of-custody (COC) form was included with all samples transferring possession of samples.

4.1.3 Sampling Frequency

As part of the PCCMP, the City collected water quality samples of stream sites and CSOTFs (if applicable) during dry weather, wet weather, and wet weather events where the CSOTFs discharged. Level monitors are available at each CSOTF to evaluate whether a discharge has occurred or not. For the identified creek sample locations, at least one (1) sample event per month (monthly) was conducted within 24 hours after a rain event where there was not a discharge from either CSOTF outfall. This assumes that there is at least one measureable rain event per month. Likewise, identified creek samples were collected at a frequency of at least one (1) sample event per month following a period of at least three (3) days of no measurable precipitation. In addition, during the initial 12 month period of sampling, the City attempted to sample for the identified creek locations one (1) rain event per month during a CSOTF discharge following a period of at least three (3) days of no measurable precipitation. As previously mentioned, Chattanooga experienced an unusually dry year resulting in fewer Chattanooga Creek CSOTF discharges. The City received a six (6) month extension from EPA and then ramped up sampling frequency in order to capture all possible events in that time period. After the initial 12 months, a discharge sampling event was performed regardless of when the last rain event occurred. Whenever the creek was sampled during a CSOTF discharge, the related CSOTF was also sampled.

4.1.4 Additional Monitoring Parameters

In addition to water quality monitoring, the City monitored rain, stream flow, and CSOTF discharge flow. The City's rain gage, RG11, as shown in Figure 4-2, was used to determine when a dry or wet weather sample should occur.

The stream velocity and stage was recorded every 30 minutes via a Teledyne Channel Master device installed just upstream of PCCMP-3 and converted to flow. Initially, the data was being recorded in smaller time steps, but this drained the equipment battery and caused loss of data during critical sampling events. A new battery was installed and a longer time step was programmed to ensure monitor accuracy.

Staff gages were installed at Outfall 002 and 003 for modeling purposes. A gage was also installed across the creek from the Channel Master at PCCMP-3 site for redundancy. Each time the identified creek locations were sampled, staff gage measurements were taken.

Lastly, the CSOTF discharge flow was monitored at each location. The discharge piping just upstream of Outfall 003 has a flow meter installed. The flow monitoring vendor was unable to install a flow meter in the discharge piping of Outfall 002 because this location is known to have standing water due to the characterization of the outfall pipe in relation to Chattanooga Creek normal stage elevations. The facility has a level meter that is used to calculate the start and stop times of a discharge and also estimate the discharge volume using a weir equation. This data was used to characterize the discharge of Outfall 002.

4.1.5 External Sampling

Per the CD, coordination with external sampling efforts was required. After discussing with City water quality experts conducting said sampling program, it was determined this data would not be useful in conjunction with our program because the external sampling was not relevant in any way with related CSOTF discharges.

4.2 Results

Sampling efforts were conducted over a 12 month period with an additional eight (8) months included to capture additional discharge samples and any dry or wet weather samples that were missed in the previous year's month. The first analysis step was to determine the concentration limits for E. coli and DO in Chattanooga Creek and then verify compliance with State WQS to determine if these parameters needed to be modeled. Next, flow data and staff gage measurements were analyzed to determine the effects of reservoir effects on Chattanooga Creek. All MBWWTP lab results are included in Appendix C. The Channel Master flow data, staff gage level measurements forms, and chain-of-custody forms are large data files and, thus, available upon request.

4.2.1 Concentration Limits

In order to determine the concentration limits of E. coli and DO for Chattanooga Creek, first the designated uses needed to be determined. According to Chapter 0400-40-04 Use Classification for Surface Waters from the Rules of the Tennessee Department and Conservation, Chattanooga Creek has the following designated use classifications: Industrial Supply (IWS), Fish and Aquatic Life (FAL), Recreation (REC), Livestock Watering and Wildlife (LWW), and Irrigation (IRR). The instantaneous concentration limits for DO and E. coli for each related designated use is shown below in Table 4-2.

Table 4-2

Chattanooga Creek Concentration Limits per Each Designated Use

Classification	DO (mg/L)	E. coli (CFU/100mL)
IWS	None	None
FAL	>5	<2880
REC	None	<941

Classification	DO (mg/L)	E. coli (CFU/100mL)
LWW	None	None
IRR	None	None

TDEC suggests that when a waterbody has multiple designated uses and, thus, multiple concentration limitations per parameter, the most stringent limitation should be used. Therefore, the DO concentration must be greater than 5 mg/L and the E. coli concentration must be less than 941 colony forming units (CFU)/100mL in Chattanooga Creek.

4.2.2 Compliance Verification – Dissolved Oxygen

The concentration limits determined above were compared to the MBWWTP lab data compiled under the PCCMP during dry weather (DW), wet weather (WW), and wet weather after a CSOTF discharge (WR). The DO results of each event type is shown below for each stream site and CSOTF (if applicable) in Table 4-3, 4-4, and 4-5 and Figure 4-3, 4-4, and 4-5, respectively. Any concentrations that are not in compliance are displayed in bold.

Table 4-3

PCCMP Dissolved Oxygen Results – Dry Weather (mg/L)

Sample Site	Oct 2015	Nov 2015	Jan 2016	Mar 2016	April 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016
PCCMP-1	8.31	10.4	10.3	10.6	8.57	7.36	7.39	**4.96**	**4.98**	6.38	7.46	7.65	10.2
PCCMP-2	8.02	9.96	11	10.4	8.15	6.76	6.33	5.16	**3.75**	5.45	**4.67**	6.74	10.1
PCCMP-3	7.38	9.75	10.9	10.4	7.91	6.32	5.15	**3.92**	**2.83**	5.21	5.54	6.6	9.74
PCCMP-4	7.4	9.57	10.8	10.5	7.93	6.04	**4.18**	**3.9**	**2.08**	**3.57**	**4**	6.73	9.44
PCCMP-5	6.88	9.07	10.8	10.4	7.85	5.93	**3.81**	**2.39**	**2.75**	**2.74**	7.75	6.56	9.18
PCCMP-6	7.11	8.64	11.2	10.4	7.97	5.91	**3.19**	**2.07**	**4.06**	**2.39**	5.43	6.59	9

Table 4-4

PCCMP Dissolved Oxygen Results – Wet Weather (mg/L)

Sample Site	Oct 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	April 2016	June 2016	July 2016	Aug 2016	Sept 2016	Nov 2016
PCCMP-1	7.73	9.02	11.6	8.98	7.85	8.98	5.99	**4.75**	**4.56**	**4.46**	7.65
PCCMP-2	7.08	7.72	11.6	8.7	7.71	8.7	**4.85**	**3.95**	**4.37**	**3.94**	6.74
PCCMP-3	7.16	7.71	11.8	8.54	7.6	8.54	**4.82**	**3.87**	**3.82**	**4.46**	6.6
PCCMP-4	6.92	7.71	11.9	8.36	7.49	8.36	**4.35**	**3.42**	**3.12**	**3.84**	6.73
PCCMP-5	6.86	7.63	11.9	8.48	7.45	8.48	**3.67**	**2.67**	**2.51**	**3.11**	6.56
PCCMP-6	6.79	7.54	12	8.35	7.48	8.35	**4.44**	**2.51**	**2.3**	**3.95**	6.59

Table 4-5

PCCMP Dissolved Oxygen Results – Wet Weather after a CSOTF Discharge (mg/L)

Sample Site	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Nov 2016	Dec 2016	Jan 2017	Mar 2017	Apr 2017	Apr 2017	May 2017
PCCMP-1	6.09	8.29	7.07	11.2	8.57	6.97	8.63	7.68	7.43	6.47	6.09	6.82
PCCMP-2	7.57	7.32	7.33	11.1	8.98	7.95	8.55	7.54	7.18	7.38	6.41	6.69
CSOTF 002	6.46	**4.15**	-	**4.03**	8.54	8.16	7.99	8.05	**4.24**	7.47	6.66	**4.24**
PCCMP-3	7.41	7.29	7.69	10.8	8.71	7.86	8	7.37	6.99	6.99	6.46	6.53
CSOTF 003	-	-	8.22	-	9.71	7.62	-		-	7.77	7.85	-
PCCMP-4	7.9	7.49	7.54	11	8.83	7.76	-	7.38	7.14	6.78	6.42	6.35
PCCMP-5	7.71	7.49	7.43	11	8.72	7.54	-	7.37	6.94	6.93	6.5	6.67
PCCMP-6	7.67	7.42	7.52	11	8.64	7.19	-	7.44	6.88	6.96	6.34	6.61

Figure 4-3

PCCMP Dissolved Oxygen Results – Dry Weather

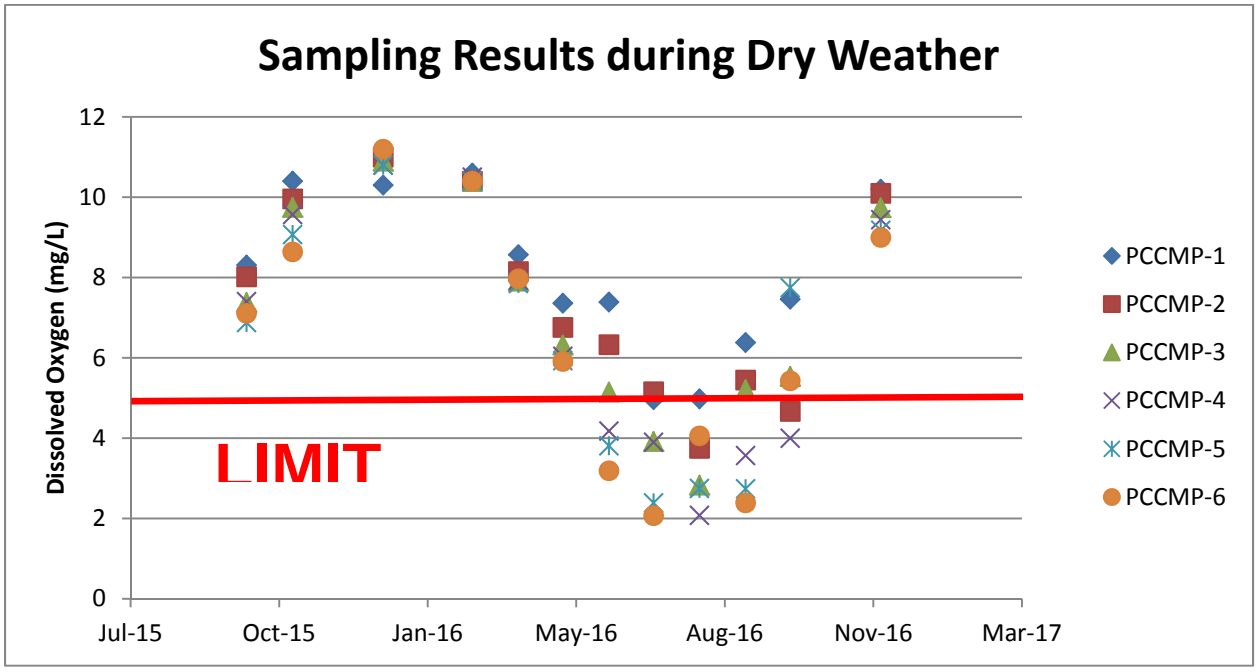


Figure 4-4

PCCMP Dissolved Oxygen Results – Wet Weather

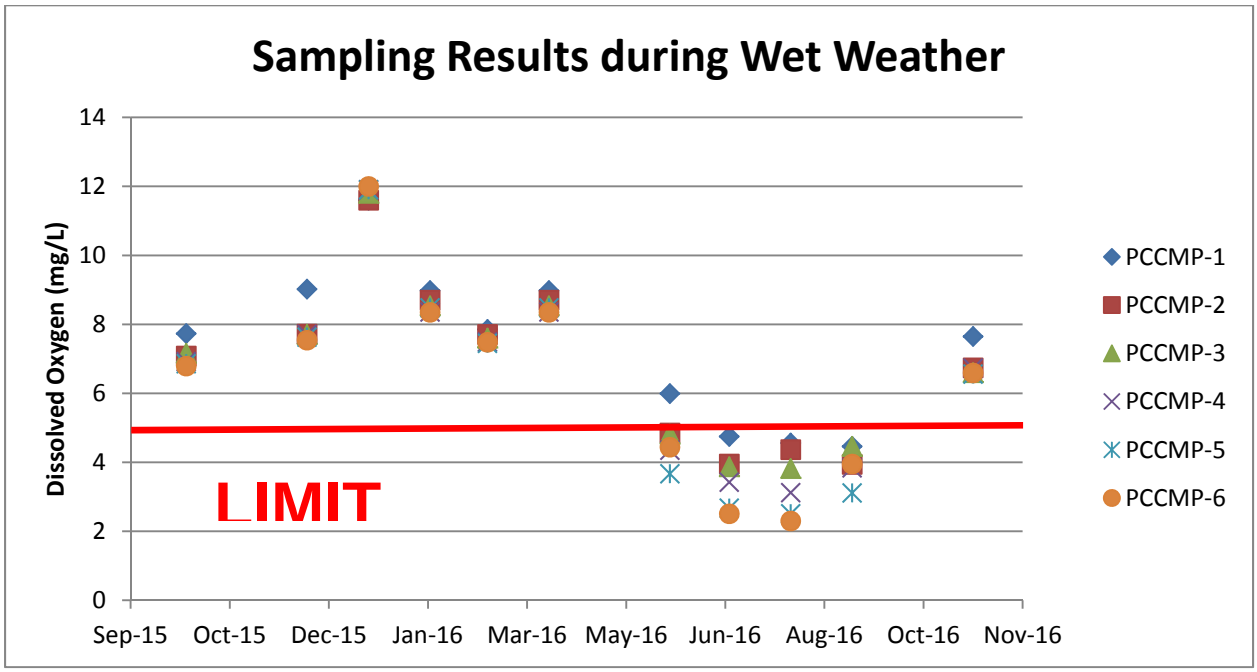
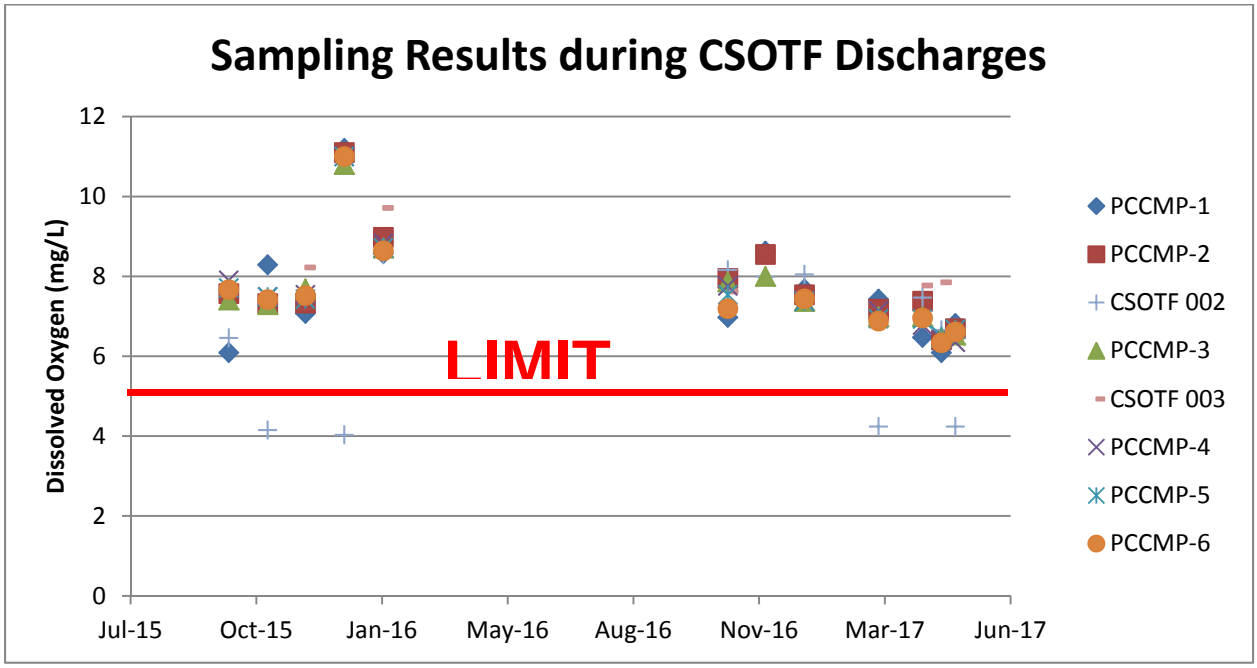


Figure 4-5

PCCMP Dissolved Oxygen Results – Wet Weather After a CSOTF Discharge



The results of the dry weather DO concentrations above in Table 4-3 and Figure 4-3 demonstrate that the creek was in compliance with DO (greater than 5 mg/L) in the representative winter and spring months but dropped below for the summer and fall months. As mentioned previously dry weather samples were only taken following a period of at least three (3) days of no measurable precipitation and, thus, three (3) days of no CSOTF discharges

affecting the stream. The results for the wet weather DO concentrations above in Table 4-4 and Figure 4-4 demonstrate the same point as these samples were taken following a period of at least three (3) days of no CSOTF discharges affecting the stream.

The results of the wet weather DO concentrations after a CSOTF discharge above in Table 4-5 and Figure 4-5 demonstrate that the creek was always in compliance with DO in the representative months regardless of whether the discharge DO concentration is below 5 mg/L. CSOTF 002 DO discharge concentration fell below acceptable limits in November and January 2016 and March and May 2017 but the receiving stream did not experience the same drop at PCCMP-3 through 6. CSOTF 003 did not experience DO concentrations below the limit during any of the sampling events.

The data indicates Chattanooga Creek dropped below the required DO concentration limit of 5 mg/L as a result of natural background conditions or upstream pollution sources, not from the CSOTF discharges.

4.2.3 Compliance Verification – E. coli

The concentration limits determined above were compared to the MBWWTP lab data compiled under the PCCMP during dry weather (DW), wet weather (WW), and wet weather after a CSOTF discharge (WR). The E. coli results of each event type is shown below for each stream site and CSOTF (if applicable) in Table 4-6, 4-7, and 4-8A & B and Figure 4-6, 4-7, and 4-8, respectively. Any concentrations that are not in compliance are displayed in bold.

Table 4-6

PCCMP E. coli Results – Dry Weather (CFU/100mL)

Sample Site	Oct 2015	Nov 2015	Jan 2016	Mar 2016	April 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016
PCCMP-1	148	126	104	104	20	244	216	170	62	126	126	148	82
PCCMP-2	104	104	194	104	170	148	296	20	196	104	104	104	124
PCCMP-3	148	168	172	20	104	104	150	126	**2220**	244	146	148	146
PCCMP-4	322	172	312	432	196	402	**8700**	550	290	264	104	322	220
PCCMP-5	398	244	194	194	316	170	672	82	148	62	20	398	268
PCCMP-6	150	126	196	168	20	216	194	104	218	20	40	150	214
PCCMP-6D	268	196	390	122	82	126	310	-	218	20	40	268	104
PCCMP-6B	1	1	1	1	1	1	1	-	1	1	1	1	1

Table 4-7

PCCMP E. coli Results – Wet Weather (CFU/100mL)

Sample Site	Oct 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	April 2016	June 2016	July 2016	Aug 2016	Sept 2016	Nov 2016
PCCMP-1	**2160**	216	**6150**	60	**6150**	856	316	378	576	**1760**	**6900**
PCCMP-2	**3000**	**1680**	**4130**	40	**4560**	**1870**	290	82	172	**2630**	**2970**

Sample Site	Oct 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	April 2016	June 2016	July 2016	Aug 2016	Sept 2016	Nov 2016
PCCMP-3	**2630**	**992**	**3210**	62	**7310**	**1350**	216	462	672	**1540**	**5230**
PCCMP-4	**2290**	**1090**	**2880**	374	**6150**	852	844	746	**2520**	**2140**	**7310**
PCCMP-5	**1980**	864	**2710**	148	**5820**	**1470**	172	570	**1130**	**2220**	**8210**
PCCMP-6	**2360**	**1550**	**3450**	150	**4370**	862	40	20	270	**11000**	**12300**
PCCMP-6D	**2150**	**1350**	**2930**	62	**4760**	**1010**	62	-	292	**9220**	**11600**
PCCMP-6B	1	1	1	1	1	1	1	-	1	1	1

Table 4-8A

PCCMP E. coli Results – Wet Weather after a CSOTF Discharge (CFU/100mL)

Sample Site	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Nov 2016	Dec 2016
PCCMP-1	**2340**	**8210**	**4200**	850	**1990**	**12600**	**980**
PCCMP-2	**34700**	**14500**	**8700**	630	**12400**	**13500**	630
CSOTF 002	**48400***	**48400***	-	**242000***	**242000**	**260000**	**484000**
PCCMP-3	**48400***	**48400***	**15400**	**3690**	**16600**	**112000**	**5040**
CSOTF 003	-	-	**199000**	-	**10800**	**173000**	-
PCCMP-4	**48400***	**34700**	**12300**	**2690**	**13700**	**92100**	-
PCCMP-5	**48400***	**28300**	**22400**	**1870**	**13100**	**61300**	-
PCCMP-6	**48400***	**28300**	**31100**	**1870**	**15200**	**81600**	-
PCCMP-6D	**48400***	**28300**	**28300**	**1870**	**12800**	**61300**	-
PCCMP-6B	1	1	1	1	1	1	-

* Designates sample was not fully diluted yielding a concentration potentially greater than what is shown

Table 4-8B

PCCMP E. coli Results – Wet Weather after a CSOTF Discharge (CFU/100mL)

Sample Site	Jan 2017	Mar 2017	Apr 2017	Apr 2017	May 2017
PCCMP-1	**34500**	**12200**	**22500**	410	**10400**
PCCMP-2	**16200**	**8780**	**17200**	**6770**	**18600**
CSOTF 002	**311000**	**980000**	**52300**	**242000**	**241000**
PCCMP-3	**17200**	**22800**	**30800**	**15500**	**12100**
CSOTF 003	-	-	**45600**	**3550**	-
PCCMP-4	**24900**	**12600**	**28500**	**18600**	**10500**
PCCMP-5	**16100**	**16100**	**38700**	**23800**	**15200**
PCCMP-6	**21000**	**17200**	**18600**	**24800**	**34500**

Sample Site	Jan 2017	Mar 2017	Apr 2017	Apr 2017	May 2017
PCCMP-6D	**21400**	**15000**	**18600**	**36500**	**23800**
PCCMP-6B	1	1	1	100	1

Figure 4-6

PCCMP E.coli Results – Dry Weather

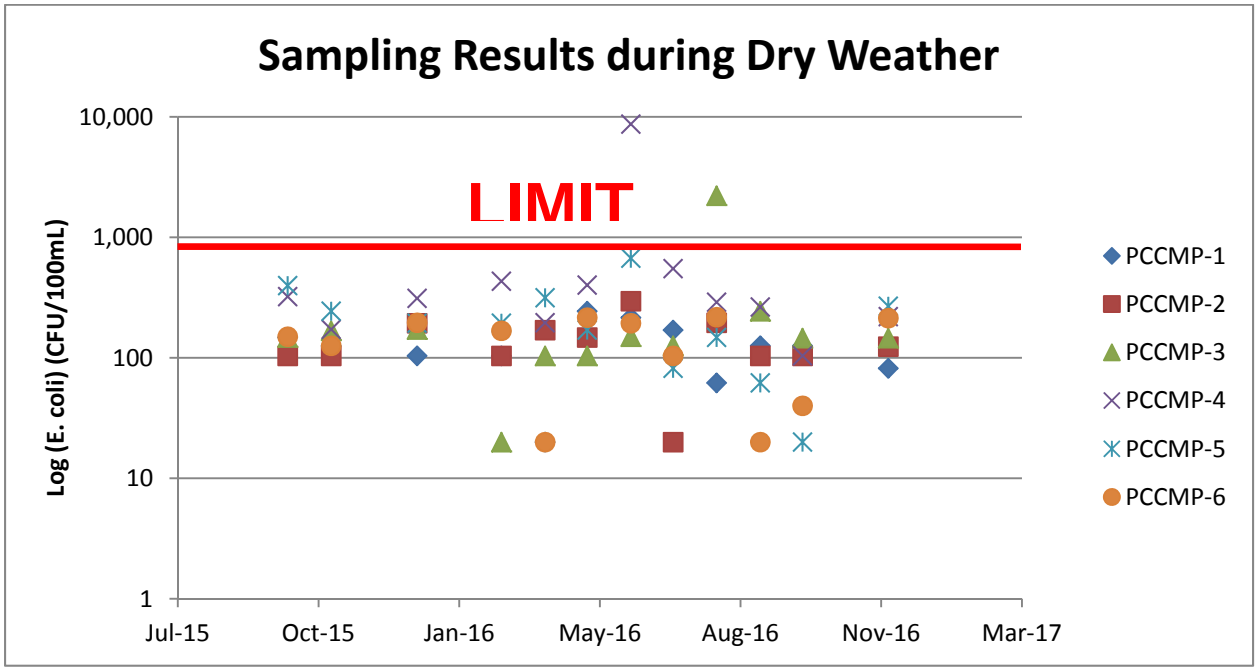


Figure 4-7

PCCMP E.coli Results – Wet Weather

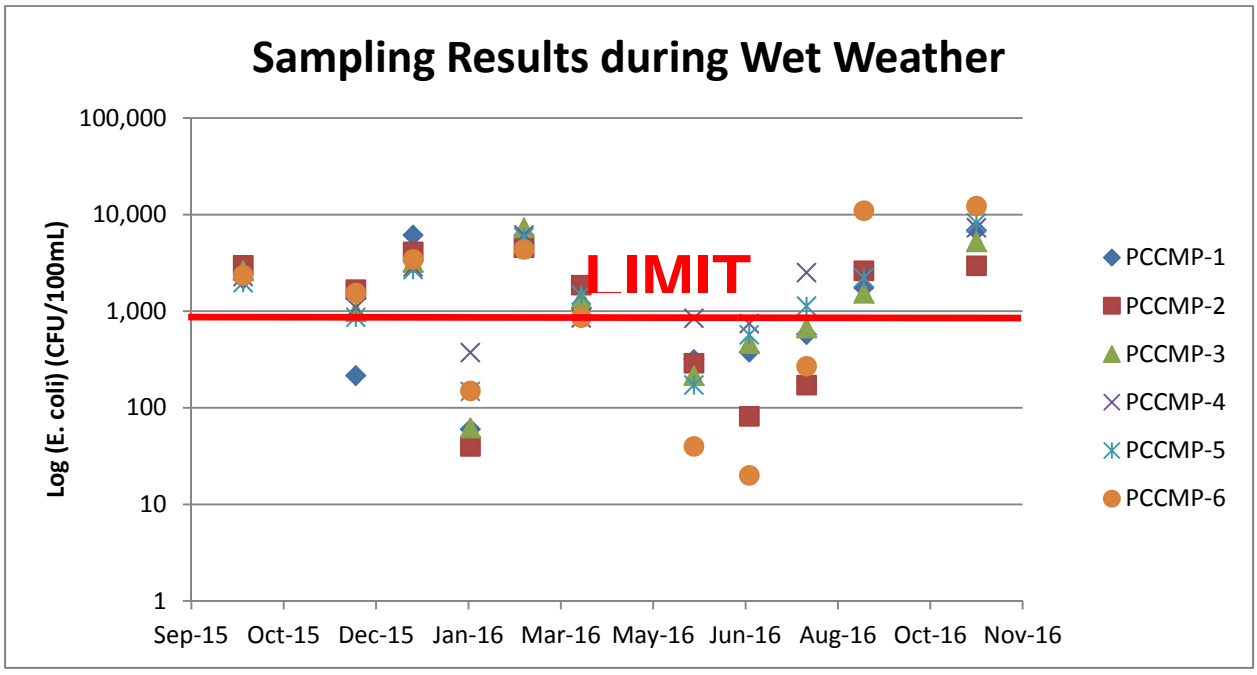
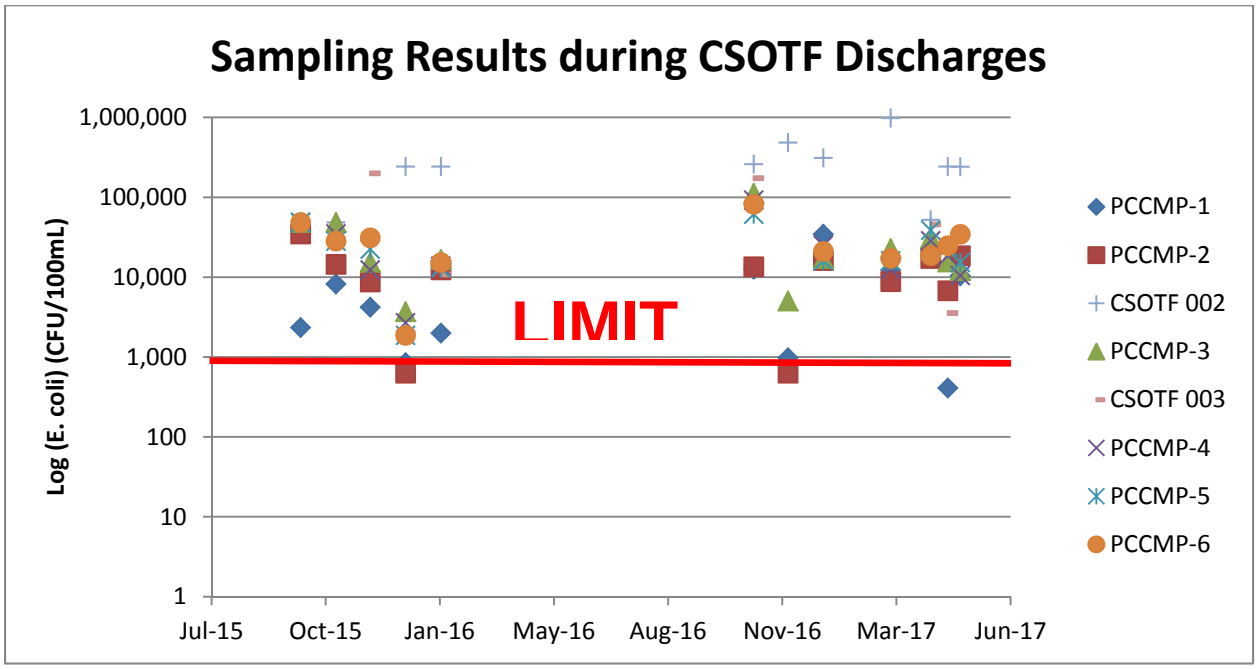


Figure 4-8

PCCMP E.coli Results – Wet Weather After a CSOTF Discharge



The results of the dry weather E.coli concentrations above in Table 4-6 and Figure 4-6 demonstrate that the creek was largely in compliance with E.coli (less than 941 CFU/100mL) with a couple exceptions. These exceptions were verified with the MBWWTP lab as being legitimate values and demonstrate the potential point sources other than the City's CSOTFs. As mentioned previously dry weather samples were only taken following a period of at least three (3) days of no measurable precipitation and, thus, three (3) days of no CSOTF discharges affecting the stream. The results for the wet weather E.coli concentrations above in Table 4-7 and Figure 4-7 demonstrate the same point as these samples were taken following a period of at least three (3) days of no CSOTF discharges affecting the stream. Majority of the wet weather sampling events yielded stream concentrations above the allowable limit suggesting major upstream contributors of E. coli unrelated to the City's CSOTFs.

The results of the wet weather E. coli concentrations above in Table 4-8A & B and Figure 4-8 demonstrate that the CSOTF discharges are potentially impacting the receiving stream; however, in almost every case, the ambient receiving stream is already not in compliance (PCCMP-2). The Channel Master data indicated no reservoir conditions affected Chattanooga Creek during the monitored CSOTF events so the elevated ambient levels were caused by other point source pollutants. Because of the ambient E. coli concentration is above allowable limits, the City's treatment goal will be directed towards a discharge that will be fully diluted in Chattanooga Creek by the end of the near-field mixing zone.

4.2.4 Results Summary

In summary, field sampling results prior to modeling were used to determine whether the CSOTF discharges were impacting the stream. DO concentrations fell below acceptable levels

during summer months due to temperature. Because DO fluctuates based on temperature, salinity, or pressure changes, these results were to be expected. DO and temperature are inversely related so as the temperature rises in the summer, the DO decreases. There were no observed CSOTF discharge DO effects downstream of the outfalls. E. coli results showed elevated creek concentrations during dry and wet weather sampling events when there was not a CSOTF discharge indicating major upstream contributors of E. coli distinct from the City's outfalls. There were observed CSOTF E. coli discharge effects that could potentially require additional CSO controls. The data collected at CSOTF and receiving stream sampling points were used to parameterize the receiving water model as presented in Section 5 Receiving Water Modeling below.

Chattanooga Creek PCCMP Sample Locations

Figure 4-1

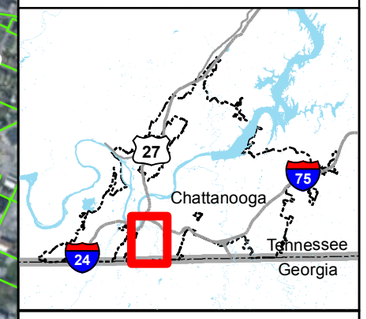
Legend

- CSO Facility
- Outfall Location
- PCCMP Sample Location
- Sewer Pressurized Mains
- Sewer Gravity Mains
- State Boundary
- River/Stream

0 350 700 1,400 Feet

N

NAD 1983 StatePlane Tennessee FIPS 4100 Feet



Map Created: 3/10/2014 10:22:58 AM

Project #: C6A02300

Author: Rogers, Jonathan

JACOBS

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Path: J:\C6A02300\GIS\MXD\Chattanooga Creek PCCMP Sample Locations - LTCP Figure 2-1.mxd

Chattanooga Rain Gauge Locations

Figure 4-2

Legend

- CSO Facility
- Rain Gauges

RG01
RG02
RG03
RG04
RG05
RG06
RG07
RG08
RG09
RG10
RG11
RG 12

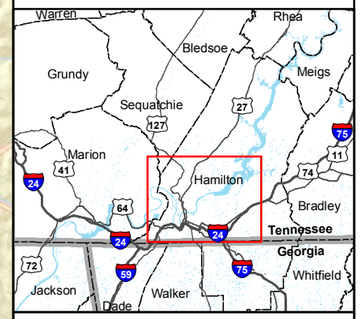
Williams Street CSO Treatment Facility

Central Avenue CSO Treatment Facility

0 1,800 3,600 7,200 Feet

NAD 1983 StatePlane Tennessee FIPS 4100 Feet

N



Map Created: 3/31/2014 5:48:49 PM

Project #: C6A02300

Author: Rogers, Jonathan

Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

JACOBS

Path: J:\C6A02300\GIS\MXD\Chattanooga Rain Gauge Locations - LTCP Figure 2-2.mxd

5.0 Receiving Water Modeling

Receiving water quality modeling is not an exact science and generally provides order of magnitude accuracy. Monitoring and sampling data, though more expensive than modeling, are generally better than the model predictions. Modeling is generally performed in lieu of monitoring and sampling due to time and budget constraints. Because this study collected ample monitoring and sampling data, modeling was not necessary, but it was done anyway because it was proposed in the PCCMP.

The City utilized a receiving water quality model in order to assess the impact of the two (2) CSOTFs discharges on Chattanooga Creek, as required by the PCCMP. Cornell Mixing Zone Expert System (Cormix), a USEPA-supported mixing zone model, was used to predict a downstream plume based on an actual point of discharge.

As mentioned previously, the field sampling results showed the City's CSOTF discharges were not affecting the stream in terms of DO so this parameter was not modeled. E. coli was modeled for both Central and Williams CSOTFs as the field sampling results indicated the facilities were potentially impairing the stream. The subsections below describe the development of the Cormix model scenarios, the results and analysis, and conclusions.

5.1 Cormix Model Development

The Cormix model requires inputs for the effluent water quality and flow parameters, ambient water quality and flow parameters, stream schematization, discharge structure configuration, and any specified mixing zone parameters such as water quality standards or mixing zones.

5.1.1 Effluent Data

The model inputs characterizing the effluent flow and water quality is detailed below.

5.1.1.1 Decay Coefficient

E. coli is a non-conservative pollutant assumed to undergo a first-order decay rate once discharged into a stream. The decay coefficient was chosen to be 1.32/day based on Table 6-1 Coliform Decay Rates for the Tennessee River taken from the CE QUAL W2 water quality model user manual and is shown below in Table 5-1.

Table 5-1

CE Qual W2 User Manual Fecal Coliform Decay Coefficients

Table 6-1: Coliform Decay Rates

Location	Season/ Temperature	Rate, *day-1*	Reference
Ohio River	Summer, 20°C	1.18	Frost and Streeter, 1924
Ohio River	Winter, 5°C	1.08	Frost and Streeter, 1924
Upper Illinois River	June-September	2.04	Hoskins, et al, 1927
Upper Illinois River	October-May	2.52, 0.89	Hoskins, et al, 1927
Upper Illinois River	December-March	0.57, 0.62	Hoskins, et al, 1927
Upper Illinois River	April-November	1.03, 0.70	Hoskins, et al, 1927
Missouri River	Winter	0.48	Kittrell and Furfari, 1963
Tennessee River	Summer	1.03, 1.32	Kittrell and Furfari, 1963
Tennessee River	Summer	1.32	Kittrell and Furfari, 1963
Sacramento River	Summer	1.75	Kittrell and Furfari, 1963
Cumberland River	Summer	5.52	Kittrell and Furfari, 1963
Leaf River, MS		0.41	Mahloch, 1974
Wastewater lagoon	7.0-25.5°C	0.20-0.70	Klock, 1971
Maturation ponds	19°C	1.68	Marais, 1974
Oxidation ponds	20 °C	2.59	Marais, 1974

5.1.1.2 Discharge Concentration (Excess)

Cormix does not have individual inputs for effluent and ambient pollutant concentrations. Instead, the discharge concentration in excess of the ambient must be defined. MBWWTP lab data from the PCCMP field sampling was used to calculate the excess concentration. For Central CSOTF scenarios, PCCMP-2 data was used as the ambient. For Williams CSOTF scenarios, PCCMP-3 data was used as the ambient. Flow data from the Channel Master indicated no backflow conditions were present during the discharge events. Thus, the ambient data at these locations upstream of the outfalls are considered to be true indications of the ambient, unaffected by discharge concentrations.

5.1.1.3 Effluent Flow Rate

Central CSOTF calculates volume from a weir equation based on measured depth and duration over the effluent weir at the facility. The average flow was used for the effluent flow rate for Central CSOTF. Williams CSOTF has a flow meter installed in the discharge piping to the river. The peak flow was used for the effluent flow rate for Williams CSOTF. The CSO Discharge Reports and Williams outfall meter used to calculate Central and Williams CSOTF flows, respectively, are included in Appendix D and E.

5.1.1.4 Effluent Temperature

MBWWTP lab data from the PCCMP field sampling was used for the effluent temperature.

5.1.2 Stream Characterization

The model inputs characterizing the stream schematization and ambient flow is detailed below.

5.1.2.1 Stream Schematization

Cormix assumes a uniform rectangular cross-section so a stream schematization is required to determine a constant average depth and width. Chattanooga Creek bathymetric surveys were performed at approximately 200', 500', and 1000' downstream of each outfall. The depth and width was determined from the cross-section at each location and then a weighted average was used to create the uniform cross-section for each scenario. The stage was determined from staff gage measurements taken at each outfall during the sampling events. The bathymetric surveys are included in Appendix F.

Depth at discharge is a separate depth measurement that characterizes the local depth at the discharge location which may be different from the average depth of the stream reach. Staff gage measurements were also used to determine this depth. Far-field results are dependent on average depth while near-field measurements are dependent on the depth at discharge.

The stream was determined to be a bounded cross-section with a slight meander channel appearance for both Central and Williams CSOTF scenarios.

5.1.2.2 Wind Speed

The *Cormix User Manual: A Hydrodynamic Mixing Zone Model and Decision Support System for Pollutant Discharges into Surface Waters*, December 2007, states 2 m/s should be used to represent conservative design conditions for wind speed if field data is not available.

5.1.2.3 Ambient Flow Rate

The Channel Master peak flow measured during the events was used as the ambient flow rate.

5.1.2.4 Ambient Temperature

MBWWTP lab data from the PCCMP field sampling was used for the ambient temperature which was assumed to be uniformly distributed.

5.1.2.5 Manning's n

Manning's n must be specified to categorize channel roughness. Table 4.3 of the Cormix user manual, shown in Table 5-2 below, provides a guide for roughness values. 0.025 was assumed and categorized Chattanooga Creek as a clean and straight natural river.

Table 5-2

Cormix User Manual Channel Roughness Values

Table 4.3 *Typical values for channel roughness*

Channel type	Manning's n
Smooth earth channel, no weeds	0.020
Earth channel, some stones and weeds	0.025
Clean and straight natural rivers	0.025 - 0.030
Winding channel, with pools and shoals	0.033 - 0.040
Very weedy streams, winding, overgrown	0.050 - 0.150
Clean straight alluvial channels	$0.031\ d^{1/6}$
(d = 75% sediment grain size in feet)	

5.1.3 Discharge Data

Characterizing the Cormix1 Single Port outfall configuration requires establishing a reference coordinate system and outfall port specification. The vertical angle THETA references the outfall pipe's orientation to the positive y-axis along the cross-section. Both outfalls are oriented perpendicular to the stream bottom so this value is 0°.The horizontal angle SIGMA references the outfall pipe's orientation to the positive x-axis downstream. Both outfalls are oriented perpendicular to the flow direction so this value is 90°.

The nearest bank for both outfalls is the right as seen by an observer looking downstream in the direction of flow. The distance to the nearest bank for both outfalls is 0'. The port diameter for Central and Williams CSOTFs is 7' and 4', respectively.

The port height above the channel bottom must also be specified but Cormix has different requirements for this input depending on whether the discharge is submerged or not. With varying stages, each outfall's discharge was submerged or above surface depending on the event. For submerged discharges, the height of the port is the center of the port above the channel bottom. For above surface discharges, the height of the port is the center of the port above the water surface.

5.1.4 Mixing Zone Data

E. coli is a non-toxic effluent and Chattanooga Creek does not have a specified mixing zone or water quality standard.

5.1.5 Scenarios

The PCCMP section of the CD required near-field and far-field water quality models be employed to predict the area of impact from the CSOs. Outfall design conditions, initial jet characteristics, and buoyancy flux are most likely to effect in-stream concentrations in the near-field region of the receiving stream. Ambient flow and density differential are most likely to effect in-stream concentrations in the far-field. The field sampling data indicates the CSOTFs are not impacting the stream in terms of DO; however, sampling data and modeling results suggest the facilities are potentially impacting the stream in terms of E. coli. For this reason, the pollutant focus for the Cormix model scenarios was on E. coli, only, and not DO. The City ran six (6) scenarios, detailed in Table 5-3 below, for each facility in the near-field and far-field for the average case E. coli concentration. During the monitoring period, Williams CSOTF only discharged when Central CSOTF discharged. According to the CSOTF operator, this is the standard relationship between these two facilities. Thus, separate scenarios were modeled when Central CSOTF was discharging in the same event as Williams CSOTF and when Central CSOTF was the only Chattanooga Creek CSOTF discharging . The PCCMP document stated these models would be calibrated with one (1) event and validated with two (2) additional events. The near-field models could not be calibrated because the downstream field samples were significantly further downstream than where Cormix predicted the near-field region ended. Between events, the excess pollutant concentration, discharge flow, ambient flow, discharge temperature, ambient temperature, and stream schematization changed. These six (6) scenarios could not be validated because of the Cormix requirements discussed previously.

Table 5-3

Cormix Scenarios

Scenario	CSOTF Modeled	CSOTFs Discharging	E. coli Concentration	Near-Field/Far-Field
1	Central	Central and Williams	Average	Near-Field
2	Central	Central and Williams	Average	Far-Field
3	Central Only	Central	Average	Near-Field
4	Central Only	Central	Average	Far-Field
5	Williams	Williams	Average	Near-Field
6	Williams	Williams	Average	Far-Field

In general, the difference between near-field and far-field modeling inputs started with the stream schematization. The near-field schematization weighted average gives a heavier weight to the 250’ downstream cross-section. For the far-field, the weighted average carries a heavier weight on the 500’ and 1000’ cross sections than the 250’ cross section so width and average depth changes. In scenarios where the relationship between local and average depth do not meet Cormix design requirements, preferential treatment is given to local depth for near-field and average depth for far-field. In scenarios where the relationship between local depth and port diameter do not meet Cormix design requirements, preferential treatment is given to local depth in the near-field and port diameter in the far-field.

5.2 Results and Analysis

The results of the six (6) Cormix scenarios are described below. Cormix model outputs and mixing plots are included in Appendix G.

5.2.1 Scenario 1 – Central CSOTF, Near-field, Williams CSOTF Also Discharging

The April 27, 2017, sampling event was modeled in Scenario 1. Central and Williams CSOTFs were discharging in this scenario but only Central CSOTF was modeled. E. coli was the pollutant being modeled. Outfall geometry and stream schematization values favored a near-field focus in this scenario.

The results of this scenario indicate the flow class is NH5, which indicates a hydro dynamically unstable plume. The negatively buoyant plume becomes diluted to a concentration of 27,019 CFU/100mL in the near-field mixing region and becomes fully vertically mixed in the near-field. This concentration is higher than the established limit of 941 CFU/100mL suggesting additional CSO controls would be needed at Central CSOTF.

5.2.2 Scenario 2 – Central CSOTF, Far-field, Williams CSOTF Also Discharging

The April 27, 2017, sampling event was modeled in Scenario 2. Central and Williams CSOTFs were discharging in this scenario but only Central CSOTF was modeled. E. coli was the pollutant being modeled. Outfall geometry and stream schematization values favored a far-field focus in this scenario.

The results of this scenario indicate the flow class is NH4A5, which indicates a hydro dynamically unstable plume. The negatively buoyant plume becomes diluted to a concentration of 67,019 CFU/100mL in the near-field mixing region and becomes fully vertically mixed in the near-field. This concentration is higher than the established limit of 941 CFU/100mL suggesting additional CSO controls would be needed at Central CSOTF.

Cormix indicated the near-field region ended at 22.6’ downstream of the outfall. Far-field modeling results were calibrated within 21% accuracy at the four (4) downstream PCCMP sampling sites, which is within the 50% stated accuracy of Cormix. Variances could be attributed to the Williams CSOTF discharges impacting the downstream concentrations that could not be modeled under the Central CSOTF scenario.

5.2.3 Scenario 3 – Central CSOTF, Near-field, Williams CSOTF Not Discharging

The January 20, 2017, sampling event was modeled in Scenario 3. Only Central CSOTF was discharging in this scenario. E. coli was the pollutant being modeled. Outfall geometry and stream schematization values favored a near-field focus in this scenario.

The results of this scenario indicate the flow class is IPH5, which indicates a hydro dynamically unstable plume. The positively buoyant plume becomes diluted to a concentration of 54,702 CFU/100mL in the near-field mixing region and becomes fully vertically mixed in the near-field. This concentration is higher than the established limit of 941 CFU/100mL suggesting additional CSO controls would be needed at Central CSOTF.

5.2.4 Scenario 4 – Central CSOTF, Far-field, Williams CSOTF Not Discharging

The January 20, 2017, sampling event was modeled in Scenario 4. Only Central CSOTF was discharging in this scenario. E. coli was the pollutant being modeled. Outfall geometry and stream schematization values favored a far-field focus in this scenario.

The results of this scenario indicate the flow class is H5-90, which indicates a hydro dynamically unstable plume. The positively buoyant plume becomes diluted to a concentration of 28,832 CFU/100mL in the near-field mixing region and becomes fully vertically mixed in the near-field. This concentration is higher than the established limit of 941 CFU/100mL suggesting additional CSO controls would be needed at Central CSOTF.

Cormix indicated the near-field region ended at 768.27’ downstream of the outfall. Far-field modeling results were calibrated within 24% accuracy at one (1) downstream PCCMP sampling site, which is within the 50% stated accuracy of Cormix. The model did not predict results outside the near-field region for this scenario.

5.2.5 Scenario 5 – Williams CSOTF, Near-field, Central CSOTF Also Discharging

The April 23, 2017, sampling event was modeled in Scenario 5. Central and Williams CSOTFs were discharging in this scenario but only Williams CSOTF was modeled. E. coli was the pollutant being modeled. Outfall geometry and stream schematization values favored a near-field focus in this scenario.

The results of this scenario indicate the flow class is IPH4A2I. The positively buoyant plume becomes diluted to a concentration of 32,716.CFU/100mL in the near-field mixing region. This concentration is higher than the established limit of 941 CFU/100mL suggesting additional CSO controls would be needed at Williams CSOTF.

5.2.6 Scenario 6 – Williams CSOTF, Far-field, Central CSOTF Also Discharging

The April 23, 2017, sampling event was modeled in Scenario 6. Central and Williams CSOTFs were discharging in this scenario but only Williams CSOTF was modeled. E. coli was the pollutant being modeled. Outfall geometry and stream schematization values favored a far-field focus in this scenario.

The results of this scenario indicate the flow class is H2A2. The positively buoyant plume becomes diluted to a concentration of 31,385 CFU/100mL in the near-field mixing region. This concentration is higher than the established limit of 941 CFU/100mL suggesting additional CSO controls would be needed at Williams CSOTF.

5.3 Conclusion

Cormix was used to predict the impact of CSOTF discharges on the receiving stream when Central CSOTF was discharging only and when both Central and Williams CSOTFs were discharging. Williams CSOTF did not discharge alone in any event during the monitoring period, and, thus, could not be calibrated. The results of each of the six (6) scenarios predicted near-field E. coli concentrations significantly higher than the established limit of 941 CFU/100mL. The field sampling and modeling results suggest additional CSO controls are needed at both Central and Williams CSOTFs.

6.0 Alternatives Analysis and Recommendations

The goal of the AOP was to complete a sampling plan to determine if the CSOTFs are a major cause of pollution to Chattanooga Creek. The field sampling data indicates the CSOTFs are not impacting the stream in terms of DO; however, sampling data and modeling results suggest the CSOTFs are potentially impacting the stream in terms of E. coli. For this reason, the City has begun evaluating additional treatment alternatives. Sodium hypochlorite, ultraviolet (UV) disinfection, and peracetic acid (PAA) have been evaluated for each facility in terms of discharge frequency, duration, total volume, and water quality characteristics such as E. coli, total suspended solids (TSS), and UV transmittance (UTV). The advantages and disadvantages of each alternative are described below as well as a lifecycle cost analysis.

6.1 Description of Disinfection Alternatives

6.1.1 Sodium Hypochlorite

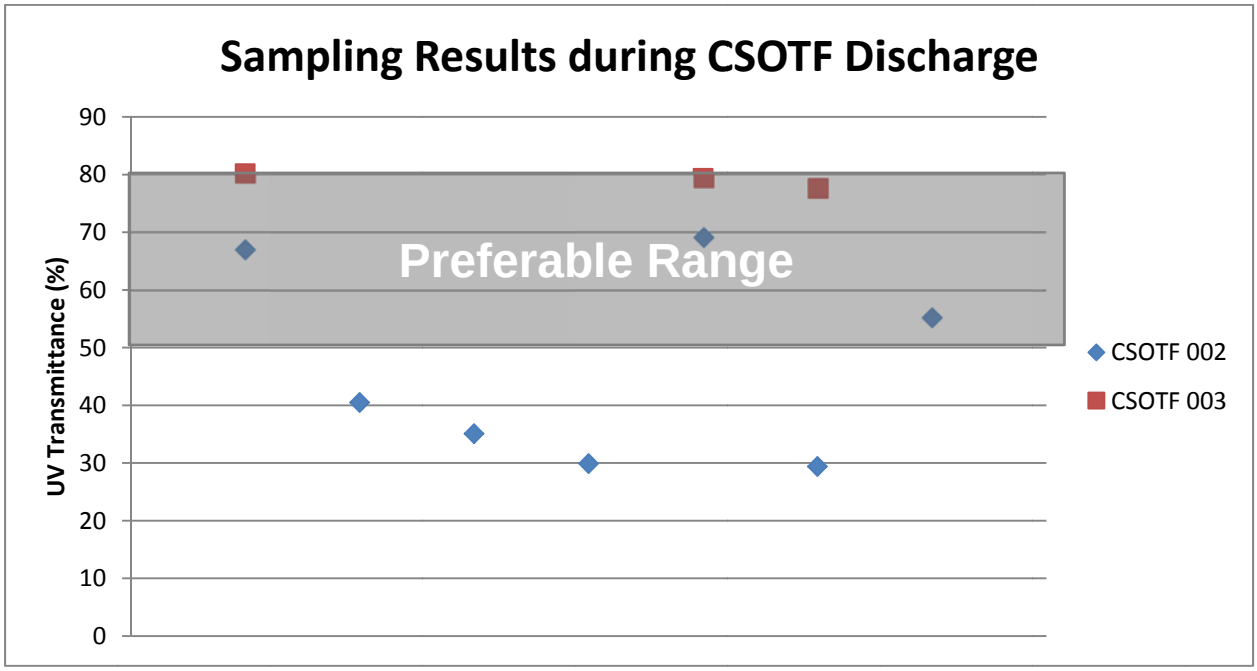
Sodium hypochlorite is a widely used treatment method for E. coli and fecal coliform in sewage treatment. The advantage to using this method is usually the low cost in comparison to other treatment types. There are several disadvantages to implementing this alternative for our application. First, disinfection with sodium hypochlorite requires a contact time of 30 minutes. During a high intensity storm event where combined sewer flows need to be treated quickly before discharging to the receiving stream, there is potential for poor performance. Second, dosing the combined sewage with sodium hypochlorite would lead to discharging chlorine to Chattanooga Creek so the regulatory agency will likely require de-chlorination. If this is the case, the facility may not have the facility structures to do so. The added capital and operation costs associated with de-chlorination may lead to another alternative being the cheaper option. Third, sodium hypochlorite has degradation issues in storage that limit its efficacy/strength over long periods of time.

6.1.2 UV Disinfection

The applicability and cost effectiveness of using UV disinfection depends greatly on the UVT. UVT is the measurement of the amount of UV light that is able to pass through a particular water sample in comparison to a pure water sample. The higher the UVT percentage, the less UV disinfection that will be needed yielding less expensive capital and annual costs. UV transmittance was added to the PCCMP lab analysis list towards the end of the sampling program when the monitoring data for E. coli suggested additional CSO controls would potentially be required. The results displayed below in Figure 6-1 show Williams CSOTF (Outfall 003) would be a potential candidate for UV disinfection while Central CSOTF (Outfall 002) would not because 50-80% UVT is the preferable range for UV disinfection to be most cost effective. More UV equipment would be required to disinfect combined sewage below that range.

Figure 6-1

CSOTF Lab Results for UVT



Although Williams CSOTF may be a good candidate for UV disinfection based on UVT, there are several other disadvantages that must be considered. First, when dealing with high flow variability, as is common with these facilities, you must always design for the worst case scenario. A peak flow design would have very high capital costs and the facility may only be utilized a few times a year. Second, UV has higher capital costs due to the installation and equipment needed for this alternative. Third, when dealing with intermittent flow, as is common with these facilities, the ballasts and bulbs would turn on and off frequently, eventually wearing out and increasing the annual cost of this alternative.

6.1.3 Peracetic Acid

PAA is a sewage disinfectant alternative that has been used in Europe for decades but is not widely used in the US (Martin, 2014). For that reason, PAA is currently more expensive than chlorine but recent trends indicate that it will become less expensive as its usage becomes more widespread in wastewater disinfection. With cost being potentially the only disadvantage to PAA, there are several advantages to consider. First, the contact time for PAA is 7-10 minutes, which is significantly lower than that of sodium hypochlorite. A shorter contact time would ensure proper treatment in a CSOTF application where the facilities experience high intensity intermittent flows. Second, PAA byproducts, acetic acid and hydrogen peroxide and then eventually oxygen and water, are organic compounds so additional facility structures are not needed to remove any potentially harmful byproducts produced by the disinfectant (Bell, 2016). Third, PAA disinfection causes DO to increase in the effluent (The Impact, 2016). Although the PCCMP field monitoring data showed low DO levels in the discharge did not affect the receiving stream, this is still an added bonus. Fourth, using PAA as a disinfectant does not require special risk management plans because it is not a toxic chemical like sodium

hypochlorite (Bell, 2016). Fifth, and most importantly for this application, PAA has a longer shelf-life than sodium hypochlorite (Maziuk). The CSOTFs only discharge during and after a storm event. Thus, during dry weather periods, several months can go by without a CSOTF discharge. During the PCCMP monitoring period, the CSOTFs did not discharge for nine (9) months. Although sodium hypochlorite is currently less expensive than PAA, a municipality would end up spending more money on wasted liquid chlorine because of the long periods without a CSOTF discharge.

6.2 Lifecycle Cost Analysis of Disinfection Alternatives

A lifecycle cost analysis was performed on the three (3) disinfection alternatives discussed previously. CSOTF peak flow, design volume, average event duration, average event duration, yearly event frequency was used to determine proper dosages, if applicable, and costs. Annual operating costs for sodium hypochlorite included chemical, dechlorination, and electrical costs. Annual operating costs for UV disinfection included bulb replacement and electrical costs. Annual operating costs for PAA included chemical and electrical costs. Present worth of operating costs was calculated using a 20-year life at 3% interest.

As shown in Table 6-1 and 6-2 below, sodium hypochlorite appears to be the most cost effective option for both Central and Williams CSOTFs. The chlorine degradation during storage is a significant operational issue that is not accounted for in the net present worth analysis. Thus, PAA would likely be the most cost-effective method if shelf-life was factored into the analysis. The high capital cost at both facilities for UV disinfection suggests this method is not a viable alternative for the City's application.

Table 6-1

Central CSOTF Lifecycle Cost Analysis

Item	Capital Cost	Annual Cost	Present Worth of Operating Costs	Net Present Worth
Alternative No. 1 - 12.5% Sodium Hypochlorite	$ 77,000	$ 2,800	$ 41,700	$ 118,700
Alternative No. 2 - UV Disinfection	$ 2,180,000	$ 700	$ 10,400	$ 2,190,400
Alternative No. 3 - Peracetic Acid	$ 104,000	$ 3,600	$ 53,600	$ 157,600

Table 6-2

Williams CSOTF Lifecycle Cost Analysis

Item	Capital Cost	Annual Cost	Present Worth of Operating Costs	Net Present Worth
Alternative No. 1 - 12.5% Sodium Hypochlorite	$ 78,000	$ 400	$ 6,000	$ 84,000
Alternative No. 2 - UV Disinfection	$ 550,000	$ 700	$ 10,400	$ 560,400

Item	Capital Cost	Annual Cost	Present Worth of Operating Costs	Net Present Worth
Alternative No. 3 - Peracetic Acid	$ 104,000	$ 3,700	$ 55,000	$ 159,000

6.3 Recommendation

Of the three (3) alternatives analyzed above, PAA has the potential to be the most cost-effective and safest alternative for the City's CSOTF application. The City has begun coordinating with a regional PAA vendor and plans to schedule a test run at each facility to ensure treatment viability before implementing this method fully.

7.0 Implementation Schedule

In order to implement the additional CSO controls, the City will contract out the planning and engineering design activities to a qualified consulting firm. The City will advertise the project and solicit bids from qualified contractors. Following the bid selection process, the City will contract with the chosen contractor to perform the proposed work. Major project milestones are provided in Table 7-1 below.

The detailed schedule Gantt chart is included in Appendix H. This schedule is based on assumed EPA review and approval dates shown in rows 2 to 5 of the Gantt chart. Unexpected approval delays may require an extension of the project completion date.

Table 7-1

Milestone Schedule

Milestone	Duration	Estimated Finish
Submit Project Plan to EPA	54 months from Effective Date of Consent Decree	10/24/2017
Receipt of EPA Comments	Approx. five (5) months	3/31/2018
Final EPA Review and Approval	Approx. three (3) months	6/29/2018
Design, Bid, and Award of Construction Project	Approx. two (2) years	6/8/2020
Final Construction Completion	Approx. one (1) year	6/29/2021
EPA Required Completion Date	Three (3) years from EPA approval of AOP	6/29/2021

8.0 Community Input Program

The AOP includes public education and information designed to maintain overall awareness of the CSO control measures developed as part of the City's LTCP Updates. The key elements of the City's public information sharing program are to: 1) report on progress made and the projected path forward for plan execution and 2) engage stakeholders in the decision-making process needed for implementing CSO control measure projects.

As required by the CD, this AOP will be made available to the public in the Public Document Repository (PDR) to enable for review and comment. This will be accomplished by providing a copy to the Reference Librarian at the downtown branch of the Chattanooga-Hamilton County Public Library and by posting a copy on the City's website. The public will be allowed 30 days to review and comment on the document. Comments received will be considered during a 15 day Public Comment Review Period, followed by modification and submittal to EPA and TDEC with notice to Tennessee Clean Water Network. A copy of the submitted version will be placed in the PDR.

In accordance with the CD, the City submits a Semi-Annual Work Progress Report and Annual Report to the EPA and TDEC. This report includes a summary of the status and progress toward achievement of the Performance Criteria for the CSO control measures within the previous calendar year, and a projection of the work to be performed during the current calendar year. The Annual Report provides a review of the results and analysis of the data described herein, including impacts of the CSO control measures on water quality. These documents are also available to the public on the City's website.

9.0 Distribution and Maintenance of the AOP

9.1 AOP Submittal and Availability

Copies of the AOP and amendments will be distributed to the following WRD sections and/or functional positions:

- Director;
- Deputy Director;
- Laboratory Manager;
- Plant Manager;
- Pretreatment Supervisor;
- Plant Operations Supervisor for PS and CSOTF;
- Plant Operator 3, Plant Operator 2, and Plant Operator 1 for PS and CSOTF; and
- Other personnel who may become incidentally involved in responding to AOP related issues should also review and become familiar with AOP.

9.2 AOP Review and Update

The AOP will be reviewed annually and amended as appropriate. The AOP will also be reviewed and updated as necessary by the WRD. During each review, the distribution list will be reviewed and updated as needed to include additional personnel.

Personnel involved in the review may include:

- Director;
- Deputy Director;
- Laboratory Manager;
- Plant Manager;
- Plant Operations Supervisor for PS and CSOTF;
- Plant Operator 3, Plant Operator 2, and Plant Operator 1 for PS and CSOTF; and
- Other personnel who may become incidentally involved in responding to AOP related issues should also review and become familiar with AOP.

9.3 Training

The WRD Plant Operations Supervisor for PS and CSOTF will conduct annual training for the WRD Plant Operator 3, Plant Operator 2, Plant Operator 1 for PS and CSOTF, and WRD support staff to ensure the proper implementation of this AOP. New WRD employees involved with the AOP will be trained upon hiring. Training sessions should:

- Occur annually in August;
- Be led by the Plant Operations Supervisor for PS and CSOTF;
- Review the latest version of the AOP;
- Review all forms, reports and other pertinent materials;
- Include an indoor session lasting a minimum of one (1) hour;
- Include onsite, hands-on field training for field personnel, and;
- Include all PS and CSOTF personnel, as appropriate.

Onsite field training should include a review of sampling and collection protocol and an evaluation of employee performance by the Plant Operations Supervisor for PS and CSOTF.

The Plant Operations Supervisor for PS and CSOTF will oversee the AOP implementation and field operations to ensure that the established procedures are being followed consistently and efficiently and will make recommendations to adjust training methods or schedule if necessary.

10.0 References

Bell, Kati, and Varsha Wylie. “The Age Of Peracetic Acid - A Solution To Increasingly Challenging Regulations.” Www.wateronline.com, Water Online, 1 Feb. 2016, www.wateronline.com/doc/the-age-of-peracetic-acid-a-solution-to-increasingly challenging-regulations-0001.

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The Impact of Peracetic Acid on Receiving Waters: Biochemical Oxygen Demand and Dissolved Oxygen. The Impact of Peracetic Acid on Receiving Waters: Biochemical Oxygen Demand and Dissolved Oxygen, VigorOx, 2016.

Martin, Laura. “EPA Investigates Chlorine Alternative.” Www.wateronline.com, Water Online, 19 Nov. 2014, www.wateronline.com/doc/epa-investigates-peraceticacid-as-a-=green alternative-to-chlorine-0001.

Maziuk, John. “Safer Disinfection with Paracetic Acid.” www.wateronline.com, SOLVAir Natural Solutions, www.wateronline.com/doc/safer-disinfection-with-peraceticacid-0001.

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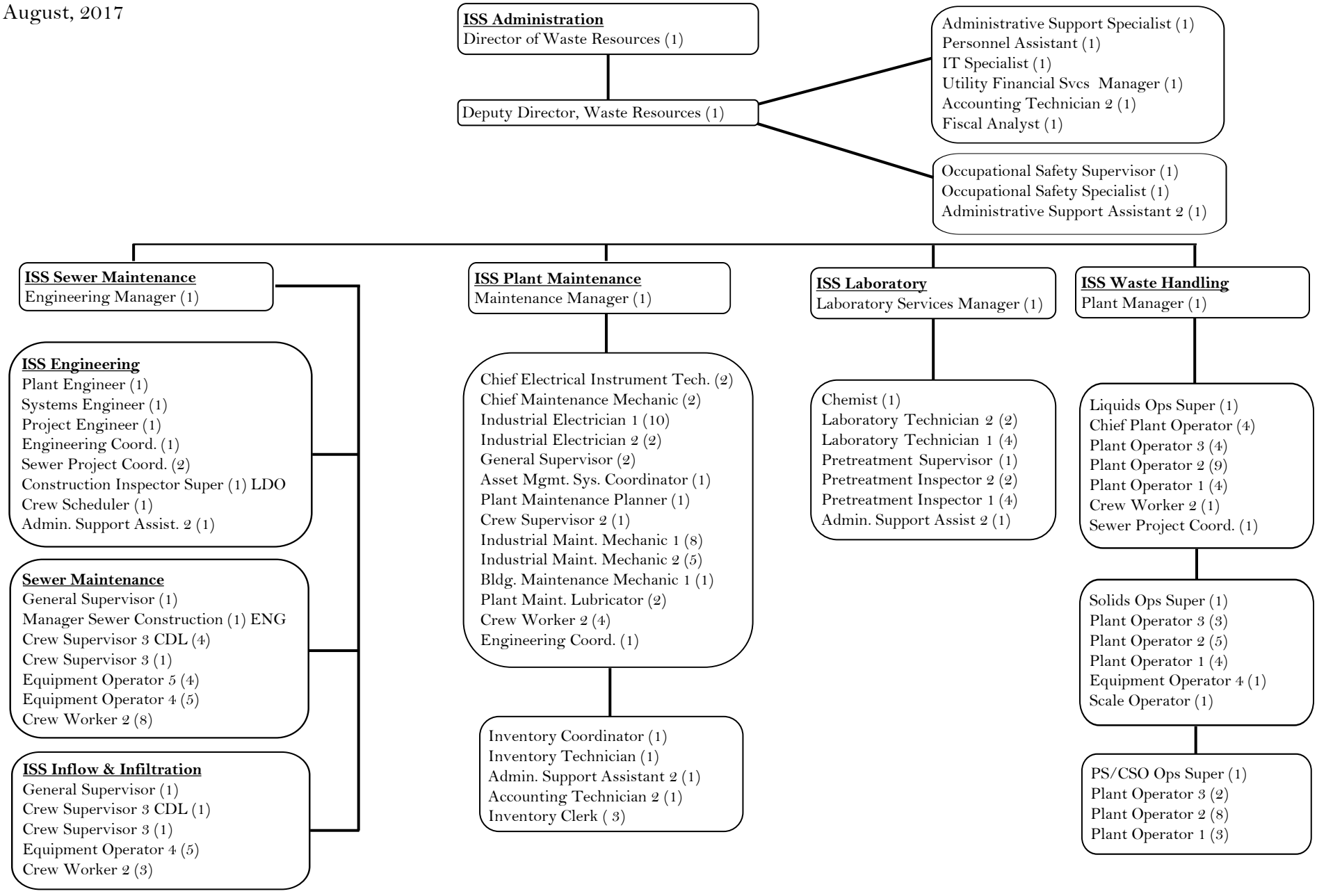
Appendix A

Waste Resources Division Organizational Chart

Department of Public Works

Division of Waste Resources

August, 2017



Total positions 176 (FY18)

Appendix B

City of Chattanooga Burnt Mill Road Sampling

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 10/26/2010

Sample ID: CHATTANOOGA CREEK

Burnt Mill Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 10100861-001								
pH			7.2	s.u.		SM 4500-H+	10/26/2010	IPT
Dissolved Oxygen			2.80	mg/l		HACH 10360	10/26/2010	IPT
Temperature			15.9	°C		SM 2550B	10/26/2010	IPT
Biochemical Oxygen Demand	0.6	<	2.1	mg/l		SM 5210B	10/27/2010	PDS
Ammonia-Nitrogen	0.2		0.3	mg/l		SM 4500-NH3C	10/26/2010	JTC
E. Coli			921	col/100 ml		Colilert	10/26/2010	JTC
Total Suspended Solids	1.4		6.5	mg/l		SM 2540D	10/28/2010	RJC
Hardness	2.0		145	mg/l		SM 2340C	11/3/2010	AIRL

COMMENTS:

Analysis performed according to 40 CFR Part 136 Lab Approved: PW Date: 11/14/10

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. *Surcharge Limit

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 3/30/2011

Sample ID: CHATTANOOGA CREEK
Burnt Mill Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 03111073-001								
pH			6.8	s.u.		SM 4500-H+	3/30/2011	IPT
Dissolved Oxygen			9.80	mg/l		HACH 10360	3/30/2011	IPT
Temperature			12.0	°C		SM 2550B	3/30/2011	IPT
Biochemical Oxygen Demand	0.6	<	2.5	mg/l		SM 5210B	3/30/2011	JTC/PDS
Ammonia-Nitrogen	0.2	<	0.3	mg/l		SM 4500-NH3C	3/31/2011	JTC
E. Coli			308	col/100 ml		Colilert	3/30/2011	JTC
Total Suspended Solids	1.4		8.4	mg/l		SM 2540D	3/30/2011	RJC
Hardness	2.0		51.8	mg/l		SM 2340C	4/8/2011	AIRL

COMMENTS: Hardness was analyzed by Analytical Industrial Research Laboratories.

Analysis performed according to 40 CFR Part 136 **Lab Approved:** PWP **Date:** 4/18/11

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 9/7/2011

Sample ID: CHATTANOOGA CREEK

Burnt Mill Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 09110220-001								
pH			7.0	s.u.		SM 4500-H+	9/7/2011	IPT
Dissolved Oxygen			7.80	mg/l		HACH 10360	9/7/2011	IPT
Temperature			19.0	°C		SM 2550B	9/7/2011	IPT
Biochemical Oxygen Demand	0.6	<	2.0	mg/l		SM 5210B	9/7/2011	RJC
Ammonia-Nitrogen	0.2	<	0.3	mg/l		SM 4500-NH3C	9/8/2011	PDS
E. Coli		>	2420	col/100 ml		Colilert	9/7/2011	PDS/JTC
Total Suspended Solids	1.4		10.4	mg/l		SM 2540D	9/7/2011	SJB
Hardness	2.0		49.4	mg/l		SM 2340C	9/15/2011	AIRL

COMMENTS:

Analysis performed according to 40 CFR Part 136 **Lab Approved:** PWP **Date:** 9/21/11

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 1/18/2012

Sample ID: CHATTANOOGA CREEK

Burnt Mill Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 01120621-001								
pH			6.2	s.u.		SM 4500-H+	1/18/2012	IPT
Dissolved Oxygen			10.2	mg/l		HACH 10360	1/18/2012	RJC
Temperature			20.0	°C		SM 2550B	1/18/2012	RJC
Biochemical Oxygen Demand	0.6	<	3.2	mg/l		SM 5210B	1/18/2012	RJC
Ammonia-Nitrogen	0.2		1.0	mg/l		SM 4500-NH3C	1/19/2012	PDS
E. Coli			1990	col/100 ml		Colilert	1/18/2012	PDS
Total Suspended Solids	1.4		21.6	mg/l		SM 2540D	1/18/2012	SJB
Hardness	2.0		42.0	mg/l		SM 2340C	1/24/2011	AIRL

COMMENTS: Hardness was measured by Analytical Industrial Research Laboratories. Temp. = approx. DO temp.

Analysis performed according to 40 CFR Part 136 **Lab Approved:** PWP **Date:** 2/9/12

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 7/11/2012

Sample ID: CHATTANOOGA CREEK

Burnt Mill Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 07120438-001								
pH			7.7	s.u.		SM 4500-H+	7/11/2012	IPT
Dissolved Oxygen			5.78	mg/l		HACH 10360	7/11/2012	IPT
Temperature			23.0	°C		SM 2550B	7/11/2012	IPT
Biochemical Oxygen Demand	0.6		2.6	mg/l		SM 5210B	7/17/2012	MAG
Ammonia-Nitrogen	0.2	<	0.3	mg/l		SM 4500-NH3C	7/12/2012	KAL
E. Coli		>	2420	col/100 ml		Colilert	7/11/2012	KAL
Total Suspended Solids	1.4		25.0	mg/l		SM 2540D	7/12/2012	MAG
Hardness	2.0		115	mg/l		SM 2340C	7/19/2012	AIRL

COMMENTS:

Analysis performed according to 40 CFR Part 136 **Lab Approved:** PWL **Date:** 8/15/12

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

R. Tate

CITY OF CHATTANOOGA
INDUSTRIAL MONITORING
FIELD RECORD

1. INFORMATION ON LOCATION

A. Industry or Location Burnt Mill Rd. Bridge Permit No. N/A

B. Contact Rick Tate

C. Date 1/15/2013 D. Sample Date 1/14/2013

II. FIELD INFORMATION

A. Initial Installation Date N/A

B. Time Spent In Installation Service N/A

1. Flow Measurement

a. Flow meter used N/A

b. Primary device Chattanooga Creek

c. Specific location Middle of Burnt Mill Rd. Bridge

d. Total flow N/A

2. Sampling

a. Sample Type Grab

b. (C CN,O&G,PHENOL,VOA'S SEMI-VOL) COLLECTED See Comments*

c. Sampler used N/A

1. Control setting N/A

2. Time of sample 2:00pm

d. pH meter used HACH #2 calibrated by Cales

Time 2:00pm pH min. N/A max. N/A
See below

e. Specific location Middle of Burnt Mill Rd. Bridge.

f. Sample color Cloudy

g. Noticeable oil or grease N/A

III. COMMENTS AND OBSERVATIONS

*The bottle for BOD, TSS, and Ammonia was collected at 2:00pm
*E-Coli grab was collected at 2:00pm
*Hardness grab was collected at 2:00pm
This sampling was conducted as required by the NPDES permit.
D.O. 9.1 mg/l , pH 6.3

Signed Dwayne Cales

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 1/14/2013 **Sample ID: CHATTANOOGA CREEK**

Burnt Mill Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 01130451-001								
pH			6.3	s.u.		SM 4500-H+	1/14/2013	IPT
Dissolved Oxygen			9.10	mg/l		HACH 10360	1/14/2013	IPT
Biochemical Oxygen Demand	0.6	<	4.5	mg/l		SM 5210B	1/15/2013	MAG
Ammonia-Nitrogen	0.2		1.6	mg/l		SM 4500-NH3C	1/17/2013	KAL
E. Coli			6380	col/100 ml		Colilert	1/14/2013	SJB/KAL
Total Suspended Solids	1.4		26.7	mg/l		SM 2540D	1/14/2013	MAG
Hardness	2.0		37.5	mg/l		SM 2340C	1/24/2013	AIRL

COMMENTS: Temperature measurement was inadvertently omitted.

Analysis performed according to 40 CFR Part 136 **Lab Approved:** PWP **Date:** 2/4/13

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

R. Tate

CITY OF CHATTANOOGA
INDUSTRIAL MONITORING
FIELD RECORD

1. INFORMATION ON LOCATION

A. Industry or Location Burnt Mill Rd. Bridge. Permit No. N/A

B. Contact Rick Tate.

C. Date 7/12/13 D. Sample Date 7/8/13

II. FIELD INFORMATION

A. Initial Installation Date N/A

B. Time Spent In Installation Service N/A

1. Flow Measurement

a. Flow meter used N/A

b. Primary device Chattanooga Creek.

c. Specific location Middle of Bumt Mill Rd. Bridge.

d . Total flow N/A

2. Sampling

a. Sample Type Grab

b. (C CN,O&G,PHENOL,VOA'S SEMI-VOL) COLLECTED See Comments*

c. Sampler used N/A

1. Control setting N/A

2. Time of sample 14:27

d. pH meter used HACH calibrated by D. Woodby

Time 2:27 PM pH min. N/A max. N/A

e. Specific location Middle of Burnt Mill Rd. Bridge

f. Sample color Slightly Cloudy

g. Noticeable oil or grease N/A

III. COMMENTS AND OBSERVATIONS

The bottle for BOD,Tss and Ammonia was collected at 2:27 PM
Hardness grab was collected at 2:27 PM E-Coli bottle was collected at 2:27 PM
This sampling was conducted as required by NPDES permit .
DO 7.39mg/l PH 7.31

Signed D. Woodby

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 7/8/2013

Sample ID: CHATTANOOGA CREEK
Burnt Mill Road Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 07130318-001								
pH			7.3	s.u.		SM 4500-H+	7/8/2013	ODC
Dissolved Oxygen			7.39	mg/l		HACH 10360	7/8/2013	ODC
Biochemical Oxygen Demand	0.6	<	3.2	mg/l		SM 5210B	7/8/2013	PDS/KAL
Ammonia-Nitrogen	0.2		1.0	mg/l		SM 4500-NH3C	7/9/2013	KAL
E. Coli			1200	col/100 ml		Colilert	7/8/2013	SJB/KAL
Total Suspended Solids	1.4		11.2	mg/l		SM 2540D	7/8/2013	MAG
Hardness	0.0		32.6	mg/l		SM 2340C	7/19/2013	AIRL

COMMENTS:

Analysis performed according to 40 CFR Part 136 **Lab Approved:** PWP **Date:** 8/14/13

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 12/24/2014

Sample ID: CHATTANOOGA CREEK

Burnt Mill Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 12140965-001								
pH			8.1	s.u.		SM 4500-H+	12/24/2014	MLW
Dissolved Oxygen			9.26	mg/l		HACH 10360	12/24/2014	MLW
Temperature			11.3	°C		SM 2550B	12/24/2014	MLW
Biochemical Oxygen Demand	0.6		3.8	mg/l		SM 5210B	12/25/2014	KAL
Ammonia-Nitrogen	0.2	<	0.3	mg/l		SM 4500-NH3C	12/29/2014	MAG
E. Coli			4620	col/100 ml		Colilert	12/24/2014	MAG/KAL
Total Suspended Solids	1.4		29.0	mg/l		SM 2540D	12/24/2014	PDS/KAL
Hardness	2.0		33.5	mg/l		SM 2340C	1/20/2015	AIRL

COMMENTS:

Analysis performed according to 40 CFR Part 136 **Lab Approved:** PWP **Date:** 2/3/15

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 1/4/2015

Sample ID: CHATTANOOGA CREEK

Burnt Mill Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 01150116-001								
pH			7.7	s.u.		SM 4500-H+	1/4/2015	MLW
Dissolved Oxygen			9.71	mg/l		HACH 10360	1/4/2015	MLW
Temperature			12.3	°C		SM 2550B	1/4/2015	MLW
Biochemical Oxygen Demand	0.6	<	2.3	mg/l		SM 5210B	1/4/2015	MAG/KAL
Ammonia-Nitrogen	0.2	<	0.3	mg/l		SM 4500-NH3C	1/4/2015	MAG
E. Coli			2250	col/100 ml		Colilert	1/4/2015	MAG
Total Suspended Solids	1.4		21.3	mg/l		SM 2540D	1/4/2015	MAG/PDS
Hardness	2.0		37.1	mg/l		SM 2340C	1/16/2015	AIRL

COMMENTS:

Analysis performed according to 40 CFR Part 136 **Lab Approved:** PWP **Date:** 2/3/15

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 11/19/2015

Sample ID: CHATTANOOGA CREEK

Burnt Mill Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 11150613-001								
pH			6.9	s.u.		SM 4500-H+	11/19/2015	SLW
Dissolved Oxygen			8.69	mg/l		HACH 10360	11/19/2015	SLW
Temperature			13.6	°C		SM 2550B	11/19/2015	SLW
Biochemical Oxygen Demand	0.6	<	5.3	mg/l		SM 5210B	11/19/2015	MAG
Ammonia-Nitrogen	0.2		0.4	mg/l		SM 4500-NH3C	11/20/2015	PDS
E. Coli			5510	col/100 ml		Colilert	11/19/2015	PDS
Total Suspended Solids	1.4		43.0	mg/l		SM 2540D	11/19/2015	JTC/KAL
Hardness	0.2		46.3	meq CaCO3		SM 2340B	12/7/2015	AIRL

COMMENTS: Wet weather sample after CSOTF discharge. BOD analysis did not meet all QC requirements.

Analysis performed according to 40 CFR Part 136 **Lab Approved:** PWP **Date:** 12/30/15

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 2/4/2016

Sample ID: CHATTANOOGA CREEK

Burnt Mill Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 02160184-001								
pH			7.1	s.u.		SM 4500-H+	2/4/2016	SLW
Dissolved Oxygen			10.8	mg/l		HACH 10360	2/4/2016	SLW
Temperature			9.3	°C		SM 2550B	2/4/2016	SLW
Biochemical Oxygen Demand	0.6	<	2.3	mg/l		SM 5210B	2/4/2016	KAL
Ammonia-Nitrogen	0.2	<	0.2	mg/l		SM 4500-NH3C	2/4/2016	MAG
E. Coli			1110	col/100 ml		Colilert	2/4/2016	MAG/SJB
Total Suspended Solids	1.4		12.0	mg/l		SM 2540D	2/4/2016	PDS
Hardness	2.0		53.2	mg/l		SM 2340C	2/12/2016	AIRL

COMMENTS:

Analysis performed according to 40 CFR Part 136 **Lab Approved:** RWP **Date:** 3/8/16

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 12/1/2016 **Sample ID: CHATTANOOGA CREEK**

Burnt Mill Bridge

Test	MDL	Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 12160038-001							
pH		7.1	s.u.		SM 4500-H+	12/1/2016	SMW
Dissolved Oxygen		7.40	mg/l		HACH 10360	12/1/2016	SMW
Temperature		12.2	°C		SM 2550B	12/1/2016	SMW
Biochemical Oxygen Demand	0.6	3.0	mg/l		SM 5210B	12/1/2016	JTC
Ammonia-Nitrogen	0.2	0.2	mg/l		SM 4500-NH3C	12/2/2016	KAL
E. Coli		2160	col/100 ml		Colilert	12/1/2016	KAL
Total Suspended Solids	1.4	25.5	mg/l		SM 2540D	12/1/2016	MAG/SJB
Hardness	2.0	104	mg/l		SM 2340C	12/19/2016	AIRL

COMMENTS:

Analysis performed according to 40 CFR Part 136 **Lab Approved:** RWP **Date:** 12/27/16

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 3/28/2017

Sample ID: CHATTANOOGA CREEK

Burnt Mill Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 03171059-001								
pH			7.3	s.u.		SM 4500-H+	3/28/2017	MW
Dissolved Oxygen			8.02	mg/l		HACH 10360	3/28/2017	MW
Temperature			15.5	°C		SM 2550B	3/28/2017	MW
Biochemical Oxygen Demand	0.6	<	2.3	mg/l		SM 5210B	3/28/2017	JTC/PDS
Ammonia-Nitrogen	0.2		0.6	mg/l		SM 4500-NH3C	3/28/2017	PDS
E. Coli			3410	col/100 ml		Colilert	3/28/2017	PDS
Total Suspended Solids	1.4		32.0	mg/l		SM 2540D	3/28/2017	KAL
Hardness	2.0		48.2	mg/l		SM 2340C	4/20/2017	AIRL

COMMENTS:

Analysis performed according to 40 CFR Part 136 **Lab Approved:** RWP **Date:** 5/12/17

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

- REPORT OF ANALYSIS -
Moccasin Bend Environmental Laboratory
City of Chattanooga

Sample Date: 7/7/2017

Sample ID: CHATTANOOGA CREEK
Burnt Mill Bridge

Test	MDL		Result	Units	Permit Limit	Method	Analysis Date	Analyzed By
Lab#: 07170314-001								
pH			7.0	s.u.		SM 4500-H+	7/7/2017	MW
Dissolved Oxygen			7.30	mg/l		HACH 10360	7/7/2017	MW
Temperature			21.0	°C		SM 2550B	7/7/2017	MW
Biochemical Oxygen Demand	0.6	<	2.5	mg/l		SM 5210B	7/7/2017	SJB
Ammonia-Nitrogen	0.2		0.5	mg/l		SM 4500-NH3C	7/7/2017	PDS
E. Coli			155	col/100 ml		Colilert	7/7/2017	PDS/KAL
Total Suspended Solids	1.4		9.0	mg/l		SM 2540D	7/7/2017	KAL
Hardness	0.2		43.9	mg/l		SM 2340C	7/12/2017	AIRL

COMMENTS:

Analysis performed according to 40 CFR Part 136 **Lab Approved:** PWP **Date:** 8/11/17

Chain of Custody forms for the samples reported above are on file at Moccasin Bend WWTP. ***Surcharge Limit**

Appendix C

MBWWTP Lab Results

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
10/2/2015	WR	10150125-001	Biochemical Oxygen Demand	Outfall 002, Central Avenue	0.6		58	mg/l	SM 5210B	02-Oct-15	SJB/MAG	
			Total Suspended Solids	Outfall 002, Central Avenue	1.4		70	mg/l	SM 2540D	02-Oct-15	KAL	
			Ammonia-Nitrogen	Outfall 002, Central Avenue	0.2		1.6	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Organic Nitrogen	Outfall 002, Central Avenue	0.2		1.4	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Total Kjeldahl Nitrogen	Outfall 002, Central Avenue	0.1		3	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Nitrate + Nitrite	Outfall 002, Central Avenue	0.05		0.13	mg/l	SM 4500-NO3E	09-Oct-15	AIRL	
			Phosphorus, Total	Outfall 002, Central Avenue	0.01		1.13	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			Phosphorus, Dissolved	Outfall 002, Central Avenue	0.01		1.43	mg/l	SM 4500-P E	08-Oct-15	AIRL	
		10150125-002	pH	Outfall 002, Central Avenue			7.2	s.u.	SM 4500-H+	02-Oct-15	MW	
			Dissolved Oxygen	Outfall 002, Central Avenue			6.46	mg/l	HACH 10360	02-Oct-15	MW	
			Temperature	Outfall 002, Central Avenue			4.7	°C	SM 2550B	02-Oct-15	MW	
			Conductivity	Outfall 002, Central Avenue			174	micromhos/cm	SM 2510B	02-Oct-15	JTC	
			E. Coli	Outfall 002, Central Avenue	20	>	48400	MPN/100 ml	Colilert	02-Oct-15	PDS/KAL	
			Settleable Solids	Outfall 002, Central Avenue	0.1		0.1	ml/l	SM 2540F	03-Oct-15	KAL	
			Oil & Grease	Outfall 002, Central Avenue	2.6		13.3	mg/l	EPA 1664A	07-Oct-15	SJB	
10/2/2015	WR	10150117-001	Conductivity	Blank			1.5	micrmhos/cm	SM 2510B	02-Oct-15	JTC	
			Biochemical Oxygen Demand	Blank	0.6	<	1.9	mg/l	SM 5210B	02-Oct-15	SJB/MAG	
			Settleable Solids	Blank	0.1	<	0.1	ml/l	SM 2540F	03-Oct-15	KAL	
			Total Suspended Solids	Blank	1.4	<	1.4	mg/l	SM 2540D	02-Oct-15	KAL	
			Ammonia-Nitrogen	Blank	0.2	<	0.3	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Organic Nitrogen	Blank	0.2	<	0.3	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Total Kjeldahl Nitrogen	Blank	0.1	<	0.6	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Nitrate + Nitrite	Blank	0.05	<	0.05	mg/l	SM 4500-NO3E	09-Oct-15	AIRL	
			Phosphorus, Total	Blank	0.01	<	0.01	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			Phosphorus, Dissolved	Blank	0.01	<	0.01	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			E. coli	Blank	1	<	1	mpn/100ml	Colilert	02-Oct-15	PDS/KAL	
			Oil & Grease	Blank	2.6	<	5	mg/l	EPA 1664A	05-Oct-15	SJB	
		10150118-001	pH	PCCMP - 1			7.4	s.u.	SM 4500-H+	02-Oct-15	MW	
			Dissolved Oxygen	PCCMP - 1			6.09	mg/l	HACH 10360	02-Oct-15	MW	
			Temperature	PCCMP - 1			19.4	°C	SM 2550B	02-Oct-15	MW	
			Conductivity	PCCMP - 1			216	micrmhos/cm	SM 2510B	02-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.8	mg/l	SM 5210B	02-Oct-15	SJB/MAG	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	03-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 1	1.4		11.6	mg/l	SM 2540D	02-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 1	0.2	<	0.3	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 1	0.2	<	0.3	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.1	<	0.6	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.1	mg/l	SM 4500-NO3E	09-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 1	0.01		0.04	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 1	0.01		0.04	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			E. coli	PCCMP - 1	20		2340	mpn/100ml	Colilert	02-Oct-15	PDS/KAL	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	05-Oct-15	SJB	
		10150119-001	pH	PCCMP - 2			8.4	s.u.	SM 4500-H+	02-Oct-15	MW	
			Dissolved Oxygen	PCCMP - 2			7.57	mg/l	HACH 10360	02-Oct-15	MW	
			Temperature	PCCMP - 2			17.7	°C	SM 2550B	02-Oct-15	MW	
			Conductivity	PCCMP - 2			101	micrmhos/cm	SM 2510B	02-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6		6.2	mg/l	SM 5210B	02-Oct-15	SJB/MAG	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	03-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 2	1.4		53.6	mg/l	SM 2540D	02-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 2	0.2	<	0.3	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 2	0.2	<	0.3	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.1	<	0.6	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.14	mg/l	SM 4500-NO3E	09-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 2	0.01		0.04	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 2	0.01		0.02	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			E. coli	PCCMP - 2	20		34700	mpn/100ml	Colilert	02-Oct-15	PDS/KAL	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	05-Oct-15	SJB	
		10150120-001	pH	PCCMP - 3			7.6	s.u.	SM 4500-H+	02-Oct-15	MW	
			Dissolved Oxygen	PCCMP - 3			7.41	mg/l	HACH 10360	02-Oct-15	MW	
			Temperature	PCCMP - 3			18.4	°C	SM 2550B	02-Oct-15	MW	
			Conductivity	PCCMP - 3			129	micrmhos/cm	SM 2510B	02-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6		220	mg/l	SM 5210B	02-Oct-15	SJB/MAG	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	03-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 3	1.4		58.6	mg/l	SM 2540D	02-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 3	0.2	<	0.3	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 3	0.2	<	0.3	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.1	<	0.6	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.11	mg/l	SM 4500-NO3E	09-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 3	0.01		0.44	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 3	0.01		0.34	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			E. coli	PCCMP - 3	20	>	48400	mpn/100ml	Colilert	02-Oct-15	PDS/KAL	
			Oil & Grease	PCCMP - 3	2.6		10	mg/l	EPA 1664A	07-Oct-15	SJB	
		10150121-001	pH	PCCMP - 4			7.1	s.u.	SM 4500-H+	02-Oct-15	MW	
			Dissolved Oxygen	PCCMP - 4			7.9	mg/l	HACH 10360	02-Oct-15	MW	
			Temperature	PCCMP - 4			18.1	°C	SM 2550B	02-Oct-15	MW	
			Conductivity	PCCMP - 4			120	micrmhos/cm	SM 2510B	02-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6		7.5	mg/l	SM 5210B	02-Oct-15	SJB/MAG	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	03-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 4	1.4		35	mg/l	SM 2540D	02-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 4	0.2		0.5	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 4	0.2		0.3	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.1		0.8	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.18	mg/l	SM 4500-NO3E	09-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 4	0.01		0.11	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 4	0.01		0.11	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			E. coli	PCCMP - 4	20	>	48400	mpn/100ml	Colilert	02-Oct-15	PDS/KAL	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	07-Oct-15	SJB	
		10150122-001	pH	PCCMP - 5			7.5	s.u.	SM 4500-H+	02-Oct-15	MW	
			Dissolved Oxygen	PCCMP - 5			7.71	mg/l	HACH 10360	02-Oct-15	MW	
			Temperature	PCCMP - 5			18.4	°C	SM 2550B	02-Oct-15	MW	
			Conductivity	PCCMP - 5			117	micrmhos/cm	SM 2510B	02-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6		7.9	mg/l	SM 5210B	02-Oct-15	SJB/MAG	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	03-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 5	1.4		87	mg/l	SM 2540D	02-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 5	0.2		0.7	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 5	0.2	<	0.3	mg/l	SM 4500-NH3	08-Oct-15	PDS	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Total Kjeldahl Nitrogen	PCCMP - 5	0.1	<	1	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.17	mg/l	SM 4500-NO3E	09-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 5	0.01		0.13	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 5	0.01		0.21	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			E. coli	PCCMP - 5	20	>	48400	mpn/100ml	Colilert	02-Oct-15	PDS/KAL	
			Oil & Grease	PCCMP - 5	2.6		12.5	mg/l	EPA 1664A	07-Oct-15	SJB	
			pH	PCCMP - 6			7.2	s.u.	SM 4500-H+	02-Oct-15	MW	
			Dissolved Oxygen	PCCMP - 6			7.67	mg/l	HACH 10360	02-Oct-15	MW	
			Temperature	PCCMP - 6			18.3	°C	SM 2550B	02-Oct-15	MW	
			Conductivity	PCCMP - 6			106	micrmhos/cm	SM 2510B	02-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6		5.8	mg/l	SM 5210B	02-Oct-15	SJB/MAG	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	03-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 6	1.4		38	mg/l	SM 2540D	02-Oct-15	KAL	
		10150123-001	Ammonia-Nitrogen	PCCMP - 6	0.2		0.7	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 6	0.2	<	0.3	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.1	<	1	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.18	mg/l	SM 4500-NO3E	09-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 6	0.01		0.06	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 6	0.01		0.16	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			E. coli	PCCMP - 6	20	>	48400	mpn/100ml	Colilert	02-Oct-15	PDS/KAL	
			Oil & Grease	PCCMP - 6	2.6		5.6	mg/l	EPA 1664A	07-Oct-15	SJB	
			Conductivity	PCCMP - 6 Duplicate			111	micrmhos/cm	SM 2510B	02-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6		8.6	mg/l	SM 5210B	02-Oct-15	SJB/MAG	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	03-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		39	mg/l	SM 2540D	02-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.2		0.6	mg/l	SM 4500-NH3	08-Oct-15	PDS	
		10150124-001	Organic Nitrogen	PCCMP - 6 Duplicate	0.2	<	0.3	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.1	<	0.9	mg/l	SM 4500-NH3	08-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.05		0.2	mg/l	SM 4500-NO3E	09-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.01		0.06	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.01		0.16	mg/l	SM 4500-P E	08-Oct-15	AIRL	
			E. coli	PCCMP - 6 Duplicate	20	>	48400	mpn/100ml	Colilert	02-Oct-15	PDS/KAL	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	07-Oct-15	SJB	
10/14/2015	DW		pH	PCCMP - 1			7.1	s.u.	SM 4500-H+	14-Oct-15	MW	
			Dissolved Oxygen	PCCMP - 1			8.31	mg/l	HACH 10360	14-Oct-15	MW	
			Temperature	PCCMP - 1			16	°C	SM 2550B	14-Oct-15	MW	
			Conductivity	PCCMP - 1			182	µmhos/cm	SM 2510B	14-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.8	mg/l	SM 5210B	15-Oct-15	JTC/SJB	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	14-Oct-15	JTC	
			Total Suspended Solids	PCCMP - 1	1.4		7	mg/l	SM 2540D	14-Oct-15	SJB/KAL	
		10150490-001	Ammonia-Nitrogen	PCCMP - 1	0.2	<	0.3	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 1	0.2		0.6	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.1	<	0.9	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.11	mg/l	SM 4500-NO3E	27-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 1	0.01		0.04	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 1	0.01	<	0.01	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			E. coli	PCCMP - 1	20		148	MPN/100 ml	Colilert	14-Oct-15	PDS	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	15-Oct-15	SJB	
			pH	PCCMP - 2			7.3	s.u.	SM 4500-H+	14-Oct-15	MW	
			Dissolved Oxygen	PCCMP - 2			8.02	mg/l	HACH 10360	14-Oct-15	MW	
			Temperature	PCCMP - 2			15.9	°C	SM 2550B	14-Oct-15	MW	
			Conductivity	PCCMP - 2			184	µmhos/cm	SM 2510B	14-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.8	mg/l	SM 5210B	15-Oct-15	JTC/SJB	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	14-Oct-15	JTC	
			Total Suspended Solids	PCCMP - 2	1.4		7.6	mg/l	SM 2540D	14-Oct-15	SJB/KAL	
		10150491-001	Ammonia-Nitrogen	PCCMP - 2	0.2	<	0.3	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 2	0.2		0.5	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.1	<	0.8	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.12	mg/l	SM 4500-NO3E	27-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 2	0.01		0.04	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 2	0.01		0.02	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			E. coli	PCCMP - 2	20		104	MPN/100 ml	Colilert	14-Oct-15	PDS	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	15-Oct-15	SJB	
			pH	PCCMP - 3			7	s.u.	SM 4500-H+	14-Oct-15	MW	
			Dissolved Oxygen	PCCMP - 3			7.38	mg/l	HACH 10360	14-Oct-15	MW	
			Temperature	PCCMP - 3			17	°C	SM 2550B	14-Oct-15	MW	
			Conductivity	PCCMP - 3			214	µmhos/cm	SM 2510B	14-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.8	mg/l	SM 5210B	15-Oct-15	JTC/SJB	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	14-Oct-15	JTC	
			Total Suspended Solids	PCCMP - 3	1.4		6.2	mg/l	SM 2540D	14-Oct-15	SJB/KAL	
		10150492-001	Ammonia-Nitrogen	PCCMP - 3	0.2		1.7	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 3	0.2		0.6	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.1		2.3	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.1	mg/l	SM 4500-NO3E	27-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 3	0.01		0.06	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 3	0.01		0.04	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			E. coli	PCCMP - 3	20		148	MPN/100 ml	Colilert	14-Oct-15	PDS	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	15-Oct-15	SJB	
			pH	PCCMP - 4			7.2	s.u.	SM 4500-H+	14-Oct-15	MW	
			Dissolved Oxygen	PCCMP - 4			7.4	mg/l	HACH 10360	14-Oct-15	MW	
			Temperature	PCCMP - 4			18.1	°C	SM 2550B	14-Oct-15	MW	
			Conductivity	PCCMP - 4			216	µmhos/cm	SM 2510B	14-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.8	mg/l	SM 5210B	15-Oct-15	JTC/SJB	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	14-Oct-15	JTC	
			Total Suspended Solids	PCCMP - 4	1.4		7.4	mg/l	SM 2540D	14-Oct-15	SJB/KAL	
		10150493-001	Ammonia-Nitrogen	PCCMP - 4	0.2		1.5	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 4	0.2		0.7	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.1		2.2	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.14	mg/l	SM 4500-NO3E	27-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 4	0.01		0.06	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 4	0.01		0.02	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			E. coli	PCCMP - 4	20		322	MPN/100 ml	Colilert	14-Oct-15	PDS	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	22-Oct-15	SJB	
			pH	PCCMP - 5			7.2	s.u.	SM 4500-H+	14-Oct-15	MW	
			Dissolved Oxygen	PCCMP - 5			6.88	mg/l	HACH 10360	14-Oct-15	MW	
			Temperature	PCCMP - 5			18	°C	SM 2550B	14-Oct-15	MW	
			Conductivity	PCCMP - 5			216	µmhos/cm	SM 2510B	14-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.8	mg/l	SM 5210B	15-Oct-15	JTC/SJB	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	14-Oct-15	JTC	
			Total Suspended Solids	PCCMP - 5	1.4		4.6	mg/l	SM 2540D	14-Oct-15	SJB/KAL	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
		10150494-001	Ammonia-Nitrogen	PCCMP - 5	0.2	<	0.3	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 5	0.2		0.6	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.1	<	0.9	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.15	mg/l	SM 4500-NO3E	27-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 5	0.01		0.04	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 5	0.01		0.02	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			E. coli	PCCMP - 5	20		398	MPN/100 ml	Colilert	14-Oct-15	PDS	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	22-Oct-15	SJB	
		10150495-001	pH	PCCMP - 6			7.2	s.u.	SM 4500-H+	14-Oct-15	MW	
			Dissolved Oxygen	PCCMP - 6			7.11	mg/l	HACH 10360	14-Oct-15	MW	
			Temperature	PCCMP - 6			18.5	°C	SM 2550B	14-Oct-15	MW	
			Conductivity	PCCMP - 6			209	µmhos/cm	SM 2510B	14-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.8	mg/l	SM 5210B	15-Oct-15	JTC/SJB	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	14-Oct-15	JTC	
			Total Suspended Solids	PCCMP - 6	1.4		3.2	mg/l	SM 2540D	14-Oct-15	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 6	0.2		0.9	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 6	0.2	<	0.6	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.1	<	1.5	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.16	mg/l	SM 4500-NO3E	27-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 6	0.01		0.06	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 6	0.01		0.02	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			E. coli	PCCMP - 6	20		150	MPN/100 ml	Colilert	14-Oct-15	PDS	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	22-Oct-15	SJB	
		10150496-001	Conductivity	PCCMP - 6 - Duplicate			210	µmhos/cm	SM 2510B	14-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Duplicate	0.6	<	2.8	mg/l	SM 5210B	15-Oct-15	JTC/SJB	
			Settleable Solids	PCCMP - 6 - Duplicate	0.1	<	0.1	ml/l	SM 2540F	14-Oct-15	JTC	
			Total Suspended Solids	PCCMP - 6 - Duplicate	1.4		3.6	mg/l	SM 2540D	14-Oct-15	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 6 - Duplicate	0.2		0.6	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 6 - Duplicate	0.2	<	0.6	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Duplicate	0.1	<	1.2	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 - Duplicate	0.05		0.17	mg/l	SM 4500-NO3E	27-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 6 - Duplicate	0.01		0.04	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 6 - Duplicate	0.01		0.02	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			E. coli	PCCMP - 6 - Duplicate	20		268	MPN/100 ml	Colilert	14-Oct-15	PDS	
			Oil & Grease	PCCMP - 6 - Duplicate	2.6	<	5	mg/l	EPA 1664A	22-Oct-15	SJB	
		10150497-001	Conductivity	PCCMP - 6 - Blank			1.1	µmhos/cm	SM 2510B	14-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Blank	0.6	<	1.9	mg/l	SM 5210B	15-Oct-15	JTC/SJB	
			Settleable Solids	PCCMP - 6 - Blank	0.1	<	0.1	ml/l	SM 2540F	14-Oct-15	JTC	
			Total Suspended Solids	PCCMP - 6 - Blank	1.4	<	1.4	mg/l	SM 2540D	14-Oct-15	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 6 - Blank	0.2	<	0.3	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 6 - Blank	0.2	<	0.6	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Blank	0.1	<	0.9	mg/l	SM 4500-NH3	21-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 - Blank	0.05	<	0.05	mg/l	SM 4500-NO3E	27-Oct-15	AIRL	
			Phosphorus, Total	PCCMP - 6 - Blank	0.01	<	0.01	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			Phosphorus, Dissolved	PCCMP - 6 - Blank	0.01	<	0.01	mg/l	SM 4500-P E	26-Oct-15	AIRL	
			E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100 ml	Colilert	14-Oct-15	PDS	
			Oil & Grease	PCCMP - 6 - Blank	2.6	<	5	mg/l	EPA 1664A	22-Oct-15	SJB	
10/27/2015	WW	10150919-001	pH	PCCMP - 1			7.5	s.u.	SM 4500-H+	27-Oct-15	MLW	
			Dissolved Oxygen	PCCMP - 1			7.73	mg/l	HACH 10360	27-Oct-15	MLW	
			Temperature	PCCMP - 1			15.8	°C	SM 2550B	27-Oct-15	MLW	
			Conductivity	PCCMP - 1			229	µmhos/cm	SM 2510B	27-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	3	mg/l	SM 5210B	27-Oct-15	MAG	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	27-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 1	1.4		9.6	mg/l	SM 2540D	27-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 1	0.2	<	0.3	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 1	0.2		0.6	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.1	<	0.9	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.09	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	17-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 1	20		2160	MPN/100 ml	Colilert	27-Oct-15	PDS	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	28-Oct-15	SJB	
		10150920-001	pH	PCCMP - 2			7.4	s.u.	SM 4500-H+	27-Oct-15	MLW	
			Dissolved Oxygen	PCCMP - 2			7.08	mg/l	HACH 10360	27-Oct-15	MLW	
			Temperature	PCCMP - 2			15.9	°C	SM 2550B	27-Oct-15	MLW	
			Conductivity	PCCMP - 2			210	µmhos/cm	SM 2510B	27-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	3	mg/l	SM 5210B	27-Oct-15	MAG	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	27-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 2	1.4		11.2	mg/l	SM 2540D	27-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 2	0.2	<	0.3	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 2	0.2		0.6	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.1	<	0.9	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.1	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 2	0.03		0.15	mg/l	SM 4500-P E	17-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 2	20		3000	MPN/100 ml	Colilert	27-Oct-15	PDS	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	28-Oct-15	SJB	
		10150921-001	pH	PCCMP - 3			7.4	s.u.	SM 4500-H+	27-Oct-15	MLW	
			Dissolved Oxygen	PCCMP - 3			7.16	mg/l	HACH 10360	27-Oct-15	MLW	
			Temperature	PCCMP - 3			16	°C	SM 2550B	27-Oct-15	MLW	
			Conductivity	PCCMP - 3			205	µmhos/cm	SM 2510B	27-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	3	mg/l	SM 5210B	27-Oct-15	MAG	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	27-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 3	1.4		12.4	mg/l	SM 2540D	27-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 3	0.2	<	0.3	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 3	0.2		0.6	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.1	<	0.9	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.1	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	17-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 3	20		2630	MPN/100 ml	Colilert	27-Oct-15	PDS	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	30-Oct-15	SJB	
		10150922-001	pH	PCCMP - 4			7.3	s.u.	SM 4500-H+	27-Oct-15	MLW	
			Dissolved Oxygen	PCCMP - 4			6.92	mg/l	HACH 10360	27-Oct-15	MLW	
			Temperature	PCCMP - 4			16	°C	SM 2550B	27-Oct-15	MLW	
			Conductivity	PCCMP - 4			203	µmhos/cm	SM 2510B	27-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	3	mg/l	SM 5210B	27-Oct-15	MAG	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	27-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 4	1.4		10.8	mg/l	SM 2540D	27-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 4	0.2	<	0.3	mg/l	SM 4500-NH3	28-Oct-15	PDS	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Organic Nitrogen	PCCMP - 4	0.2		0.6	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.1	<	0.9	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.09	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 4	0.03		0.34	mg/l	SM 4500-P E	17-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 4	20		2290	MPN/100 ml	Colilert	27-Oct-15	PDS	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	30-Oct-15	SJB	
		10150923-001	pH	PCCMP - 5			7.4	s.u.	SM 4500-H+	27-Oct-15	MLW	
			Dissolved Oxygen	PCCMP - 5			6.86	mg/l	HACH 10360	27-Oct-15	MLW	
			Temperature	PCCMP - 5			16	°C	SM 2550B	27-Oct-15	MLW	
			Conductivity	PCCMP - 5			203	µmhos/cm	SM 2510B	27-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	3	mg/l	SM 5210B	27-Oct-15	MAG	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	27-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 5	1.4		9.6	mg/l	SM 2540D	27-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 5	0.2	<	0.3	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 5	0.2		0.6	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.1	<	0.9	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.09	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 5	0.03		0.08	mg/l	SM 4500-P E	17-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 5	20		1980	MPN/100 ml	Colilert	27-Oct-15	PDS	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	30-Oct-15	SJB	
		10150924-001	pH	PCCMP - 6			7.4	s.u.	SM 4500-H+	27-Oct-15	MLW	
			Dissolved Oxygen	PCCMP - 6			6.79	mg/l	HACH 10360	27-Oct-15	MLW	
			Temperature	PCCMP - 6			15.9	°C	SM 2550B	27-Oct-15	MLW	
			Conductivity	PCCMP - 6			210	µmhos/cm	SM 2510B	27-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	3	mg/l	SM 5210B	27-Oct-15	MAG	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	27-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 6	1.4		8	mg/l	SM 2540D	27-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 6	0.2	<	0.3	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 6	0.2		0.6	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.1	<	0.9	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.08	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	17-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 6	20		2360	MPN/100 ml	Colilert	27-Oct-15	PDS	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	30-Oct-15	SJB	
		10150925-001	Conductivity	PCCMP - 6 - Duplicate			211	µmhos/cm	SM 2510B	27-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Duplicate	0.6	<	3	mg/l	SM 5210B	27-Oct-15	MAG	
			Settleable Solids	PCCMP - 6 - Duplicate	0.1	<	0.1	ml/l	SM 2540F	27-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 6 - Duplicate	1.4		7.6	mg/l	SM 2540D	27-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 6 - Duplicate	0.2	<	0.3	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 6 - Duplicate	0.2		0.4	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Duplicate	0.1	<	0.7	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 - Duplicate	0.05		0.11	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 6 - Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	17-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 6 - Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 6 - Duplicate	20		2150	MPN/100 ml	Colilert	27-Oct-15	PDS	
			Oil & Grease	PCCMP - 6 - Duplicate	2.6	<	5	mg/l	EPA 1664A	30-Oct-15	SJB	
		10150926-001	Conductivity	PCCMP - 6 - Blank			1.8	µmhos/cm	SM 2510B	27-Oct-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Blank	0.6	<	3	mg/l	SM 5210B	27-Oct-15	MAG	
			Settleable Solids	PCCMP - 6 - Blank	0.1	<	0.1	ml/l	SM 2540F	27-Oct-15	KAL	
			Total Suspended Solids	PCCMP - 6 - Blank	1.4	<	1.4	mg/l	SM 2540D	27-Oct-15	KAL	
			Ammonia-Nitrogen	PCCMP - 6 - Blank	0.2	<	0.3	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Organic Nitrogen	PCCMP - 6 - Blank	0.2	<	0.3	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Blank	0.1	<	0.6	mg/l	SM 4500-NH3	28-Oct-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 - Blank	0.05	<	0.05	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	17-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100 ml	Colilert	27-Oct-15	PDS	
			Oil & Grease	PCCMP - 6 - Blank	2.6	<	5	mg/l	EPA 1664A	30-Oct-15	SJB	
11/19/2015		2773654	Biochemical Oxygen Demand	Outfall 002, Central Avenue	0.6	>	71	mg/l	SM 5210B	19-Nov-15	MAG	Please note that BOD analysis did not meet all QC requirements.
			Total Suspended Solids	Outfall 002, Central Avenue	1.4		66	mg/l	SM 2540D	19-Nov-15	JTC/KAL	
			Ammonia-Nitrogen	Outfall 002, Central Avenue	0.2		1.6	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Organic Nitrogen	Outfall 002, Central Avenue	0.2		10.5	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Total Kjeldahl Nitrogen	Outfall 002, Central Avenue	0.1		12	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Nitrate + Nitrite	Outfall 002, Central Avenue	0.05		0.17	mg/l	SM 4500-NO3E	04-Dec-15	AIRL	
			Phosphorus, Total	Outfall 002, Central Avenue	0.03		3.04	mg/l	SM 4500-P E	02-Dec-15	MAG	
			Phosphorus, Dissolved	Outfall 002, Central Avenue	0.03		2.36	mg/l	SM 4500-P E	25-Nov-15	JTC	
			pH	Outfall 002, Central Avenue			7	s.u.	SM 4500-H+	19-Nov-15	SLW	
			Dissolved Oxygen	Outfall 002, Central Avenue			4.15	mg/l	HACH 10360	19-Nov-15	SLW	
			Temperature	Outfall 002, Central Avenue			17.3	°C	SM 2550B	19-Nov-15	SLW	
			Conductivity	Outfall 002, Central Avenue			131	µmhos/cm	SM 2510B	23-Nov-15	JTC	
			E. Coli	Outfall 002, Central Avenue	20	>	48400	MPN/100 ml	Colilert	19-Nov-15	PDS	
			Settleable Solids	Outfall 002, Central Avenue	0.1	<	0.1	ml/l	SM 2540F	19-Nov-15	JTC	
			Oil & Grease	Outfall 002, Central Avenue	2.6		11	mg/l	EPA 1664A	01-Dec-15	SJB	
11/16/2017	DW	11150490-001	pH	PCCMP - 1			7.2	s.u.	SM 4500-H+	16-Nov-15	SLW	Please note that BOD analysis did not meet all QC requirements.
			Dissolved Oxygen	PCCMP - 1			10.4	mg/l	HACH 10360	16-Nov-15	SLW	
			Temperature	PCCMP - 1			8.3	°C	SM 2550B	16-Nov-15	SLW	
			Conductivity	PCCMP - 1			177	µmhos/cm	SM 2510B	16-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.4	mg/l	SM 5210B	16-Nov-15	MAG/KAL	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	16-Nov-15	SJB	
			Total Suspended Solids	PCCMP - 1	1.4		4.4	mg/l	SM 2540D	16-Nov-15	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 1	0.2	<	0.3	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 1	0.2		0.6	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.1	<	0.9	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.15	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	25-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 1	20		126	mpn/100ml	Colilert	16-Nov-15	PDS	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	19-Nov-15	SJB	
		11150491-001	pH	PCCMP - 2			7.3	s.u.	SM 4500-H+	16-Nov-15	SLW	
			Dissolved Oxygen	PCCMP - 2			9.96	mg/l	HACH 10360	16-Nov-15	SLW	
			Temperature	PCCMP - 2			9.5	°C	SM 2550B	16-Nov-15	SLW	
			Conductivity	PCCMP - 2			195	µmhos/cm	SM 2510B	16-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.4	mg/l	SM 5210B	16-Nov-15	MAG/KAL	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	16-Nov-15	SJB	
			Total Suspended Solids	PCCMP - 2	1.4		4	mg/l	SM 2540D	16-Nov-15	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 2	0.2	<	0.3	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 2	0.2		0.4	mg/l	SM 4500-NH3	16-Nov-15	PDS	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
		11150492-001	Total Kjeldahl Nitrogen	PCCMP - 2	0.1	<	0.7	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.1	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	25-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 2	20		104	mpn/100ml	Colilert	16-Nov-15	PDS	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	19-Nov-15	SJB	
			pH	PCCMP - 3			7.4	s.u.	SM 4500-H+	16-Nov-15	SLW	
			Dissolved Oxygen	PCCMP - 3			9.75	mg/l	HACH 10360	16-Nov-15	SLW	
			Temperature	PCCMP - 3			10	°C	SM 2550B	16-Nov-15	SLW	
			Conductivity	PCCMP - 3			199	µmhos/cm	SM 2510B	16-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.4	mg/l	SM 5210B	16-Nov-15	MAG/KAL	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	16-Nov-15	SJB	
			Total Suspended Solids	PCCMP - 3	1.4		4.4	mg/l	SM 2540D	16-Nov-15	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 3	0.2	<	0.3	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 3	0.2		0.4	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.1	<	0.7	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.15	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 3	0.03		0.06	mg/l	SM 4500-P E	25-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 3	20		168	mpn/100ml	Colilert	16-Nov-15	PDS	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	19-Nov-15	SJB	
		11150493-001	pH	PCCMP - 4			7.4	s.u.	SM 4500-H+	16-Nov-15	SLW	
			Dissolved Oxygen	PCCMP - 4			9.57	mg/l	HACH 10360	16-Nov-15	SLW	
			Temperature	PCCMP - 4			10.5	°C	SM 2550B	16-Nov-15	SLW	
			Conductivity	PCCMP - 4			201	µmhos/cm	SM 2510B	16-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.4	mg/l	SM 5210B	16-Nov-15	MAG/KAL	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	16-Nov-15	SJB	
			Total Suspended Solids	PCCMP - 4	1.4		2.8	mg/l	SM 2540D	16-Nov-15	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 4	0.2	<	0.3	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 4	0.2		0.7	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.1	<	1	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.13	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	25-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 4	20		172	mpn/100ml	Colilert	16-Nov-15	PDS	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	19-Nov-15	SJB	
		11150494-001	pH	PCCMP - 5			7.4	s.u.	SM 4500-H+	16-Nov-15	SLW	
			Dissolved Oxygen	PCCMP - 5			9.07	mg/l	HACH 10360	16-Nov-15	SLW	
			Temperature	PCCMP - 5			10.8	°C	SM 2550B	16-Nov-15	SLW	
			Conductivity	PCCMP - 5			202	µmhos/cm	SM 2510B	16-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.4	mg/l	SM 5210B	16-Nov-15	MAG/KAL	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	16-Nov-15	SJB	
			Total Suspended Solids	PCCMP - 5	1.4		2.4	mg/l	SM 2540D	16-Nov-15	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 5	0.2	<	0.3	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 5	0.2		0.6	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.1	<	0.9	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.1	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	25-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 5	20		244	mpn/100ml	Colilert	16-Nov-15	PDS	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	19-Nov-15	SJB	
		11150495-001	Conductivity	PCCMP - 6 Blank			1.2	µmhos/cm	SM 2510B	16-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	2.4	mg/l	SM 5210B	16-Nov-15	MAG/KAL	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	16-Nov-15	SJB	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	16-Nov-15	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.2	<	0.3	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 6 Blank	0.2	<	0.3	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.1	<	0.6	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.05	<	0.05	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	25-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	mpn/100ml	Colilert	16-Nov-15	PDS	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	23-Nov-15	SJB	
		11150496-001	pH	PCCMP - 6			7.3	s.u.	SM 4500-H+	16-Nov-15	SLW	
			Dissolved Oxygen	PCCMP - 6			8.64	mg/l	HACH 10360	16-Nov-15	SLW	
			Temperature	PCCMP - 6			10.8	°C	SM 2550B	16-Nov-15	SLW	
			Conductivity	PCCMP - 6			201	µmhos/cm	SM 2510B	16-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.4	mg/l	SM 5210B	16-Nov-15	MAG/KAL	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	16-Nov-15	SJB	
			Total Suspended Solids	PCCMP - 6	1.4		2.4	mg/l	SM 2540D	16-Nov-15	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 6	0.2	<	0.3	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 6	0.2		0.6	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.1	<	0.9	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.11	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	25-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 6	20		126	mpn/100ml	Colilert	16-Nov-15	PDS	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	23-Nov-15	SJB	
		11150497-001	Conductivity	PCCMP - 6 Duplicate			201	µmhos/cm	SM 2510B	16-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6	<	2.4	mg/l	SM 5210B	16-Nov-15	MAG/KAL	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	16-Nov-15	SJB	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		2.8	mg/l	SM 2540D	16-Nov-15	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.2	<	0.3	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2		0.7	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.1	<	1	mg/l	SM 4500-NH3	16-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.05		0.13	mg/l	SM 4500-NO3E	18-Nov-15	AIRL	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	25-Nov-15	MAG	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	23-Oct-15	JTC	
			E. coli	PCCMP - 6 Duplicate	20		196	mpn/100ml	Colilert	16-Nov-15	PDS	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	23-Nov-15	SJB	
11/19/2015	WR	2770367	pH	PCCMP - 1			7	s.u.	SM 4500-H+	19-Nov-15	SLW	Please note that BOD analysis did not meet all QC requirements.
			Dissolved Oxygen	PCCMP - 1			8.29	mg/l	HACH 10360	19-Nov-15	SLW	
			Temperature	PCCMP - 1			14	°C	SM 2550B	19-Nov-15	SLW	
			Conductivity	PCCMP - 1			112	µmhos/cm	SM 2510B	23-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	5.3	mg/l	SM 5210B	19-Nov-15	MAG	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	19-Nov-15	JTC	
			Total Suspended Solids	PCCMP - 1	1.4		51.9	mg/l	SM 2540D	19-Nov-15	JTC/KAL	
			Ammonia-Nitrogen	PCCMP - 1	0.2		0.5	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 1	0.2		1	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.1		1.5	mg/l	SM 4500-NH3	23-Nov-15	PDS	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Nitrate + Nitrite	PCCMP - 1	0.05		0.09	mg/l	SM 4500-NO3E	04-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 1	0.03		0.11	mg/l	SM 4500-P E	02-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 1	0.03		0.07	mg/l	SM 4500-P E	25-Nov-15	JTC	
			E. coli	PCCMP - 1	20		8210	mpn/100ml	Colilert	19-Nov-15	PDS	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	23-Nov-15	SJB	
			pH	PCCMP - 2			7	s.u.	SM 4500-H+	19-Nov-15	SLW	
			Dissolved Oxygen	PCCMP - 2			7.32	mg/l	HACH 10360	19-Nov-15	SLW	
			Temperature	PCCMP - 2			14.9	°C	SM 2550B	19-Nov-15	SLW	
			Conductivity	PCCMP - 2			146	µmhos/cm	SM 2510B	23-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	5.3	mg/l	SM 5210B	19-Nov-15	MAG	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	19-Nov-15	JTC	
			Total Suspended Solids	PCCMP - 2	1.4		30.6	mg/l	SM 2540D	19-Nov-15	JTC/KAL	
		2770732	Ammonia-Nitrogen	PCCMP - 2	0.2		0.5	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 2	0.2		0.9	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.1		1.4	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.23	mg/l	SM 4500-NO3E	04-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 2	0.03		0.13	mg/l	SM 4500-P E	02-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	25-Nov-15	JTC	
			E. coli	PCCMP - 2	20		14500	mpn/100ml	Colilert	19-Nov-15	PDS	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	23-Nov-15	SJB	
			pH	PCCMP - 3			7	s.u.	SM 4500-H+	19-Nov-15	SLW	
			Dissolved Oxygen	PCCMP - 3			7.29	mg/l	HACH 10360	19-Nov-15	SLW	
			Temperature	PCCMP - 3			15.1	°C	SM 2550B	19-Nov-15	SLW	
			Conductivity	PCCMP - 3			127	µmhos/cm	SM 2510B	23-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	5.3	mg/l	SM 5210B	19-Nov-15	MAG	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	19-Nov-15	JTC	
			Total Suspended Solids	PCCMP - 3	1.4		33.6	mg/l	SM 2540D	19-Nov-15	JTC/KAL	
		2771097	Ammonia-Nitrogen	PCCMP - 3	0.2		0.6	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 3	0.2		1	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.1		1.5	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.13	mg/l	SM 4500-NO3E	04-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 3	0.03		0.1	mg/l	SM 4500-P E	02-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 3	0.03		0.04	mg/l	SM 4500-P E	25-Nov-15	JTC	
			E. coli	PCCMP - 3	20	>	48400	mpn/100ml	Colilert	19-Nov-15	PDS	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	01-Dec-15	SJB	
			pH	PCCMP - 4			6.8	s.u.	SM 4500-H+	19-Nov-15	SLW	
			Dissolved Oxygen	PCCMP - 4			7.49	mg/l	HACH 10360	19-Nov-15	SLW	
			Temperature	PCCMP - 4			15.5	°C	SM 2550B	19-Nov-15	SLW	
			Conductivity	PCCMP - 4			128	µmhos/cm	SM 2510B	23-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	5.3	mg/l	SM 5210B	19-Nov-15	MAG	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	19-Nov-15	JTC	
			Total Suspended Solids	PCCMP - 4	1.4		31	mg/l	SM 2540D	19-Nov-15	JTC/KAL	
		2771462	Ammonia-Nitrogen	PCCMP - 4	0.2		0.6	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 4	0.2		1	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.1		1.6	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.13	mg/l	SM 4500-NO3E	04-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 4	0.03		1.29	mg/l	SM 4500-P E	02-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 4	0.03		0.37	mg/l	SM 4500-P E	25-Nov-15	JTC	
			E. coli	PCCMP - 4	20		34700	mpn/100ml	Colilert	19-Nov-15	PDS	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	01-Dec-15	SJB	
			pH	PCCMP - 5			7.6	s.u.	SM 4500-H+	19-Nov-15	SLW	
			Dissolved Oxygen	PCCMP - 5			7.49	mg/l	HACH 10360	19-Nov-15	SLW	
			Temperature	PCCMP - 5			15	°C	SM 2550B	19-Nov-15	SLW	
			Conductivity	PCCMP - 5			129	µmhos/cm	SM 2510B	23-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	5.3	mg/l	SM 5210B	19-Nov-15	MAG	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	19-Nov-15	JTC	
			Total Suspended Solids	PCCMP - 5	1.4		34	mg/l	SM 2540D	19-Nov-15	JTC/KAL	
		2771828	Ammonia-Nitrogen	PCCMP - 5	0.2	<	0.3	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 5	0.2		1.1	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.1	<	1.4	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.14	mg/l	SM 4500-NO3E	04-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 5	0.03		0.12	mg/l	SM 4500-P E	02-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 5	0.03		0.09	mg/l	SM 4500-P E	25-Nov-15	JTC	
			E. coli	PCCMP - 5	20		28300	mpn/100ml	Colilert	19-Nov-15	PDS	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	01-Dec-15	SJB	
			Conductivity	PCCMP - 6 Blank			1.3	µmhos/cm	SM 2510B	23-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	5.3	mg/l	SM 5210B	19-Nov-15	MAG	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	19-Nov-15	JTC	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	19-Nov-15	JTC/KAL	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.2		0.5	mg/l	SM 4500-NH3	23-Nov-15	PDS	
		2772193	Organic Nitrogen	PCCMP - 6 Blank	0.2	<	0.3	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.1	<	0.8	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.05	<	0.05	mg/l	SM 4500-NO3E	04-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	02-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	25-Nov-15	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	mpn/100ml	Colilert	19-Nov-15	PDS	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	01-Dec-15	SJB	
			pH	PCCMP - 6			7.2	s.u.	SM 4500-H+	19-Nov-15	SLW	
			Dissolved Oxygen	PCCMP - 6			7.42	mg/l	HACH 10360	19-Nov-15	SLW	
			Temperature	PCCMP - 6			15.1	°C	SM 2550B	19-Nov-15	SLW	
			Conductivity	PCCMP - 6			131	µmhos/cm	SM 2510B	23-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	5.3	mg/l	SM 5210B	19-Nov-15	MAG	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	19-Nov-15	JTC	
			Total Suspended Solids	PCCMP - 6	1.4		44	mg/l	SM 2540D	19-Nov-15	JTC/KAL	
		2772558	Ammonia-Nitrogen	PCCMP - 6	0.2		0.5	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Organic Nitrogen	PCCMP - 6	0.2		1	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.1		1.5	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.1	mg/l	SM 4500-NO3E	04-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 6	0.03		0.13	mg/l	SM 4500-P E	02-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 6	0.03		0.06	mg/l	SM 4500-P E	25-Nov-15	JTC	
			E. coli	PCCMP - 6	20		28300	mpn/100ml	Colilert	19-Nov-15	PDS	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	01-Dec-15	SJB	
			Conductivity	PCCMP - 6 Duplicate			131	µmhos/cm	SM 2510B	23-Nov-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6	<	5.3	mg/l	SM 5210B	19-Nov-15	MAG	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	19-Nov-15	JTC	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		31	mg/l	SM 2540D	19-Nov-15	JTC/KAL	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.2		0.5	mg/l	SM 4500-NH3	23-Nov-15	PDS	
		2772923	Organic Nitrogen	PCCMP - 6 Duplicate	0.2		0.8	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.1		1.3	mg/l	SM 4500-NH3	23-Nov-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.05		0.12	mg/l	SM 4500-NO3E	04-Dec-15	AIRL	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03		0.11	mg/l	SM 4500-P E	02-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03		0.08	mg/l	SM 4500-P E	25-Nov-15	JTC	
			E. coli	PCCMP - 6 Duplicate	20		28300	mpn/100ml	Colilert	19-Nov-15	PDS	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	01-Dec-15	SJB	
12/1/2015	WR	12150085-001	Biochemical Oxygen Demand	Outfall 003, Williams Street	0.6		30.5	mg/l	SM 5210B	02-Dec-15	MAG	
			Total Suspended Solids	Outfall 003, Williams Street	1.4		138	mg/l	SM 2540D	02-Dec-15	SJB/JTC	
			Ammonia-Nitrogen	Outfall 003, Williams Street	0.2	<	0.3	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Organic Nitrogen	Outfall 003, Williams Street	0.2		1.1	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Total Kjeldahl Nitrogen	Outfall 003, Williams Street	0.1	<	1.4	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Nitrate + Nitrite	Outfall 003, Williams Street	0.05		0.67	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	Outfall 003, Williams Street	0.03		0.11	mg/l	SM 4500-P E	09-Dec-15	MAG	
			Phosphorus, Dissolved	Outfall 003, Williams Street	0.03		0.09	mg/l	SM 4500-P E	15-Dec-15	JTC	
		12150085-002	pH	Outfall 003, Williams Street			7	s.u.	SM 4500-H+	02-Dec-15	SLW	
			Dissolved Oxygen	Outfall 003, Williams Street			8.22	mg/l	HACH 10360	02-Dec-15	SLW	
			Temperature	Outfall 003, Williams Street			15.4	°C	SM 2550B	02-Dec-15	SLW	
			Conductivity	Outfall 003, Williams Street			236	µmhos/cm	SM 2510B	04-Dec-15	JTC	
			Settleable Solids	Outfall 003, Williams Street	0.2	<	0.2	ml/l	SM 2540F	02-Dec-15	KAL/JTC	
			Oil & Grease	Outfall 003, Williams Street	2.6		8.4	mg/l	EPA 1664A	04-Dec-15	SJB	
12/3/2015	WR	12150135-001	E. Coli	Outfall 003, Williams Street	100		199000	MPN/100 ml	Colilert	03-Dec-15	PDS	During the 12-1-15 Overflow Event
12/2/2015	WR		pH	PCCMP - 1			7.2	s.u.	SM 4500-H+	02-Dec-15	SLW	
			Dissolved Oxygen	PCCMP - 1			7.07	mg/l	HACH 10360	02-Dec-15	SLW	
			Temperature	PCCMP - 1			14.7	°C	SM 2550B	02-Dec-15	SLW	
			Conductivity	PCCMP - 1			153	µmhos/cm	SM 2510B	04-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	3.2	mg/l	SM 5210B	02-Dec-15	MAG	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	02-Dec-15	KAL/JTC	
			Total Suspended Solids	PCCMP - 1	1.4		11.2	mg/l	SM 2540D	02-Dec-15	SJB/JTC	
		12150088-001	Ammonia-Nitrogen	PCCMP - 1	0.2		0.3	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 1	0.2		0.8	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.1		1.1	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.15	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 1	0.03		0.1	mg/l	SM 4500-P E	09-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	15-Dec-15	JTC	
			E. coli	PCCMP - 1	20		4200	MPN/100ml	Colilert	02-Dec-15	PDS	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	08-Dec-15	SJB	
			pH	PCCMP - 2			7.6	s.u.	SM 4500-H+	02-Dec-15	SLW	
			Dissolved Oxygen	PCCMP - 2			7.33	mg/l	HACH 10360	02-Dec-15	SLW	
			Temperature	PCCMP - 2			14.5	°C	SM 2550B	02-Dec-15	SLW	
			Conductivity	PCCMP - 2			127	µmhos/cm	SM 2510B	04-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	3.2	mg/l	SM 5210B	02-Dec-15	MAG	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	02-Dec-15	KAL/JTC	
			Total Suspended Solids	PCCMP - 2	1.4		16	mg/l	SM 2540D	02-Dec-15	SJB/JTC	
		12150089-001	Ammonia-Nitrogen	PCCMP - 2	0.2	<	0.3	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 2	0.2		0.8	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.1	<	1.1	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.23	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 2	0.03		0.11	mg/l	SM 4500-P E	09-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 2	0.03		0.08	mg/l	SM 4500-P E	15-Dec-15	JTC	
			E. coli	PCCMP - 2	20		8700	MPN/100ml	Colilert	02-Dec-15	PDS	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	08-Dec-15	SJB	
			pH	PCCMP - 3			7.2	s.u.	SM 4500-H+	02-Dec-15	SLW	
			Dissolved Oxygen	PCCMP - 3			7.69	mg/l	HACH 10360	02-Dec-15	SLW	
			Temperature	PCCMP - 3			14.5	°C	SM 2550B	02-Dec-15	SLW	
			Conductivity	PCCMP - 3			130	µmhos/cm	SM 2510B	04-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6		3.5	mg/l	SM 5210B	02-Dec-15	MAG	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	02-Dec-15	KAL/JTC	
			Total Suspended Solids	PCCMP - 3	1.4		29.5	mg/l	SM 2540D	02-Dec-15	SJB/JTC	
		12150090-001	Ammonia-Nitrogen	PCCMP - 3	0.2		0.5	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 3	0.2		1	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.1		1.5	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.16	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 3	0.03		0.15	mg/l	SM 4500-P E	09-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 3	0.03		0.14	mg/l	SM 4500-P E	15-Dec-15	JTC	
			E. coli	PCCMP - 3	20		15400	MPN/100ml	Colilert	02-Dec-15	PDS	
			Oil & Grease	PCCMP - 3	2.6		5.2	mg/l	EPA 1664A	08-Dec-15	SJB	
			pH	PCCMP - 4			7.6	s.u.	SM 4500-H+	02-Dec-15	SLW	
			Dissolved Oxygen	PCCMP - 4			7.54	mg/l	HACH 10360	02-Dec-15	SLW	
			Temperature	PCCMP - 4			14.4	°C	SM 2550B	02-Dec-15	SLW	
			Conductivity	PCCMP - 4			129	µmhos/cm	SM 2510B	04-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6		3.3	mg/l	SM 5210B	02-Dec-15	MAG	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	02-Dec-15	KAL/JTC	
			Total Suspended Solids	PCCMP - 4	1.4		29.3	mg/l	SM 2540D	02-Dec-15	SJB/JTC	
		12150091-001	Ammonia-Nitrogen	PCCMP - 4	0.2		0.3	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 4	0.2		1	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.1		1.3	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.15	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 4	0.03		0.15	mg/l	SM 4500-P E	09-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 4	0.03		0.16	mg/l	SM 4500-P E	15-Dec-15	JTC	
			E. coli	PCCMP - 4	20		12300	MPN/100ml	Colilert	02-Dec-15	PDS	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	08-Dec-15	SJB	
			pH	PCCMP - 5			7.6	s.u.	SM 4500-H+	02-Dec-15	SLW	
			Dissolved Oxygen	PCCMP - 5			7.43	mg/l	HACH 10360	02-Dec-15	SLW	
			Temperature	PCCMP - 5			14.4	°C	SM 2550B	02-Dec-15	SLW	
			Conductivity	PCCMP - 5			130	µmhos/cm	SM 2510B	04-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6		3.8	mg/l	SM 5210B	02-Dec-15	MAG	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	02-Dec-15	KAL/JTC	
			Total Suspended Solids	PCCMP - 5	1.4		28	mg/l	SM 2540D	02-Dec-15	SJB/JTC	
		12150092-001	Ammonia-Nitrogen	PCCMP - 5	0.2	<	0.3	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 5	0.2		0.9	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.1	<	1.2	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.17	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 5	0.03		0.19	mg/l	SM 4500-P E	09-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 5	0.03		0.14	mg/l	SM 4500-P E	15-Dec-15	JTC	
			E. coli	PCCMP - 5	20		22400	MPN/100ml	Colilert	02-Dec-15	PDS	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	08-Dec-15	SJB	
			Conductivity	PCCMP - 6 Blank			1.8	µmhos/cm	SM 2510B	04-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	3.2	mg/l	SM 5210B	02-Dec-15	MAG	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	02-Dec-15	KAL/JTC	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	02-Dec-15	SJB/JTC	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.2	<	0.3	mg/l	SM 4500-NH3	03-Dec-15	PDS	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
		12150093-001	Organic Nitrogen	PCCMP - 6 Blank	0.2	<	0.3	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.1	<	0.6	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.05	<	0.05	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	09-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	15-Dec-15	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	02-Dec-15	PDS	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	17-Dec-15	SJB	
		12150094-001	pH	PCCMP - 6			7.7	s.u.	SM 4500-H+	02-Dec-15	SLW	
			Dissolved Oxygen	PCCMP - 6			7.52	mg/l	HACH 10360	02-Dec-15	SLW	
			Temperature	PCCMP - 6			14.3	°C	SM 2550B	02-Dec-15	SLW	
			Conductivity	PCCMP - 6			130	µmhos/cm	SM 2510B	04-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6		3.5	mg/l	SM 5210B	02-Dec-15	MAG	
			Settleable Solids	PCCMP - 6	0.1		0.1	ml/l	SM 2540F	02-Dec-15	KAL/JTC	
			Total Suspended Solids	PCCMP - 6	1.4		30	mg/l	SM 2540D	02-Dec-15	SJB/JTC	
			Ammonia-Nitrogen	PCCMP - 6	0.2	<	0.3	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 6	0.2		0.9	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.1	<	1.2	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.15	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 6	0.03		0.18	mg/l	SM 4500-P E	09-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 6	0.03		0.15	mg/l	SM 4500-P E	15-Dec-15	JTC	
			E. coli	PCCMP - 6	20		31100	MPN/100ml	Colilert	02-Dec-15	PDS	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	08-Dec-15	SJB	
		12150095-001	Conductivity	PCCMP - 6 Duplicate			131	µmhos/cm	SM 2510B	04-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6		4	mg/l	SM 5210B	02-Dec-15	MAG	
			Settleable Solids	PCCMP - 6 Duplicate	0.1		0.1	ml/l	SM 2540F	02-Dec-15	KAL/JTC	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		44	mg/l	SM 2540D	02-Dec-15	SJB/JTC	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.2	<	0.3	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2		0.9	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.1	<	1.2	mg/l	SM 4500-NH3	03-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.05		0.18	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03		0.23	mg/l	SM 4500-P E	09-Dec-15	MAG	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03		0.15	mg/l	SM 4500-P E	15-Dec-15	JTC	
			E. coli	PCCMP - 6 Duplicate	20		28300	MPN/100ml	Colilert	02-Dec-15	PDS	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	08-Dec-15	SJB	
12/5/2017	WW	12150548-001	pH	PCCMP - 1			7.1	s.u.	SM 4500-H+	15-Dec-15	SLW	
			Dissolved Oxygen	PCCMP - 1			9.02	mg/l	HACH 10360	15-Dec-15	SLW	
			Temperature	PCCMP - 1			12.5	°C	SM 2550B	15-Dec-15	SLW	
			Conductivity	PCCMP - 1			176	µmhos/cm	SM 2510B	17-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.3	mg/l	SM 5210B	15-Dec-15	MAG	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	15-Dec-15	KAL	
			Total Suspended Solids	PCCMP - 1	1.4		4.8	mg/l	SM 2540D	15-Dec-15	KAL	
			Ammonia-Nitrogen	PCCMP - 1	0.2	<	0.3	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 1	0.2	<	0.3	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.1	<	0.6	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.19	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	12-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	22-Dec-15	JTC	
			E. coli	PCCMP - 1	20		216	MPN/100ml	Colilert	15-Dec-15	PDS	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	17-Dec-15	SJB	
		12150549-001	pH	PCCMP - 2			7.3	s.u.	SM 4500-H+	15-Dec-15	SLW	
			Dissolved Oxygen	PCCMP - 2			7.72	mg/l	HACH 10360	15-Dec-15	SLW	
			Temperature	PCCMP - 2			12.6	°C	SM 2550B	15-Dec-15	SLW	
			Conductivity	PCCMP - 2			181	µmhos/cm	SM 2510B	17-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.3	mg/l	SM 5210B	15-Dec-15	MAG	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	15-Dec-15	KAL	
			Total Suspended Solids	PCCMP - 2	1.4		8	mg/l	SM 2540D	15-Dec-15	KAL	
			Ammonia-Nitrogen	PCCMP - 2	0.2	<	0.3	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 2	0.2		0.6	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.1	<	0.9	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.24	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 2	0.03		0.04	mg/l	SM 4500-P E	12-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	22-Dec-15	JTC	
			E. coli	PCCMP - 2	20		1680	MPN/100ml	Colilert	15-Dec-15	PDS	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	17-Dec-15	SJB	
		12150550-001	pH	PCCMP - 3			7.2	s.u.	SM 4500-H+	15-Dec-15	SLW	
			Dissolved Oxygen	PCCMP - 3			7.71	mg/l	HACH 10360	15-Dec-15	SLW	
			Temperature	PCCMP - 3			13	°C	SM 2550B	15-Dec-15	SLW	
			Conductivity	PCCMP - 3			183	µmhos/cm	SM 2510B	17-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.3	mg/l	SM 5210B	15-Dec-15	MAG	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	15-Dec-15	KAL	
			Total Suspended Solids	PCCMP - 3	1.4		5.2	mg/l	SM 2540D	15-Dec-15	KAL	
			Ammonia-Nitrogen	PCCMP - 3	0.2	<	0.3	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 3	0.2		0.5	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.1	<	0.8	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.19	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 3	0.03		0.05	mg/l	SM 4500-P E	12-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	22-Dec-15	JTC	
			E. coli	PCCMP - 3	20		992	MPN/100ml	Colilert	15-Dec-15	PDS	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	23-Dec-15	SJB	
		12150551-001	pH	PCCMP - 4			7.7	s.u.	SM 4500-H+	15-Dec-15	SLW	
			Dissolved Oxygen	PCCMP - 4			7.71	mg/l	HACH 10360	15-Dec-15	SLW	
			Temperature	PCCMP - 4			13.7	°C	SM 2550B	15-Dec-15	SLW	
			Conductivity	PCCMP - 4			187	µmhos/cm	SM 2510B	17-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.3	mg/l	SM 5210B	15-Dec-15	MAG	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	15-Dec-15	KAL	
			Total Suspended Solids	PCCMP - 4	1.4		4.4	mg/l	SM 2540D	15-Dec-15	KAL	
			Ammonia-Nitrogen	PCCMP - 4	0.2	<	0.3	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 4	0.2		0.3	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.1	<	0.6	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.25	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	12-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	22-Dec-15	JTC	
			E. coli	PCCMP - 4	20		1090	MPN/100ml	Colilert	15-Dec-15	PDS	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	23-Dec-15	SJB	
			pH	PCCMP - 5			7.7	s.u.	SM 4500-H+	15-Dec-15	SLW	
			Dissolved Oxygen	PCCMP - 5			7.63	mg/l	HACH 10360	15-Dec-15	SLW	
			Temperature	PCCMP - 5			14	°C	SM 2550B	15-Dec-15	SLW	
			Conductivity	PCCMP - 5			192	µmhos/cm	SM 2510B	17-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.3	mg/l	SM 5210B	15-Dec-15	MAG	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	15-Dec-15	KAL	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
		12150552-001	Total Suspended Solids	PCCMP - 5	1.4		4.8	mg/l	SM 2540D	15-Dec-15	KAL	
			Ammonia-Nitrogen	PCCMP - 5	0.2	<	0.3	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 5	0.2		0.4	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.1	<	0.7	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.25	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	12-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	22-Dec-15	JTC	
			E. coli	PCCMP - 5	20		864	MPN/100ml	Colilert	15-Dec-15	PDS	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	23-Dec-15	SJB	
		12150553-001	Conductivity	PCCMP - 6 Blank			1.2	µmhos/cm	SM 2510B	17-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	2.3	mg/l	SM 5210B	15-Dec-15	MAG	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	15-Dec-15	KAL	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	15-Dec-15	KAL	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.2	<	0.3	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 6 Blank	0.2	<	0.3	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.1	<	0.6	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.05		0.06	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	12-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	22-Dec-15	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	15-Dec-15	PDS	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	23-Dec-15	SJB	
		12150554-001	pH	PCCMP - 6			7.4	s.u.	SM 4500-H+	15-Dec-15	SLW	
			Dissolved Oxygen	PCCMP - 6			7.54	mg/l	HACH 10360	15-Dec-15	SLW	
			Temperature	PCCMP - 6			13.8	°C	SM 2550B	15-Dec-15	SLW	
			Conductivity	PCCMP - 6			218	µmhos/cm	SM 2510B	17-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.3	mg/l	SM 5210B	15-Dec-15	MAG	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	15-Dec-15	KAL	
			Total Suspended Solids	PCCMP - 6	1.4		4.8	mg/l	SM 2540D	15-Dec-15	KAL	
			Ammonia-Nitrogen	PCCMP - 6	0.2	<	0.3	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 6	0.2		0.3	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.1	<	0.6	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.27	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	12-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	22-Dec-15	JTC	
			E. coli	PCCMP - 6	20		1550	MPN/100ml	Colilert	15-Dec-15	PDS	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	23-Dec-15	SJB	
		12150555-001	Conductivity	PCCMP - 6 Duplicate			221	µmhos/cm	SM 2510B	17-Dec-15	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6	<	2.3	mg/l	SM 5210B	15-Dec-15	MAG	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	15-Dec-15	KAL	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		5.2	mg/l	SM 2540D	15-Dec-15	KAL	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.2	<	0.3	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2		0.4	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.1	<	0.7	mg/l	SM 4500-NH3	17-Dec-15	PDS	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.05		0.36	mg/l	SM 4500-NO3E	20-Dec-15	AIRL	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	12-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	22-Dec-15	JTC	
			E. coli	PCCMP - 6 Duplicate	20		1350	MPN/100ml	Colilert	15-Dec-15	PDS	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	23-Dec-15	SJB	
1/27/2016	WR	01160955-001	pH	Outfall 002, Central Avenue			7.3	s.u.	SM 4500-H+	27-Jan-16	SLW	
			Dissolved Oxygen	Outfall 002, Central Avenue			4.03	mg/l	HACH 10360	27-Jan-16	SLW	
			Temperature	Outfall 002, Central Avenue			8.9	°C	SM 2550B	27-Jan-16	SLW	
			Conductivity	Outfall 002, Central Avenue			334	µmhos/cm	SM 2510B	01-Feb-16	JTC	
			Biochemical Oxygen Demand	Outfall 002, Central Avenue	0.6	<	2.1	mg/l	SM 5210B	27-Jan-16	MAG/JTC	
			Settleable Solids	Outfall 002, Central Avenue	0.1	<	0.1	ml/l	SM 2540F	27-Jan-16	PDS	
			Total Suspended Solids	Outfall 002, Central Avenue	1.4		75	mg/l	SM 2540D	28-Jan-16	PDS	
			Ammonia-Nitrogen	Outfall 002, Central Avenue	0.1		3.3	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Organic Nitrogen	Outfall 002, Central Avenue	0.2		11.4	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Total Kjeldahl Nitrogen	Outfall 002, Central Avenue	0.3		14.8	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Nitrate + Nitrite	Outfall 002, Central Avenue	0.05	<	0.05	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	Outfall 002, Central Avenue	0.03		3.78	mg/l	SM 4500-P E	31-Jan-16	MAG	
			Phosphorus, Dissolved	Outfall 002, Central Avenue	0.03		2.92	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	Outfall 002, Central Avenue	100		242000	MPN/100ml	Colilert	27-Jan-16	KAL	
			Oil & Grease	Outfall 002, Central Avenue	2.6	<	5	mg/l	EPA 1664A	04-Feb-16	SJB	
1/13/2016	DW	01160441-001	pH	PCCMP - 1			7.2	s.u.	SM 4500-H+	13-Jan-16	SLW/DB	
			Dissolved Oxygen	PCCMP - 1			10.3	mg/l	HACH 10360	13-Jan-16	SLW/DB	
			Temperature	PCCMP - 1			5.1	°C	SM 2550B	13-Jan-16	SLW/DB	
			Conductivity	PCCMP - 1			157	µmhos/cm	SM 2510B	19-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.1	mg/l	SM 5210B	13-Jan-16	MAG/ LMJ	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	13-Jan-16	SJB	
			Total Suspended Solids	PCCMP - 1	1.4		2.4	mg/l	SM 2540D	13-Jan-16	KAL/JTC	
			Ammonia-Nitrogen	PCCMP - 1	0.2	<	0.3	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Organic Nitrogen	PCCMP - 1	0.2		0.5	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.1	<	0.8	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.22	mg/l	SM 4500-NO3E	22-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	26-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	21-Jan-16	JTC	
			E. coli	PCCMP - 1	20		104	MPN/100ml	Colilert	13-Jan-16	PDS	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	15-Jan-16	SJB	
		01160442-001	pH	PCCMP - 2			7.2	s.u.	SM 4500-H+	13-Jan-16	SLW/DB	
			Dissolved Oxygen	PCCMP - 2			11	mg/l	HACH 10360	13-Jan-16	SLW/DB	
			Temperature	PCCMP - 2			5.1	°C	SM 2550B	13-Jan-16	SLW/DB	
			Conductivity	PCCMP - 2			183	µmhos/cm	SM 2510B	19-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.1	mg/l	SM 5210B	13-Jan-16	MAG/ LMJ	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	13-Jan-16	SJB	
			Total Suspended Solids	PCCMP - 2	1.4		4	mg/l	SM 2540D	13-Jan-16	KAL/JTC	
			Ammonia-Nitrogen	PCCMP - 2	0.2	<	0.3	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Organic Nitrogen	PCCMP - 2	0.2		0.6	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.1	<	0.9	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.25	mg/l	SM 4500-NO3E	22-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	26-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	21-Jan-16	JTC	
			E. coli	PCCMP - 2	20		194	MPN/100ml	Colilert	13-Jan-16	PDS	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	15-Jan-16	SJB	
			pH	PCCMP - 3			7.3	s.u.	SM 4500-H+	13-Jan-16	SLW/DB	
			Dissolved Oxygen	PCCMP - 3			10.9	mg/l	HACH 10360	13-Jan-16	SLW/DB	
			Temperature	PCCMP - 3			5.1	°C	SM 2550B	13-Jan-16	SLW/DB	
			Conductivity	PCCMP - 3			180	µmhos/cm	SM 2510B	19-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.1	mg/l	SM 5210B	13-Jan-16	MAG/ LMJ	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	13-Jan-16	SJB	
			Total Suspended Solids	PCCMP - 3	1.4		2	mg/l	SM 2540D	13-Jan-16	KAL/JTC	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
		01160443-001	Ammonia-Nitrogen	PCCMP - 3	0.2	<	0.3	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Organic Nitrogen	PCCMP - 3	0.2		0.5	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.1	<	0.8	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.28	mg/l	SM 4500-NO3E	22-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	26-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	21-Jan-16	JTC	
			E. coli	PCCMP - 3	20		172	MPN/100ml	Colilert	13-Jan-16	PDS	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	15-Jan-16	SJB	
		01160444-001	pH	PCCMP - 4			7.3	s.u.	SM 4500-H+	13-Jan-16	SLW/DB	
			Dissolved Oxygen	PCCMP - 4			10.8	mg/l	HACH 10360	13-Jan-16	SLW/DB	
			Temperature	PCCMP - 4			5.3	°C	SM 2550B	13-Jan-16	SLW/DB	
			Conductivity	PCCMP - 4			185	µmhos/cm	SM 2510B	19-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.1	mg/l	SM 5210B	13-Jan-16	MAG/ LMJ	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	13-Jan-16	SJB	
			Total Suspended Solids	PCCMP - 4	1.4		3.6	mg/l	SM 2540D	13-Jan-16	KAL/JTC	
			Ammonia-Nitrogen	PCCMP - 4	0.2	<	0.3	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Organic Nitrogen	PCCMP - 4	0.2		0.6	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.1	<	0.9	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.35	mg/l	SM 4500-NO3E	22-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	26-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	21-Jan-16	JTC	
			E. coli	PCCMP - 4	20		312	MPN/100ml	Colilert	13-Jan-16	PDS	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	15-Jan-16	SJB	
		01160445-001	pH	PCCMP - 5			7.9	s.u.	SM 4500-H+	13-Jan-16	SLW/DB	
			Dissolved Oxygen	PCCMP - 5			10.8	mg/l	HACH 10360	13-Jan-16	SLW/DB	
			Temperature	PCCMP - 5			5	°C	SM 2550B	13-Jan-16	SLW/DB	
			Conductivity	PCCMP - 5			187	µmhos/cm	SM 2510B	19-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.1	mg/l	SM 5210B	13-Jan-16	MAG/ LMJ	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	13-Jan-16	SJB	
			Total Suspended Solids	PCCMP - 5	1.4		3.2	mg/l	SM 2540D	13-Jan-16	KAL/JTC	
			Ammonia-Nitrogen	PCCMP - 5	0.2	<	0.3	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Organic Nitrogen	PCCMP - 5	0.2		0.5	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.1	<	0.8	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.3	mg/l	SM 4500-NO3E	22-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	26-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	21-Jan-16	JTC	
			E. coli	PCCMP - 5	20		194	MPN/100ml	Colilert	13-Jan-16	PDS	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	15-Jan-16	SJB	
		01160446-001	Conductivity	PCCMP - 6 - BLANK			1.3	µmhos/cm	SM 2510B	19-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - BLANK	0.6	<	5.3	mg/l	SM 5210B	13-Jan-16	MAG/ LMJ	
			Settleable Solids	PCCMP - 6 - BLANK	0.1	<	0.1	ml/l	SM 2540F	13-Jan-16	SJB	
			Total Suspended Solids	PCCMP - 6 - BLANK	1.4	<	1.4	mg/l	SM 2540D	13-Jan-16	KAL/JTC	
			Ammonia-Nitrogen	PCCMP - 6 - BLANK	0.2	<	0.3	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Organic Nitrogen	PCCMP - 6 - BLANK	0.2	<	0.3	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 - BLANK	0.1	<	0.6	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Nitrate + Nitrite	PCCMP - 6 - BLANK	0.05	<	0.05	mg/l	SM 4500-NO3E	22-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 6 - BLANK	0.03	<	0.03	mg/l	SM 4500-P E	26-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 6 - BLANK	0.03	<	0.03	mg/l	SM 4500-P E	21-Jan-16	JTC	
			E. coli	PCCMP - 6 - BLANK	1	<	1	MPN/100ml	Colilert	13-Jan-16	PDS	
			Oil & Grease	PCCMP - 6 - BLANK	2.6	<	5	mg/l	EPA 1664A	15-Jan-16	SJB	
		01160447-001	pH	PCCMP - 6			7.3	s.u.	SM 4500-H+	13-Jan-16	SLW/DB	
			Dissolved Oxygen	PCCMP - 6			11.2	mg/l	HACH 10360	13-Jan-16	SLW/DB	
			Temperature	PCCMP - 6			5	°C	SM 2550B	13-Jan-16	SLW/DB	
			Conductivity	PCCMP - 6			186	µmhos/cm	SM 2510B	19-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.1	mg/l	SM 5210B	13-Jan-16	MAG/ LMJ	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	13-Jan-16	SJB	
			Total Suspended Solids	PCCMP - 6	1.4		3.2	mg/l	SM 2540D	13-Jan-16	KAL/JTC	
			Ammonia-Nitrogen	PCCMP - 6	0.2	<	0.3	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Organic Nitrogen	PCCMP - 6	0.2		0.5	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.1	<	0.8	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.2	mg/l	SM 4500-NO3E	22-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	26-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	21-Jan-16	JTC	
			E. coli	PCCMP - 6	20		196	MPN/100ml	Colilert	13-Jan-16	PDS	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	15-Jan-16	SJB	
		01160448-001	Conductivity	PCCMP - 6 - DUPLICATE			189	µmhos/cm	SM 2510B	19-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - DUPLICATE	0.6	<	2.1	mg/l	SM 5210B	13-Jan-16	MAG/ LMJ	
			Settleable Solids	PCCMP - 6 - DUPLICATE	0.1	<	0.1	ml/l	SM 2540F	13-Jan-16	SJB	
			Total Suspended Solids	PCCMP - 6 - DUPLICATE	1.4		7.5	mg/l	SM 2540D	13-Jan-16	KAL/JTC	
			Ammonia-Nitrogen	PCCMP - 6 - DUPLICATE	0.2	<	0.3	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Organic Nitrogen	PCCMP - 6 - DUPLICATE	0.2		0.6	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 6 - DUPLICATE	0.1	<	0.9	mg/l	SM 4500-NH3	14-Jan-16	PDS	
			Nitrate + Nitrite	PCCMP - 6 - DUPLICATE	0.05		0.17	mg/l	SM 4500-NO3E	22-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 6 - DUPLICATE	0.03	<	0.03	mg/l	SM 4500-P E	26-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 6 - DUPLICATE	0.03	<	0.03	mg/l	SM 4500-P E	21-Jan-16	JTC	
			E. coli	PCCMP - 6 - DUPLICATE	20		390	MPN/100ml	Colilert	13-Jan-16	PDS	
			Oil & Grease	PCCMP - 6 - DUPLICATE	2.6	<	5	mg/l	EPA 1664A	15-Jan-16	SJB	
1/27/2016	WR	01160947-001	pH	PCCMP - 1			7.2	s.u.	SM 4500-H+	27-Jan-16	SLW	
			Dissolved Oxygen	PCCMP - 1			11.2	mg/l	HACH 10360	27-Jan-16	SLW	
			Temperature	PCCMP - 1			7.8	°C	SM 2550B	27-Jan-16	SLW	
			Conductivity	PCCMP - 1			134	µmhos/cm	SM 2510B	01-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.1	mg/l	SM 5210B	27-Jan-16	MAG/JTC	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	27-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 1	1.4		16.4	mg/l	SM 2540D	28-Jan-16	PDS	
			Ammonia-Nitrogen	PCCMP - 1	0.1	<	0.1	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 1	0.2		1.1	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		1.1	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.21	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 1	0.03		0.09	mg/l	SM 4500-P E	31-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 1	0.03		0.03	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 1	100		850	MPN/100ml	Colilert	27-Jan-16	KAL	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	04-Feb-16	SJB	
		01160948-001	pH	PCCMP - 2			7.3	s.u.	SM 4500-H+	27-Jan-16	SLW	
			Dissolved Oxygen	PCCMP - 2			11.1	mg/l	HACH 10360	27-Jan-16	SLW	
			Temperature	PCCMP - 2			7	°C	SM 2550B	27-Jan-16	SLW	
			Conductivity	PCCMP - 2			145	µmhos/cm	SM 2510B	01-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.1	mg/l	SM 5210B	27-Jan-16	MAG/JTC	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	27-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 2	1.4		12	mg/l	SM 2540D	28-Jan-16	PDS	
			Ammonia-Nitrogen	PCCMP - 2	0.1	<	0.1	mg/l	SM 4500 Series	29-Jan-16	KAL	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Organic Nitrogen	PCCMP - 2	0.2	<	0.2	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3	<	0.3	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.23	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 2	0.03		0.05	mg/l	SM 4500-P E	31-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 2	100		630	MPN/100ml	Colilert	27-Jan-16	KAL	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	04-Feb-16	SJB	
			pH	PCCMP - 3			7.2	s.u.	SM 4500-H+	27-Jan-16	SLW	
			Dissolved Oxygen	PCCMP - 3			10.8	mg/l	HACH 10360	27-Jan-16	SLW	
			Temperature	PCCMP - 3			7.7	°C	SM 2550B	27-Jan-16	SLW	
			Conductivity	PCCMP - 3			144	µmhos/cm	SM 2510B	01-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.1	mg/l	SM 5210B	27-Jan-16	MAG/JTC	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	27-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 3	1.4		12	mg/l	SM 2540D	28-Jan-16	PDS	
		01160949-001	Ammonia-Nitrogen	PCCMP - 3	0.1	<	0.1	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 3	0.2	<	0.2	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3	<	0.3	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.24	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 3	0.03		0.06	mg/l	SM 4500-P E	31-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 3	0.03		0.06	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 3	100		3690	MPN/100ml	Colilert	27-Jan-16	KAL	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	04-Feb-16	SJB	
			pH	PCCMP - 4			7.8	s.u.	SM 4500-H+	27-Jan-16	SLW	
			Dissolved Oxygen	PCCMP - 4			11	mg/l	HACH 10360	27-Jan-16	SLW	
			Temperature	PCCMP - 4			7.2	°C	SM 2550B	27-Jan-16	SLW	
			Conductivity	PCCMP - 4			144	µmhos/cm	SM 2510B	01-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.1	mg/l	SM 5210B	27-Jan-16	MAG/JTC	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	27-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 4	1.4		12.4	mg/l	SM 2540D	28-Jan-16	PDS	
		01160950-001	Ammonia-Nitrogen	PCCMP - 4	0.1	<	0.1	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 4	0.2	<	0.2	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3	<	0.3	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.25	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 4	0.03		0.04	mg/l	SM 4500-P E	31-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 4	100		2690	MPN/100ml	Colilert	27-Jan-16	KAL	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	04-Feb-16	SJB	
			pH	PCCMP - 5			7.8	s.u.	SM 4500-H+	27-Jan-16	SLW	
			Dissolved Oxygen	PCCMP - 5			11	mg/l	HACH 10360	27-Jan-16	SLW	
			Temperature	PCCMP - 5			7.3	°C	SM 2550B	27-Jan-16	SLW	
			Conductivity	PCCMP - 5			145	µmhos/cm	SM 2510B	01-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.1	mg/l	SM 5210B	27-Jan-16	MAG/JTC	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	27-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 5	1.4		10.8	mg/l	SM 2540D	28-Jan-16	PDS	
		01160951-001	Ammonia-Nitrogen	PCCMP - 5	0.1	<	0.1	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 5	0.2	<	0.2	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3	<	0.3	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.26	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 5	0.03		0.14	mg/l	SM 4500-P E	31-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 5	0.03		0.07	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 5	100		1870	MPN/100ml	Colilert	27-Jan-16	KAL	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	04-Feb-16	SJB	
			Conductivity	PCCMP - 6 - Blank			1.2	µmhos/cm	SM 2510B	01-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Blank	0.6	<	2.1	mg/l	SM 5210B	27-Jan-16	MAG/JTC	
			Settleable Solids	PCCMP - 6 - Blank	0.1	<	0.1	ml/l	SM 2540F	27-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 6 - Blank	1.4	<	1.4	mg/l	SM 2540D	28-Jan-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 - Blank	0.1	<	0.1	mg/l	SM 4500 Series	29-Jan-16	KAL	
		01160952-001	Organic Nitrogen	PCCMP - 6 - Blank	0.2	<	0.2	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Blank	0.3	<	0.3	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 - Blank	0.05	<	0.05	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	31-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100ml	Colilert	27-Jan-16	KAL	
			Oil & Grease	PCCMP - 6 - Blank	2.6	<	5	mg/l	EPA 1664A	04-Feb-16	SJB	
			pH	PCCMP - 6			8	s.u.	SM 4500-H+	27-Jan-16	SLW	
			Dissolved Oxygen	PCCMP - 6			11	mg/l	HACH 10360	27-Jan-16	SLW	
			Temperature	PCCMP - 6			7.6	°C	SM 2550B	27-Jan-16	SLW	
			Conductivity	PCCMP - 6			146	µmhos/cm	SM 2510B	01-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.1	mg/l	SM 5210B	27-Jan-16	MAG/JTC	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	27-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 6	1.4		8.8	mg/l	SM 2540D	28-Jan-16	PDS	
		01160953-001	Ammonia-Nitrogen	PCCMP - 6	0.1	<	0.1	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 6	0.2	<	0.2	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3	<	0.3	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.23	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 6	0.03		0.07	mg/l	SM 4500-P E	31-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 6	0.03		0.06	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 6	100		1870	MPN/100ml	Colilert	27-Jan-16	KAL	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	04-Feb-16	SJB	
			Conductivity	PCCMP - 6- DUPLICATE			146	µmhos/cm	SM 2510B	01-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6- DUPLICATE	0.6	<	2.1	mg/l	SM 5210B	27-Jan-16	MAG/JTC	
			Settleable Solids	PCCMP - 6- DUPLICATE	0.1	<	0.1	ml/l	SM 2540F	27-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 6- DUPLICATE	1.4		10.8	mg/l	SM 2540D	28-Jan-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6- DUPLICATE	0.1	<	0.1	mg/l	SM 4500 Series	29-Jan-16	KAL	
		01160954-001	Organic Nitrogen	PCCMP - 6- DUPLICATE	0.2	<	0.2	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6- DUPLICATE	0.3	<	0.3	mg/l	SM 4500 Series	29-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 6- DUPLICATE	0.05		0.24	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 6- DUPLICATE	0.03		0.06	mg/l	SM 4500-P E	31-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 6- DUPLICATE	0.03		0.09	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 6- DUPLICATE	100		1870	MPN/100ml	Colilert	27-Jan-16	KAL	
			Oil & Grease	PCCMP - 6- DUPLICATE	2.6	<	5	mg/l	EPA 1664A	04-Feb-16	SJB	
1/22/2016	WW		pH	PCCMP - 1			7.4	s.u.	SM 4500-H+	22-Jan-16	SLW	
			Dissolved Oxygen	PCCMP - 1			11.6	mg/l	HACH 10360	22-Jan-16	SLW	
			Temperature	PCCMP - 1			5.3	°C	SM 2550B	22-Jan-16	SLW	
			Conductivity	PCCMP - 1			156	µmhos/cm	SM 2510B	22-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6		2.4	mg/l	SM 5210B	22-Jan-16	JTC/MAG	
			Settleable Solids	PCCMP - 1	0.1		0.1	ml/l	SM 2540F	22-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 1	1.4		76	mg/l	SM 2540D	22-Jan-16	KAL	
		01160806-001	Ammonia-Nitrogen	PCCMP - 1	0.1		0.6	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 1	0.2		1.1	mg/l	SM 4500-NH3	22-Jan-16	KAL	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		1.7	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.23	mg/l	SM 4500-NO3E	27-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 1	0.03		0.41	mg/l	SM 4500-P E	27-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 1	0.03		0.24	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 1	20		6150	MPN/100ml	Colilert	22-Jan-16	KAL	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	30-Jan-16	SJB	
		01160807-001	pH	PCCMP - 2			7.4	s.u.	SM 4500-H+	22-Jan-16	SLW	
			Dissolved Oxygen	PCCMP - 2			11.6	mg/l	HACH 10360	22-Jan-16	SLW	
			Temperature	PCCMP - 2			4.9	°C	SM 2550B	22-Jan-16	SLW	
			Conductivity	PCCMP - 2			178	µmhos/cm	SM 2510B	22-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6		5.6	mg/l	SM 5210B	22-Jan-16	JTC/MAG	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	22-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 2	1.4		54	mg/l	SM 2540D	22-Jan-16	KAL	
			Ammonia-Nitrogen	PCCMP - 2	0.1		0.1	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 2	0.2		0.8	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		0.9	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.24	mg/l	SM 4500-NO3E	27-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 2	0.03		0.24	mg/l	SM 4500-P E	27-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 2	0.03		0.52	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 2	20		4130	MPN/100ml	Colilert	22-Jan-16	KAL	
			Oil & Grease	PCCMP - 2	2.6		8	mg/l	EPA 1664A	30-Jan-16	SJB	
		01160808-001	pH	PCCMP - 3			7.4	s.u.	SM 4500-H+	22-Jan-16	SLW	
			Dissolved Oxygen	PCCMP - 3			11.8	mg/l	HACH 10360	22-Jan-16	SLW	
			Temperature	PCCMP - 3			4.9	°C	SM 2550B	22-Jan-16	SLW	
			Conductivity	PCCMP - 3			178	µmhos/cm	SM 2510B	22-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.1	mg/l	SM 5210B	22-Jan-16	JTC/MAG	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	22-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 3	1.4		52	mg/l	SM 2540D	22-Jan-16	KAL	
			Ammonia-Nitrogen	PCCMP - 3	0.1		0.1	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 3	0.2		2.5	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		2.6	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.26	mg/l	SM 4500-NO3E	27-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 3	0.03		0.16	mg/l	SM 4500-P E	27-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 3	0.03		0.13	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 3	20		3210	MPN/100ml	Colilert	22-Jan-16	KAL	
			Oil & Grease	PCCMP - 3	2.6		6.8	mg/l	EPA 1664A	30-Jan-16	SJB	
		01160809-001	pH	PCCMP - 4			7.5	s.u.	SM 4500-H+	22-Jan-16	SLW	
			Dissolved Oxygen	PCCMP - 4			11.9	mg/l	HACH 10360	22-Jan-16	SLW	
			Temperature	PCCMP - 4			4.8	°C	SM 2550B	22-Jan-16	SLW	
			Conductivity	PCCMP - 4			174	µmhos/cm	SM 2510B	22-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6		2.1	mg/l	SM 5210B	22-Jan-16	JTC/MAG	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	22-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 4	1.4		52	mg/l	SM 2540D	22-Jan-16	KAL	
			Ammonia-Nitrogen	PCCMP - 4	0.1	<	0.1	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 4	0.2	<	0.2	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3	<	0.3	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.23	mg/l	SM 4500-NO3E	27-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 4	0.03		0.17	mg/l	SM 4500-P E	27-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 4	0.03		0.14	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 4	20		2880	MPN/100ml	Colilert	22-Jan-16	KAL	
			Oil & Grease	PCCMP - 4	2.6		6	mg/l	EPA 1664A	30-Jan-16	SJB	
		01160810-001	pH	PCCMP - 5			7.9	s.u.	SM 4500-H+	22-Jan-16	SLW	
			Dissolved Oxygen	PCCMP - 5			11.9	mg/l	HACH 10360	22-Jan-16	SLW	
			Temperature	PCCMP - 5			4.9	°C	SM 2550B	22-Jan-16	SLW	
			Conductivity	PCCMP - 5			174	µmhos/cm	SM 2510B	22-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.1	mg/l	SM 5210B	22-Jan-16	JTC/MAG	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	22-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 5	1.4		56	mg/l	SM 2540D	22-Jan-16	KAL	
			Ammonia-Nitrogen	PCCMP - 5	0.1	<	0.1	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 5	0.2	<	0.2	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3	<	0.3	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.25	mg/l	SM 4500-NO3E	27-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 5	0.03		0.16	mg/l	SM 4500-P E	27-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 5	0.03		0.03	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 5	20		2710	MPN/100ml	Colilert	22-Jan-16	KAL	
			Oil & Grease	PCCMP - 5	2.6		7.6	mg/l	EPA 1664A	30-Jan-16	SJB	
		01160811-001	Conductivity	PCCMP - 6 - Blank			1	µmhos/cm	SM 2510B	22-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Blank	0.6	<	2.1	mg/l	SM 5210B	22-Jan-16	JTC/MAG	
			Settleable Solids	PCCMP - 6 - Blank	0.1	<	0.1	ml/l	SM 2540F	22-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 6 - Blank	1.4	<	1.4	mg/l	SM 2540D	22-Jan-16	KAL	
			Ammonia-Nitrogen	PCCMP - 6 - Blank	0.1	<	0.1	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 6 - Blank	0.2	<	0.2	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Blank	0.3	<	0.3	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 - Blank	0.05	<	0.05	mg/l	SM 4500-NO3E	27-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	27-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100ml	Colilert	22-Jan-16	KAL	
			Oil & Grease	PCCMP - 6 - Blank	2.6	<	5	mg/l	EPA 1664A	30-Jan-16	SJB	
		01160812-001	pH	PCCMP - 6			8	s.u.	SM 4500-H+	22-Jan-16	SLW	
			Dissolved Oxygen	PCCMP - 6			12	mg/l	HACH 10360	22-Jan-16	SLW	
			Temperature	PCCMP - 6			4.9	°C	SM 2550B	22-Jan-16	SLW	
			Conductivity	PCCMP - 6			172	µmhos/cm	SM 2510B	22-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6		2.4	mg/l	SM 5210B	22-Jan-16	JTC/MAG	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	22-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 6	1.4		90	mg/l	SM 2540D	22-Jan-16	KAL	
			Ammonia-Nitrogen	PCCMP - 6	0.1		0.1	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 6	0.2		0.8	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		0.9	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.27	mg/l	SM 4500-NO3E	27-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 6	0.03		0.16	mg/l	SM 4500-P E	27-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 6	0.03		0.07	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 6	20		3450	MPN/100ml	Colilert	22-Jan-16	KAL	
			Oil & Grease	PCCMP - 6	2.6		9.2	mg/l	EPA 1664A	30-Jan-16	SJB	
		01160813-001	Conductivity	PCCMP - 6 - Duplicate			173	µmhos/cm	SM 2510B	22-Jan-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Duplicate	0.6		3.2	mg/l	SM 5210B	22-Jan-16	JTC/MAG	
			Settleable Solids	PCCMP - 6 - Duplicate	0.1	<	0.1	ml/l	SM 2540F	22-Jan-16	PDS	
			Total Suspended Solids	PCCMP - 6 - Duplicate	1.4		67	mg/l	SM 2540D	22-Jan-16	KAL	
			Ammonia-Nitrogen	PCCMP - 6 - Duplicate	0.1		0.1	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Organic Nitrogen	PCCMP - 6 - Duplicate	0.2		1	mg/l	SM 4500-NH3	22-Jan-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Duplicate	0.3		1.1	mg/l	SM 4500-NH3	22-Jan-16	KAL	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Nitrate + Nitrite	PCCMP - 6 - Duplicate	0.05		0.25	mg/l	SM 4500-NO3E	27-Jan-16	AIRL	
			Phosphorus, Total	PCCMP - 6 - Duplicate	0.03		0.16	mg/l	SM 4500-P E	27-Jan-16	MAG	
			Phosphorus, Dissolved	PCCMP - 6 - Duplicate	0.03		0.07	mg/l	SM 4500-P E	02-Feb-16	JTC	
			E. coli	PCCMP - 6 - Duplicate	20		2930	MPN/100ml	Colilert	22-Jan-16	KAL	
			Oil & Grease	PCCMP - 6 - Duplicate	2.6		8.8	mg/l	EPA 1664A	30-Jan-16	SJB	
2/3/2016	WR		pH	Outfall 002, Central Avenue			7.2	s.u.	SM 4500-H+	03-Feb-16	SLW	
			Dissolved Oxygen	Outfall 002, Central Avenue			8.54	mg/l	HACH 10360	03-Feb-16	SLW	
			Temperature	Outfall 002, Central Avenue			15.3	°C	SM 2550B	03-Feb-16	SLW	
			Conductivity	Outfall 002, Central Avenue			200	µmhos/cm	SM 2510B	10-Feb-16	JTC	
			Biochemical Oxygen Demand	Outfall 002, Central Avenue	0.6		36	mg/l	SM 5210B	04-Feb-16	KAL	
			Settleable Solids	Outfall 002, Central Avenue	0.1	<	0.1	ml/l	SM 2540F	04-Feb-16	PDS	
			Total Suspended Solids	Outfall 002, Central Avenue	1.4		49	mg/l	SM 2540D	04-Feb-16	PDS	
		02160132-001	Ammonia-Nitrogen	Outfall 002, Central Avenue	0.1		1.7	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Organic Nitrogen	Outfall 002, Central Avenue	0.2		4.3	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Total Kjeldahl Nitrogen	Outfall 002, Central Avenue	0.3		6	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Nitrate + Nitrite	Outfall 002, Central Avenue	0.05		0.29	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	Outfall 002, Central Avenue	0.03		1.31	mg/l	SM 4500-P E	17-Feb-16	KAL	
			Phosphorus, Dissolved	Outfall 002, Central Avenue	0.03		0.99	mg/l	SM 4500-P E	05-Feb-16	JTC	
			E. coli	Outfall 002, Central Avenue	100	>	242000	MPN/100ml	Colilert	03-Feb-16	MAG	
			Oil & Grease	Outfall 002, Central Avenue	2.6		10.4	mg/l	EPA 1664A	11-Feb-16	SJB	
2/3/2016	WR		pH	Outfall 003, Williams Street			7.2	s.u.	SM 4500-H+	03-Feb-16	SLW	
			Dissolved Oxygen	Outfall 003, Williams Street			9.71	mg/l	HACH 10360	03-Feb-16	SLW	
			Temperature	Outfall 003, Williams Street			14.6	°C	SM 2550B	03-Feb-16	SLW	
			Conductivity	Outfall 003, Williams Street			128	µmhos/cm	SM 2510B	10-Feb-16	JTC	
			Biochemical Oxygen Demand	Outfall 003, Williams Street	0.6		12.7	mg/l	SM 5210B	04-Feb-16	KAL	
			Settleable Solids	Outfall 003, Williams Street	0.1	<	0.1	ml/l	SM 2540F	04-Feb-16	PDS	
			Total Suspended Solids	Outfall 003, Williams Street	1.4		28	mg/l	SM 2540D	04-Feb-16	PDS	
		02160133-001	Ammonia-Nitrogen	Outfall 003, Williams Street	0.1	<	0.1	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Organic Nitrogen	Outfall 003, Williams Street	0.2	<	0.2	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Total Kjeldahl Nitrogen	Outfall 003, Williams Street	0.3	<	0.3	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Nitrate + Nitrite	Outfall 003, Williams Street	0.05		0.36	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	Outfall 003, Williams Street	0.03		0.15	mg/l	SM 4500-P E	17-Feb-16	KAL	
			Phosphorus, Dissolved	Outfall 003, Williams Street	0.03		0.05	mg/l	SM 4500-P E	05-Feb-16	JTC	
			E. coli	Outfall 003, Williams Street	100		10800	mpn/100ml	Colilert	03-Feb-16	MAG	
			Oil & Grease	Outfall 003, Williams Street	2.6		6	mg/l	EPA 1664A	16-Feb-16	SJB	
2/3/2016	WR		pH	PCCMP - 1			7.3	s.u.	SM 4500-H+	03-Feb-16	SLW	Ammonia and organic nitrogen were not reported for some samples due to potentially unreliable results that were obtained. However, a "<" result on TKN implies that ammonia and organic nitrogen making up the TKN are also "<".
			Dissolved Oxygen	PCCMP - 1			8.57	mg/l	HACH 10360	03-Feb-16	SLW	
			Temperature	PCCMP - 1			15	°C	SM 2550B	03-Feb-16	SLW	
			Conductivity	PCCMP - 1			108	µmhos/cm	SM 2510B	10-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.8	mg/l	SM 5210B	04-Feb-16	KAL	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	04-Feb-16	PDS	
		02160124-001	Total Suspended Solids	PCCMP - 1	1.4		35.3	mg/l	SM 2540D	04-Feb-16	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3	<	0.3	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.06	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 1	0.03		0.14	mg/l	SM 4500-P E	17-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 1	0.03		0.1	mg/l	SM 4500-P E	05-Feb-16	JTC	
			E. coli	PCCMP - 1	100		1990	MPN/100ml	Colilert	03-Feb-16	MAG	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	11-Feb-16	SJB	
			pH	PCCMP - 2			7.3	s.u.	SM 4500-H+	03-Feb-16	SLW	
			Dissolved Oxygen	PCCMP - 2			8.98	mg/l	HACH 10360	03-Feb-16	SLW	
			Temperature	PCCMP - 2			14.8	°C	SM 2550B	03-Feb-16	SLW	
			Conductivity	PCCMP - 2			136	µmhos/cm	SM 2510B	10-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.8	mg/l	SM 5210B	04-Feb-16	KAL	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	04-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 2	1.4		42	mg/l	SM 2540D	04-Feb-16	PDS	
		02160125-001	Ammonia-Nitrogen	PCCMP - 2	0.1	<	0.1	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Organic Nitrogen	PCCMP - 2	0.2	<	0.2	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3	<	0.3	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.22	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 2	0.03		0.13	mg/l	SM 4500-P E	17-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 2	0.03		0.09	mg/l	SM 4500-P E	05-Feb-16	JTC	
			E. coli	PCCMP - 2	100		12400	MPN/100ml	Colilert	03-Feb-16	MAG	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	11-Feb-16	SJB	
			pH	PCCMP - 3			7.4	s.u.	SM 4500-H+	03-Feb-16	SLW	
			Dissolved Oxygen	PCCMP - 3			8.71	mg/l	HACH 10360	03-Feb-16	SLW	
			Temperature	PCCMP - 3			15	°C	SM 2550B	03-Feb-16	SLW	
			Conductivity	PCCMP - 3			123	µmhos/cm	SM 2510B	10-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6		2.8	mg/l	SM 5210B	04-Feb-16	KAL	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	04-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 3	1.4		55	mg/l	SM 2540D	04-Feb-16	PDS	
		02160126-001	Ammonia-Nitrogen	PCCMP - 3	0.1	<	0.1	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Organic Nitrogen	PCCMP - 3	0.2	<	0.2	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3	<	0.3	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.14	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 3	0.03		0.17	mg/l	SM 4500-P E	17-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 3	0.03		0.1	mg/l	SM 4500-P E	05-Feb-16	JTC	
			E. coli	PCCMP - 3	100		16600	MPN/100ml	Colilert	03-Feb-16	MAG	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	11-Feb-16	SJB	
			pH	PCCMP - 4			7.3	s.u.	SM 4500-H+	03-Feb-16	SLW	
			Dissolved Oxygen	PCCMP - 4			8.83	mg/l	HACH 10360	03-Feb-16	SLW	
			Temperature	PCCMP - 4			14.8	°C	SM 2550B	03-Feb-16	SLW	
			Conductivity	PCCMP - 4			122	µmhos/cm	SM 2510B	10-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.8	mg/l	SM 5210B	04-Feb-16	KAL	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	04-Feb-16	PDS	
		02160127-001	Total Suspended Solids	PCCMP - 4	1.4		64	mg/l	SM 2540D	04-Feb-16	PDS	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3	<	0.3	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.14	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 4	0.03		0.18	mg/l	SM 4500-P E	17-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 4	0.03		0.07	mg/l	SM 4500-P E	05-Feb-16	JTC	
			E. coli	PCCMP - 4	100		13700	MPN/100ml	Colilert	03-Feb-16	MAG	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	11-Feb-16	SJB	
			pH	PCCMP - 5			7.8	s.u.	SM 4500-H+	03-Feb-16	SLW	
			Dissolved Oxygen	PCCMP - 5			8.72	mg/l	HACH 10360	03-Feb-16	SLW	
			Temperature	PCCMP - 5			14.9	°C	SM 2550B	03-Feb-16	SLW	
			Conductivity	PCCMP - 5			121	µmhos/cm	SM 2510B	10-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6		2.8	mg/l	SM 5210B	04-Feb-16	KAL	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	04-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 5	1.4		62	mg/l	SM 2540D	04-Feb-16	PDS	
		02160128-001	Ammonia-Nitrogen	PCCMP - 5	0.1	<	0.1	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Organic Nitrogen	PCCMP - 5	0.2	<	0.2	mg/l	SM 4500 Series	04-Feb-16	MAG	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3	<	0.3	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.15	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 5	0.03		0.17	mg/l	SM 4500-P E	17-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 5	0.03		0.13	mg/l	SM 4500-P E	05-Feb-16	JTC	
			E. coli	PCCMP - 5	100		13100	MPN/100ml	Colilert	03-Feb-16	MAG	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	11-Feb-16	SJB	
		02160129-001	Conductivity	PCCMP - 6 - Blank			1.1	µmhos/cm	SM 2510B	10-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Blank	0.6	<	2.8	mg/l	SM 5210B	04-Feb-16	KAL	
			Settleable Solids	PCCMP - 6 - Blank	0.1	<	0.1	ml/l	SM 2540F	04-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 6 - Blank	1.4	<	1.4	mg/l	SM 2540D	04-Feb-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 - Blank	0.1	<	0.1	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Organic Nitrogen	PCCMP - 6 - Blank	0.2	<	0.2	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Blank	0.3	<	0.3	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 - Blank	0.05	<	0.05	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	17-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	05-Feb-16	JTC	
			E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100ml	Colilert	03-Feb-16	MAG	
			Oil & Grease	PCCMP - 6 - Blank	2.6	<	5	mg/l	EPA 1664A	11-Feb-16	SJB	
		02160130-001	pH	PCCMP - 6			7.9	s.u.	SM 4500-H+	03-Feb-16	SLW	
			Dissolved Oxygen	PCCMP - 6			8.64	mg/l	HACH 10360	03-Feb-16	SLW	
			Temperature	PCCMP - 6			15.2	°C	SM 2550B	03-Feb-16	SLW	
			Conductivity	PCCMP - 6			123	µmhos/cm	SM 2510B	10-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6		2.8	mg/l	SM 5210B	04-Feb-16	KAL	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	04-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 6	1.4		64	mg/l	SM 2540D	04-Feb-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6	0.1	<	0.1	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Organic Nitrogen	PCCMP - 6	0.2	<	0.2	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3	<	0.3	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.15	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 6	0.03		0.18	mg/l	SM 4500-P E	17-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6	0.03		0.15	mg/l	SM 4500-P E	05-Feb-16	JTC	
			E. coli	PCCMP - 6	100		15200	MPN/100ml	Colilert	03-Feb-16	MAG	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	11-Feb-16	SJB	
		02160131-001	Conductivity	PCCMP - 6 - Duplicate			123	µmhos/cm	SM 2510B	10-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Duplicate	0.6		3.2	mg/l	SM 5210B	04-Feb-16	KAL	
			Settleable Solids	PCCMP - 6 - Duplicate	0.1	<	0.1	ml/l	SM 2540F	04-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 6 - Duplicate	1.4		63	mg/l	SM 2540D	04-Feb-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 - Duplicate	0.1	<	0.1	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Organic Nitrogen	PCCMP - 6 - Duplicate	0.2	<	0.2	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Duplicate	0.3	<	0.3	mg/l	SM 4500 Series	04-Feb-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 - Duplicate	0.05		0.15	mg/l	SM 4500-NO3E	11-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 6 - Duplicate	0.03		0.18	mg/l	SM 4500-P E	17-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 - Duplicate	0.03		0.15	mg/l	SM 4500-P E	05-Feb-16	JTC	
			E. coli	PCCMP - 6 - Duplicate	100		12800	MPN/100ml	Colilert	03-Feb-16	MAG	
			Oil & Grease	PCCMP - 6 - Duplicate	2.6	<	5	mg/l	EPA 1664A	11-Feb-16	SJB	
2/15/2016	WW		pH	PCCMP - 1			7.3	s.u.	SM 4500-H+	15-Feb-16	SLW	The high blank result on oil and grease was investigated, but no cause could be found.
			Dissolved Oxygen	PCCMP - 1			12.1	mg/l	HACH 10360	15-Feb-16	SLW	
			Temperature	PCCMP - 1			5.2	°C	SM 2550B	15-Feb-16	SLW	
			Conductivity	PCCMP - 1			163	µmhos/cm	SM 2510B	29-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.4	mg/l	SM 5210B	15-Feb-16	SJB/KAL	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	15-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 1	1.4		3.6	mg/l	SM 2540D	15-Feb-16	PDS	
		02160571-001	Ammonia-Nitrogen	PCCMP - 1	0.1	<	0.1	mg/l	SM 4500-NH3	16-Feb-16	JTC	
			Organic Nitrogen	PCCMP - 1	0.2	<	0.2	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.1	<	0.3	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.27	mg/l	SM 4500-NO3E	24-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	18-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	26-Feb-16	JTC	
			E. coli	PCCMP - 1	20		60	MPN/100ml	Colilert	15-Feb-16	MAG	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	25-Feb-16	SJB	
		02160572-001	pH	PCCMP - 2			7.3	s.u.	SM 4500-H+	15-Feb-16	SLW	
			Dissolved Oxygen	PCCMP - 2			11.6	mg/l	HACH 10360	15-Feb-16	SLW	
			Temperature	PCCMP - 2			4.8	°C	SM 2550B	15-Feb-16	SLW	
			Conductivity	PCCMP - 2			192	µmhos/cm	SM 2510B	29-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.4	mg/l	SM 5210B	15-Feb-16	SJB/KAL	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	15-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 2	1.4		2.4	mg/l	SM 2540D	15-Feb-16	PDS	
			Ammonia-Nitrogen	PCCMP - 2	0.1	<	0.1	mg/l	SM 4500-NH3	16-Feb-16	JTC	
			Organic Nitrogen	PCCMP - 2	0.2	<	0.2	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.1	<	0.3	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.35	mg/l	SM 4500-NO3E	24-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	18-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	26-Feb-16	JTC	
			E. coli	PCCMP - 2	20		40	MPN/100ml	Colilert	15-Feb-16	MAG	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	25-Feb-16	SJB	
		02160573-001	pH	PCCMP - 3			7.3	s.u.	SM 4500-H+	15-Feb-16	SLW	
			Dissolved Oxygen	PCCMP - 3			11.4	mg/l	HACH 10360	15-Feb-16	SLW	
			Temperature	PCCMP - 3			4.9	°C	SM 2550B	15-Feb-16	SLW	
			Conductivity	PCCMP - 3			184	µmhos/cm	SM 2510B	29-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.4	mg/l	SM 5210B	15-Feb-16	SJB/KAL	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	15-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 3	1.4		2	mg/l	SM 2540D	15-Feb-16	PDS	
			Ammonia-Nitrogen	PCCMP - 3	0.1	<	0.1	mg/l	SM 4500-NH3	16-Feb-16	JTC	
			Organic Nitrogen	PCCMP - 3	0.2	<	0.2	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.1	<	0.3	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.36	mg/l	SM 4500-NO3E	24-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 3	0.03		0.27	mg/l	SM 4500-P E	18-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	26-Feb-16	JTC	
			E. coli	PCCMP - 3	20		62	MPN/100ml	Colilert	15-Feb-16	MAG	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	25-Feb-16	SJB	
		02160574-001	pH	PCCMP - 4			7.8	s.u.	SM 4500-H+	15-Feb-16	SLW	
			Dissolved Oxygen	PCCMP - 4			11.5	mg/l	HACH 10360	15-Feb-16	SLW	
			Temperature	PCCMP - 4			5.3	°C	SM 2550B	15-Feb-16	SLW	
			Conductivity	PCCMP - 4			193	µmhos/cm	SM 2510B	29-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.4	mg/l	SM 5210B	15-Feb-16	SJB/KAL	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	15-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 4	1.4		4	mg/l	SM 2540D	15-Feb-16	PDS	
			Ammonia-Nitrogen	PCCMP - 4	0.1	<	0.1	mg/l	SM 4500-NH3	16-Feb-16	JTC	
			Organic Nitrogen	PCCMP - 4	0.2	<	0.2	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.1	<	0.3	mg/l	SM 4500-NH3	17-Feb-16	SJB	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Nitrate + Nitrite	PCCMP - 4	0.05		0.3	mg/l	SM 4500-NO3E	24-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	18-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	26-Feb-16	JTC	
			E. coli	PCCMP - 4	20		374	MPN/100ml	Colilert	15-Feb-16	MAG	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	25-Feb-16	SJB	
			pH	PCCMP - 5			7.7	s.u.	SM 4500-H+	15-Feb-16	SLW	
			Dissolved Oxygen	PCCMP - 5			11.6	mg/l	HACH 10360	15-Feb-16	SLW	
			Temperature	PCCMP - 5			5.1	°C	SM 2550B	15-Feb-16	SLW	
			Conductivity	PCCMP - 5			187	µmhos/cm	SM 2510B	29-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.4	mg/l	SM 5210B	15-Feb-16	SJB/KAL	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	15-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 5	1.4		3.2	mg/l	SM 2540D	15-Feb-16	PDS	
		02160575-001	Ammonia-Nitrogen	PCCMP - 5	0.1	<	0.1	mg/l	SM 4500-NH3	16-Feb-16	JTC	
			Organic Nitrogen	PCCMP - 5	0.2	<	0.2	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.1	<	0.3	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.35	mg/l	SM 4500-NO3E	24-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	18-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	26-Feb-16	JTC	
			E. coli	PCCMP - 5	20		148	MPN/100ml	Colilert	15-Feb-16	MAG	
			Oil & Grease	PCCMP - 5	2.6		11.6	mg/l	EPA 1664A	25-Feb-16	SJB	
			Conductivity	PCCMP - 6 Blank			1.2	µmhos/cm	SM 2510B	29-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	2.4	mg/l	SM 5210B	15-Feb-16	SJB/KAL	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	15-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	15-Feb-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.1	<	0.1	mg/l	SM 4500-NH3	16-Feb-16	JTC	
		02160576-001	Organic Nitrogen	PCCMP - 6 Blank	0.2	<	0.2	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.1	<	0.3	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.05	<	0.05	mg/l	SM 4500-NO3E	24-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	18-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	26-Feb-16	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	15-Feb-16	MAG	
			Oil & Grease	PCCMP - 6 Blank	2.6		16.8	mg/l	EPA 1664A	25-Feb-16	SJB	
			pH	PCCMP - 6			8	s.u.	SM 4500-H+	15-Feb-16	SLW	
			Dissolved Oxygen	PCCMP - 6			11.7	mg/l	HACH 10360	15-Feb-16	SLW	
			Temperature	PCCMP - 6			5.1	°C	SM 2550B	15-Feb-16	SLW	
			Conductivity	PCCMP - 6			184	µmhos/cm	SM 2510B	29-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.4	mg/l	SM 5210B	15-Feb-16	SJB/KAL	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	15-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 6	1.4		2.8	mg/l	SM 2540D	15-Feb-16	PDS	
		02160577-001	Ammonia-Nitrogen	PCCMP - 6	0.1	<	0.1	mg/l	SM 4500-NH3	16-Feb-16	JTC	
			Organic Nitrogen	PCCMP - 6	0.2	<	0.2	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.1	<	0.3	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.34	mg/l	SM 4500-NO3E	24-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	18-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	26-Feb-16	JTC	
			E. coli	PCCMP - 6	20		150	MPN/100ml	Colilert	15-Feb-16	MAG	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	25-Feb-16	SJB	
			Conductivity	PCCMP - 6 Duplicate			186	µmhos/cm	SM 2510B	29-Feb-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6	<	2.4	mg/l	SM 5210B	15-Feb-16	SJB/KAL	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	15-Feb-16	PDS	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		2.8	mg/l	SM 2540D	15-Feb-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.1	<	0.1	mg/l	SM 4500-NH3	16-Feb-16	JTC	
		02160578-001	Organic Nitrogen	PCCMP - 6 Duplicate	0.2	<	0.2	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.1	<	0.3	mg/l	SM 4500-NH3	17-Feb-16	SJB	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.05		0.35	mg/l	SM 4500-NO3E	24-Feb-16	AIRL	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	18-Feb-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	26-Feb-16	JTC	
			E. coli	PCCMP - 6 Duplicate	20		62	MPN/100ml	Colilert	15-Feb-16	MAG	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	25-Feb-16	SJB	
3/7/2016	DW		pH	PCCMP - 1			7.2	s.u.	SM 4500-H+	07-Mar-16	SLW	
			Dissolved Oxygen	PCCMP - 1			10.6	mg/l	HACH 10360	07-Mar-16	SLW	
			Temperature	PCCMP - 1			9.2	°C	SM 2550B	07-Mar-16	SLW	
			Conductivity	PCCMP - 1			155	µmhos/cm	SM 2510B	11-Mar-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.4	mg/l	SM 5210B	07-Mar-16	SJB/KAL	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	07-Mar-16	SJB/PDS	
			Total Suspended Solids	PCCMP - 1	1.4		4.4	mg/l	SM 2540D	07-Mar-16	PDS	
		03160247-001	Ammonia-Nitrogen	PCCMP - 1	0.1	<	0.1	mg/l	SM 4500 Series	08-Mar-16	MAG	
			Organic Nitrogen	PCCMP - 1	0.2	<	0.2	mg/l	SM 4500 Series	08-Mar-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3	<	0.3	mg/l	SM 4500 Series	08-Mar-16	MAG	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.21	mg/l	SM 4500-NO3E	16-Mar-16	AIRL	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	18-Mar-16	KAL	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	08-Mar-16	JTC	
			E. coli	PCCMP - 1	20		104	MPN/100ml	Colilert	07-Mar-16	MAG	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	16-Mar-16	SJB	
			pH	PCCMP - 2			7.3	s.u.	SM 4500-H+	07-Mar-16	SLW	
			Dissolved Oxygen	PCCMP - 2			10.4	mg/l	HACH 10360	07-Mar-16	SLW	
			Temperature	PCCMP - 2			9.9	°C	SM 2550B	07-Mar-16	SLW	
			Conductivity	PCCMP - 2			184	µmhos/cm	SM 2510B	11-Mar-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.4	mg/l	SM 5210B	07-Mar-16	SJB/KAL	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	07-Mar-16	SJB/PDS	
			Total Suspended Solids	PCCMP - 2	1.4		5.2	mg/l	SM 2540D	07-Mar-16	PDS	
		03160248-001	Ammonia-Nitrogen	PCCMP - 2	0.1	<	0.1	mg/l	SM 4500 Series	08-Mar-16	MAG	
			Organic Nitrogen	PCCMP - 2	0.2	<	0.2	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3	<	0.3	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.3	mg/l	SM 4500-NO3E	16-Mar-16	AIRL	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	18-Mar-16	KAL	
			Phosphorus, Dissolved	PCCMP - 2	0.03		0.07	mg/l	SM 4500-P E	08-Mar-16	JTC	
			E. coli	PCCMP - 2	20		104	MPN/100ml	Colilert	07-Mar-16	MAG	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	16-Mar-16	SJB	
			pH	PCCMP - 3			7.4	s.u.	SM 4500-H+	07-Mar-16	SLW	
			Dissolved Oxygen	PCCMP - 3			10.4	mg/l	HACH 10360	07-Mar-16	SLW	
			Temperature	PCCMP - 3			10.4	°C	SM 2550B	07-Mar-16	SLW	
			Conductivity	PCCMP - 3			171	µmhos/cm	SM 2510B	11-Mar-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.4	mg/l	SM 5210B	07-Mar-16	SJB/KAL	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	07-Mar-16	SJB/PDS	
			Total Suspended Solids	PCCMP - 3	1.4		6.4	mg/l	SM 2540D	07-Mar-16	PDS	
		03160249-001	Ammonia-Nitrogen	PCCMP - 3	0.1	<	0.1	mg/l	SM 4500 Series	08-Mar-16	MAG	
			Organic Nitrogen	PCCMP - 3	0.2	<	0.2	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3	<	0.3	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.42	mg/l	SM 4500-NO3E	16-Mar-16	AIRL	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Phosphorus, Total	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	18-Mar-16	KAL	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	08-Mar-16	JTC	
			E. coli	PCCMP - 3	20		20	MPN/100ml	Colilert	07-Mar-16	MAG	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	16-Mar-16	SJB	
		03160250-001	pH	PCCMP - 4			7.9	s.u.	SM 4500-H+	07-Mar-16	SLW	
			Dissolved Oxygen	PCCMP - 4			10.5	mg/l	HACH 10360	07-Mar-16	SLW	
			Temperature	PCCMP - 4			10.9	°C	SM 2550B	07-Mar-16	SLW	
			Conductivity	PCCMP - 4			174	µmhos/cm	SM 2510B	11-Mar-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.4	mg/l	SM 5210B	07-Mar-16	SJB/KAL	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	07-Mar-16	SJB/PDS	
			Total Suspended Solids	PCCMP - 4	1.4		6	mg/l	SM 2540D	07-Mar-16	PDS	
			Ammonia-Nitrogen	PCCMP - 4	0.1	<	0.1	mg/l	SM 4500 Series	08-Mar-16	MAG	
			Organic Nitrogen	PCCMP - 4	0.2	<	0.2	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3	<	0.3	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.28	mg/l	SM 4500-NO3E	16-Mar-16	AIRL	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	18-Mar-16	KAL	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	08-Mar-16	JTC	
			E. coli	PCCMP - 4	20		432	MPN/100ml	Colilert	07-Mar-16	MAG	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	16-Mar-16	SJB	
		03160251-001	pH	PCCMP - 5			7.4	s.u.	SM 4500-H+	07-Mar-16	SLW	
			Dissolved Oxygen	PCCMP - 5			10.4	mg/l	HACH 10360	07-Mar-16	SLW	
			Temperature	PCCMP - 5			11.5	°C	SM 2550B	07-Mar-16	SLW	
			Conductivity	PCCMP - 5			174	µmhos/cm	SM 2510B	11-Mar-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.4	mg/l	SM 5210B	07-Mar-16	SJB/KAL	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	07-Mar-16	SJB/PDS	
			Total Suspended Solids	PCCMP - 5	1.4		4	mg/l	SM 2540D	07-Mar-16	PDS	
			Ammonia-Nitrogen	PCCMP - 5	0.1	<	0.1	mg/l	SM 4500 Series	08-Mar-16	MAG	
			Organic Nitrogen	PCCMP - 5	0.2	<	0.2	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3	<	0.3	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.27	mg/l	SM 4500-NO3E	16-Mar-16	AIRL	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	18-Mar-16	KAL	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	08-Mar-16	JTC	
			E. coli	PCCMP - 5	20		194	MPN/100ml	Colilert	07-Mar-16	MAG	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	16-Mar-16	SJB	
		03160252-001	Conductivity	PCCMP - 6 Blank			1.1	µmhos/cm	SM 2510B	11-Mar-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	2.4	mg/l	SM 5210B	07-Mar-16	SJB/KAL	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	07-Mar-16	SJB/PDS	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	07-Mar-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.1	<	0.1	mg/l	SM 4500 Series	08-Mar-16	MAG	
			Organic Nitrogen	PCCMP - 6 Blank	0.2	<	0.2	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.3	<	0.3	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.05	<	0.05	mg/l	SM 4500-NO3E	16-Mar-16	AIRL	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	18-Mar-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	08-Mar-16	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	07-Mar-16	MAG	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	16-Mar-16	SJB	
		03160253-001	pH	PCCMP - 6			8	s.u.	SM 4500-H+	07-Mar-16	SLW	
			Dissolved Oxygen	PCCMP - 6			10.4	mg/l	HACH 10360	07-Mar-16	SLW	
			Temperature	PCCMP - 6			11.8	°C	SM 2550B	07-Mar-16	SLW	
			Conductivity	PCCMP - 6			173	µmhos/cm	SM 2510B	11-Mar-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.4	mg/l	SM 5210B	07-Mar-16	SJB/KAL	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	07-Mar-16	SJB/PDS	
			Total Suspended Solids	PCCMP - 6	1.4		3.6	mg/l	SM 2540D	07-Mar-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6	0.1	<	0.1	mg/l	SM 4500 Series	08-Mar-16	MAG	
			Organic Nitrogen	PCCMP - 6	0.2	<	0.2	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3	<	0.3	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.24	mg/l	SM 4500-NO3E	16-Mar-16	AIRL	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	18-Mar-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	08-Mar-16	JTC	
			E. coli	PCCMP - 6	20		168	MPN/100ml	Colilert	07-Mar-16	MAG	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	16-Mar-16	SJB	
		03160254-001	Conductivity	PCCMP - 6 Duplicate			174	µmhos/cm	SM 2510B	11-Mar-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6	<	2.4	mg/l	SM 5210B	07-Mar-16	SJB/KAL	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	07-Mar-16	SJB/PDS	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		4.8	mg/l	SM 2540D	07-Mar-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.1	<	0.1	mg/l	SM 4500 Series	08-Mar-16	MAG	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2	<	0.2	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.3	<	0.3	mg/l	SM 4500 Series	09-Mar-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.05		0.23	mg/l	SM 4500-NO3E	16-Mar-16	AIRL	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	18-Mar-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	08-Mar-16	JTC	
			E. coli	PCCMP - 6 Duplicate	20		122	MPN/100ml	Colilert	07-Mar-16	MAG	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	16-Mar-16	SJB	
4/1/2016	WW		pH	PCCMP - 1			7.7	s.u.	SM 4500-H+	01-Apr-16	SLW	Counts for March
			Dissolved Oxygen	PCCMP - 1			7.85	mg/l	HACH 10360	01-Apr-16	SLW	
			Temperature	PCCMP - 1			16.7	°C	SM 2550B	01-Apr-16	SLW	
			Conductivity	PCCMP - 1			150	µmhos/cm	SM 2510B	05-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.3	mg/l	SM 5210B	01-Apr-16	KAL	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	01-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 1	1.4		22	mg/l	SM 2540D	01-Apr-16	PDS/KAL	
		04160093-001	Ammonia-Nitrogen	PCCMP - 1	0.1	<	0.1	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 1	0.2		0.3	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		0.4	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 1	0.05		0.12	mg/l	SM 4500-NO3E	08-Apr-16	AIRL	
			Phosphorus, Total	PCCMP - 1	0.03		0.03	mg/l	SM 4500-P E	12-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 1	0.03		0.04	mg/l	SM 4500-P E	05-Apr-16	JTC	
			E. coli	PCCMP - 1	20		6150	MPN/100ml	Colilert	01-Apr-16	JTC/KAL	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	06-Apr-16	SJB	
		04160094-001	pH	PCCMP - 2			7.4	s.u.	SM 4500-H+	01-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 2			7.71	mg/l	HACH 10360	01-Apr-16	SLW	
			Temperature	PCCMP - 2			16.7	°C	SM 2550B	01-Apr-16	SLW	
			Conductivity	PCCMP - 2			152	µmhos/cm	SM 2510B	05-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6		2.5	mg/l	SM 5210B	01-Apr-16	KAL	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	01-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 2	1.4		24.8	mg/l	SM 2540D	01-Apr-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 2	0.1	<	0.1	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 2	0.2		0.7	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		0.8	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 2	0.05		0.15	mg/l	SM 4500-NO3E	08-Apr-16	AIRL	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	12-Apr-16	KAL	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Phosphorus, Dissolved	PCCMP - 2	0.03		0.03	mg/l	SM 4500-P E	05-Apr-16	JTC	
			E. coli	PCCMP - 2	20		4560	MPN/100ml	Colilert	01-Apr-16	JTC/KAL	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	06-Apr-16	SJB	
		04160095-001	pH	PCCMP - 3			7.5	s.u.	SM 4500-H+	01-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 3			7.6	mg/l	HACH 10360	01-Apr-16	SLW	
			Temperature	PCCMP - 3			16.5	°C	SM 2550B	01-Apr-16	SLW	
			Conductivity	PCCMP - 3			151	µmhos/cm	SM 2510B	05-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6		3.9	mg/l	SM 5210B	01-Apr-16	KAL	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	01-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 3	1.4		21.6	mg/l	SM 2540D	01-Apr-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 3	0.1	<	0.1	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 3	0.2		0.7	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		0.8	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 3	0.05		0.13	mg/l	SM 4500-NO3E	08-Apr-16	AIRL	
			Phosphorus, Total	PCCMP - 3	0.03		0.03	mg/l	SM 4500-P E	12-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	05-Apr-16	JTC	
			E. coli	PCCMP - 3	20		7310	MPN/100ml	Colilert	01-Apr-16	JTC/KAL	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	06-Apr-16	SJB	
		04160096-001	pH	PCCMP - 4			7.6	s.u.	SM 4500-H+	01-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 4			7.49	mg/l	HACH 10360	01-Apr-16	SLW	
			Temperature	PCCMP - 4			16.7	°C	SM 2550B	01-Apr-16	SLW	
			Conductivity	PCCMP - 4			153	µmhos/cm	SM 2510B	05-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6		3.9	mg/l	SM 5210B	01-Apr-16	KAL	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	01-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 4	1.4		18.8	mg/l	SM 2540D	01-Apr-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 4	0.1	<	0.1	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 4	0.2		0.5	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		0.6	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 4	0.05		0.13	mg/l	SM 4500-NO3E	08-Apr-16	AIRL	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	12-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	05-Apr-16	JTC	
			E. coli	PCCMP - 4	20		6150	MPN/100ml	Colilert	01-Apr-16	JTC/KAL	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	06-Apr-16	SJB	
		04160097-001	pH	PCCMP - 5			7.5	s.u.	SM 4500-H+	01-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 5			7.45	mg/l	HACH 10360	01-Apr-16	SLW	
			Temperature	PCCMP - 5			16.8	°C	SM 2550B	01-Apr-16	SLW	
			Conductivity	PCCMP - 5			153	µmhos/cm	SM 2510B	05-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6		4.4	mg/l	SM 5210B	01-Apr-16	KAL	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	01-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 5	1.4		20	mg/l	SM 2540D	01-Apr-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 5	0.1	<	0.1	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 5	0.2		0.9	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		1	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 5	0.05		0.13	mg/l	SM 4500-NO3E	08-Apr-16	AIRL	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	12-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	05-Apr-16	JTC	
			E. coli	PCCMP - 5	20		5820	MPN/100ml	Colilert	01-Apr-16	JTC/KAL	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	06-Apr-16	SJB	
		04160098-001	Conductivity	PCCMP - 6 Blank			1.1	µmhos/cm	SM 2510B	05-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	2.3	mg/l	SM 5210B	01-Apr-16	KAL	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	01-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	01-Apr-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.1	<	0.1	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 6 Blank	0.2		0.3	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.3		0.4	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.05	<	0.05	mg/l	SM 4500-NO3E	08-Apr-16	AIRL	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	12-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	05-Apr-16	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	01-Apr-16	JTC/KAL	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	12-Apr-16	SJB	
		04160099-001	pH	PCCMP - 6			7.6	s.u.	SM 4500-H+	01-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 6			7.48	mg/l	HACH 10360	01-Apr-16	SLW	
			Temperature	PCCMP - 6			16.7	°C	SM 2550B	01-Apr-16	SLW	
			Conductivity	PCCMP - 6			153	µmhos/cm	SM 2510B	05-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6		4.9	mg/l	SM 5210B	01-Apr-16	KAL	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	01-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 6	1.4		17.2	mg/l	SM 2540D	01-Apr-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 6	0.1	<	0.1	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 6	0.2		0.5	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		0.6	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 6	0.05		0.16	mg/l	SM 4500-NO3E	08-Apr-16	AIRL	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	12-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	05-Apr-16	JTC	
			E. coli	PCCMP - 6	20		4370	MPN/100ml	Colilert	01-Apr-16	JTC/KAL	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	12-Apr-16	SJB	
		04160100-001	Conductivity	PCCMP - 6 Duplicate			154	µmhos/cm	SM 2510B	05-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6		5.4	mg/l	SM 5210B	01-Apr-16	KAL	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	01-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		16.8	mg/l	SM 2540D	01-Apr-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.1	<	0.1	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2		0.5	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.3		0.6	mg/l	SM 4500 Series	04-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.05		0.17	mg/l	SM 4500-NO3E	08-Apr-16	AIRL	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	12-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	05-Apr-16	JTC	
			E. coli	PCCMP - 6 Duplicate	20		4760	MPN/100ml	Colilert	01-Apr-16	JTC/KAL	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	12-Apr-16	SJB	
4/18/2017	DW		pH	PCCMP - 1			7.4	s.u.	SM 4500-H+	07-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 1			8.57	mg/l	HACH 10360	07-Apr-16	SLW	
			Temperature	PCCMP - 1			14.2	°C	SM 2550B	07-Apr-16	SLW	
			Conductivity	PCCMP - 1			162	µmhos/cm	SM 2510B	19-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.4	mg/l	SM 5210B	18-Apr-16	SJB/KAL	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	18-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 1	1.4		7.6	mg/l	SM 2540D	18-Apr-16	PDS	
		04160640-001	Ammonia-Nitrogen	PCCMP - 1	0.1	<	0.1	mg/l	SM 4500 Series	19-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 1	0.2		0.9	mg/l	SM 4500 Series	19-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		1	mg/l	SM 4500 Series	19-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 1	0.132		0.162	mg/l	EPA 300.0	19-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	07-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	19-Apr-16	JTC	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			E. coli	PCCMP - 1	20		20	MPN/100ml	Colilert	18-Apr-16	MAG	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	20-Apr-16	SJB	
		04160641-001	pH	PCCMP - 2			7.5	s.u.	SM 4500-H+	07-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 2			8.15	mg/l	HACH 10360	07-Apr-16	SLW	
			Temperature	PCCMP - 2			14.7	°C	SM 2550B	07-Apr-16	SLW	
			Conductivity	PCCMP - 2			177	µmhos/cm	SM 2510B	19-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.4	mg/l	SM 5210B	18-Apr-16	SJB/KAL	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	18-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 2	1.4		6	mg/l	SM 2540D	18-Apr-16	PDS	
			Ammonia-Nitrogen	PCCMP - 2	0.1	<	0.1	mg/l	SM 4500 Series	19-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 2	0.2		0.9	mg/l	SM 4500 Series	19-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		1	mg/l	SM 4500 Series	19-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 2	0.132		0.191	mg/l	EPA 300.0	19-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	07-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	19-Apr-16	JTC	
			E. coli	PCCMP - 2	20		170	MPN/100ml	Colilert	18-Apr-16	MAG	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	20-Apr-16	SJB	
		04160642-001	pH	PCCMP - 3			7.4	s.u.	SM 4500-H+	07-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 3			7.91	mg/l	HACH 10360	07-Apr-16	SLW	
			Temperature	PCCMP - 3			15.7	°C	SM 2550B	07-Apr-16	SLW	
			Conductivity	PCCMP - 3			181	µmhos/cm	SM 2510B	19-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.4	mg/l	SM 5210B	18-Apr-16	SJB/KAL	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	18-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 3	1.4		6.4	mg/l	SM 2540D	18-Apr-16	PDS	
			Ammonia-Nitrogen	PCCMP - 3	0.1	<	0.1	mg/l	SM 4500 Series	19-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 3	0.2		1	mg/l	SM 4500 Series	19-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		1.1	mg/l	SM 4500 Series	19-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 3	0.132		0.228	mg/l	EPA 300.0	19-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	07-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 3	0.03		0.05	mg/l	SM 4500-P E	19-Apr-16	JTC	
			E. coli	PCCMP - 3	20		104	MPN/100ml	Colilert	18-Apr-16	MAG	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	20-Apr-16	SJB	
		04160643-001	pH	PCCMP - 4			7.8	s.u.	SM 4500-H+	07-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 4			7.93	mg/l	HACH 10360	07-Apr-16	SLW	
			Temperature	PCCMP - 4			16.2	°C	SM 2550B	07-Apr-16	SLW	
			Conductivity	PCCMP - 4			185	µmhos/cm	SM 2510B	19-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.4	mg/l	SM 5210B	18-Apr-16	SJB/KAL	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	18-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 4	1.4		6.4	mg/l	SM 2540D	18-Apr-16	PDS	
			Ammonia-Nitrogen	PCCMP - 4	0.1	<	0.1	mg/l	SM 4500 Series	19-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 4	0.2		1	mg/l	SM 4500 Series	19-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		1.1	mg/l	SM 4500 Series	19-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 4	0.132		0.198	mg/l	EPA 300.0	19-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	07-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 4	0.03		0.07	mg/l	SM 4500-P E	19-Apr-16	JTC	
			E. coli	PCCMP - 4	20		196	MPN/100ml	Colilert	18-Apr-16	MAG	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	20-Apr-16	SJB	
		04160644-001	pH	PCCMP - 5			7.7	s.u.	SM 4500-H+	07-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 5			7.85	mg/l	HACH 10360	07-Apr-16	SLW	
			Temperature	PCCMP - 5			16.2	°C	SM 2550B	07-Apr-16	SLW	
			Conductivity	PCCMP - 5			185	µmhos/cm	SM 2510B	19-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.4	mg/l	SM 5210B	18-Apr-16	SJB/KAL	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	18-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 5	1.4		5.6	mg/l	SM 2540D	18-Apr-16	PDS	
			Ammonia-Nitrogen	PCCMP - 5	0.1		0.2	mg/l	SM 4500 Series	20-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 5	0.2		0.8	mg/l	SM 4500 Series	20-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		1	mg/l	SM 4500 Series	20-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 5	0.132		0.216	mg/l	EPA 300.0	19-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	07-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 5	0.03		0.08	mg/l	SM 4500-P E	19-Apr-16	JTC	
			E. coli	PCCMP - 5	20		316	MPN/100ml	Colilert	18-Apr-16	MAG	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	20-Apr-16	SJB	
		04160645-001	Conductivity	PCCMP - 6 Blank			1.1	µmhos/cm	SM 2510B	19-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	2.4	mg/l	SM 5210B	18-Apr-16	SJB/KAL	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	18-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	18-Apr-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.1	<	0.1	mg/l	SM 4500 Series	20-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 6 Blank	0.2		0.3	mg/l	SM 4500 Series	20-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.3		0.4	mg/l	SM 4500 Series	20-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.132	<	0.132	mg/l	EPA 300.0	19-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	07-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	19-Apr-16	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	18-Apr-16	MAG	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	20-Apr-16	SJB	
		04160646-001	pH	PCCMP - 6			7.7	s.u.	SM 4500-H+	07-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 6			7.97	mg/l	HACH 10360	07-Apr-16	SLW	
			Temperature	PCCMP - 6			16.7	°C	SM 2550B	07-Apr-16	SLW	
			Conductivity	PCCMP - 6			180	µmhos/cm	SM 2510B	19-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.4	mg/l	SM 5210B	18-Apr-16	SJB/KAL	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	18-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 6	1.4		4.8	mg/l	SM 2540D	18-Apr-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6	0.1	<	0.1	mg/l	SM 4500 Series	20-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 6	0.2		0.3	mg/l	SM 4500 Series	20-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		0.4	mg/l	SM 4500 Series	20-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 6	0.132		0.203	mg/l	EPA 300.0	19-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	07-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	19-Apr-16	JTC	
			E. coli	PCCMP - 6	20		20	MPN/100ml	Colilert	18-Apr-16	MAG	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	20-Apr-16	SJB	
		04160647-001	Conductivity	PCCMP - 6 Duplicate			180	µmhos/cm	SM 2510B	19-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6	<	2.4	mg/l	SM 5210B	18-Apr-16	SJB/KAL	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	18-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		4.8	mg/l	SM 2540D	18-Apr-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.1	<	0.1	mg/l	SM 4500 Series	20-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2		0.5	mg/l	SM 4500 Series	20-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.3		0.6	mg/l	SM 4500 Series	20-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.132		0.194	mg/l	EPA 300.0	19-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	07-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	19-Apr-16	JTC	
			E. coli	PCCMP - 6 Duplicate	20		82	MPN/100ml	Colilert	18-Apr-16	MAG	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	20-Apr-16	SJB	
4/7/2016	WW		pH	PCCMP - 1			7.4	s.u.	SM 4500-H+	07-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 1			8.98	mg/l	HACH 10360	07-Apr-16	SLW	
			Temperature	PCCMP - 1			13.1	°C	SM 2550B	07-Apr-16	SLW	
			Conductivity	PCCMP - 1			170	µmhos/cm	SM 2510B	11-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.7	mg/l	SM 5210B	08-Apr-16	KAL	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	08-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 1	1.4		10.8	mg/l	SM 2540D	07-Apr-16	PDS	
		04160261-001	Ammonia-Nitrogen	PCCMP - 1	0.1	<	0.1	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 1	0.2		0.7	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		0.8	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 1	0.132		0.188	mg/l	EPA 300.0	08-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	21-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 1	0.03		0.06	mg/l	SM 4500-P E	12-Apr-16	JTC	
			E. coli	PCCMP - 1	20		856	MPN/100ml	Colilert	07-Apr-16	MAG/SJB	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	12-Apr-16	SJB	
			pH	PCCMP - 2			7.5	s.u.	SM 4500-H+	07-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 2			8.7	mg/l	HACH 10360	07-Apr-16	SLW	
			Temperature	PCCMP - 2			13.4	°C	SM 2550B	07-Apr-16	SLW	
			Conductivity	PCCMP - 2			175	µmhos/cm	SM 2510B	11-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.7	mg/l	SM 5210B	08-Apr-16	KAL	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	08-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 2	1.4		16.8	mg/l	SM 2540D	07-Apr-16	PDS	
		04160262-001	Ammonia-Nitrogen	PCCMP - 2	0.1	<	0.1	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 2	0.2		0.8	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		1	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 2	0.132		0.198	mg/l	EPA 300.0	08-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	21-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 2	0.03		0.04	mg/l	SM 4500-P E	12-Apr-16	JTC	
			E. coli	PCCMP - 2	20		1870	MPN/100ml	Colilert	07-Apr-16	MAG/SJB	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	12-Apr-16	SJB	
			pH	PCCMP - 3			7.4	s.u.	SM 4500-H+	07-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 3			8.54	mg/l	HACH 10360	07-Apr-16	SLW	
			Temperature	PCCMP - 3			13.6	°C	SM 2550B	07-Apr-16	SLW	
			Conductivity	PCCMP - 3			170	µmhos/cm	SM 2510B	11-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.7	mg/l	SM 5210B	08-Apr-16	KAL	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	08-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 3	1.4		15.2	mg/l	SM 2540D	07-Apr-16	PDS	
		04160263-001	Ammonia-Nitrogen	PCCMP - 3	0.1	<	0.1	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 3	0.2		0.7	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		0.8	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 3	0.132		0.184	mg/l	EPA 300.0	08-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	21-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 3	0.03		0.09	mg/l	SM 4500-P E	12-Apr-16	JTC	
			E. coli	PCCMP - 3	20		1350	MPN/100ml	Colilert	07-Apr-16	MAG/SJB	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	12-Apr-16	SJB	
			pH	PCCMP - 4			7.7	s.u.	SM 4500-H+	07-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 4			8.36	mg/l	HACH 10360	07-Apr-16	SLW	
			Temperature	PCCMP - 4			14.3	°C	SM 2550B	07-Apr-16	SLW	
			Conductivity	PCCMP - 4			176	µmhos/cm	SM 2510B	11-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.7	mg/l	SM 5210B	08-Apr-16	KAL	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	08-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 4	1.4		13.2	mg/l	SM 2540D	07-Apr-16	PDS	
		04160264-001	Ammonia-Nitrogen	PCCMP - 4	0.1	<	0.1	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 4	0.2		0.8	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		1	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 4	0.132		0.232	mg/l	EPA 300.0	08-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	21-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 4	0.03		0.09	mg/l	SM 4500-P E	12-Apr-16	JTC	
			E. coli	PCCMP - 4	20		852	MPN/100ml	Colilert	07-Apr-16	MAG/SJB	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	14-Apr-16	SJB	
			pH	PCCMP - 5			7.7	s.u.	SM 4500-H+	07-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 5			8.48	mg/l	HACH 10360	07-Apr-16	SLW	
			Temperature	PCCMP - 5			13.7	°C	SM 2550B	07-Apr-16	SLW	
			Conductivity	PCCMP - 5			169	µmhos/cm	SM 2510B	11-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.7	mg/l	SM 5210B	08-Apr-16	KAL	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	08-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 5	1.4		11.2	mg/l	SM 2540D	07-Apr-16	PDS	
		04160265-001	Ammonia-Nitrogen	PCCMP - 5	0.1	<	0.1	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 5	0.2		0.7	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		0.8	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 5	0.132		0.216	mg/l	EPA 300.0	08-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	21-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 5	0.03		0.06	mg/l	SM 4500-P E	12-Apr-16	JTC	
			E. coli	PCCMP - 5	20		1470	MPN/100ml	Colilert	07-Apr-16	MAG/SJB	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	14-Apr-16	SJB	
			Conductivity	PCCMP - 6 - Blank			1.1	µmhos/cm	SM 2510B	11-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Blank	0.6	<	2.7	mg/l	SM 5210B	08-Apr-16	KAL	
			Settleable Solids	PCCMP - 6 - Blank	0.1	<	0.1	ml/l	SM 2540F	08-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 6 - Blank	1.4	<	1.4	mg/l	SM 2540D	07-Apr-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 - Blank	0.1	<	0.1	mg/l	SM 4500 Series	11-Apr-16	MAG	
		04160266-001	Organic Nitrogen	PCCMP - 6 - Blank	0.2		1	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Blank	0.3		1.1	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 - Blank	0.132	<	0.132	mg/l	EPA 300.0	08-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	21-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	12-Apr-16	JTC	
			E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100ml	Colilert	07-Apr-16	MAG/SJB	
			Oil & Grease	PCCMP - 6 - Blank	2.6	<	5	mg/l	EPA 1664A	14-Apr-16	SJB	
			pH	PCCMP - 6			7.6	s.u.	SM 4500-H+	07-Apr-16	SLW	
			Dissolved Oxygen	PCCMP - 6			8.35	mg/l	HACH 10360	07-Apr-16	SLW	
			Temperature	PCCMP - 6			14.4	°C	SM 2550B	07-Apr-16	SLW	
			Conductivity	PCCMP - 6			165	µmhos/cm	SM 2510B	11-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.7	mg/l	SM 5210B	08-Apr-16	KAL	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	08-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 6	1.4		12.4	mg/l	SM 2540D	07-Apr-16	PDS	
		04160267-001	Ammonia-Nitrogen	PCCMP - 6	0.1	<	0.1	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 6	0.2		1.6	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		1.7	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 6	0.132		0.202	mg/l	EPA 300.0	08-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	21-Apr-16	KAL	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	12-Apr-16	JTC	
			E. coli	PCCMP - 6	20		862	MPN/100ml	Colilert	07-Apr-16	MAG/SJB	
			Oil & Grease	PCCMP - 6	2.6		8.8	mg/l	EPA 1664A	14-Apr-16	SJB	
		04160268-001	Conductivity	PCCMP - 6 - Duplicate			164	µmhos/cm	SM 2510B	11-Apr-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Duplicate	0.6	<	2.7	mg/l	SM 5210B	08-Apr-16	KAL	
			Settleable Solids	PCCMP - 6 - Duplicate	0.1	<	0.1	ml/l	SM 2540F	08-Apr-16	PDS	
			Total Suspended Solids	PCCMP - 6 - Duplicate	1.4		12.4	mg/l	SM 2540D	07-Apr-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 - Duplicate	0.1	<	0.1	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Organic Nitrogen	PCCMP - 6 - Duplicate	0.2		1.2	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Duplicate	0.3		1.3	mg/l	SM 4500 Series	11-Apr-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 - Duplicate	0.132		0.197	mg/l	EPA 300.0	08-Apr-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	21-Apr-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 - Duplicate	0.03		0.03	mg/l	SM 4500-P E	12-Apr-16	JTC	
			E. coli	PCCMP - 6 - Duplicate	20		1010	MPN/100ml	Colilert	07-Apr-16	MAG/SJB	
			Oil & Grease	PCCMP - 6 - Duplicate	2.6		8	mg/l	EPA 1664A	14-Apr-16	SJB	
5/9/2016	PCCMP-DW		pH	PCCMP - 1			7.4	s.u.	SM 4500-H+	09-May-16	SLW	
			Dissolved Oxygen	PCCMP - 1			7.36	mg/l	HACH 10360	09-May-16	SLW	
			Temperature	PCCMP - 1			18.7	°C	SM 2550B	09-May-16	SLW	
			Conductivity	PCCMP - 1			192	µmhos/cm	SM 2510B	12-May-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.4	mg/l	SM 5210B	09-May-16	SJB/KAL	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	09-May-16	PDS	
			Total Suspended Solids	PCCMP - 1	1.4		8.8	mg/l	SM 2540D	09-May-16	PDS	
		05160264-001	Ammonia-Nitrogen	PCCMP - 1	0.1		0.1	mg/l	SM 4500 Series	10-May-16	MAG	
			Organic Nitrogen	PCCMP - 1	0.2		0.7	mg/l	SM 4500 Series	10-May-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		0.8	mg/l	SM 4500 Series	10-May-16	MAG	
			Nitrate + Nitrite	PCCMP - 1	0.132		0.22	mg/l	EPA 300.0	10-May-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	JTC	
			E. coli	PCCMP - 1	20		244	MPN/100ml	Colilert	09-May-16	MAG	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	24-May-16	SJB	
		05160265-001	pH	PCCMP - 2			7.4	s.u.	SM 4500-H+	09-May-16	SLW	
			Dissolved Oxygen	PCCMP - 2			6.76	mg/l	HACH 10360	09-May-16	SLW	
			Temperature	PCCMP - 2			19.1	°C	SM 2550B	09-May-16	SLW	
			Conductivity	PCCMP - 2			217	µmhos/cm	SM 2510B	12-May-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.4	mg/l	SM 5210B	09-May-16	SJB/KAL	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	09-May-16	PDS	
			Total Suspended Solids	PCCMP - 2	1.4		12	mg/l	SM 2540D	09-May-16	PDS	
			Ammonia-Nitrogen	PCCMP - 2	0.1		0.2	mg/l	SM 4500 Series	10-May-16	MAG	
			Organic Nitrogen	PCCMP - 2	0.2		0.8	mg/l	SM 4500 Series	10-May-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		1	mg/l	SM 4500 Series	10-May-16	MAG	
			Nitrate + Nitrite	PCCMP - 2	0.132		0.301	mg/l	EPA 300.0	10-May-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	JTC	
			E. coli	PCCMP - 2	20		148	MPN/100ml	Colilert	09-May-16	MAG	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	24-May-16	SJB	
		05160266-001	pH	PCCMP - 3			7.4	s.u.	SM 4500-H+	09-May-16	SLW	
			Dissolved Oxygen	PCCMP - 3			6.32	mg/l	HACH 10360	09-May-16	SLW	
			Temperature	PCCMP - 3			19.2	°C	SM 2550B	09-May-16	SLW	
			Conductivity	PCCMP - 3			220	µmhos/cm	SM 2510B	12-May-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.4	mg/l	SM 5210B	09-May-16	SJB/KAL	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	09-May-16	PDS	
			Total Suspended Solids	PCCMP - 3	1.4		7.2	mg/l	SM 2540D	09-May-16	PDS	
			Ammonia-Nitrogen	PCCMP - 3	0.1		0.2	mg/l	SM 4500 Series	10-May-16	MAG	
			Organic Nitrogen	PCCMP - 3	0.2		1	mg/l	SM 4500 Series	10-May-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		1.1	mg/l	SM 4500 Series	10-May-16	MAG	
			Nitrate + Nitrite	PCCMP - 3	0.132		0.28	mg/l	EPA 300.0	10-May-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	JTC	
			E. coli	PCCMP - 3	20		104	MPN/100ml	Colilert	09-May-16	MAG	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	24-May-16	SJB	
		05160267-001	pH	PCCMP - 4			7.5	s.u.	SM 4500-H+	09-May-16	SLW	
			Dissolved Oxygen	PCCMP - 4			6.04	mg/l	HACH 10360	09-May-16	SLW	
			Temperature	PCCMP - 4			19.7	°C	SM 2550B	09-May-16	SLW	
			Conductivity	PCCMP - 4			222	µmhos/cm	SM 2510B	12-May-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.4	mg/l	SM 5210B	09-May-16	SJB/KAL	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	09-May-16	PDS	
			Total Suspended Solids	PCCMP - 4	1.4		6.4	mg/l	SM 2540D	09-May-16	PDS	
			Ammonia-Nitrogen	PCCMP - 4	0.1		0.2	mg/l	SM 4500 Series	11-May-16	MAG	
			Organic Nitrogen	PCCMP - 4	0.2		1	mg/l	SM 4500 Series	11-May-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		1.1	mg/l	SM 4500 Series	11-May-16	MAG	
			Nitrate + Nitrite	PCCMP - 4	0.132		0.251	mg/l	EPA 300.0	10-May-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	JTC	
			E. coli	PCCMP - 4	20		402	MPN/100ml	Colilert	09-May-16	MAG	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	24-May-16	SJB	
		05160268-001	pH	PCCMP - 5			7.6	s.u.	SM 4500-H+	09-May-16	SLW	
			Dissolved Oxygen	PCCMP - 5			5.93	mg/l	HACH 10360	09-May-16	SLW	
			Temperature	PCCMP - 5			20.3	°C	SM 2550B	09-May-16	SLW	
			Conductivity	PCCMP - 5			225	µmhos/cm	SM 2510B	12-May-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.4	mg/l	SM 5210B	09-May-16	SJB/KAL	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	09-May-16	PDS	
			Total Suspended Solids	PCCMP - 5	1.4		4	mg/l	SM 2540D	09-May-16	PDS	
			Ammonia-Nitrogen	PCCMP - 5	0.1		0.1	mg/l	SM 4500 Series	11-May-16	MAG	
			Organic Nitrogen	PCCMP - 5	0.2		1	mg/l	SM 4500 Series	11-May-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		1.1	mg/l	SM 4500 Series	11-May-16	MAG	
			Nitrate + Nitrite	PCCMP - 5	0.132		0.27	mg/l	EPA 300.0	10-May-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	JTC	
			E. coli	PCCMP - 5	20		170	MPN/100ml	Colilert	09-May-16	MAG	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	24-May-16	SJB	
		05160269-001	Conductivity	PCCMP - 6 Blank			1	µmhos/cm	SM 2510B	12-May-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	2.4	mg/l	SM 5210B	09-May-16	SJB/KAL	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	09-May-16	PDS	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	09-May-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.1	<	0.1	mg/l	SM 4500 Series	11-May-16	MAG	
			Organic Nitrogen	PCCMP - 6 Blank	0.2		0.5	mg/l	SM 4500 Series	11-May-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.3		0.6	mg/l	SM 4500 Series	11-May-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.132	<	0.132	mg/l	EPA 300.0	10-May-16	MIC	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	JTC	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	09-May-16	MAG	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	24-May-16	SJB	
		05160270-001	pH	PCCMP - 6			7.5	s.u.	SM 4500-H+	09-May-16	SLW	
			Dissolved Oxygen	PCCMP - 6			5.91	mg/l	HACH 10360	09-May-16	SLW	
			Temperature	PCCMP - 6			20.5	°C	SM 2550B	09-May-16	SLW	
			Conductivity	PCCMP - 6			229	µmhos/cm	SM 2510B	12-May-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.4	mg/l	SM 5210B	09-May-16	SJB/KAL	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	09-May-16	PDS	
			Total Suspended Solids	PCCMP - 6	1.4		2.8	mg/l	SM 2540D	09-May-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6	0.1		0.2	mg/l	SM 4500 Series	16-May-16	MAG	
			Organic Nitrogen	PCCMP - 6	0.2		1.1	mg/l	SM 4500 Series	16-May-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		1.3	mg/l	SM 4500 Series	16-May-16	MAG	
			Nitrate + Nitrite	PCCMP - 6	0.132		0.399	mg/l	EPA 300.0	10-May-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	JTC	
			E. coli	PCCMP - 6	20		216	MPN/100ml	Colilert	09-May-16	MAG	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	24-May-16	SJB	
		05160271-001	Conductivity	PCCMP - 6 Duplicate			231	µmhos/cm	SM 2510B	12-May-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6	<	2.4	mg/l	SM 5210B	09-May-16	SJB/KAL	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	09-May-16	PDS	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		4	mg/l	SM 2540D	09-May-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.1	<	0.1	mg/l	SM 4500 Series	16-May-16	MAG	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2		1	mg/l	SM 4500 Series	16-May-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.3		1.1	mg/l	SM 4500 Series	16-May-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.132		0.277	mg/l	EPA 300.0	10-May-16	MIC	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	12-May-16	JTC	
			E. coli	PCCMP - 6 Duplicate	20		126	MPN/100ml	Colilert	09-May-16	MAG	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	24-May-16	SJB	
6/9/2016	DW		pH	PCCMP - 1			7.7	s.u.	SM 4500-H+	09-Jun-16	SLW	
			Dissolved Oxygen	PCCMP - 1			7.39	mg/l	HACH 10360	09-Jun-16	SLW	
			Temperature	PCCMP - 1			20.3	°C	SM 2550B	09-Jun-16	SLW	
			Conductivity	PCCMP - 1			239	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	1.7	mg/l	SM 5210B	10-Jun-16	SJB	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	10-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 1	1.4		8.4	mg/l	SM 2540D	09-Jun-16	PDS	
		06160374-001	Ammonia-Nitrogen	PCCMP - 1	0.1	<	0.1	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Organic Nitrogen	PCCMP - 1	0.2		0.2	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		0.3	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Nitrate + Nitrite	PCCMP - 1	0.132		0.181	mg/l	EPA 300.0	10-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	17-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 1	20		216	MPN/100ml	Colilert	09-Jun-16	JTC/SJB	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	07-Jul-16	SJB	
		06160375-001	pH	PCCMP - 2			7.6	s.u.	SM 4500-H+	09-Jun-16	SLW	
			Dissolved Oxygen	PCCMP - 2			6.33	mg/l	HACH 10360	09-Jun-16	SLW	
			Temperature	PCCMP - 2			21.1	°C	SM 2550B	09-Jun-16	SLW	
			Conductivity	PCCMP - 2			253	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	1.7	mg/l	SM 5210B	10-Jun-16	SJB	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	10-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 2	1.4		8.4	mg/l	SM 2540D	09-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 2	0.1	<	0.1	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Organic Nitrogen	PCCMP - 2	0.2		0.2	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		0.3	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Nitrate + Nitrite	PCCMP - 2	0.132		0.209	mg/l	EPA 300.0	10-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	17-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 2	20		296	MPN/100ml	Colilert	09-Jun-16	JTC/SJB	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	07-Jul-16	SJB	
		06160376-001	pH	PCCMP - 3			7.5	s.u.	SM 4500-H+	09-Jun-16	SLW	
			Dissolved Oxygen	PCCMP - 3			5.15	mg/l	HACH 10360	09-Jun-16	SLW	
			Temperature	PCCMP - 3			22.3	°C	SM 2550B	09-Jun-16	SLW	
			Conductivity	PCCMP - 3			265	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	1.7	mg/l	SM 5210B	10-Jun-16	SJB	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	10-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 3	1.4		5.6	mg/l	SM 2540D	09-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 3	0.1	<	0.1	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Organic Nitrogen	PCCMP - 3	0.2		0.5	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		0.6	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Nitrate + Nitrite	PCCMP - 3	0.132		0.225	mg/l	EPA 300.0	10-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03		0.04	mg/l	SM 4500-P E	17-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 3	20		150	MPN/100ml	Colilert	09-Jun-16	JTC/SJB	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	07-Jul-16	SJB	
		06160377-001	pH	PCCMP - 4			7.6	s.u.	SM 4500-H+	09-Jun-16	SLW	
			Dissolved Oxygen	PCCMP - 4			4.18	mg/l	HACH 10360	09-Jun-16	SLW	
			Temperature	PCCMP - 4			23.1	°C	SM 2550B	09-Jun-16	SLW	
			Conductivity	PCCMP - 4			261	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	1.7	mg/l	SM 5210B	10-Jun-16	SJB	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	10-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 4	1.4		4	mg/l	SM 2540D	09-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 4	0.1	<	0.1	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Organic Nitrogen	PCCMP - 4	0.2		0.5	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		0.6	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Nitrate + Nitrite	PCCMP - 4	0.132		0.23	mg/l	EPA 300.0	10-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03		0.04	mg/l	SM 4500-P E	17-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 4	20		8700	MPN/100ml	Colilert	09-Jun-16	JTC/SJB	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	07-Jul-16	SJB	
		06160378-001	pH	PCCMP - 5			7.6	s.u.	SM 4500-H+	09-Jun-16	SLW	
			Dissolved Oxygen	PCCMP - 5			3.81	mg/l	HACH 10360	09-Jun-16	SLW	
			Temperature	PCCMP - 5			22.8	°C	SM 2550B	09-Jun-16	SLW	
			Conductivity	PCCMP - 5			259	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	1.7	mg/l	SM 5210B	10-Jun-16	SJB	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	10-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 5	1.4		2.4	mg/l	SM 2540D	09-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 5	0.1	<	0.1	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Organic Nitrogen	PCCMP - 5	0.2		0.2	mg/l	SM 4500 Series	14-Jun-16	JTC	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		0.3	mg/l	SM 4500 Series	14-Jun-16	JTC	
			Nitrate + Nitrite	PCCMP - 5	0.132		0.273	mg/l	EPA 300.0	10-Jun-16	MIC	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	17-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 5	20		672	MPN/100ml	Colilert	09-Jun-16	JTC/SJB	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	07-Jul-16	SJB	
		06160379-001	Conductivity	PCCMP - 6 Blank			1.3	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	1.7	mg/l	SM 5210B	10-Jun-16	SJB	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	10-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	09-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.1	<	0.1	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Organic Nitrogen	PCCMP - 6 Blank	0.2	<	0.2	mg/l	SM 4500 Series	14-Jun-16	JTC	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.3	<	0.3	mg/l	SM 4500 Series	14-Jun-16	JTC	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.132	<	0.132	mg/l	EPA 300.0	10-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	17-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	09-Jun-16	JTC/SJB	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	12-Jul-16	SJB	
		06160380-001	pH	PCCMP - 6			7.5	s.u.	SM 4500-H+	09-Jun-16	SLW	
			Dissolved Oxygen	PCCMP - 6			3.19	mg/l	HACH 10360	09-Jun-16	SLW	
			Temperature	PCCMP - 6			23.1	°C	SM 2550B	09-Jun-16	SLW	
			Conductivity	PCCMP - 6			247	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	1.7	mg/l	SM 5210B	10-Jun-16	SJB	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	10-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 6	1.4		1.6	mg/l	SM 2540D	09-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6	0.1	<	0.1	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Organic Nitrogen	PCCMP - 6	0.2	<	0.2	mg/l	SM 4500 Series	14-Jun-16	JTC	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3	<	0.3	mg/l	SM 4500 Series	14-Jun-16	JTC	
			Nitrate + Nitrite	PCCMP - 6	0.132		0.29	mg/l	EPA 300.0	10-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	17-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 6	20		194	MPN/100ml	Colilert	09-Jun-16	JTC/SJB	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	07-Jul-16	SJB	
		06160381-001	Conductivity	PCCMP - 6 - Duplicate			250	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Duplicate	0.6	<	1.7	mg/l	SM 5210B	10-Jun-16	SJB	
			Settleable Solids	PCCMP - 6 - Duplicate	0.1	<	0.1	ml/l	SM 2540F	10-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 6 - Duplicate	1.4		2	mg/l	SM 2540D	09-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 - Duplicate	0.1	<	0.1	mg/l	SM 4500 Series	13-Jun-16	MAG/JTC	
			Organic Nitrogen	PCCMP - 6 - Duplicate	0.2	<	0.2	mg/l	SM 4500 Series	14-Jun-16	JTC	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Duplicate	0.3	<	0.3	mg/l	SM 4500 Series	14-Jun-16	JTC	
			Nitrate + Nitrite	PCCMP - 6 - Duplicate	0.132		0.294	mg/l	EPA 300.0	10-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Duplicate	0.03		0.03	mg/l	SM 4500-P E	17-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 - Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 6 - Duplicate	20		310	MPN/100ml	Colilert	09-Jun-16	JTC/SJB	
			Oil & Grease	PCCMP - 6 - Duplicate	2.6	<	5	mg/l	EPA 1664A	12-Jul-16	SJB	
6/2/2016	WW		pH	PCCMP - 1			7.7	s.u.	SM 4500-H+	02-Jun-16	SLW	
			Dissolved Oxygen	PCCMP - 1			5.99	mg/l	HACH 10360	02-Jun-16	SLW	
			Temperature	PCCMP - 1			23.8	°C	SM 2550B	02-Jun-16	SLW	
			Conductivity	PCCMP - 1			242	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.3	mg/l	SM 5210B	02-Jun-16	KAL	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	02-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 1	1.4		9.2	mg/l	SM 2540D	02-Jun-16	PDS	
		06160080-001	Ammonia-Nitrogen	PCCMP - 1	0.1		0.8	mg/l	SM 4500 Series	10-Jun-16	SJB	
			Organic Nitrogen	PCCMP - 1	0.2		0.4	mg/l	SM 4500 Series	10-Jun-16	SJB	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		1.2	mg/l	SM 4500 Series	10-Jun-16	SJB	
			Nitrate + Nitrite	PCCMP - 1	0.132		0.217	mg/l	EPA 300.0	03-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03		0.13	mg/l	SM 4500-P E	14-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 1	0.03		0.27	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 1	20		316	MPN/100ml	Colilert	02-Jun-16	MAG/SJB	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	09-Jun-16	SJB	
		06160081-001	pH	PCCMP - 2			7.5	s.u.	SM 4500-H+	02-Jun-16	SLW	
			Dissolved Oxygen	PCCMP - 2			4.85	mg/l	HACH 10360	02-Jun-16	SLW	
			Temperature	PCCMP - 2			23.8	°C	SM 2550B	02-Jun-16	SLW	
			Conductivity	PCCMP - 2			272	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.3	mg/l	SM 5210B	02-Jun-16	KAL	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	02-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 2	1.4		7.2	mg/l	SM 2540D	02-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 2	0.1	<	0.1	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Organic Nitrogen	PCCMP - 2	0.2		0.6	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		0.7	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Nitrate + Nitrite	PCCMP - 2	0.132		0.32	mg/l	EPA 300.0	03-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03		0.12	mg/l	SM 4500-P E	14-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 2	0.03		0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 2	20		290	MPN/100ml	Colilert	02-Jun-16	MAG/SJB	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	09-Jun-16	SJB	
		06160082-001	pH	PCCMP - 3			7.5	s.u.	SM 4500-H+	02-Jun-16	SLW	
			Dissolved Oxygen	PCCMP - 3			4.82	mg/l	HACH 10360	02-Jun-16	SLW	
			Temperature	PCCMP - 3			24.9	°C	SM 2550B	02-Jun-16	SLW	
			Conductivity	PCCMP - 3			276	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.3	mg/l	SM 5210B	02-Jun-16	KAL	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	02-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 3	1.4		8.4	mg/l	SM 2540D	02-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 3	0.1		0.2	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Organic Nitrogen	PCCMP - 3	0.2		0.9	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		1	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Nitrate + Nitrite	PCCMP - 3	0.132		0.302	mg/l	EPA 300.0	03-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03		0.29	mg/l	SM 4500-P E	14-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 3	0.03		0.05	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 3	20		216	MPN/100ml	Colilert	02-Jun-16	MAG/SJB	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	09-Jun-16	SJB	
		06160083-001	pH	PCCMP - 4			7.6	s.u.	SM 4500-H+	02-Jun-16	SLW	
			Dissolved Oxygen	PCCMP - 4			4.35	mg/l	HACH 10360	02-Jun-16	SLW	
			Temperature	PCCMP - 4			25.1	°C	SM 2550B	02-Jun-16	SLW	
			Conductivity	PCCMP - 4			282	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.3	mg/l	SM 5210B	02-Jun-16	KAL	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	02-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 4	1.4		6.8	mg/l	SM 2540D	02-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 4	0.1		0.3	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Organic Nitrogen	PCCMP - 4	0.2		0.3	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		0.7	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Nitrate + Nitrite	PCCMP - 4	0.132		0.283	mg/l	EPA 300.0	03-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03		0.19	mg/l	SM 4500-P E	14-Jun-16	KAL	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Phosphorus, Dissolved	PCCMP - 4	0.03		0.13	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 4	20		844	MPN/100ml	Colilert	02-Jun-16	MAG/SJB	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	09-Jun-16	SJB	
		06160084-001	pH	PCCMP - 5			7.5	s.u.	SM 4500-H+	02-Jun-16	SLW	
			Dissolved Oxygen	PCCMP - 5			3.67	mg/l	HACH 10360	02-Jun-16	SLW	
			Temperature	PCCMP - 5			25.2	°C	SM 2550B	02-Jun-16	SLW	
			Conductivity	PCCMP - 5			280	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.3	mg/l	SM 5210B	02-Jun-16	KAL	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	02-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 5	1.4		2.4	mg/l	SM 2540D	02-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 5	0.1	<	0.1	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Organic Nitrogen	PCCMP - 5	0.2		0.4	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		0.5	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Nitrate + Nitrite	PCCMP - 5	0.132		0.285	mg/l	EPA 300.0	03-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03		0.16	mg/l	SM 4500-P E	14-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 5	20		172	MPN/100ml	Colilert	02-Jun-16	MAG/SJB	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	09-Jun-16	SJB	
		06160085-001	Conductivity	PCCMP - 6 Blank			1.2	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	2.3	mg/l	SM 5210B	02-Jun-16	KAL	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	02-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	02-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.1	<	0.1	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Organic Nitrogen	PCCMP - 6 Blank	0.2	<	0.2	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.3	<	0.3	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.132	<	0.132	mg/l	EPA 300.0	03-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	14-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	02-Jun-16	MAG/SJB	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	09-Jun-16	SJB	
		06160086-001	pH	PCCMP - 6			7.6	s.u.	SM 4500-H+	02-Jun-16	SLW	
			Dissolved Oxygen	PCCMP - 6			4.44	mg/l	HACH 10360	02-Jun-16	SLW	
			Temperature	PCCMP - 6			26.9	°C	SM 2550B	02-Jun-16	SLW	
			Conductivity	PCCMP - 6			275	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.3	mg/l	SM 5210B	02-Jun-16	KAL	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	02-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 6	1.4		3.2	mg/l	SM 2540D	02-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6	0.1	<	0.1	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Organic Nitrogen	PCCMP - 6	0.2		0.4	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		0.5	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Nitrate + Nitrite	PCCMP - 6	0.132		0.277	mg/l	EPA 300.0	03-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03		0.05	mg/l	SM 4500-P E	14-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 6	20		40	MPN/100ml	Colilert	02-Jun-16	MAG/SJB	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	09-Jun-16	SJB	
		06160087-001	Conductivity	PCCMP - 6 Duplicate			278	µmhos/cm	SM 2510B	14-Jun-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6	<	2.3	mg/l	SM 5210B	02-Jun-16	KAL	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	02-Jun-16	PDS	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		2.4	mg/l	SM 2540D	02-Jun-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.1	<	0.1	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2		0.4	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.3		0.5	mg/l	SM 4500 Series	08-Jun-16	JTC	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.132		0.279	mg/l	EPA 300.0	03-Jun-16	MIC	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03		0.03	mg/l	SM 4500-P E	14-Jun-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	21-Jun-16	JTC	
			E. coli	PCCMP - 6 Duplicate	20		62	MPN/100ml	Colilert	02-Jun-16	MAG/SJB	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	09-Jun-16	SJB	
7/22/2016	DW		pH	PCCMP - 1			7.5	s.u.	SM 4500-H+	22-Jul-16	SLW	
			Dissolved Oxygen	PCCMP - 1			4.96	mg/l	HACH 10360	22-Jul-16	SLW	
			Temperature	PCCMP - 1			27	°C	SM 2550B	22-Jul-16	SLW	
			Conductivity	PCCMP - 1			243	µmhos/cm	SM 2510B	25-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.3	mg/l	SM 5210B	22-Jul-16	KAL	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	22-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 1	1.4		4	mg/l	SM 2540D	22-Jul-16	PDS/KAL	
		07160914-001	Ammonia-Nitrogen	PCCMP - 1	0.1	<	0.1	mg/l	SM 4500 Series	22-Jul-16	JTC	
			Organic Nitrogen	PCCMP - 1	0.2		0.2	mg/l	SM 4500 Series	25-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		0.3	mg/l	SM 4500 Series	25-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 1	0.132	<	0.132	mg/l	EPA 300.0	22-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	30-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	02-Aug-16	JTC	
			E. coli	PCCMP - 1	20		170	MPN/100ml	Colilert	22-Jul-16	JTC/KAL	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	03-Aug-16	SJB	
		07160915-001	pH	PCCMP - 2			7.4	s.u.	SM 4500-H+	22-Jul-16	SLW	
			Dissolved Oxygen	PCCMP - 2			5.16	mg/l	HACH 10360	22-Jul-16	SLW	
			Temperature	PCCMP - 2			26.9	°C	SM 2550B	22-Jul-16	SLW	
			Conductivity	PCCMP - 2			287	µmhos/cm	SM 2510B	25-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.3	mg/l	SM 5210B	22-Jul-16	KAL	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	22-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 2	1.4		4	mg/l	SM 2540D	22-Jul-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 2	0.1	<	0.1	mg/l	SM 4500 Series	22-Jul-16	JTC	
			Organic Nitrogen	PCCMP - 2	0.2		0.4	mg/l	SM 4500 Series	25-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		0.5	mg/l	SM 4500 Series	25-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 2	0.132		0.177	mg/l	EPA 300.0	22-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	30-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	02-Aug-16	JTC	
			E. coli	PCCMP - 2	20	<	20	MPN/100ml	Colilert	22-Jul-16	JTC/KAL	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	03-Aug-16	SJB	
		07160916-001	pH	PCCMP - 3			7.3	s.u.	SM 4500-H+	22-Jul-16	SLW	
			Dissolved Oxygen	PCCMP - 3			3.92	mg/l	HACH 10360	22-Jul-16	SLW	
			Temperature	PCCMP - 3			27.2	°C	SM 2550B	22-Jul-16	SLW	
			Conductivity	PCCMP - 3			303	µmhos/cm	SM 2510B	25-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.3	mg/l	SM 5210B	22-Jul-16	KAL	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	22-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 3	1.4		4.8	mg/l	SM 2540D	22-Jul-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 3	0.1	<	0.1	mg/l	SM 4500 Series	22-Jul-16	JTC	
			Organic Nitrogen	PCCMP - 3	0.2		0.6	mg/l	SM 4500 Series	25-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		0.7	mg/l	SM 4500 Series	25-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 3	0.132		0.19	mg/l	EPA 300.0	22-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03		0.07	mg/l	SM 4500-P E	30-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	02-Aug-16	JTC	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			E. coli	PCCMP - 3	20		126	MPN/100ml	Colilert	22-Jul-16	JTC/KAL	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	03-Aug-16	SJB	
		07160917-001	pH	PCCMP - 4			7.5	s.u.	SM 4500-H+	22-Jul-16	SLW	
			Dissolved Oxygen	PCCMP - 4			3.9	mg/l	HACH 10360	22-Jul-16	SLW	
			Temperature	PCCMP - 4			27	°C	SM 2550B	22-Jul-16	SLW	
			Conductivity	PCCMP - 4			309	µmhos/cm	SM 2510B	25-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.3	mg/l	SM 5210B	22-Jul-16	KAL	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	22-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 4	1.4		4	mg/l	SM 2540D	22-Jul-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 4	0.1	<	0.1	mg/l	SM 4500 Series	22-Jul-16	JTC	
			Organic Nitrogen	PCCMP - 4	0.2		0.8	mg/l	SM 4500 Series	25-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		0.9	mg/l	SM 4500 Series	25-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 4	0.132	<	0.132	mg/l	EPA 300.0	22-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	30-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	02-Aug-16	JTC	
			E. coli	PCCMP - 4	20		550	MPN/100ml	Colilert	22-Jul-16	JTC/KAL	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	03-Aug-16	SJB	
		07160918-001	pH	PCCMP - 5			7.4	s.u.	SM 4500-H+	22-Jul-16	SLW	
			Dissolved Oxygen	PCCMP - 5			2.39	mg/l	HACH 10360	22-Jul-16	SLW	
			Temperature	PCCMP - 5			27.2	°C	SM 2550B	22-Jul-16	SLW	
			Conductivity	PCCMP - 5			308	µmhos/cm	SM 2510B	25-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.3	mg/l	SM 5210B	22-Jul-16	KAL	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	22-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 5	1.4	<	1.4	mg/l	SM 2540D	22-Jul-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 5	0.1	<	0.1	mg/l	SM 4500 Series	22-Jul-16	JTC	
			Organic Nitrogen	PCCMP - 5	0.2		0.4	mg/l	SM 4500 Series	26-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		0.5	mg/l	SM 4500 Series	26-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 5	0.132	<	0.132	mg/l	EPA 300.0	22-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03		0.18	mg/l	SM 4500-P E	30-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	02-Aug-16	JTC	
			E. coli	PCCMP - 5	20		82	MPN/100ml	Colilert	22-Jul-16	JTC/KAL	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	03-Aug-16	SJB	
		07160919-001	Conductivity	PCCMP - 6 Blank			1.2	µmhos/cm	SM 2510B	25-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	2.3	mg/l	SM 5210B	22-Jul-16	KAL	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	22-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	22-Jul-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.1	<	0.1	mg/l	SM 4500 Series	22-Jul-16	JTC	
			Organic Nitrogen	PCCMP - 6 Blank	0.2		0.4	mg/l	SM 4500 Series	26-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.3		0.5	mg/l	SM 4500 Series	26-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.132	<	0.132	mg/l	EPA 300.0	22-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	30-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	02-Aug-16	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	22-Jul-16	JTC/KAL	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	03-Aug-16	SJB	
		07160920-001	pH	PCCMP - 6			7.4	s.u.	SM 4500-H+	22-Jul-16	SLW	
			Dissolved Oxygen	PCCMP - 6			2.07	mg/l	HACH 10360	22-Jul-16	SLW	
			Temperature	PCCMP - 6			27.7	°C	SM 2550B	22-Jul-16	SLW	
			Conductivity	PCCMP - 6			291	µmhos/cm	SM 2510B	25-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.3	mg/l	SM 5210B	22-Jul-16	KAL	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	22-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 6	1.4	<	1.4	mg/l	SM 2540D	22-Jul-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 6	0.1	<	0.1	mg/l	SM 4500 Series	22-Jul-16	JTC	
			Organic Nitrogen	PCCMP - 6	0.2		0.2	mg/l	SM 4500 Series	26-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		0.3	mg/l	SM 4500 Series	26-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 6	0.132	<	0.132	mg/l	EPA 300.0	22-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03		0.1	mg/l	SM 4500-P E	30-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	02-Aug-16	JTC	
			E. coli	PCCMP - 6	20		104	MPN/100ml	Colilert	22-Jul-16	JTC/KAL	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	03-Aug-16	SJB	
		07160921-001	Conductivity	PCCMP - 6 Duplicate			291	µmhos/cm	SM 2510B	25-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6	<	2.3	mg/l	SM 5210B	22-Jul-16	KAL	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	22-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		2	mg/l	SM 2540D	22-Jul-16	PDS/KAL	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.1	<	0.1	mg/l	SM 4500 Series	22-Jul-16	JTC	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2		0.4	mg/l	SM 4500 Series	26-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.3		0.5	mg/l	SM 4500 Series	26-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.132	<	0.132	mg/l	EPA 300.0	22-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03		0.1	mg/l	SM 4500-P E	30-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	02-Aug-16	JTC	
			E. coli	PCCMP - 6 Duplicate	20		172	MPN/100ml	Colilert	22-Jul-16	JTC/KAL	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	03-Aug-16	SJB	
7/6/2016	WW		pH	PCCMP - 1			7.4	s.u.	SM 4500-H+	06-Jul-16	SLW	
			Dissolved Oxygen	PCCMP - 1			4.75	mg/l	HACH 10360	06-Jul-16	SLW	
			Temperature	PCCMP - 1			25.2	°C	SM 2550B	06-Jul-16	SLW	
			Conductivity	PCCMP - 1			238	µmhos/cm	SM 2510B	19-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.3	mg/l	SM 5210B	07-Jul-16	KAL	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	06-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 1	1.4		6.3	mg/l	SM 2540D	06-Jul-16	PDS	
		07160189-001	Ammonia-Nitrogen	PCCMP - 1	0.1	<	0.1	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Organic Nitrogen	PCCMP - 1	0.2	<	0.2	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3	<	0.3	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 1	0.132		0.132	mg/l	EPA 300.0	07-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	26-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	07-Jul-16	JTC	
			E. coli	PCCMP - 1	20		378	MPN/100ml	Colilert	06-Jul-16	MAG	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	14-Jul-16	SJB	
		07160190-001	pH	PCCMP - 2			7.4	s.u.	SM 4500-H+	06-Jul-16	SLW	
			Dissolved Oxygen	PCCMP - 2			3.95	mg/l	HACH 10360	06-Jul-16	SLW	
			Temperature	PCCMP - 2			25.2	°C	SM 2550B	06-Jul-16	SLW	
			Conductivity	PCCMP - 2			249	µmhos/cm	SM 2510B	19-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.3	mg/l	SM 5210B	07-Jul-16	KAL	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	06-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 2	1.4		4.4	mg/l	SM 2540D	06-Jul-16	PDS	
			Ammonia-Nitrogen	PCCMP - 2	0.1	<	0.1	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Organic Nitrogen	PCCMP - 2	0.2	<	0.2	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3	<	0.3	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 2	0.132		0.138	mg/l	EPA 300.0	07-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03		0.07	mg/l	SM 4500-P E	26-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	07-Jul-16	JTC	
			E. coli	PCCMP - 2	20		82	MPN/100ml	Colilert	06-Jul-16	MAG	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	14-Jul-16	SJB	
		07160191-001	pH	PCCMP - 3			7.4	s.u.	SM 4500-H+	06-Jul-16	SLW	
			Dissolved Oxygen	PCCMP - 3			3.87	mg/l	HACH 10360	06-Jul-16	SLW	
			Temperature	PCCMP - 3			25.4	°C	SM 2550B	06-Jul-16	SLW	
			Conductivity	PCCMP - 3			272	µmhos/cm	SM 2510B	19-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6		2.5	mg/l	SM 5210B	07-Jul-16	KAL	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	06-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 3	1.4		5.6	mg/l	SM 2540D	06-Jul-16	PDS	
			Ammonia-Nitrogen	PCCMP - 3	0.1	<	0.1	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Organic Nitrogen	PCCMP - 3	0.2	<	0.2	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3	<	0.3	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 3	0.132		0.212	mg/l	EPA 300.0	07-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	26-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	07-Jul-16	JTC	
			E. coli	PCCMP - 3	20		462	MPN/100ml	Colilert	06-Jul-16	MAG	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	14-Jul-16	SJB	
		07160192-001	pH	PCCMP - 4			7.5	s.u.	SM 4500-H+	06-Jul-16	SLW	
			Dissolved Oxygen	PCCMP - 4			3.42	mg/l	HACH 10360	06-Jul-16	SLW	
			Temperature	PCCMP - 4			25.8	°C	SM 2550B	06-Jul-16	SLW	
			Conductivity	PCCMP - 4			260	µmhos/cm	SM 2510B	19-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.3	mg/l	SM 5210B	07-Jul-16	KAL	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	06-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 4	1.4		4	mg/l	SM 2540D	06-Jul-16	PDS	
			Ammonia-Nitrogen	PCCMP - 4	0.1	<	0.1	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Organic Nitrogen	PCCMP - 4	0.2	<	0.2	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3	<	0.3	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 4	0.132	<	0.132	mg/l	EPA 300.0	07-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	26-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	07-Jul-16	JTC	
			E. coli	PCCMP - 4	20		746	MPN/100ml	Colilert	06-Jul-16	MAG	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	14-Jul-16	SJB	
		07160193-001	pH	PCCMP - 5			7.5	s.u.	SM 4500-H+	06-Jul-16	SLW	
			Dissolved Oxygen	PCCMP - 5			2.67	mg/l	HACH 10360	06-Jul-16	SLW	
			Temperature	PCCMP - 5			26.2	°C	SM 2550B	06-Jul-16	SLW	
			Conductivity	PCCMP - 5			256	µmhos/cm	SM 2510B	19-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.3	mg/l	SM 5210B	07-Jul-16	KAL	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	06-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 5	1.4		2	mg/l	SM 2540D	06-Jul-16	PDS	
			Ammonia-Nitrogen	PCCMP - 5	0.1	<	0.1	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Organic Nitrogen	PCCMP - 5	0.2	<	0.2	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3	<	0.3	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 5	0.132		0.152	mg/l	EPA 300.0	07-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	26-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	07-Jul-16	JTC	
			E. coli	PCCMP - 5	20		570	MPN/100ml	Colilert	06-Jul-16	MAG	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	14-Jul-16	SJB	
		07160194-001	Conductivity	PCCMP - 6 Blank			1.1	µmhos/cm	SM 2510B	19-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	2.3	mg/l	SM 5210B	07-Jul-16	KAL	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	06-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	06-Jul-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.1	<	0.1	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Organic Nitrogen	PCCMP - 6 Blank	0.2	<	0.2	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.3	<	0.3	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.132	<	0.132	mg/l	EPA 300.0	07-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	26-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	07-Jul-16	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	06-Jul-16	MAG	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	14-Jul-16	SJB	
		07160195-001	pH	PCCMP - 6			7.5	s.u.	SM 4500-H+	06-Jul-16	SLW	
			Dissolved Oxygen	PCCMP - 6			2.51	mg/l	HACH 10360	06-Jul-16	SLW	
			Temperature	PCCMP - 6			25.7	°C	SM 2550B	06-Jul-16	SLW	
			Conductivity	PCCMP - 6			284	µmhos/cm	SM 2510B	19-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.3	mg/l	SM 5210B	07-Jul-16	KAL	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	06-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 6	1.4		2.5	mg/l	SM 2540D	06-Jul-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6	0.1	<	0.1	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Organic Nitrogen	PCCMP - 6	0.2	<	0.2	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3	<	0.3	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 6	0.132		0.242	mg/l	EPA 300.0	07-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	26-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	07-Jul-16	JTC	
			E. coli	PCCMP - 6	20	<	20	MPN/100ml	Colilert	06-Jul-16	MAG	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	14-Jul-16	SJB	
		07160196-001	Conductivity	PCCMP - 6 Duplicate			289	µmhos/cm	SM 2510B	19-Jul-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6	<	2.3	mg/l	SM 5210B	07-Jul-16	KAL	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	06-Jul-16	PDS	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		2	mg/l	SM 2540D	06-Jul-16	PDS	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.1	<	0.1	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2	<	0.2	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.3	<	0.3	mg/l	SM 4500 Series	11-Jul-16	MAG	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.132		0.247	mg/l	EPA 300.0	07-Jul-16	MIC	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	26-Jul-16	KAL	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	07-Jul-16	JTC	
			E. coli	PCCMP - 6 Duplicate	20		40	MPN/100ml	Colilert	06-Jul-16	MAG	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	14-Jul-16	SJB	
8/12/2016	DW		pH	PCCMP - 1			7.3	s.u.	SM 4500-H+	12-Aug-16	SLW	
			Dissolved Oxygen	PCCMP - 1			4.98	mg/l	HACH 10360	12-Aug-16	SLW	
			Temperature	PCCMP - 1			26.2	°C	SM 2550B	12-Aug-16	SLW	
			Conductivity	PCCMP - 1			193	µmhos/cm	SM 2510B	12-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.1	mg/l	SM 5210B	12-Aug-16	PDS	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	12-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 1	1.4		4.4	mg/l	SM 2540D	12-Aug-16	SJB/KAL	
		08160493-001	Ammonia-Nitrogen	PCCMP - 1	0.1		0.7	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 1	0.2		0.4	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		1.1	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 1	0.132		0.252	mg/l	EPA 300.0	12-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	12-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	17-Aug-16	JTC	
			E. coli	PCCMP - 1	20		62	MPN/100ml	Colilert	12-Aug-16	KAL	
			Oil & Grease	PCCMP - 1	2.6		16.8	mg/l	EPA 1664A	25-Aug-16	SJB	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
		08160494-001	pH	PCCMP - 2			7.3	s.u.	SM 4500-H+	12-Aug-16	SLW	
			Dissolved Oxygen	PCCMP - 2			3.75	mg/l	HACH 10360	12-Aug-16	SLW	
			Temperature	PCCMP - 2			26.3	°C	SM 2550B	12-Aug-16	SLW	
			Conductivity	PCCMP - 2			225	µmhos/cm	SM 2510B	12-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.1	mg/l	SM 5210B	12-Aug-16	PDS	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	12-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 2	1.4		8	mg/l	SM 2540D	12-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 2	0.1		0.3	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 2	0.2		0.8	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		1.1	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 2	0.132		0.228	mg/l	EPA 300.0	12-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	12-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 2	0.03		0.04	mg/l	SM 4500-P E	17-Aug-16	JTC	
			E. coli	PCCMP - 2	20		196	MPN/100ml	Colilert	12-Aug-16	KAL	
			Oil & Grease	PCCMP - 2	2.6		20.8	mg/l	EPA 1664A	25-Aug-16	SJB	
		08160495-001	pH	PCCMP - 3			7.4	s.u.	SM 4500-H+	12-Aug-16	SLW	
			Dissolved Oxygen	PCCMP - 3			2.83	mg/l	HACH 10360	12-Aug-16	SLW	
			Temperature	PCCMP - 3			26.3	°C	SM 2550B	12-Aug-16	SLW	
			Conductivity	PCCMP - 3			238	µmhos/cm	SM 2510B	12-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6		2.1	mg/l	SM 5210B	12-Aug-16	PDS	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	12-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 3	1.4		6.8	mg/l	SM 2540D	12-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 3	0.1		0.6	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 3	0.2		0.4	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		1	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 3	0.132		0.194	mg/l	EPA 300.0	12-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	12-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	17-Aug-16	JTC	
			E. coli	PCCMP - 3	20		2220	MPN/100ml	Colilert	12-Aug-16	KAL	
			Oil & Grease	PCCMP - 3	2.6		18	mg/l	EPA 1664A	25-Aug-16	SJB	
		08160496-001	pH	PCCMP - 4			7.4	s.u.	SM 4500-H+	12-Aug-16	SLW	
			Dissolved Oxygen	PCCMP - 4			2.08	mg/l	HACH 10360	12-Aug-16	SLW	
			Temperature	PCCMP - 4			26.3	°C	SM 2550B	12-Aug-16	SLW	
			Conductivity	PCCMP - 4			242	µmhos/cm	SM 2510B	12-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.1	mg/l	SM 5210B	12-Aug-16	PDS	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	12-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 4	1.4		2.8	mg/l	SM 2540D	12-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 4	0.1		0.4	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 4	0.2		0.7	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		1.1	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 4	0.132		0.155	mg/l	EPA 300.0	12-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03		0.04	mg/l	SM 4500-P E	12-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	17-Aug-16	JTC	
			E. coli	PCCMP - 4	20		290	MPN/100ml	Colilert	12-Aug-16	KAL	
			Oil & Grease	PCCMP - 4	2.6		18.4	mg/l	EPA 1664A	25-Aug-16	SJB	
		08160497-001	pH	PCCMP - 5			7.4	s.u.	SM 4500-H+	12-Aug-16	SLW	
			Dissolved Oxygen	PCCMP - 5			2.75	mg/l	HACH 10360	12-Aug-16	SLW	
			Temperature	PCCMP - 5			26.8	°C	SM 2550B	12-Aug-16	SLW	
			Conductivity	PCCMP - 5			232	µmhos/cm	SM 2510B	12-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.1	mg/l	SM 5210B	12-Aug-16	PDS	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	12-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 5	1.4		3.6	mg/l	SM 2540D	12-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 5	0.1		0.3	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 5	0.2		0.7	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		1	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 5	0.132		0.182	mg/l	EPA 300.0	12-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	12-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	17-Aug-16	JTC	
			E. coli	PCCMP - 5	20		148	MPN/100ml	Colilert	12-Aug-16	KAL	
			Oil & Grease	PCCMP - 5	2.6		20.8	mg/l	EPA 1664A	25-Aug-16	SJB	
		08160498-001	Conductivity	PCCMP - 6 - Blank			1.5	µmhos/cm	SM 2510B	12-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Blank	0.6	<	2.1	mg/l	SM 5210B	12-Aug-16	PDS	
			Settleable Solids	PCCMP - 6 - Blank	0.1	<	0.1	ml/l	SM 2540F	12-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 6 - Blank	1.4	<	1.4	mg/l	SM 2540D	12-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 6 - Blank	0.1	<	0.1	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 6 - Blank	0.2	<	0.2	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Blank	0.3	<	0.3	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 - Blank	0.132	<	0.132	mg/l	EPA 300.0	12-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	12-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	17-Aug-16	JTC	
			E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100ml	Colilert	12-Aug-16	KAL	
			Oil & Grease	PCCMP - 6 - Blank	2.6		16.8	mg/l	EPA 1664A	25-Aug-16	SJB	
		08160499-001	pH	PCCMP - 6			7.5	s.u.	SM 4500-H+	12-Aug-16	SLW	
			Dissolved Oxygen	PCCMP - 6			4.06	mg/l	HACH 10360	12-Aug-16	SLW	
			Temperature	PCCMP - 6			27.9	°C	SM 2550B	12-Aug-16	SLW	
			Conductivity	PCCMP - 6			208	µmhos/cm	SM 2510B	12-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.1	mg/l	SM 5210B	12-Aug-16	PDS	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	12-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 6	1.4		3.6	mg/l	SM 2540D	12-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 6	0.1		0.6	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 6	0.2	<	0.2	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		0.6	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 6	0.132		0.148	mg/l	EPA 300.0	12-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	12-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	17-Aug-16	JTC	
			E. coli	PCCMP - 6	20		218	MPN/100ml	Colilert	12-Aug-16	KAL	
			Oil & Grease	PCCMP - 6	2.6		16.8	mg/l	EPA 1664A	25-Aug-16	SJB	
		08160500-001	Conductivity	PCCMP - 6 - Duplicate			202	µmhos/cm	SM 2510B	12-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Duplicate	0.6	<	2.1	mg/l	SM 5210B	12-Aug-16	PDS	
			Settleable Solids	PCCMP - 6 - Duplicate	0.1	<	0.1	ml/l	SM 2540F	12-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 6 - Duplicate	1.4		3.2	mg/l	SM 2540D	12-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 6 - Duplicate	0.1		0.6	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 6 - Duplicate	0.2	<	0.2	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Duplicate	0.3		0.6	mg/l	SM 4500 Series	17-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 - Duplicate	0.132		0.153	mg/l	EPA 300.0	12-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	12-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 - Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	17-Aug-16	JTC	
			E. coli	PCCMP - 6 - Duplicate	20		218	MPN/100ml	Colilert	12-Aug-16	KAL	
			Oil & Grease	PCCMP - 6 - Duplicate	2.6		14.8	mg/l	EPA 1664A	25-Aug-16	SJB	
8/19/2016	WW		pH	PCCMP - 1			7.3	s.u.	SM 4500-H+	19-Aug-16	SLW	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
		08160725-001	Dissolved Oxygen	PCCMP - 1			4.56	mg/l	HACH 10360	19-Aug-16	SLW	
			Temperature	PCCMP - 1			26	°C	SM 2550B	19-Aug-16	SLW	
			Conductivity	PCCMP - 1			224	µmhos/cm	SM 2510B	23-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2	mg/l	SM 5210B	19-Aug-16	PDS	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	19-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 1	1.4		8.4	mg/l	SM 2540D	20-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 1	0.1		0.3	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 1	0.2		0.8	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		1.1	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 1	0.066		0.172	mg/l	EPA 300.0	20-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03		0.13	mg/l	SM 4500-P E	23-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	23-Aug-16	JTC	
			E. coli	PCCMP - 1	20		576	MPN/100ml	Colilert	19-Aug-16	JTC/KAL	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	08-Sep-16	SJB	
		08160726-001	pH	PCCMP - 2			7.6	s.u.	SM 4500-H+	19-Aug-16	SLW	
			Dissolved Oxygen	PCCMP - 2			4.37	mg/l	HACH 10360	19-Aug-16	SLW	
			Temperature	PCCMP - 2			25.8	°C	SM 2550B	19-Aug-16	SLW	
			Conductivity	PCCMP - 2			236	µmhos/cm	SM 2510B	23-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6		2	mg/l	SM 5210B	19-Aug-16	PDS	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	19-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 2	1.4		8	mg/l	SM 2540D	20-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 2	0.1		0.3	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 2	0.2		1	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		1.3	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 2	0.066		0.126	mg/l	EPA 300.0	20-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03		0.08	mg/l	SM 4500-P E	23-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	23-Aug-16	JTC	
			E. coli	PCCMP - 2	20		172	MPN/100ml	Colilert	19-Aug-16	JTC/KAL	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	08-Sep-16	SJB	
		08160727-001	pH	PCCMP - 3			7.5	s.u.	SM 4500-H+	19-Aug-16	SLW	
			Dissolved Oxygen	PCCMP - 3			3.82	mg/l	HACH 10360	19-Aug-16	SLW	
			Temperature	PCCMP - 3			26.7	°C	SM 2550B	19-Aug-16	SLW	
			Conductivity	PCCMP - 3			238	µmhos/cm	SM 2510B	23-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6		2.5	mg/l	SM 5210B	19-Aug-16	PDS	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	19-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 3	1.4		10.4	mg/l	SM 2540D	20-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 3	0.1		0.4	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 3	0.2		0.9	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		1.3	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 3	0.066		0.179	mg/l	EPA 300.0	20-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03		0.23	mg/l	SM 4500-P E	23-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 3	0.03		0.21	mg/l	SM 4500-P E	23-Aug-16	JTC	
			E. coli	PCCMP - 3	20		672	MPN/100ml	Colilert	19-Aug-16	JTC/KAL	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	08-Sep-16	SJB	
		08160728-001	pH	PCCMP - 4			7.4	s.u.	SM 4500-H+	19-Aug-16	SLW	
			Dissolved Oxygen	PCCMP - 4			3.12	mg/l	HACH 10360	19-Aug-16	SLW	
			Temperature	PCCMP - 4			26.7	°C	SM 2550B	19-Aug-16	SLW	
			Conductivity	PCCMP - 4			253	µmhos/cm	SM 2510B	23-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6		3.8	mg/l	SM 5210B	19-Aug-16	PDS	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	19-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 4	1.4		8	mg/l	SM 2540D	20-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 4	0.1		0.4	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 4	0.2		1.1	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		1.5	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 4	0.066		0.194	mg/l	EPA 300.0	20-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03		0.11	mg/l	SM 4500-P E	23-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 4	0.03		0.07	mg/l	SM 4500-P E	23-Aug-16	JTC	
			E. coli	PCCMP - 4	20		2520	MPN/100ml	Colilert	19-Aug-16	JTC/KAL	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	08-Sep-16	SJB	
		08160729-001	pH	PCCMP - 5			7.4	s.u.	SM 4500-H+	19-Aug-16	SLW	
			Dissolved Oxygen	PCCMP - 5			2.51	mg/l	HACH 10360	19-Aug-16	SLW	
			Temperature	PCCMP - 5			27.1	°C	SM 2550B	19-Aug-16	SLW	
			Conductivity	PCCMP - 5			271	µmhos/cm	SM 2510B	23-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6		2.3	mg/l	SM 5210B	19-Aug-16	PDS	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	19-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 5	1.4		6.8	mg/l	SM 2540D	20-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 5	0.1		0.6	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 5	0.2		0.9	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		1.5	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 5	0.066		0.194	mg/l	EPA 300.0	20-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03		0.08	mg/l	SM 4500-P E	23-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 5	0.03		0.04	mg/l	SM 4500-P E	23-Aug-16	JTC	
			E. coli	PCCMP - 5	20		1130	MPN/100ml	Colilert	19-Aug-16	JTC/KAL	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	08-Sep-16	SJB	
		08160730-001	Conductivity	PCCMP - 6 - Blank			1.3	µmhos/cm	SM 2510B	23-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Blank	0.6	<	2	mg/l	SM 5210B	19-Aug-16	PDS	
			Settleable Solids	PCCMP - 6 - Blank	0.1	<	0.1	ml/l	SM 2540F	19-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 6 - Blank	1.4	<	1.4	mg/l	SM 2540D	20-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 6 - Blank	0.1		0.1	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 6 - Blank	0.2		0.8	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Blank	0.3		0.9	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 - Blank	0.066	<	0.066	mg/l	EPA 300.0	20-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	23-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	23-Aug-16	JTC	
			E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100ml	Colilert	19-Aug-16	JTC/KAL	
			Oil & Grease	PCCMP - 6 - Blank	2.6	<	5	mg/l	EPA 1664A	08-Sep-16	SJB	
		08160731-001	pH	PCCMP - 6			7.3	s.u.	SM 4500-H+	19-Aug-16	SLW	
			Dissolved Oxygen	PCCMP - 6			2.3	mg/l	HACH 10360	19-Aug-16	SLW	
			Temperature	PCCMP - 6			27.8	°C	SM 2550B	19-Aug-16	SLW	
			Conductivity	PCCMP - 6			266	µmhos/cm	SM 2510B	23-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2	mg/l	SM 5210B	19-Aug-16	PDS	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	19-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 6	1.4		3.6	mg/l	SM 2540D	20-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 6	0.1		0.4	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 6	0.2		0.9	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		1.3	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 6	0.066		0.138	mg/l	EPA 300.0	20-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	23-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	23-Aug-16	JTC	
			E. coli	PCCMP - 6	20		270	MPN/100ml	Colilert	19-Aug-16	JTC/KAL	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	08-Sep-16	SJB	
		08160732-001	Conductivity	PCCMP - 6 - Duplicate			260	µmhos/cm	SM 2510B	23-Aug-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Duplicate	0.6		2	mg/l	SM 5210B	19-Aug-16	PDS	
			Settleable Solids	PCCMP - 6 - Duplicate	0.1	<	0.1	ml/l	SM 2540F	19-Aug-16	SJB	
			Total Suspended Solids	PCCMP - 6 - Duplicate	1.4		1.6	mg/l	SM 2540D	20-Aug-16	SJB/KAL	
			Ammonia-Nitrogen	PCCMP - 6 - Duplicate	0.1		0.4	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Organic Nitrogen	PCCMP - 6 - Duplicate	0.2		0.9	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Duplicate	0.3		1.3	mg/l	SM 4500 Series	24-Aug-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 - Duplicate	0.066		0.138	mg/l	EPA 300.0	20-Aug-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	23-Aug-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 - Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	23-Aug-16	JTC	
			E. coli	PCCMP - 6 - Duplicate	20		292	MPN/100ml	Colilert	19-Aug-16	JTC/KAL	
			Oil & Grease	PCCMP - 6 - Duplicate	2.6	<	5	mg/l	EPA 1664A	08-Sep-16	SJB	
9/8/2016	DW	09160257-001	pH	PCCMP - 1			7.5	s.u.	SM 4500-H+	08-Sep-16	SLW	
			Dissolved Oxygen	PCCMP - 1			6.38	mg/l	HACH 10360	08-Sep-16	SLW	
			Temperature	PCCMP - 1			23.3	°C	SM 2550B	08-Sep-16	SLW	
			Conductivity	PCCMP - 1			268	µmhos/cm	SM 2510B	08-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.1	mg/l	SM 5210B	08-Sep-16	PDS	
			Settleable Solids	PCCMP - 1	0.1		0.1	ml/l	SM 2540F	08-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 1	1.4		12	mg/l	SM 2540D	08-Sep-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 1	0.1	<	0.1	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 1	0.2		0.6	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		0.7	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 1	0.132	<	0.132	mg/l	EPA 300.0	09-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	08-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	08-Sep-16	JTC	
			E. coli	PCCMP - 1	20		126	MPN/100ml	Colilert	08-Sep-16	KAL	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	22-Sep-16	SJB	
		09160258-001	pH	PCCMP - 2			7.6	s.u.	SM 4500-H+	08-Sep-16	SLW	
			Dissolved Oxygen	PCCMP - 2			5.45	mg/l	HACH 10360	08-Sep-16	SLW	
			Temperature	PCCMP - 2			23.3	°C	SM 2550B	08-Sep-16	SLW	
			Conductivity	PCCMP - 2			323	µmhos/cm	SM 2510B	08-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6		2.8	mg/l	SM 5210B	08-Sep-16	PDS	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	08-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 2	1.4		6.4	mg/l	SM 2540D	08-Sep-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 2	0.1	<	0.1	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 2	0.2		0.5	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		0.6	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 2	0.132		0.18	mg/l	EPA 300.0	09-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03		0.08	mg/l	SM 4500-P E	08-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	08-Sep-16	JTC	
			E. coli	PCCMP - 2	20		104	MPN/100ml	Colilert	08-Sep-16	KAL	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	22-Sep-16	SJB	
		09160259-001	pH	PCCMP - 3			7.6	s.u.	SM 4500-H+	08-Sep-16	SLW	
			Dissolved Oxygen	PCCMP - 3			5.21	mg/l	HACH 10360	08-Sep-16	SLW	
			Temperature	PCCMP - 3			23.6	°C	SM 2550B	08-Sep-16	SLW	
			Conductivity	PCCMP - 3			313	µmhos/cm	SM 2510B	08-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.1	mg/l	SM 5210B	08-Sep-16	PDS	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	08-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 3	1.4		6	mg/l	SM 2540D	08-Sep-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 3	0.1	<	0.1	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 3	0.2		0.5	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		0.6	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 3	0.132		0.135	mg/l	EPA 300.0	09-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	08-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	08-Sep-16	JTC	
			E. coli	PCCMP - 3	20		244	MPN/100ml	Colilert	08-Sep-16	KAL	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	22-Sep-16	SJB	
		09160260-001	pH	PCCMP - 4			7.5	s.u.	SM 4500-H+	08-Sep-16	SLW	
			Dissolved Oxygen	PCCMP - 4			3.57	mg/l	HACH 10360	08-Sep-16	SLW	
			Temperature	PCCMP - 4			24.7	°C	SM 2550B	08-Sep-16	SLW	
			Conductivity	PCCMP - 4			317	µmhos/cm	SM 2510B	08-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.1	mg/l	SM 5210B	08-Sep-16	PDS	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	08-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 4	1.4		10.4	mg/l	SM 2540D	08-Sep-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 4	0.1	<	0.1	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 4	0.2		0.6	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		0.7	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 4	0.132	<	0.132	mg/l	EPA 300.0	09-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03		0.05	mg/l	SM 4500-P E	08-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	08-Sep-16	JTC	
			E. coli	PCCMP - 4	20		264	MPN/100ml	Colilert	08-Sep-16	KAL	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	22-Sep-16	SJB	
		09160261-001	pH	PCCMP - 5			7.4	s.u.	SM 4500-H+	08-Sep-16	SLW	
			Dissolved Oxygen	PCCMP - 5			2.74	mg/l	HACH 10360	08-Sep-16	SLW	
			Temperature	PCCMP - 5			24.6	°C	SM 2550B	08-Sep-16	SLW	
			Conductivity	PCCMP - 5			322	µmhos/cm	SM 2510B	08-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6	<	2.1	mg/l	SM 5210B	08-Sep-16	PDS	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	08-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 5	1.4		3.2	mg/l	SM 2540D	08-Sep-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 5	0.1	<	0.1	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 5	0.2		0.7	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		0.8	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 5	0.132		0.14	mg/l	EPA 300.0	09-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	08-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	08-Sep-16	JTC	
			E. coli	PCCMP - 5	20		62	MPN/100ml	Colilert	08-Sep-16	KAL	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	22-Sep-16	SJB	
		09160262-001	Conductivity	PCCMP - 6 - Blank			1.4	µmhos/cm	SM 2510B	08-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Blank	0.6	<	2.1	mg/l	SM 5210B	08-Sep-16	PDS	
			Settleable Solids	PCCMP - 6 - Blank	0.1	<	0.1	ml/l	SM 2540F	08-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 6 - Blank	1.4	<	1.4	mg/l	SM 2540D	08-Sep-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 6 - Blank	0.1	<	0.1	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 6 - Blank	0.2	<	0.2	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Blank	0.3	<	0.3	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 - Blank	0.132	<	0.132	mg/l	EPA 300.0	09-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	08-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	08-Sep-16	JTC	
			E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100ml	Colilert	08-Sep-16	KAL	
			Oil & Grease	PCCMP - 6 - Blank	2.6	<	5	mg/l	EPA 1664A	22-Sep-16	SJB	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
		09160263-001	pH	PCCMP - 6			7.3	s.u.	SM 4500-H+	08-Sep-16	SLW	
			Dissolved Oxygen	PCCMP - 6			2.39	mg/l	HACH 10360	08-Sep-16	SLW	
			Temperature	PCCMP - 6			24.8	°C	SM 2550B	08-Sep-16	SLW	
			Conductivity	PCCMP - 6			321	µmhos/cm	SM 2510B	08-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.1	mg/l	SM 5210B	08-Sep-16	PDS	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	08-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 6	1.4		4	mg/l	SM 2540D	08-Sep-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 6	0.1	<	0.1	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 6	0.2		0.6	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		0.7	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 6	0.132		0.152	mg/l	EPA 300.0	09-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03		0.03	mg/l	SM 4500-P E	08-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	08-Sep-16	JTC	
			E. coli	PCCMP - 6	20	<	20	MPN/100ml	Colilert	08-Sep-16	KAL	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	22-Sep-16	SJB	
		09160264-001	Conductivity	PCCMP - 6 - Duplicate			320	µmhos/cm	SM 2510B	08-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Duplicate	0.6	<	2.1	mg/l	SM 5210B	08-Sep-16	PDS	
			Settleable Solids	PCCMP - 6 - Duplicate	0.1	<	0.1	ml/l	SM 2540F	08-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 6 - Duplicate	1.4		3.6	mg/l	SM 2540D	08-Sep-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 6 - Duplicate	0.1	<	0.1	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 6 - Duplicate	0.2		0.6	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Duplicate	0.3		0.7	mg/l	SM 4500 Series	13-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 - Duplicate	0.132		0.134	mg/l	EPA 300.0	09-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Duplicate	0.03		0.07	mg/l	SM 4500-P E	08-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 - Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	08-Sep-16	JTC	
			E. coli	PCCMP - 6 - Duplicate	20		20	MPN/100ml	Colilert	08-Sep-16	KAL	
			Oil & Grease	PCCMP - 6 - Duplicate	2.6	<	5	mg/l	EPA 1664A	22-Sep-16	SJB	
9/19/2016	WW	09160612-001	pH	PCCMP - 1			7.3	s.u.	SM 4500-H+	19-Sep-16	SLW	
			Dissolved Oxygen	PCCMP - 1			4.46	mg/l	HACH 10360	19-Sep-16	SLW	
			Temperature	PCCMP - 1			23.9	°C	SM 2550B	19-Sep-16	SLW	
			Conductivity	PCCMP - 1			198	µmhos/cm	SM 2510B	22-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	1.9	mg/l	SM 5210B	19-Sep-16	JTC/KAL	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	26-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 1	1.4		9.2	mg/l	SM 2540D	19-Sep-16	MAG	
			Ammonia-Nitrogen	PCCMP - 1	0.1		0.1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 1	0.2		0.6	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		0.7	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 1	0.13		0.14	mg/l	EPA 300.0	20-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03		0.05	mg/l	SM 4500-P E	22-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	20-Sep-16	JTC	
			E. coli	PCCMP - 1	20		1760	MPN/100ml	Colilert	19-Sep-16	SJB/KAL	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	29-Sep-16	SJB	
		09160613-001	pH	PCCMP - 2			7.3	s.u.	SM 4500-H+	19-Sep-16	SLW	
			Dissolved Oxygen	PCCMP - 2			3.94	mg/l	HACH 10360	19-Sep-16	SLW	
			Temperature	PCCMP - 2			24.1	°C	SM 2550B	19-Sep-16	SLW	
			Conductivity	PCCMP - 2			246	µmhos/cm	SM 2510B	22-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6		1.9	mg/l	SM 5210B	19-Sep-16	JTC/KAL	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	26-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 2	1.4		5.2	mg/l	SM 2540D	19-Sep-16	MAG	
			Ammonia-Nitrogen	PCCMP - 2	0.1		0.1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 2	0.2		0.6	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		0.7	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 2	0.13		0.27	mg/l	EPA 300.0	20-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03		0.04	mg/l	SM 4500-P E	22-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	20-Sep-16	JTC	
			E. coli	PCCMP - 2	20		2630	MPN/100ml	Colilert	19-Sep-16	SJB/KAL	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	29-Sep-16	SJB	
		09160614-001	pH	PCCMP - 3			7.4	s.u.	SM 4500-H+	19-Sep-16	SLW	
			Dissolved Oxygen	PCCMP - 3			4.46	mg/l	HACH 10360	19-Sep-16	SLW	
			Temperature	PCCMP - 3			24.9	°C	SM 2550B	19-Sep-16	SLW	
			Conductivity	PCCMP - 3			243	µmhos/cm	SM 2510B	22-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6		2	mg/l	SM 5210B	19-Sep-16	JTC/KAL	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	26-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 3	1.4		7.2	mg/l	SM 2540D	19-Sep-16	MAG	
			Ammonia-Nitrogen	PCCMP - 3	0.1		0.1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 3	0.2		0.9	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 3	0.13		0.18	mg/l	EPA 300.0	20-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03		0.04	mg/l	SM 4500-P E	22-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	20-Sep-16	JTC	
			E. coli	PCCMP - 3	20		1540	MPN/100ml	Colilert	19-Sep-16	SJB/KAL	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	29-Sep-16	SJB	
		09160615-001	pH	PCCMP - 4			7.3	s.u.	SM 4500-H+	19-Sep-16	SLW	
			Dissolved Oxygen	PCCMP - 4			3.84	mg/l	HACH 10360	19-Sep-16	SLW	
			Temperature	PCCMP - 4			25.3	°C	SM 2550B	19-Sep-16	SLW	
			Conductivity	PCCMP - 4			238	µmhos/cm	SM 2510B	22-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6		2	mg/l	SM 5210B	19-Sep-16	JTC/KAL	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	26-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 4	1.4		9.6	mg/l	SM 2540D	19-Sep-16	MAG	
			Ammonia-Nitrogen	PCCMP - 4	0.1		0.1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 4	0.2		0.6	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		0.7	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 4	0.13		0.17	mg/l	EPA 300.0	20-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03		0.04	mg/l	SM 4500-P E	22-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	20-Sep-16	JTC	
			E. coli	PCCMP - 4	20		2140	MPN/100ml	Colilert	19-Sep-16	SJB/KAL	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	29-Sep-16	SJB	
		09160616-001	pH	PCCMP - 5			7.3	s.u.	SM 4500-H+	19-Sep-16	SLW	
			Dissolved Oxygen	PCCMP - 5			3.11	mg/l	HACH 10360	19-Sep-16	SLW	
			Temperature	PCCMP - 5			25.1	°C	SM 2550B	19-Sep-16	SLW	
			Conductivity	PCCMP - 5			218	µmhos/cm	SM 2510B	22-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6		2.1	mg/l	SM 5210B	19-Sep-16	JTC/KAL	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	26-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 5	1.4		10.8	mg/l	SM 2540D	19-Sep-16	MAG	
			Ammonia-Nitrogen	PCCMP - 5	0.1		0.1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 5	0.2		0.9	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 5	0.13		0.25	mg/l	EPA 300.0	20-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03		0.05	mg/l	SM 4500-P E	22-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	20-Sep-16	JTC	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			E. coli	PCCMP - 5	20		2220	MPN/100ml	Colilert	19-Sep-16	SJB/KAL	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	29-Sep-16	SJB	
		09160617-001	Conductivity	PCCMP - 6 Blank			1.1	µmhos/cm	SM 2510B	22-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	1.9	mg/l	SM 5210B	19-Sep-16	JTC/KAL	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	26-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	19-Sep-16	MAG	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.1		0.1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 6 Blank	0.2		0.5	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.3		0.6	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.13	<	0.13	mg/l	EPA 300.0	20-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	22-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	20-Sep-16	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	19-Sep-16	SJB/KAL	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	29-Sep-16	SJB	
		09160618-001	pH	PCCMP - 6			7.3	s.u.	SM 4500-H+	19-Sep-16	SLW	
			Dissolved Oxygen	PCCMP - 6			3.95	mg/l	HACH 10360	19-Sep-16	SLW	
			Temperature	PCCMP - 6			25.4	°C	SM 2550B	19-Sep-16	SLW	
			Conductivity	PCCMP - 6			108	µmhos/cm	SM 2510B	22-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6		3.5	mg/l	SM 5210B	19-Sep-16	JTC/KAL	
			Settleable Solids	PCCMP - 6	0.1		0.1	ml/l	SM 2540F	26-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 6	1.4		21.6	mg/l	SM 2540D	19-Sep-16	MAG	
			Ammonia-Nitrogen	PCCMP - 6	0.1		0.1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 6	0.2		0.9	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 6	0.13		0.42	mg/l	EPA 300.0	20-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03		0.08	mg/l	SM 4500-P E	22-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6	0.03		0.04	mg/l	SM 4500-P E	20-Sep-16	JTC	
			E. coli	PCCMP - 6	20		11000	MPN/100ml	Colilert	19-Sep-16	SJB/KAL	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	29-Sep-16	SJB	
		09160619-001	Conductivity	PCCMP - 6 Duplicate			108	µmhos/cm	SM 2510B	22-Sep-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6		3.3	mg/l	SM 5210B	19-Sep-16	JTC/KAL	
			Settleable Solids	PCCMP - 6 Duplicate	0.1		0.1	ml/l	SM 2540F	26-Sep-16	MAG	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		18.8	mg/l	SM 2540D	19-Sep-16	MAG	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.1		0.1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2		1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.3		1.1	mg/l	SM 4500 Series	20-Sep-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.13		0.42	mg/l	EPA 300.0	20-Sep-16	MIC	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03		0.09	mg/l	SM 4500-P E	22-Sep-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03		0.05	mg/l	SM 4500-P E	20-Sep-16	JTC	
			E. coli	PCCMP - 6 Duplicate	20		9220	MPN/100ml	Colilert	19-Sep-16	SJB/KAL	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	29-Sep-16	SJB	
10/6/2016	DW		pH	PCCMP - 1			7.6	s.u.	SM 4500-H+	06-Oct-16	SLW	
			Dissolved Oxygen	PCCMP - 1			7.46	mg/l	HACH 10360	06-Oct-16	SLW	
			Temperature	PCCMP - 1			18.1	°C	SM 2550B	06-Oct-16	SLW	
			Conductivity	PCCMP - 1			230	µmhos/cm	SM 2510B	17-Oct-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6	<	2.1	mg/l	SM 5210B	06-Oct-16	PDS	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	06-Oct-16	JTC	
			Total Suspended Solids	PCCMP - 1	1.4	<	1.4	mg/l	SM 2540D	06-Oct-16	JTC/SJB	
		10160200-001	Ammonia-Nitrogen	PCCMP - 1	0.1		0.4	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Organic Nitrogen	PCCMP - 1	0.2		0.3	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		0.7	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Nitrate + Nitrite	PCCMP - 1	0.06	<	0.06	mg/l	EPA 300.0	07-Oct-16	SDF	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	07-Oct-16	PDS	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	13-Oct-16	JTC	
			E. coli	PCCMP - 1	20		126	MPN/100ml	Colilert	06-Oct-16	KAL	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	12-Oct-16	SJB	
		10160201-001	pH	PCCMP - 2			7.2	s.u.	SM 4500-H+	06-Oct-16	SLW	
			Dissolved Oxygen	PCCMP - 2			4.67	mg/l	HACH 10360	06-Oct-16	SLW	
			Temperature	PCCMP - 2			18.1	°C	SM 2550B	06-Oct-16	SLW	
			Conductivity	PCCMP - 2			303	µmhos/cm	SM 2510B	17-Oct-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6	<	2.1	mg/l	SM 5210B	06-Oct-16	PDS	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	06-Oct-16	JTC	
			Total Suspended Solids	PCCMP - 2	1.4		4.4	mg/l	SM 2540D	06-Oct-16	JTC/SJB	
			Ammonia-Nitrogen	PCCMP - 2	0.1		0.4	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Organic Nitrogen	PCCMP - 2	0.2		0.2	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		0.6	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Nitrate + Nitrite	PCCMP - 2	0.06		0.274	mg/l	EPA 300.0	07-Oct-16	SDF	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	07-Oct-16	PDS	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	13-Oct-16	JTC	
			E. coli	PCCMP - 2	20		104	MPN/100ml	Colilert	06-Oct-16	KAL	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	12-Oct-16	SJB	
		10160202-001	pH	PCCMP - 3			7.3	s.u.	SM 4500-H+	06-Oct-16	SLW	
			Dissolved Oxygen	PCCMP - 3			5.54	mg/l	HACH 10360	06-Oct-16	SLW	
			Temperature	PCCMP - 3			18.6	°C	SM 2550B	06-Oct-16	SLW	
			Conductivity	PCCMP - 3			286	µmhos/cm	SM 2510B	17-Oct-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6	<	2.1	mg/l	SM 5210B	06-Oct-16	PDS	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	06-Oct-16	JTC	
			Total Suspended Solids	PCCMP - 3	1.4		3.2	mg/l	SM 2540D	06-Oct-16	JTC/SJB	
			Ammonia-Nitrogen	PCCMP - 3	0.1		0.3	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Organic Nitrogen	PCCMP - 3	0.2		0.5	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		0.8	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Nitrate + Nitrite	PCCMP - 3	0.064		0.157	mg/l	EPA 300.0	07-Oct-16	SDF	
			Phosphorus, Total	PCCMP - 3	0.03		0.04	mg/l	SM 4500-P E	07-Oct-16	PDS	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	13-Oct-16	JTC	
			E. coli	PCCMP - 3	20		146	MPN/100ml	Colilert	06-Oct-16	KAL	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	12-Oct-16	SJB	
		10160203-001	pH	PCCMP - 4			7.2	s.u.	SM 4500-H+	06-Oct-16	SLW	
			Dissolved Oxygen	PCCMP - 4			4	mg/l	HACH 10360	06-Oct-16	SLW	
			Temperature	PCCMP - 4			19.3	°C	SM 2550B	06-Oct-16	SLW	
			Conductivity	PCCMP - 4			295	µmhos/cm	SM 2510B	17-Oct-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.1	mg/l	SM 5210B	06-Oct-16	PDS	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	06-Oct-16	JTC	
			Total Suspended Solids	PCCMP - 4	1.4		3.6	mg/l	SM 2540D	06-Oct-16	JTC/SJB	
			Ammonia-Nitrogen	PCCMP - 4	0.1		0.3	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Organic Nitrogen	PCCMP - 4	0.2		0.5	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		0.8	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Nitrate + Nitrite	PCCMP - 4	0.064		0.186	mg/l	EPA 300.0	07-Oct-16	SDF	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	07-Oct-16	PDS	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	13-Oct-16	JTC	
			E. coli	PCCMP - 4	20		104	MPN/100ml	Colilert	06-Oct-16	KAL	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	12-Oct-16	SJB	
		10160204-001	pH	PCCMP - 5			7.4	s.u.	SM 4500-H+	06-Oct-16	SLW	
			Dissolved Oxygen	PCCMP - 5			7.75	mg/l	HACH 10360	06-Oct-16	SLW	
			Temperature	PCCMP - 5			19.9	°C	SM 2550B	06-Oct-16	SLW	
			Conductivity	PCCMP - 5			282	µmhos/cm	SM 2510B	17-Oct-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6		2.9	mg/l	SM 5210B	06-Oct-16	PDS	
			Settleable Solids	PCCMP - 5	0.1		0.2	ml/l	SM 2540F	06-Oct-16	JTC	
			Total Suspended Solids	PCCMP - 5	1.4		5	mg/l	SM 2540D	06-Oct-16	JTC/SJB	
			Ammonia-Nitrogen	PCCMP - 5	0.1		0.6	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Organic Nitrogen	PCCMP - 5	0.2		0.5	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		1.1	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Nitrate + Nitrite	PCCMP - 5	0.064		0.228	mg/l	EPA 300.0	07-Oct-16	SDF	
			Phosphorus, Total	PCCMP - 5	0.03		0.13	mg/l	SM 4500-P E	07-Oct-16	PDS	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	13-Oct-16	JTC	
			E. coli	PCCMP - 5	20		20	MPN/100ml	Colilert	06-Oct-16	KAL	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	12-Oct-16	SJB	
		10160205-001	Conductivity	PCCMP - 6 Blank			1.2	µmhos/cm	SM 2510B	17-Oct-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	2.1	mg/l	SM 5210B	06-Oct-16	PDS	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	06-Oct-16	JTC	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	06-Oct-16	JTC/SJB	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.1		0.2	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Organic Nitrogen	PCCMP - 6 Blank	0.2		0.4	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.3		0.6	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.06	<	0.06	mg/l	EPA 300.0	07-Oct-16	SDF	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	07-Oct-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	13-Oct-16	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	06-Oct-16	KAL	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	12-Oct-16	SJB	
		10160206-001	pH	PCCMP - 6			7.6	s.u.	SM 4500-H+	06-Oct-16	SLW	
			Dissolved Oxygen	PCCMP - 6			5.43	mg/l	HACH 10360	06-Oct-16	SLW	
			Temperature	PCCMP - 6			20.9	°C	SM 2550B	06-Oct-16	SLW	
			Conductivity	PCCMP - 6			222	µmhos/cm	SM 2510B	17-Oct-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.1	mg/l	SM 5210B	06-Oct-16	PDS	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	06-Oct-16	JTC	
			Total Suspended Solids	PCCMP - 6	1.4	<	1.4	mg/l	SM 2540D	06-Oct-16	JTC/SJB	
			Ammonia-Nitrogen	PCCMP - 6	0.1		0.4	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Organic Nitrogen	PCCMP - 6	0.2		0.4	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		0.8	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Nitrate + Nitrite	PCCMP - 6	0.064		0.242	mg/l	EPA 300.0	07-Oct-16	SDF	
			Phosphorus, Total	PCCMP - 6	0.03		0.06	mg/l	SM 4500-P E	07-Oct-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	13-Oct-16	JTC	
			E. coli	PCCMP - 6	20		40	MPN/100ml	Colilert	06-Oct-16	KAL	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	12-Oct-16	SJB	
		10160207-001	Conductivity	PCCMP - 6 Duplicate			223	µmhos/cm	SM 2510B	17-Oct-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6	<	2.1	mg/l	SM 5210B	06-Oct-16	PDS	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	06-Oct-16	JTC	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		1.6	mg/l	SM 2540D	06-Oct-16	JTC/SJB	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.1		0.6	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2		0.3	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.3		0.9	mg/l	SM 4500 Series	07-Oct-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.064		0.241	mg/l	EPA 300.0	07-Oct-16	SDF	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	07-Oct-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	13-Oct-16	JTC	
			E. coli	PCCMP - 6 Duplicate	20		40	MPN/100ml	Colilert	06-Oct-16	KAL	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	12-Oct-16	SJB	
11/30/2017	WR	11161044-001	pH	PCCMP - 1			7.3	s.u.	SM 4500-H+	30-Nov-16	MW/DB	
			Dissolved Oxygen	PCCMP - 1			6.97	mg/l	HACH 10360	30-Nov-16	MW/DB	
			Temperature	PCCMP - 1			16.4	°C	SM 2550B	30-Nov-16	MW/DB	
			Conductivity	PCCMP - 1			128	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6		4.5	mg/l	SM 5210B	01-Dec-16	JTC	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	04-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 1	1.4		33.1	mg/l	SM 2540D	01-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 1	0.1		0.2	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 1	0.2		0.8	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		1	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 1	0.014		0.264	mg/l	EPA 300.0	01-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03		0.26	mg/l	SM 4500-P E	08-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	20-Dec-16	JTC	
			E. coli	PCCMP - 1	100		12600	MPN/100ml	Colilert	30-Nov-16	KAL	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	07-Dec-16	SJB	
		11161045-001	pH	PCCMP - 2			7.3	s.u.	SM 4500-H+	30-Nov-16	MW/DB	
			Dissolved Oxygen	PCCMP - 2			7.95	mg/l	HACH 10360	30-Nov-16	MW/DB	
			Temperature	PCCMP - 2			17.1	°C	SM 2550B	30-Nov-16	MW/DB	
			Conductivity	PCCMP - 2			114	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6		4.2	mg/l	SM 5210B	01-Dec-16	JTC	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	04-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 2	1.4		30	mg/l	SM 2540D	01-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 2	0.1		0.2	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 2	0.2		1.4	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		1.6	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 2	0.014		0.716	mg/l	EPA 300.0	01-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03		0.21	mg/l	SM 4500-P E	08-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	20-Dec-16	JTC	
			E. coli	PCCMP - 2	100		13500	MPN/100ml	Colilert	30-Nov-16	KAL	
			Oil & Grease	PCCMP - 2	2.6	<	5	mg/l	EPA 1664A	07-Dec-16	SJB	
		11161046-001	pH	PCCMP - 3			7.3	s.u.	SM 4500-H+	30-Nov-16	MW/DB	
			Dissolved Oxygen	PCCMP - 3			7.86	mg/l	HACH 10360	30-Nov-16	MW/DB	
			Temperature	PCCMP - 3			19.8	°C	SM 2550B	30-Nov-16	MW/DB	
			Conductivity	PCCMP - 3			113	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6		5.8	mg/l	SM 5210B	01-Dec-16	JTC	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	04-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 3	1.4		26	mg/l	SM 2540D	01-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 3	0.1		0.3	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 3	0.2		1	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		1.3	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 3	0.014		0.673	mg/l	EPA 300.0	01-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03		0.22	mg/l	SM 4500-P E	08-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	20-Dec-16	JTC	
			E. coli	PCCMP - 3	100		112000	MPN/100ml	Colilert	30-Nov-16	KAL	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	07-Dec-16	SJB	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
		11161047-001	pH	PCCMP - 4			7.3	s.u.	SM 4500-H+	30-Nov-16	MW/DB	
			Dissolved Oxygen	PCCMP - 4			7.76	mg/l	HACH 10360	30-Nov-16	MW/DB	
			Temperature	PCCMP - 4			17.1	°C	SM 2550B	30-Nov-16	MW/DB	
			Conductivity	PCCMP - 4			113	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6		5.3	mg/l	SM 5210B	01-Dec-16	JTC	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	04-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 4	1.4		22	mg/l	SM 2540D	01-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 4	0.1		0.3	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 4	0.2		1.1	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		1.4	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 4	0.014		0.66	mg/l	EPA 300.0	01-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03		0.22	mg/l	SM 4500-P E	08-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	20-Dec-16	JTC	
			E. coli	PCCMP - 4	100		92100	MPN/100ml	Colilert	30-Nov-16	KAL	
			Oil & Grease	PCCMP - 4	2.6	<	5	mg/l	EPA 1664A	08-Dec-16	SJB	
		11161048-001	pH	PCCMP - 5			7.4	s.u.	SM 4500-H+	30-Nov-16	MW/DB	
			Dissolved Oxygen	PCCMP - 5			7.54	mg/l	HACH 10360	30-Nov-16	MW/DB	
			Temperature	PCCMP - 5			17.3	°C	SM 2550B	30-Nov-16	MW/DB	
			Conductivity	PCCMP - 5			120	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6		6.5	mg/l	SM 5210B	01-Dec-16	JTC	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	04-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 5	1.4		26	mg/l	SM 2540D	01-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 5	0.1		0.2	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 5	0.2		1.1	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		1.3	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 5	0.014		0.636	mg/l	EPA 300.0	01-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03		0.23	mg/l	SM 4500-P E	08-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	20-Dec-16	JTC	
			E. coli	PCCMP - 5	100		61300	MPN/100ml	Colilert	30-Nov-16	KAL	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	08-Dec-16	SJB	
		11161049-001	Conductivity	PCCMP - 6 - Blank			3.9	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Blank	0.6		2.4	mg/l	SM 5210B	01-Dec-16	JTC	
			Settleable Solids	PCCMP - 6 - Blank	0.1	<	0.1	ml/l	SM 2540F	04-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 6 - Blank	1.4	<	1.4	mg/l	SM 2540D	01-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 6 - Blank	0.1		0.1	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 6 - Blank	0.2		0.2	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Blank	0.3		0.3	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 - Blank	0.014	<	0.014	mg/l	EPA 300.0	01-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	08-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	20-Dec-16	JTC	
			E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100ml	Colilert	30-Nov-16	KAL	
			Oil & Grease	PCCMP - 6 - Blank	2.6	<	5	mg/l	EPA 1664A	08-Dec-16	SJB	
		11161050-001	pH	PCCMP - 6			7.8	s.u.	SM 4500-H+	30-Nov-16	MW/DB	
			Dissolved Oxygen	PCCMP - 6			7.19	mg/l	HACH 10360	30-Nov-16	MW/DB	
			Temperature	PCCMP - 6			17.4	°C	SM 2550B	30-Nov-16	MW/DB	
			Conductivity	PCCMP - 6			118	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6		6.3	mg/l	SM 5210B	01-Dec-16	JTC	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	04-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 6	1.4		28	mg/l	SM 2540D	01-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 6	0.1		0.2	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 6	0.2		1.2	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		1.4	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 6	0.014		0.649	mg/l	EPA 300.0	01-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03		0.22	mg/l	SM 4500-P E	08-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	20-Dec-16	JTC	
			E. coli	PCCMP - 6	100		81600	MPN/100ml	Colilert	30-Nov-16	KAL	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	08-Dec-16	SJB	
		11161051-001	Conductivity	PCCMP - 6 - Duplicate			114	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Duplicate	0.6		6	mg/l	SM 5210B	01-Dec-16	JTC	
			Settleable Solids	PCCMP - 6 - Duplicate	0.1	<	0.1	ml/l	SM 2540F	04-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 6 - Duplicate	1.4		31.3	mg/l	SM 2540D	01-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 6 - Duplicate	0.1		0.2	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 6 - Duplicate	0.2		1.2	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Duplicate	0.3		1.4	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 - Duplicate	0.014		0.64	mg/l	EPA 300.0	01-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Duplicate	0.03		0.19	mg/l	SM 4500-P E	08-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 - Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	20-Dec-16	JTC	
			E. coli	PCCMP - 6 - Duplicate	100		61300	MPN/100ml	Colilert	30-Nov-16	KAL	
			Oil & Grease	PCCMP - 6 - Duplicate	2.6	<	5	mg/l	EPA 1664A	08-Dec-16	SJB	
		11161052-001	pH	Outfall 002, Central Avenue			7.1	s.u.	SM 4500-H+	30-Nov-16	MW/DB	
			Dissolved Oxygen	Outfall 002, Central Avenue			8.16	mg/l	HACH 10360	30-Nov-16	MW/DB	
			Temperature	Outfall 002, Central Avenue			17.3	°C	SM 2550B	30-Nov-16	MW/DB	
			Conductivity	Outfall 002, Central Avenue			112	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	Outfall 002, Central Avenue	0.6		14	mg/l	SM 5210B	01-Dec-16	JTC	
			Settleable Solids	Outfall 002, Central Avenue	0.1	<	0.1	ml/l	SM 2540F	01-Dec-16	MAG	
			Total Suspended Solids	Outfall 002, Central Avenue	1.4		20.8	mg/l	SM 2540D	01-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	Outfall 002, Central Avenue	0.1		0.6	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Organic Nitrogen	Outfall 002, Central Avenue	0.2		2	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Total Kjeldahl Nitrogen	Outfall 002, Central Avenue	0.3		2.6	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Nitrate + Nitrite	Outfall 002, Central Avenue	0.014		0.575	mg/l	EPA 300.0	01-Dec-16	MIC	
			Phosphorus, Total	Outfall 002, Central Avenue	0.03		0.35	mg/l	SM 4500-P E	08-Dec-16	PDS	
			Phosphorus, Dissolved	Outfall 002, Central Avenue	0.03		0.04	mg/l	SM 4500-P E	20-Dec-16	JTC	
			E. coli	Outfall 002, Central Avenue	200		260000	MPN/100ml	Colilert	30-Nov-16	KAL	
			Oil & Grease	Outfall 002, Central Avenue	2.6	<	5	mg/l	EPA 1664A	08-Dec-16	SJB	
			UV-Absorbing Constituents	Outfall 002, Central Avenue			67	% Trans.	SM 5910B	08-Dec-16	JTC	
		11161053-001	pH	Outfall 003, Williams Street			7.1	s.u.	SM 4500-H+	30-Nov-16	MW/DB	
			Dissolved Oxygen	Outfall 003, Williams Street			7.62	mg/l	HACH 10360	30-Nov-16	MW/DB	
			Temperature	Outfall 003, Williams Street			17.1	°C	SM 2550B	30-Nov-16	MW/DB	
			Conductivity	Outfall 003, Williams Street			67.4	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	Outfall 003, Williams Street	0.6		6.2	mg/l	SM 5210B	01-Dec-16	JTC	
			Settleable Solids	Outfall 003, Williams Street	0.1	<	0.1	ml/l	SM 2540F	01-Dec-16	MAG	
			Total Suspended Solids	Outfall 003, Williams Street	1.4		6.5	mg/l	SM 2540D	01-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	Outfall 003, Williams Street	0.1		0.3	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Organic Nitrogen	Outfall 003, Williams Street	0.2		1.1	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Total Kjeldahl Nitrogen	Outfall 003, Williams Street	0.3		1.4	mg/l	SM 4500 Series	02-Dec-16	KAL	
			Nitrate + Nitrite	Outfall 003, Williams Street	0.014		0.29	mg/l	EPA 300.0	01-Dec-16	MIC	
			Phosphorus, Total	Outfall 003, Williams Street	0.03		0.14	mg/l	SM 4500-P E	08-Dec-16	PDS	
			Phosphorus, Dissolved	Outfall 003, Williams Street	0.03		0.06	mg/l	SM 4500-P E	20-Dec-16	JTC	
			E. coli	Outfall 003, Williams Street	200		173000	mpn/100ml	Colilert	30-Nov-16	KAL	
			Oil & Grease	Outfall 003, Williams Street	2.6	<	5	mg/l	EPA 1664A	08-Dec-16	SJB	

Appendix C
MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			UV-Absorbing Constituents	Outfall 003, Williams Street			80.2	% Trans.	SM 5910B	08-Dec-16	JTC	
11/29/2016	WW		pH	PCCMP - 1			7.6	s.u.	SM 4500-H+	29-Nov-16	MW/DB	
			Dissolved Oxygen	PCCMP - 1			7.65	mg/l	HACH 10360	29-Nov-16	MW/DB	
			Temperature	PCCMP - 1			11.2	°C	SM 2550B	29-Nov-16	MW/DB	
			Conductivity	PCCMP - 1			227	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6		4.7	mg/l	SM 5210B	29-Nov-16	JTC/MAG	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	29-Nov-16	MAG	
			Total Suspended Solids	PCCMP - 1	1.4		31	mg/l	SM 2540D	29-Nov-16	MAG	
		11160981-001	Ammonia-Nitrogen	PCCMP - 1	0.1		0.3	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 1	0.2		0.7	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		1	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 1	0.014		0.105	mg/l	EPA 300.0	30-Nov-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03		0.05	mg/l	SM 4500-P E	05-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	08-Dec-16	JTC	
			E. coli	PCCMP - 1	20		6900	MPN/100ml	Colilert	29-Nov-16	KAL	
			Oil & Grease	PCCMP - 1	2.6		6.8	mg/l	EPA 1664A	05-Dec-16	SJB	
			pH	PCCMP - 2			7.6	s.u.	SM 4500-H+	29-Nov-16	MW/DB	
			Dissolved Oxygen	PCCMP - 2			6.74	mg/l	HACH 10360	29-Nov-16	MW/DB	
			Temperature	PCCMP - 2			11.8	°C	SM 2550B	29-Nov-16	MW/DB	
			Conductivity	PCCMP - 2			225	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6		5	mg/l	SM 5210B	29-Nov-16	JTC/MAG	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	29-Nov-16	MAG	
			Total Suspended Solids	PCCMP - 2	1.4		8.5	mg/l	SM 2540D	29-Nov-16	MAG	
		11160982-001	Ammonia-Nitrogen	PCCMP - 2	0.1		0.2	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 2	0.2		0.7	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		0.9	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 2	0.014		0.208	mg/l	EPA 300.0	30-Nov-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	05-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	08-Dec-16	JTC	
			E. coli	PCCMP - 2	20		2970	MPN/100ml	Colilert	29-Nov-16	KAL	
			Oil & Grease	PCCMP - 2	2.6		9.6	mg/l	EPA 1664A	05-Dec-16	SJB	
			pH	PCCMP - 3			7.6	s.u.	SM 4500-H+	29-Nov-16	MW/DB	
			Dissolved Oxygen	PCCMP - 3			6.6	mg/l	HACH 10360	29-Nov-16	MW/DB	
			Temperature	PCCMP - 3			12.5	°C	SM 2550B	29-Nov-16	MW/DB	
			Conductivity	PCCMP - 3			212	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6		7	mg/l	SM 5210B	29-Nov-16	JTC/MAG	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	29-Nov-16	MAG	
			Total Suspended Solids	PCCMP - 3	1.4		11.5	mg/l	SM 2540D	29-Nov-16	MAG	
		11160983-001	Ammonia-Nitrogen	PCCMP - 3	0.1		0.2	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 3	0.2		0.9	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		1.1	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 3	0.014		0.295	mg/l	EPA 300.0	30-Nov-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03		0.08	mg/l	SM 4500-P E	05-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 3	0.03		0.03	mg/l	SM 4500-P E	08-Dec-16	JTC	
			E. coli	PCCMP - 3	20		5230	MPN/100ml	Colilert	29-Nov-16	KAL	
			Oil & Grease	PCCMP - 3	2.6		5.6	mg/l	EPA 1664A	05-Dec-16	SJB	
			pH	PCCMP - 4			7.2	s.u.	SM 4500-H+	29-Nov-16	MW/DB	
			Dissolved Oxygen	PCCMP - 4			6.73	mg/l	HACH 10360	29-Nov-16	MW/DB	
			Temperature	PCCMP - 4			13.7	°C	SM 2550B	29-Nov-16	MW/DB	
			Conductivity	PCCMP - 4			169	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6		11.2	mg/l	SM 5210B	29-Nov-16	JTC/MAG	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	29-Nov-16	MAG	
			Total Suspended Solids	PCCMP - 4	1.4		27.3	mg/l	SM 2540D	29-Nov-16	MAG	
		11160984-001	Ammonia-Nitrogen	PCCMP - 4	0.1		0.3	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 4	0.2		1	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		1.3	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 4	0.014		0.41	mg/l	EPA 300.0	30-Nov-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03		0.14	mg/l	SM 4500-P E	05-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 4	0.03		0.11	mg/l	SM 4500-P E	08-Dec-16	JTC	
			E. coli	PCCMP - 4	20		7310	MPN/100ml	Colilert	29-Nov-16	KAL	
			Oil & Grease	PCCMP - 4	2.6		12.4	mg/l	EPA 1664A	05-Dec-16	SJB	
			pH	PCCMP - 5			7.4	s.u.	SM 4500-H+	29-Nov-16	MW/DB	
			Dissolved Oxygen	PCCMP - 5			6.56	mg/l	HACH 10360	29-Nov-16	MW/DB	
			Temperature	PCCMP - 5			14.2	°C	SM 2550B	29-Nov-16	MW/DB	
			Conductivity	PCCMP - 5			141	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6		12.8	mg/l	SM 5210B	29-Nov-16	JTC/MAG	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	29-Nov-16	MAG	
			Total Suspended Solids	PCCMP - 5	1.4		25.3	mg/l	SM 2540D	29-Nov-16	MAG	
		11160985-001	Ammonia-Nitrogen	PCCMP - 5	0.1		0.4	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 5	0.2		0.7	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		1.1	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 5	0.014		0.414	mg/l	EPA 300.0	30-Nov-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03		0.15	mg/l	SM 4500-P E	05-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 5	0.03		0.15	mg/l	SM 4500-P E	08-Dec-16	JTC	
			E. coli	PCCMP - 5	20		8210	MPN/100ml	Colilert	29-Nov-16	KAL	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	05-Dec-16	SJB	
			Conductivity	PCCMP - 6 Blank			1.8	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Blank	0.6	<	2.4	mg/l	SM 5210B	29-Nov-16	JTC/MAG	
			Settleable Solids	PCCMP - 6 Blank	0.1	<	0.1	ml/l	SM 2540F	29-Nov-16	MAG	
			Total Suspended Solids	PCCMP - 6 Blank	1.4	<	1.4	mg/l	SM 2540D	29-Nov-16	MAG	
			Ammonia-Nitrogen	PCCMP - 6 Blank	0.1	<	0.1	mg/l	SM 4500 Series	01-Dec-16	KAL	
		11160986-001	Organic Nitrogen	PCCMP - 6 Blank	0.2	<	0.2	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 Blank	0.3	<	0.3	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 Blank	0.014	<	0.014	mg/l	EPA 300.0	30-Nov-16	MIC	
			Phosphorus, Total	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	05-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 Blank	0.03	<	0.03	mg/l	SM 4500-P E	08-Dec-16	JTC	
			E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	29-Nov-16	KAL	
			Oil & Grease	PCCMP - 6 Blank	2.6	<	5	mg/l	EPA 1664A	05-Dec-16	SJB	
			pH	PCCMP - 6			8.2	s.u.	SM 4500-H+	29-Nov-16	MW/DB	
			Dissolved Oxygen	PCCMP - 6			6.59	mg/l	HACH 10360	29-Nov-16	MW/DB	
			Temperature	PCCMP - 6			14.8	°C	SM 2550B	29-Nov-16	MW/DB	
			Conductivity	PCCMP - 6			116	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6		14.8	mg/l	SM 5210B	29-Nov-16	JTC/MAG	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	29-Nov-16	MAG	
			Total Suspended Solids	PCCMP - 6	1.4		43.1	mg/l	SM 2540D	29-Nov-16	MAG	
		11160987-001	Ammonia-Nitrogen	PCCMP - 6	0.1		0.3	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 6	0.2		1.1	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		1.4	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 6	0.014		0.429	mg/l	EPA 300.0	30-Nov-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03		0.16	mg/l	SM 4500-P E	05-Dec-16	PDS	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Phosphorus, Dissolved	PCCMP - 6	0.03		0.22	mg/l	SM 4500-P E	08-Dec-16	JTC	
			E. coli	PCCMP - 6	20		12300	MPN/100ml	Colilert	29-Nov-16	KAL	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	05-Dec-16	SJB	
		11160988-001	Conductivity	PCCMP - 6 Duplicate			113	µmhos/cm	SM 2510B	20-Dec-16	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 Duplicate	0.6		14.4	mg/l	SM 5210B	29-Nov-16	JTC/MAG	
			Settleable Solids	PCCMP - 6 Duplicate	0.1	<	0.1	ml/l	SM 2540F	29-Nov-16	MAG	
			Total Suspended Solids	PCCMP - 6 Duplicate	1.4		41.5	mg/l	SM 2540D	29-Nov-16	MAG	
			Ammonia-Nitrogen	PCCMP - 6 Duplicate	0.1		0.3	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 6 Duplicate	0.2		1	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 Duplicate	0.3		1.3	mg/l	SM 4500 Series	01-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 Duplicate	0.014		0.43	mg/l	EPA 300.0	30-Nov-16	MIC	
			Phosphorus, Total	PCCMP - 6 Duplicate	0.03		0.16	mg/l	SM 4500-P E	05-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 Duplicate	0.03		0.21	mg/l	SM 4500-P E	08-Dec-16	JTC	
			E. coli	PCCMP - 6 Duplicate	20		11600	MPN/100ml	Colilert	29-Nov-16	KAL	
			Oil & Grease	PCCMP - 6 Duplicate	2.6	<	5	mg/l	EPA 1664A	05-Dec-16	SJB	
12/4/2016	WR		pH	PCCMP - 1			7.2	s.u.	SM 4500-H+	04-Dec-16	MW	
		12160128-001	Dissolved Oxygen	PCCMP - 1			8.63	mg/l	HACH 10360	04-Dec-16	MW	
			Temperature	PCCMP - 1			8.7	°C	SM 2550B	04-Dec-16	MW	
			E. coli	PCCMP - 1	100		980	MPN/100ml	Colilert	04-Dec-16	SJB	
			pH	PCCMP - 2			7.7	s.u.	SM 4500-H+	04-Dec-16	MW	
		12160129-001	Dissolved Oxygen	PCCMP - 2			8.55	mg/l	HACH 10360	04-Dec-16	MW	
			Temperature	PCCMP - 2			9.5	°C	SM 2550B	04-Dec-16	MW	
			E. coli	PCCMP - 2	100		630	MPN/100ml	Colilert	04-Dec-16	SJB	
			pH	PCCMP - 3			7.7	s.u.	SM 4500-H+	04-Dec-16	MW	
		12160130-001	Dissolved Oxygen	PCCMP - 3			8	mg/l	HACH 10360	04-Dec-16	MW	
			Temperature	PCCMP - 3			6.6	°C	SM 2550B	04-Dec-16	MW	
			E. coli	PCCMP - 3	100		5040	MPN/100ml	Colilert	04-Dec-16	SJB	
			pH	Outfall 002, Central Avenue			7.3	s.u.	SM 4500-H+	04-Dec-16	MW	
			Dissolved Oxygen	Outfall 002, Central Avenue			7.99	mg/l	HACH 10360	04-Dec-16	MW	
		12160131-001	Temperature	Outfall 002, Central Avenue			10.2	°C	SM 2550B	04-Dec-16	MW	
			E. coli	Outfall 002, Central Avenue	200		484000	MPN/100ml	Colilert	04-Dec-16	SJB	
			UV-Absorbing Constituents	Outfall 002, Central Avenue			40.5	% Trans.	SM 5910B	08-Dec-16	JTC	
12/22/2016	DW		pH	PCCMP - 1			7.2	s.u.	SM 4500-H+	22-Dec-16	MW	
			Dissolved Oxygen	PCCMP - 1			10.2	mg/l	HACH 10360	22-Dec-16	MW	
			Temperature	PCCMP - 1			6.6	°C	SM 2550B	22-Dec-16	MW	
			Conductivity	PCCMP - 1			181	µmhos/cm	SM 2510B	05-Jan-17	JTC	
			Biochemical Oxygen Demand	PCCMP - 1	0.6		7.6	mg/l	SM 5210B	22-Dec-16	PDS	
			Settleable Solids	PCCMP - 1	0.1	<	0.1	ml/l	SM 2540F	22-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 1	1.4		5.5	mg/l	SM 2540D	22-Dec-16	MAG/SJB	
		12160849-001	Ammonia-Nitrogen	PCCMP - 1	0.1		0.4	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 1	0.2		0.6	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 1	0.3		1.1	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 1	0.014		0.312	mg/l	EPA 300.0	23-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	27-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 1	0.03	<	0.03	mg/l	SM 4500-P E	03-Jan-17	JTC	
			E. coli	PCCMP - 1	20		82	MPN/100ml	Colilert	22-Dec-16	KAL	
			Oil & Grease	PCCMP - 1	2.6	<	5	mg/l	EPA 1664A	29-Dec-17	SJB	
			pH	PCCMP - 2			7.4	s.u.	SM 4500-H+	22-Dec-16	MW	
			Dissolved Oxygen	PCCMP - 2			10.1	mg/l	HACH 10360	22-Dec-16	MW	
			Temperature	PCCMP - 2			6.2	°C	SM 2550B	22-Dec-16	MW	
			Conductivity	PCCMP - 2			199	µmhos/cm	SM 2510B	05-Jan-17	JTC	
			Biochemical Oxygen Demand	PCCMP - 2	0.6		2.3	mg/l	SM 5210B	22-Dec-16	PDS	
			Settleable Solids	PCCMP - 2	0.1	<	0.1	ml/l	SM 2540F	22-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 2	1.4		5	mg/l	SM 2540D	22-Dec-16	MAG/SJB	
		12160850-001	Ammonia-Nitrogen	PCCMP - 2	0.1		0.4	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 2	0.2		0.6	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 2	0.3		1.1	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 2	0.014		0.343	mg/l	EPA 300.0	23-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	27-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 2	0.03	<	0.03	mg/l	SM 4500-P E	03-Jan-17	JTC	
			E. coli	PCCMP - 2	20		124	MPN/100ml	Colilert	22-Dec-16	KAL	
			Oil & Grease	PCCMP - 2	2.6		6.4	mg/l	EPA 1664A	29-Dec-17	SJB	
			pH	PCCMP - 3			7.3	s.u.	SM 4500-H+	22-Dec-16	MW	
			Dissolved Oxygen	PCCMP - 3			9.74	mg/l	HACH 10360	22-Dec-16	MW	
			Temperature	PCCMP - 3			6.6	°C	SM 2550B	22-Dec-16	MW	
			Conductivity	PCCMP - 3			212	µmhos/cm	SM 2510B	05-Jan-17	JTC	
			Biochemical Oxygen Demand	PCCMP - 3	0.6		2.1	mg/l	SM 5210B	22-Dec-16	PDS	
			Settleable Solids	PCCMP - 3	0.1	<	0.1	ml/l	SM 2540F	22-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 3	1.4		4.8	mg/l	SM 2540D	22-Dec-16	MAG/SJB	
		12160851-001	Ammonia-Nitrogen	PCCMP - 3	0.1		0.3	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 3	0.2		0.6	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 3	0.3		1	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 3	0.014		0.355	mg/l	EPA 300.0	23-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	27-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 3	0.03	<	0.03	mg/l	SM 4500-P E	03-Jan-17	JTC	
			E. coli	PCCMP - 3	20		146	MPN/100ml	Colilert	22-Dec-16	KAL	
			Oil & Grease	PCCMP - 3	2.6	<	5	mg/l	EPA 1664A	29-Dec-17	SJB	
			pH	PCCMP - 4			7.3	s.u.	SM 4500-H+	22-Dec-16	MW	
			Dissolved Oxygen	PCCMP - 4			9.44	mg/l	HACH 10360	22-Dec-16	MW	
			Temperature	PCCMP - 4			7.2	°C	SM 2550B	22-Dec-16	MW	
			Conductivity	PCCMP - 4			213	µmhos/cm	SM 2510B	05-Jan-17	JTC	
			Biochemical Oxygen Demand	PCCMP - 4	0.6	<	2.1	mg/l	SM 5210B	22-Dec-16	PDS	
			Settleable Solids	PCCMP - 4	0.1	<	0.1	ml/l	SM 2540F	22-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 4	1.4		4	mg/l	SM 2540D	22-Dec-16	MAG/SJB	
		12160852-001	Ammonia-Nitrogen	PCCMP - 4	0.1		0.4	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 4	0.2		0.7	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 4	0.3		1.2	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 4	0.014		0.346	mg/l	EPA 300.0	23-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	27-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 4	0.03	<	0.03	mg/l	SM 4500-P E	03-Jan-17	JTC	
			E. coli	PCCMP - 4	20		220	MPN/100ml	Colilert	22-Dec-16	KAL	
			Oil & Grease	PCCMP - 4	2.6		5.2	mg/l	EPA 1664A	29-Dec-17	SJB	
			pH	PCCMP - 5			7.3	s.u.	SM 4500-H+	22-Dec-16	MW	
			Dissolved Oxygen	PCCMP - 5			9.18	mg/l	HACH 10360	22-Dec-16	MW	
			Temperature	PCCMP - 5			7.8	°C	SM 2550B	22-Dec-16	MW	
			Conductivity	PCCMP - 5			204	µmhos/cm	SM 2510B	05-Jan-17	JTC	
			Biochemical Oxygen Demand	PCCMP - 5	0.6		2.8	mg/l	SM 5210B	22-Dec-16	PDS	
			Settleable Solids	PCCMP - 5	0.1	<	0.1	ml/l	SM 2540F	22-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 5	1.4		3.5	mg/l	SM 2540D	22-Dec-16	MAG/SJB	
		12160853-001	Ammonia-Nitrogen	PCCMP - 5	0.1		0.4	mg/l	SM 4500 Series	27-Dec-16	KAL	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			Organic Nitrogen	PCCMP - 5	0.2		0.6	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 5	0.3		1.1	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 5	0.014		0.335	mg/l	EPA 300.0	23-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	27-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 5	0.03	<	0.03	mg/l	SM 4500-P E	03-Jan-17	JTC	
			E. coli	PCCMP - 5	20		268	MPN/100ml	Colilert	22-Dec-16	KAL	
			Oil & Grease	PCCMP - 5	2.6	<	5	mg/l	EPA 1664A	29-Dec-17	SJB	
		12160854-001	Conductivity	PCCMP - 6 - Blank			1.2	µmhos/cm	SM 2510B	05-Jan-17	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Blank	0.6	<	2.1	mg/l	SM 5210B	22-Dec-16	PDS	
			Settleable Solids	PCCMP - 6 - Blank	0.1	<	0.1	ml/l	SM 2540F	22-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 6 - Blank	1.4	<	1.4	mg/l	SM 2540D	22-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 6 - Blank	0.1		0.2	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 6 - Blank	0.2		0.6	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Blank	0.3		0.9	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 - Blank	0.014		0.014	mg/l	EPA 300.0	23-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	27-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 - Blank	0.03	<	0.03	mg/l	SM 4500-P E	03-Jan-17	JTC	
			E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100ml	Colilert	22-Dec-16	KAL	
			Oil & Grease	PCCMP - 6 - Blank	2.6	<	5	mg/l	EPA 1664A	29-Dec-17	SJB	
		12160855-001	pH	PCCMP - 6			7.3	s.u.	SM 4500-H+	22-Dec-16	MW	
			Dissolved Oxygen	PCCMP - 6			9	mg/l	HACH 10360	22-Dec-16	MW	
			Temperature	PCCMP - 6			7.5	°C	SM 2550B	22-Dec-16	MW	
			Conductivity	PCCMP - 6			214	µmhos/cm	SM 2510B	05-Jan-17	JTC	
			Biochemical Oxygen Demand	PCCMP - 6	0.6	<	2.1	mg/l	SM 5210B	22-Dec-16	PDS	
			Settleable Solids	PCCMP - 6	0.1	<	0.1	ml/l	SM 2540F	22-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 6	1.4		2.8	mg/l	SM 2540D	22-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 6	0.1		0.3	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 6	0.2		0.6	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6	0.3		1	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 6	0.014		0.328	mg/l	EPA 300.0	23-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 6	0.03		0.05	mg/l	SM 4500-P E	27-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6	0.03	<	0.03	mg/l	SM 4500-P E	03-Jan-17	JTC	
			E. coli	PCCMP - 6	20		214	MPN/100ml	Colilert	22-Dec-16	KAL	
			Oil & Grease	PCCMP - 6	2.6	<	5	mg/l	EPA 1664A	29-Dec-17	SJB	
		12160856-001	Conductivity	PCCMP - 6 - Duplicate			215	µmhos/cm	SM 2510B	05-Jan-17	JTC	
			Biochemical Oxygen Demand	PCCMP - 6 - Duplicate	0.6	<	2.1	mg/l	SM 5210B	22-Dec-16	PDS	
			Settleable Solids	PCCMP - 6 - Duplicate	0.1	<	0.1	ml/l	SM 2540F	22-Dec-16	MAG	
			Total Suspended Solids	PCCMP - 6 - Duplicate	1.4		2.8	mg/l	SM 2540D	22-Dec-16	MAG/SJB	
			Ammonia-Nitrogen	PCCMP - 6 - Duplicate	0.1		0.3	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Organic Nitrogen	PCCMP - 6 - Duplicate	0.2		0.6	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Total Kjeldahl Nitrogen	PCCMP - 6 - Duplicate	0.3		1	mg/l	SM 4500 Series	27-Dec-16	KAL	
			Nitrate + Nitrite	PCCMP - 6 - Duplicate	0.014		0.334	mg/l	EPA 300.0	23-Dec-16	MIC	
			Phosphorus, Total	PCCMP - 6 - Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	27-Dec-16	PDS	
			Phosphorus, Dissolved	PCCMP - 6 - Duplicate	0.03	<	0.03	mg/l	SM 4500-P E	03-Jan-17	JTC	
			E. coli	PCCMP - 6 - Duplicate	20		104	MPN/100ml	Colilert	22-Dec-16	KAL	
			Oil & Grease	PCCMP - 6 - Duplicate	2.6	<	5	mg/l	EPA 1664A	29-Dec-17	SJB	
1/20/2017	WR	01170755-001	pH	Outfall 002, Central Avenue			7.3	s.u.	SM 4500-H+	20-Jan-17	MW	
			Dissolved Oxygen	Outfall 002, Central Avenue			8.05	mg/l	HACH 10360	20-Jan-17	MW	
			Temperature	Outfall 002, Central Avenue			15.7	°C	SM 2550B	20-Jan-17	MW	
			E. Coli	Outfall 002, Central Avenue	200		311000	MPN/100 ml	Colilert	20-Jan-17	KAL	
			UV-Absorbing Constituents	Outfall 002, Central Avenue			35.1	% Trans.	SM 5910B	23-Jan-17	JTC	
1/20/2017	WR	01170747-001	pH	PCCMP - 1			7.5	s.u.	SM 4500-H+	20-Jan-17	MW	
			Dissolved Oxygen	PCCMP - 1			7.68	mg/l	HACH 10360	20-Jan-17	MW	
			Temperature	PCCMP - 1			14.2	°C	SM 2550B	20-Jan-17	MW	
			E. coli	PCCMP - 1	100		34500	MPN/100ml	Colilert	20-Jan-17	KAL	
		01170748-001	pH	PCCMP - 2			7.6	s.u.	SM 4500-H+	20-Jan-17	MW	
			Dissolved Oxygen	PCCMP - 2			7.54	mg/l	HACH 10360	20-Jan-17	MW	
			Temperature	PCCMP - 2			14.5	°C	SM 2550B	20-Jan-17	MW	
			E. coli	PCCMP - 2	100		16200	MPN/100ml	Colilert	20-Jan-17	KAL	
		01170749-001	pH	PCCMP - 3			7.5	s.u.	SM 4500-H+	20-Jan-17	MW	
			Dissolved Oxygen	PCCMP - 3			7.37	mg/l	HACH 10360	20-Jan-17	MW	
			Temperature	PCCMP - 3			14.5	°C	SM 2550B	20-Jan-17	MW	
			E. coli	PCCMP - 3	100		17200	MPN/100ml	Colilert	20-Jan-17	KAL	
		01170750-001	pH	PCCMP - 4			7.6	s.u.	SM 4500-H+	20-Jan-17	MW	
			Dissolved Oxygen	PCCMP - 4			7.38	mg/l	HACH 10360	20-Jan-17	MW	
			Temperature	PCCMP - 4			14.6	°C	SM 2550B	20-Jan-17	MW	
			E. coli	PCCMP - 4	100		24900	MPN/100ml	Colilert	20-Jan-17	KAL	
		01170751-001	pH	PCCMP - 5			7.6	s.u.	SM 4500-H+	20-Jan-17	MW	
			Dissolved Oxygen	PCCMP - 5			7.37	mg/l	HACH 10360	20-Jan-17	MW	
			Temperature	PCCMP - 5			14.8	°C	SM 2550B	20-Jan-17	MW	
			E. coli	PCCMP - 5	100		16100	MPN/100ml	Colilert	20-Jan-17	KAL	
		01170752-001	E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100ml	Colilert	20-Jan-17	KAL	
		01170753-001	pH	PCCMP - 6			7.6	s.u.	SM 4500-H+	20-Jan-17	MW	
			Dissolved Oxygen	PCCMP - 6			7.44	mg/l	HACH 10360	20-Jan-17	MW	
			Temperature	PCCMP - 6			14.8	°C	SM 2550B	20-Jan-17	MW	
			E. coli	PCCMP - 6	100		21000	MPN/100ml	Colilert	20-Jan-17	KAL	
		01170754-001	E. coli	PCCMP - 6 - Duplicate	100		21400	MPN/100ml	Colilert	20-Jan-17	KAL	
3/8/2017	WR	03171052-001	pH	Outfall 002, Central Avenue			7.3	s.u.	SM 4500-H+	28-Mar-17	MW	
			Dissolved Oxygen	Outfall 002, Central Avenue			4.24	mg/l	HACH 10360	28-Mar-17	MW	
			Temperature	Outfall 002, Central Avenue			17.4	°C	SM 2550B	28-Mar-17	MW	
			E. coli	Outfall 002, Central Avenue	1000		980000	mpn/100ml	Colilert	28-Mar-17	PDS	
			UV-Absorbing Constituents	Outfall 002, Central Avenue			29.9	% Trans.	SM 5910B	28-Mar-17	JTC	
3/28/2017	WR	03171050-001	pH	PCCMP - 1			7	s.u.	SM 4500-H+	28-Mar-17	MW	
			Dissolved Oxygen	PCCMP - 1			7.43	mg/l	HACH 10360	28-Mar-17	MW	
			Temperature	PCCMP - 1			16.1	°C	SM 2550B	28-Mar-17	MW	
			E. coli	PCCMP - 1	100		12200	mpn/100ml	Colilert	28-Mar-17	PDS	
		03171051-001	pH	PCCMP - 2			6.6	s.u.	SM 4500-H+	28-Mar-17	MW	
			Dissolved Oxygen	PCCMP - 2			7.18	mg/l	HACH 10360	28-Mar-17	MW	
			Temperature	PCCMP - 2			16.7	°C	SM 2550B	28-Mar-17	MW	
			E. coli	PCCMP - 2	100		8780	MPN/100ml	Colilert	28-Mar-17	PDS	
		03171053-001	pH	PCCMP - 3			7.5	s.u.	SM 4500-H+	28-Mar-17	MW	
			Dissolved Oxygen	PCCMP - 3			6.99	mg/l	HACH 10360	28-Mar-17	MW	
			Temperature	PCCMP - 3			17	°C	SM 2550B	28-Mar-17	MW	
			E. coli	PCCMP - 3	100		22800	MPN/100ml	Colilert	28-Mar-17	PDS	
		03171054-001	pH	PCCMP - 4			7.7	s.u.	SM 4500-H+	28-Mar-17	MW	
			Dissolved Oxygen	PCCMP - 4			7.14	mg/l	HACH 10360	28-Mar-17	MW	
			Temperature	PCCMP - 4			17.5	°C	SM 2550B	28-Mar-17	MW	
			E. coli	PCCMP - 4	100		12600	MPN/100ml	Colilert	28-Mar-17	PDS	
		03171055-001	pH	PCCMP - 5			7.6	s.u.	SM 4500-H+	28-Mar-17	MW	
			Dissolved Oxygen	PCCMP - 5			6.94	mg/l	HACH 10360	28-Mar-17	MW	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
		03171055-001	Temperature	PCCMP - 5			17.3	°C	SM 2550B	28-Mar-17	MW	
			E. coli	PCCMP - 5	100		16100	MPN/100ml	Colilert	28-Mar-17	PDS	
		03171056-001	E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	28-Mar-17	PDS	
		03171057-001	pH	PCCMP - 6			7.7	s.u.	SM 4500-H+	28-Mar-17	MW	
			Dissolved Oxygen	PCCMP - 6			6.88	mg/l	HACH 10360	28-Mar-17	MW	
			Temperature	PCCMP - 6			17.5	°C	SM 2550B	28-Mar-17	MW	
			E. coli	PCCMP - 6	100		17200	MPN/100ml	Colilert	28-Mar-17	PDS	
		03171058-001	E. coli	PCCMP - 6 Duplicate	100		15000	MPN/100ml	Colilert	28-Mar-17	PDS	
4/23/2017	WR	04170845-001	pH	Outfall 002, Central Avenue			7.4	s.u.	SM 4500-H+	23-Apr-17	MW	
			Dissolved Oxygen	Outfall 002, Central Avenue			7.47	mg/l	HACH 10360	23-Apr-17	MW	
			Temperature	Outfall 002, Central Avenue			18.2	°C	SM 2550B	23-Apr-17	MW	
			E. coli	Outfall 002, Central Avenue	200		52300	mpn/100ml	Colilert	23-Apr-17	JTC/PDS	
			UV-Absorbing Constituents	Outfall 002, Central Avenue			69.1	% Trans.	SM 5910B	28-Apr-17	JTC	
4/27/2017	WR	04171026-001	pH	Outfall 002, Central Avenue			7.2	s.u.	SM 4500-H+	27-Apr-17	MW	
			Dissolved Oxygen	Outfall 002, Central Avenue			6.66	mg/l	HACH 10360	27-Apr-17	MW	
			Temperature	Outfall 002, Central Avenue			18.5	°C	SM 2550B	27-Apr-17	MW	
			E. coli	Outfall 002, Central Avenue	100		242000	mpn/100ml	Colilert	27-Apr-17	SJB/JTC	
			UV-Absorbing Constituents	Outfall 002, Central Avenue			29.4	% Trans.	SM 5910B	28-Apr-17	JTC	
4/23/2017	WR	04170846-001	pH	Outfall 003, Williams Street			7.6	s.u.	SM 4500-H+	23-Apr-17	MW	
			Dissolved Oxygen	Outfall 003, Williams Street			7.77	mg/l	HACH 10360	23-Apr-17	MW	
			Temperature	Outfall 003, Williams Street			17.7	°C	SM 2550B	23-Apr-17	MW	
			E. coli	Outfall 003, Williams Street	200		45600	mpn/100ml	Colilert	23-Apr-17	JTC/PDS	
			UV-Absorbing Constituents	Outfall 003, Williams Street			79.4	% Trans.	SM 5910B	28-Apr-17	JTC	
4/27/2017	WR	04171027-001	pH	Outfall 003, Williams Street			7	s.u.	SM 4500-H+	27-Apr-17	MW	
			Dissolved Oxygen	Outfall 003, Williams Street			7.85	mg/l	HACH 10360	27-Apr-17	MW	
			Temperature	Outfall 003, Williams Street			19	°C	SM 2550B	27-Apr-17	MW	
			E. coli	Outfall 003, Williams Street	100		3550	mpn/100ml	Colilert	27-Apr-17	SJB/JTC	
			UV-Absorbing Constituents	Outfall 003, Williams Street			77.6	% Trans.	SM 5910B	28-Apr-17	JTC	
4/23/2017	WR	04170837-001	pH	PCCMP - 1			7.2	s.u.	SM 4500-H+	23-Apr-17	MW	
			Dissolved Oxygen	PCCMP - 1			6.47	mg/l	HACH 10360	23-Apr-17	MW	
			Temperature	PCCMP - 1			17.2	°C	SM 2550B	23-Apr-17	MW	
			E. coli	PCCMP - 1	100		22500	MPN/100ml	Colilert	23-Apr-17	JTC/PDS	
		04170838-001	pH	PCCMP - 2			7.5	s.u.	SM 4500-H+	23-Apr-17	MW	
			Dissolved Oxygen	PCCMP - 2			7.38	mg/l	HACH 10360	23-Apr-17	MW	
			Temperature	PCCMP - 2			17.6	°C	SM 2550B	23-Apr-17	MW	
			E. coli	PCCMP - 2	100		17200	MPN/100ml	Colilert	23-Apr-17	JTC/PDS	
		04170839-001	pH	PCCMP - 3			7.6	s.u.	SM 4500-H+	23-Apr-17	MW	
			Dissolved Oxygen	PCCMP - 3			6.99	mg/l	HACH 10360	23-Apr-17	MW	
			Temperature	PCCMP - 3			17.6	°C	SM 2550B	23-Apr-17	MW	
			E. coli	PCCMP - 3	100		30800	MPN/100ml	Colilert	23-Apr-17	JTC/PDS	
		04170840-001	pH	PCCMP - 4			7.6	s.u.	SM 4500-H+	23-Apr-17	MW	
			Dissolved Oxygen	PCCMP - 4			6.78	mg/l	HACH 10360	23-Apr-17	MW	
			Temperature	PCCMP - 4			17.6	°C	SM 2550B	23-Apr-17	MW	
			E. coli	PCCMP - 4	100		28500	MPN/100ml	Colilert	23-Apr-17	JTC/PDS	
		04170841-001	pH	PCCMP - 5			7.6	s.u.	SM 4500-H+	23-Apr-17	MW	
			Dissolved Oxygen	PCCMP - 5			6.93	mg/l	HACH 10360	23-Apr-17	MW	
			Temperature	PCCMP - 5			17.5	°C	SM 2550B	23-Apr-17	MW	
			E. coli	PCCMP - 5	100		38700	MPN/100ml	Colilert	23-Apr-17	JTC/PDS	
		04170842-001	E. coli	PCCMP - 6 - Blank	1	<	1	MPN/100ml	Colilert	23-Apr-17	JTC/PDS	
		04170843-001	pH	PCCMP - 6			7.6	s.u.	SM 4500-H+	23-Apr-17	MW	
			Dissolved Oxygen	PCCMP - 6			6.96	mg/l	HACH 10360	23-Apr-17	MW	
			Temperature	PCCMP - 6			17.6	°C	SM 2550B	23-Apr-17	MW	
			E. coli	PCCMP - 6	100		18600	MPN/100ml	Colilert	23-Apr-17	JTC/PDS	
		04170844-001	E. coli	PCCMP - 6 - Duplicate	100		18600	MPN/100ml	Colilert	23-Apr-17	JTC/PDS	
4/27/2017	WR	04171018-001	pH	PCCMP - 1			7.1	s.u.	SM 4500-H+	27-Apr-17	MW	
			Dissolved Oxygen	PCCMP - 1			6.09	mg/l	HACH 10360	27-Apr-17	MW	
			Temperature	PCCMP - 1			19.6	°C	SM 2550B	27-Apr-17	MW	
			E. coli	PCCMP - 1	100		410	MPN/100ml	Colilert	27-Apr-17	SJB/JTC	
		04171019-001	pH	PCCMP - 2			7.4	s.u.	SM 4500-H+	27-Apr-17	MW	
			Dissolved Oxygen	PCCMP - 2			6.41	mg/l	HACH 10360	27-Apr-17	MW	
			Temperature	PCCMP - 2			19.1	°C	SM 2550B	27-Apr-17	MW	
			E. coli	PCCMP - 2	100		6770	MPN/100ml	Colilert	27-Apr-17	SJB/JTC	
		04171020-001	pH	PCCMP - 3			7.3	s.u.	SM 4500-H+	27-Apr-17	MW	
			Dissolved Oxygen	PCCMP - 3			6.46	mg/l	HACH 10360	27-Apr-17	MW	
			Temperature	PCCMP - 3			18.8	°C	SM 2550B	27-Apr-17	MW	
			E. coli	PCCMP - 3	100		15500	MPN/100ml	Colilert	27-Apr-17	SJB/JTC	
		04171021-001	pH	PCCMP - 4			6.4	s.u.	SM 4500-H+	27-Apr-17	MW	
			Dissolved Oxygen	PCCMP - 4			6.42	mg/l	HACH 10360	27-Apr-17	MW	
			Temperature	PCCMP - 4			19.1	°C	SM 2550B	27-Apr-17	MW	
			E. coli	PCCMP - 4	100		18600	MPN/100ml	Colilert	27-Apr-17	SJB/JTC	
		04171022-001	pH	PCCMP - 5			7.4	s.u.	SM 4500-H+	27-Apr-17	MW	
			Dissolved Oxygen	PCCMP - 5			6.5	mg/l	HACH 10360	27-Apr-17	MW	
			Temperature	PCCMP - 5			19	°C	SM 2550B	27-Apr-17	MW	
			E. coli	PCCMP - 5	100		23800	MPN/100ml	Colilert	27-Apr-17	SJB/JTC	
		04171023-001	E. coli	PCCMP - 6 - Blank	1	<	100	MPN/100ml	Colilert	27-Apr-17	SJB/JTC	
		04171024-001	pH	PCCMP - 6			7.5	s.u.	SM 4500-H+	27-Apr-17	MW	
			Dissolved Oxygen	PCCMP - 6			6.34	mg/l	HACH 10360	27-Apr-17	MW	
			Temperature	PCCMP - 6			19.8	°C	SM 2550B	27-Apr-17	MW	
			E. coli	PCCMP - 6	100		24800	MPN/100ml	Colilert	27-Apr-17	SJB/JTC	
		04171025-001	E. coli	PCCMP - 6 - Duplicate	100		36500	MPN/100ml	Colilert	27-Apr-17	SJB/JTC	
5/1/2017	WR	05170041-001	pH	Outfall 002, Central Avenue			7	s.u.	SM 4500-H+	01-May-17	MW	
			Dissolved Oxygen	Outfall 002, Central Avenue			4.24	mg/l	HACH 10360	01-May-17	MW	
			Temperature	Outfall 002, Central Avenue			19.9	°C	SM 2550B	01-May-17	MW	
			E. coli	Outfall 002, Central Avenue	200		241000	mpn/100ml	Colilert	01-May-17	PDS/JTC	
			UV-Absorbing Constituents	Outfall 002, Central Avenue			55.3	% Trans.	SM 5910B	10-May-17	JTC	
5/1/2017	WR	05170039-001	pH	PCCMP - 1			7.5	s.u.	SM 4500-H+	01-May-17	MW	
			Dissolved Oxygen	PCCMP - 1			6.82	mg/l	HACH 10360	01-May-17	MW	
			Temperature	PCCMP - 1			18.8	°C	SM 2550B	01-May-17	MW	
			E. coli	PCCMP - 1	100		10400	MPN/100ml	Colilert	01-May-17	PDS/JTC	
		05170040-001	pH	PCCMP - 2			7.5	s.u.	SM 4500-H+	01-May-17	MW	
			Dissolved Oxygen	PCCMP - 2			6.69	mg/l	HACH 10360	01-May-17	MW	
			Temperature	PCCMP - 2			18.9	°C	SM 2550B	01-May-17	MW	
			E. coli	PCCMP - 2	100		18600	MPN/100ml	Colilert	01-May-17	PDS/JTC	
		05170042-001	pH	PCCMP - 3			7.4	s.u.	SM 4500-H+	01-May-17	MW	
			Dissolved Oxygen	PCCMP - 3			6.53	mg/l	HACH 10360	01-May-17	MW	
			Temperature	PCCMP - 3			19.5	°C	SM 2550B	01-May-17	MW	
			E. coli	PCCMP - 3	100		12100	MPN/100ml	Colilert	01-May-17	PDS/JTC	
		05170043-001	pH	PCCMP - 4			7.2	s.u.	SM 4500-H+	01-May-17	MW	
			Dissolved Oxygen	PCCMP - 4			6.35	mg/l	HACH 10360	01-May-17	MW	
			Temperature	PCCMP - 4			19.6	°C	SM 2550B	01-May-17	MW	

Appendix C

MBWWTP Lab Results

Collection Date	Sample Type	Lab #	Test	Sample ID	MDL	Flag	Result	Units	Analysis Method	Analysis Date	Analyst	Notes
			E. coli	PCCMP - 4	100		10500	MPN/100ml	Colilert	01-May-17	PDS/JTC	
		05170044-001	pH	PCCMP - 5			7.5	s.u.	SM 4500-H+	01-May-17	MW	
			Dissolved Oxygen	PCCMP - 5			6.67	mg/l	HACH 10360	01-May-17	MW	
			Temperature	PCCMP - 5			19.4	°C	SM 2550B	01-May-17	MW	
			E. coli	PCCMP - 5	100		15200	MPN/100ml	Colilert	01-May-17	PDS/JTC	
		05170045-001	pH	PCCMP - 6			7.5	s.u.	SM 4500-H+	01-May-17	MW	
			Dissolved Oxygen	PCCMP - 6			6.61	mg/l	HACH 10360	01-May-17	MW	
			Temperature	PCCMP - 6			19.6	°C	SM 2550B	01-May-17	MW	
			E. coli	PCCMP - 6	100		34500	MPN/100ml	Colilert	01-May-17	PDS/JTC	
		05170046-001	E. coli	PCCMP - 6 Duplicate	100		23800	MPN/100ml	Colilert	01-May-17	PDS/JTC	
		05170047-001	E. coli	PCCMP - 6 Blank	1	<	1	MPN/100ml	Colilert	01-May-17	PDS/JTC	

Appendix D

Central CSOTF Discharge Reports

Appendix F

Central CSOTF Discharge Reports

10/1/2015 - 5/31/2017

Day	Rainfall (in)	Location of Discharge	Start Time	End Time	Gallons Discharged	Duration (hrs)	Discharge Type
3-Oct-2015	1.12	Central CSO (002)	10:55	21:31	5,304,244	18.3	Treated
18-Nov-2015	1.86	Central CSO (002)	16:01	15:26	8,401,237	23.35	Treated
29-Nov-2015	2.76	Central CSO (002)	22:53	23:59	8,297,058	25.1	Treated
1-Dec-2015	2.69	Central CSO (002)	08:34	14:30	8,118,385	5.93	Treated
22-Jan-2016	1.42	Central CSO (002)	09:29	21:34	2,736,291	9.76	Treated
26-Jan-2016	0.75	Central CSO (002)	15:23	23:49	439,799	5.05	Treated
3-Feb-2016	1.24	Central CSO (002)	00:40	05:06	11,584,967	4.43	Treated
23-Feb-2016	2.29	Central CSO (002)	20:37	00:51	5,338,533	4.23	Treated
12-May-2016	0.8	Central CSO (002)	17:07	19:56	1,886,181	2.82	Treated
8-Aug-2016	0.09	Central CSO (002)	01:16	02:16	1,185,692	1	Treated
29-Nov-2016	0.76	Central CSO (002)	13:38	13:45	4,850	0.12	Treated
30-Nov-2016	2.98	Central CSO (002)	04:16	23:58	23,266,525	19.7	Treated
4-Dec-2016	2.91	Central CSO (002)	16:22	12:12	13,199,108	67.83	Treated
20-Jan-2017	0.60	Central CSO (002)	3:21	17:42	5,057,620	13.38	Treated
22-Jan thru 23-Jan	1.26	Central CSO (002)	21:26	3:02	4,131,625	5.32	Treated
28-Mar-2017	0.28	Central CSO (002)	4:16	16:24	591,906	1.23	Treated
3-Apr-2017	2.18	Central CSO (002)	10:51	19:11	2,671,575	6.95	Treated
5-Apr thru 6-Apr	0.87	Central CSO (002)	21:11	12:46	2,912,326	9.63	Treated
18-Apr thru 19 Apr	0.28	Central CSO (002)	9:51	6:36	4,378,051	15.43	Treated
23-Apr-2017	2.39	Central CSO (002)	6:38	14:43	12,863,751	8.07	Treated
27-Apr-2017	1.42	Central CSO (002)	6:46	11:24	5,604,376	4.40	Treated
29-Apr thru 30-Apr	1.16	Central CSO (002)	19:35	2:48	1,422,293	6.60	Treated
1-May-2017	1.09	Central CSO (002)	7:20	17:25	1,992,277	9.03	Treated
4-May thru 6-May	1.4	Central CSO (002)	14:18	8:52	9,000,479	36.87	Treated

Appendix E

Williams CSOTF Discharge Meter Flow Data

Williams CSOTF Outfall Meter

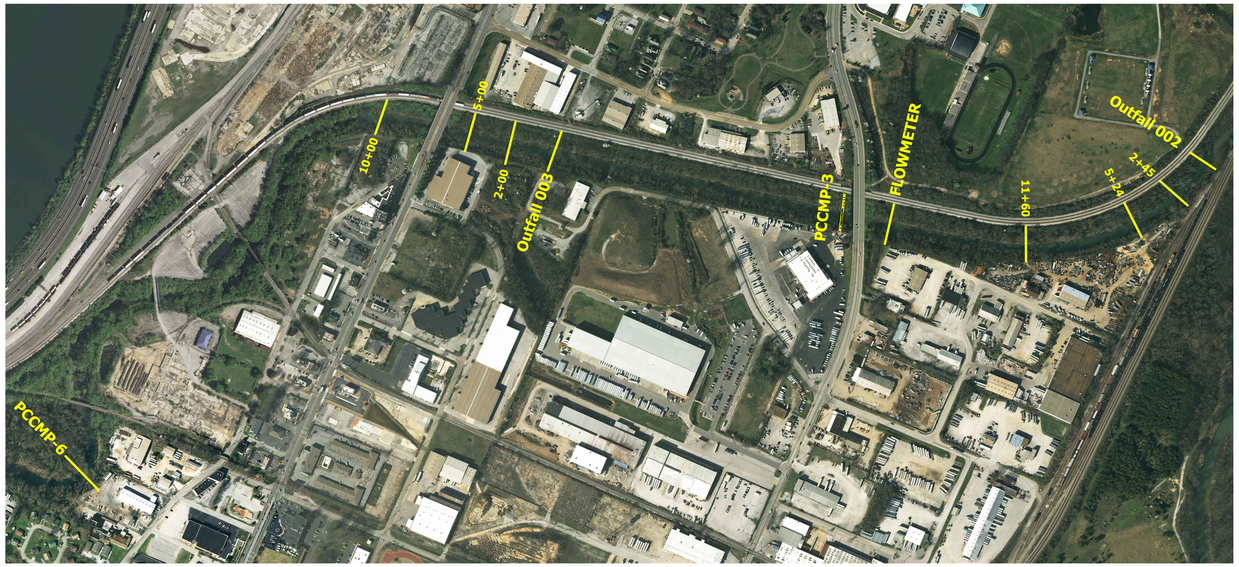
DateTime	Depth (in)	Velocity (ft/s)	Flow (MGD)
04/22/2017 00:00:00	1.78	0	0
04/22/2017 01:00:00	1.81	0	0
04/22/2017 02:00:00	1.67	0	0
04/22/2017 03:00:00	1.51	0	0
04/22/2017 04:00:00	1.41	0	0
04/22/2017 05:00:00	1.56	0	0
04/22/2017 06:00:00	1.78	0	0
04/22/2017 07:00:00	1.7	0	0
04/22/2017 08:00:00	1.55	0	0
04/22/2017 09:00:00	1.42	0	0
04/22/2017 10:00:00	1.46	0	0
04/22/2017 11:00:00	1.61	0	0
04/22/2017 12:00:00	1.81	0.07	0.006
04/22/2017 13:00:00	1.75	0.04	0.004
04/22/2017 14:00:00	1.56	0	0
04/22/2017 15:00:00	1.39	0	0
04/22/2017 16:00:00	1.52	0	0
04/22/2017 17:00:00	1.67	0	0
04/22/2017 18:00:00	1.42	0	0
04/22/2017 19:00:00	1.55	1.49	0.119
04/22/2017 20:00:00	2.5	1.25	0.219
04/22/2017 21:00:00	2.83	1.26	0.374
04/22/2017 22:00:00	2.6	1.2	0.214
04/22/2017 23:00:00	2.23	0.61	0.084
04/23/2017 00:00:00	2.03	0.52	0.062
04/23/2017 01:00:00	2.02	0.26	0.032
04/23/2017 02:00:00	2	0.18	0.023
04/23/2017 03:00:00	2.26	0.67	0.105
04/23/2017 04:00:00	2.52	0.68	0.125
04/23/2017 05:00:00	3.23	1.87	0.475
04/23/2017 06:00:00	1.48	1.83	0.135
04/23/2017 07:00:00	1.42	3.52	0.246
04/23/2017 08:00:00	1.42	3.07	0.214
04/23/2017 09:00:00	1.42	3.61	0.251
04/23/2017 10:00:00	1.42	3.17	0.221
04/23/2017 11:00:00	1.42	3	0.209
04/23/2017 12:00:00	1.42	3.18	0.221
04/23/2017 13:00:00	1.42	3.01	0.21
04/23/2017 14:00:00	1.42	2.59	0.181
04/23/2017 15:00:00	4.75	2.18	0.97
04/23/2017 16:00:00	5.24	2	0.998
04/23/2017 17:00:00	5.21	1.83	0.894
04/23/2017 18:00:00	2.73	1.15	0.218
04/23/2017 19:00:00	2.96	0.99	0.205
04/23/2017 20:00:00	2.79	0.24	0.047
04/23/2017 21:00:00	2.7	0	0
04/23/2017 22:00:00	2.62	0	0
04/23/2017 23:00:00	2.56	0	0

Appendix F

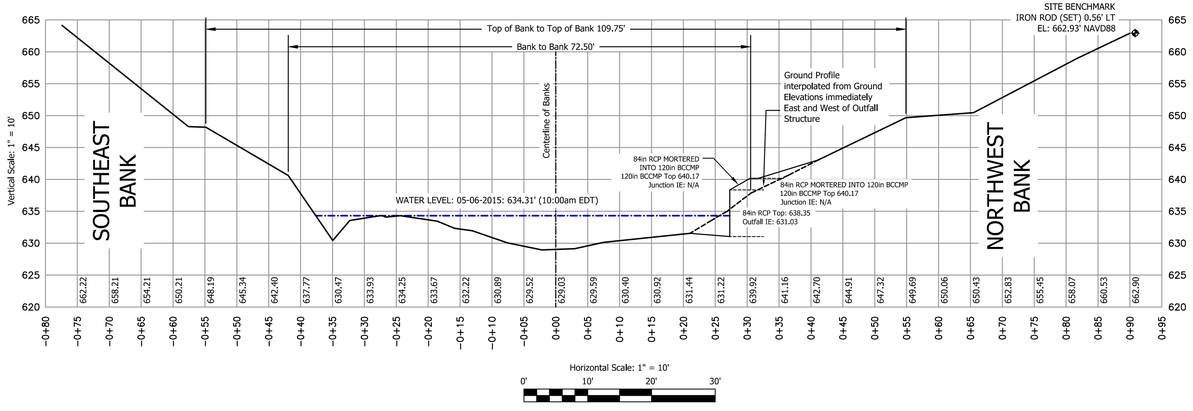
Chattanooga Creek Bathymetric Surveys

KEY PLAN

Scale: 1" = 400'



CROSS SECTION OF CHATTANOOGA CREEK - OUTFALL 002



NOTES:

1. NORTH ARROW IDENTIFICATION: TENNESSEE STATE PLANE COORDINATE SYSTEM, NAD83 (CORS), DETERMINED BY GPS SURVEY.
2. ELEVATION DATUM: NAVD88. RELATIVE ELEVATIONS BETWEEN BENCHMARKS SHOWN AT EACH CROSS SECTION DETERMINED BY GPS SURVEY BASED ON CONTINUOUSLY OPERATING REFERENCE STATIONS (CORS).
3. NO BOUNDARY SURVEY PERFORMED.
4. THE ACCURACY OF RAW DATA FROM WHICH TOPOGRAPHIC AND CROSS SECTION DATA WAS PREPARED EXCEEDS REQUIREMENTS FOR A CLASS I SURVEY ACCORDING TO TENNESSEE STATE STANDARDS OF PRACTICE.
5. CROSS SECTIONS ACROSS CREEK WERE GENERATED FROM RAW SURVEY DATA IN LOCATIONS SHOWN ON KEY PLAN ABOVE. THE ALIGNMENT OF THE CREEK WAS NOT SURVEYED.
6. CROSS SECTIONS ARE NOT REPRESENTED AS BEING EXACTLY PERPENDICULAR TO ANY DESIGNED OR EXISTING CREEK CENTERLINE. THE ANGLE OF CROSS SECTIONS ACROSS CREEK IS AS SHOWN ON KEY PLAN ABOVE.
7. STATIONS DOWNSTREAM OF OUTLETS SHOWN HEREON ARE APPROXIMATE ONLY.
8. ALL CROSS SECTIONS SHOWN HEREON ARE ORIENTED IN THE DOWNSTREAM DIRECTION. STATIONS FOR CROSS SECTIONS ARE BASED ON THE APPROXIMATE CENTER OF BANKS AS INDICATED ON EACH CROSS SECTION, AND ARE NOT BASED UPON ANY DESIGNED OR EXISTING "CREEK CENTERLINE", WHICH WAS NOT SURVEYED HEREON.
9. ONLY THE DOWNSTREAM DATA FOR PIPES AT OUTLETS 002 AND 003 WERE COLLECTED IN THIS SURVEY.
10. INTERPOLATED CROSS SECTION DATA IS BASED ON SURVEYED GROUND ELEVATIONS IMMEDIATELY ADJACENT ON EACH SIDE OF DRAINAGE STRUCTURE.
11. DATE OF LAST FIELD SURVEY: 05-22-2015. "WATER LEVEL" ELEVATIONS SHOWN HEREON ARE AS FOUND AT THE TIME AND DATA NOTED.

INDEX TO SHEETS:

LEGEND

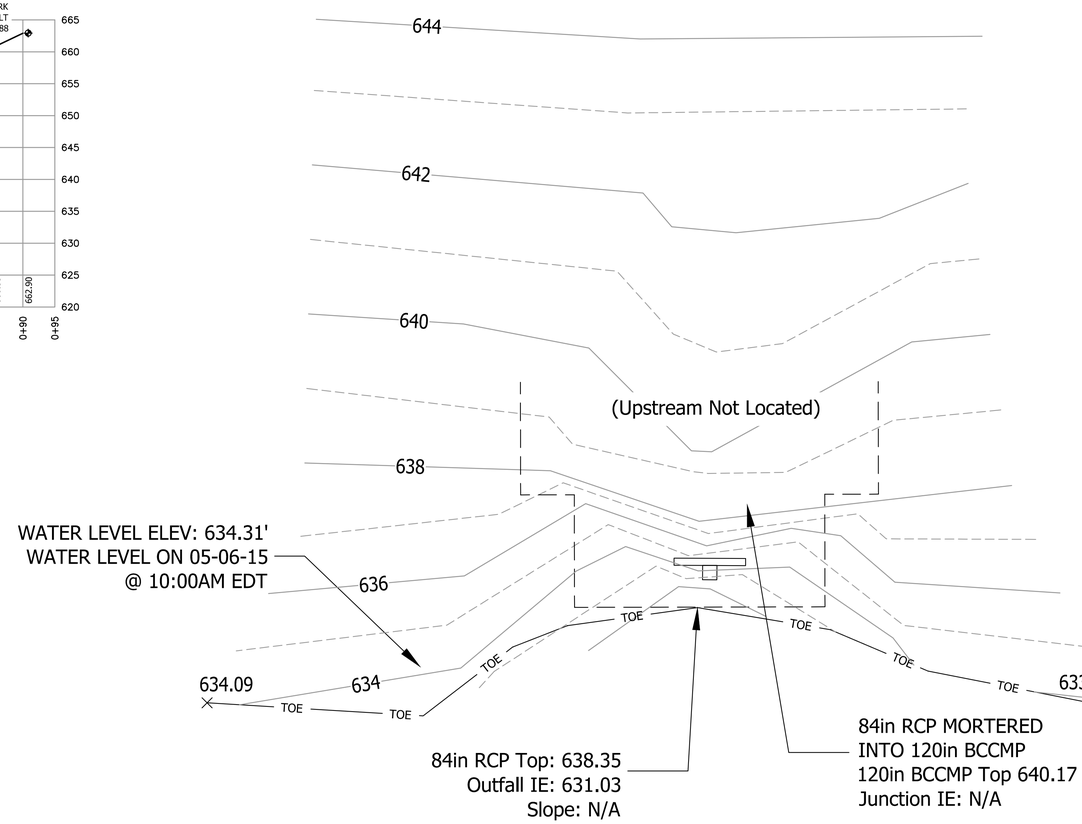
- 631.55 × — SPOT ELEVATION
- SITE BENCHMARK
- SIGN
- CENTERLINE OF CREEK BANKS
- TOP — TOP — TOP OF BANK
- TOE — TOE — TOE OF SLOPE
- WATER LEVEL

TOPOGRAPHIC SURVEY
OUTFALL 002
Northwest Bank

SCALE: 1" = 5'

0' 5' 10' 15'

TN STATE PLANE



earthworx, llc
4510 Turntable Rd, Suite 120
Chattanooga, Tennessee 37421
(423) 892-4780

DIXON G. BRACKETT
REGISTERED LAND SURVEYOR
TENNESSEE NO. 2494

CHATTANOOGA CREEK
CITY OF CHATTANOOGA, HAMILTON COUNTY, TENNESSEE

REVISIONS

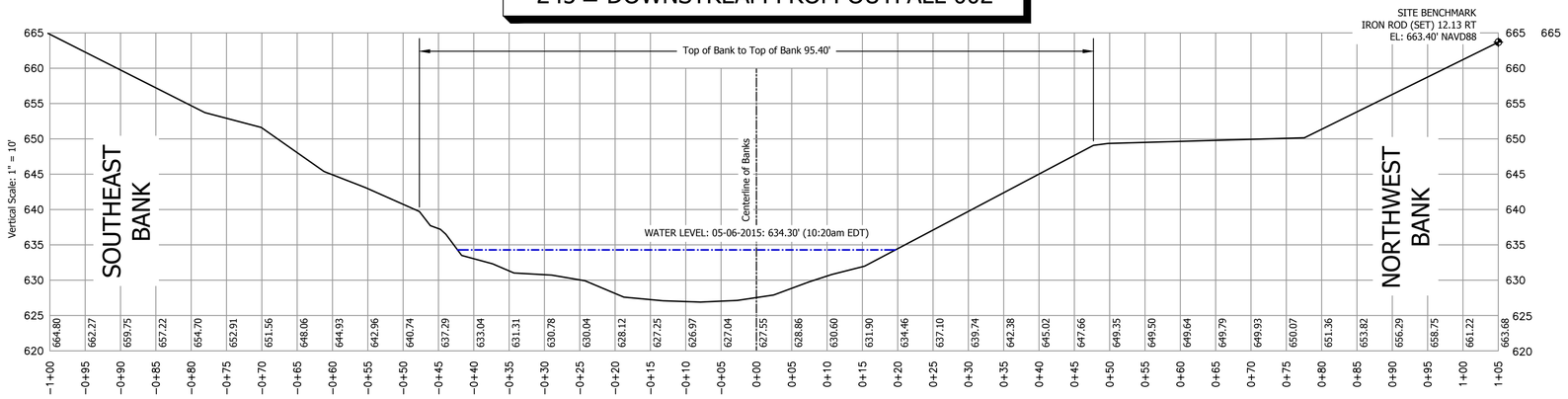
TOPOGRAPHIC SURVEY
CROSS SECTIONS

DRAWN: NB
DESIGN:
APPROVED: DGB
DWG. NO. 12021 TASK 10.4.DWG
DATE: 05-25-15
SCALE: As Noted
CI: 1'

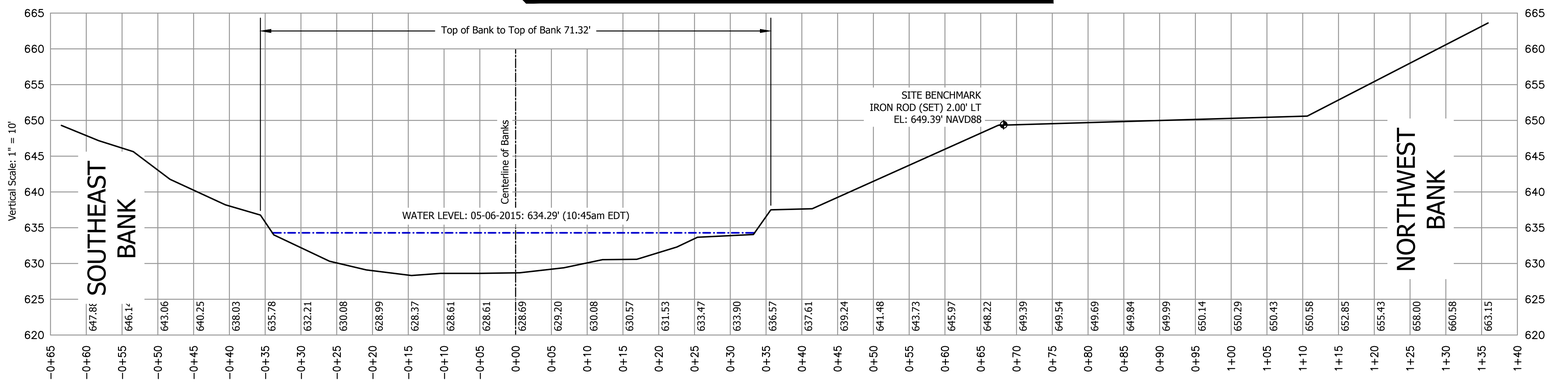
SHEET NO. 1.0

PROJECT NO. 12-021

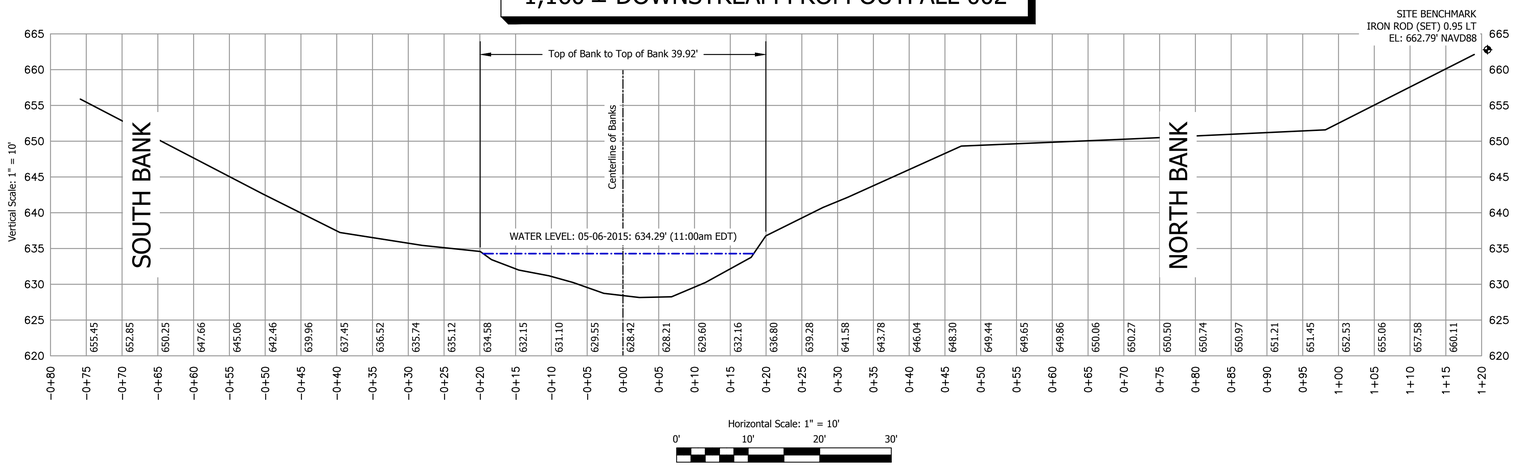
CROSS SECTION OF CHATTANOOGA CREEK 245'± DOWNSTREAM FROM OUTFALL 002



CROSS SECTION OF CHATTANOOGA CREEK 525'± DOWNSTREAM FROM OUTFALL 002



CROSS SECTION OF CHATTANOOGA CREEK 1,160'± DOWNSTREAM FROM OUTFALL 002



SEE NOTES & LEGEND
SHEET 1.0

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DIXON G. BRACKETT
REGISTERED LAND SURVEYOR
TENNESSEE NO. 2494

CHATTANOOGA CREEK - OUTFALL 002
CITY OF CHATTANOOGA, HAMILTON COUNTY, TENNESSEE

REVISIONS

DRAWN: NB
DESIGN:
APPROVED: DGB

DWG. NO. 12021 TASK 10.4.DWG
DATE: 05-25-15
SCALE: 1" = 10'

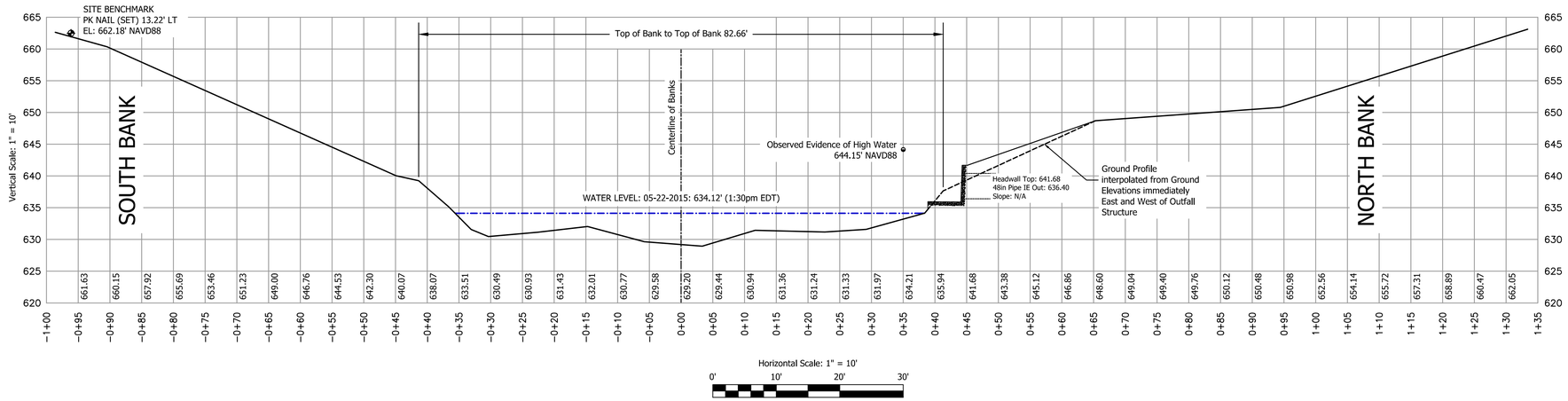
PROJECT NO. 12-021

CROSS SECTIONS

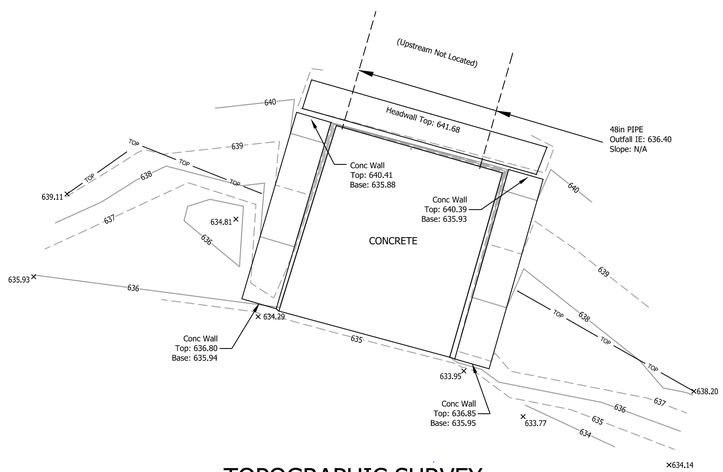
SHEET NO. 2.0

SEE NOTES & LEGEND
SHEET 1.0

CROSS SECTION OF CHATTANOOGA CREEK - OUTFALL 003



TN STATE PLANE



TOPOGRAPHIC SURVEY
OUTFALL 003
North Bank

SCALE: 1" = 2'
0' 2' 4' 6'

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TENNESSEE NO. 2494

CHATTANOOGA CREEK - OUTFALL 003
CITY OF CHATTANOOGA, HAMILTON COUNTY, TENNESSEE

REVISIONS

TOPOGRAPHIC SURVEY
CROSS SECTIONS

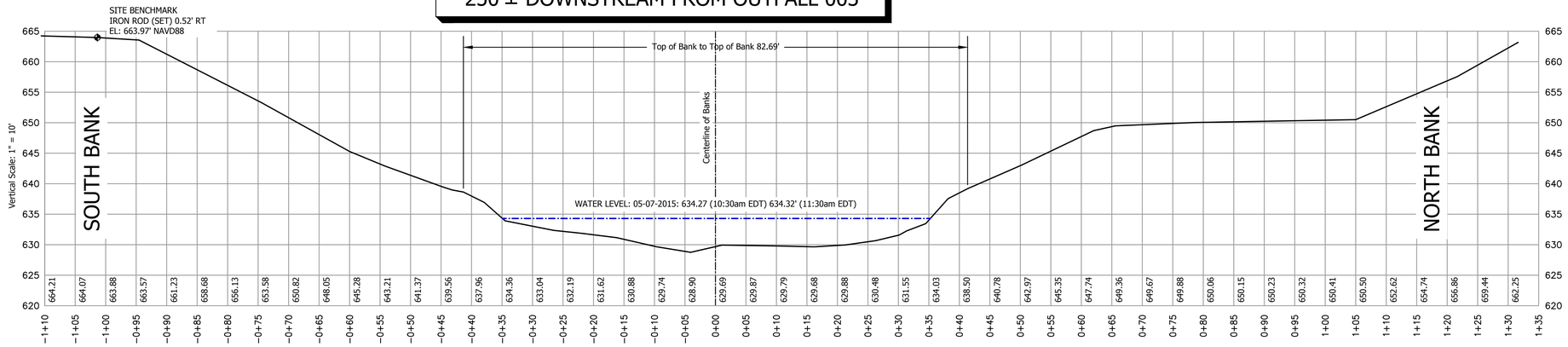
DWG. NO. 12021 TASK 10.4.DWG	DRAWN: NB
DATE: 05-25-15	DESIGN:
SCALE: As-Stated	CI: 1'
	APPROVED: DGB

SHEET NO.
3.0

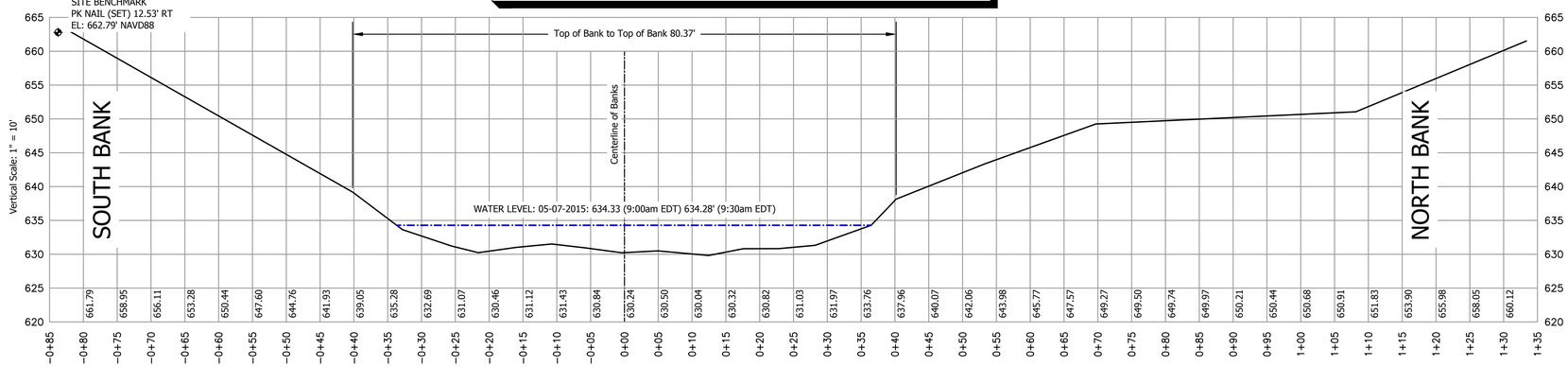
PROJECT NO.
12-021

SEE NOTES & LEGEND
SHEET 1.0

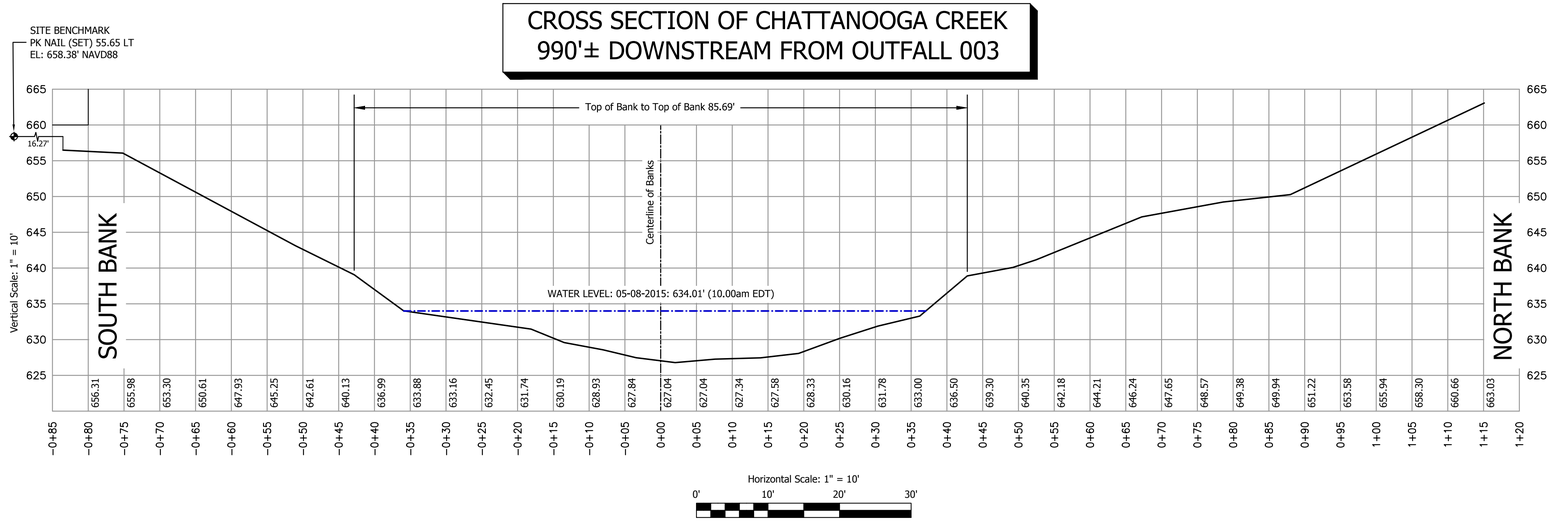
CROSS SECTION OF CHATTANOOGA CREEK 250'± DOWNSTREAM FROM OUTFALL 003



CROSS SECTION OF CHATTANOOGA CREEK 495'± DOWNSTREAM FROM OUTFALL 003



CROSS SECTION OF CHATTANOOGA CREEK 990'± DOWNSTREAM FROM OUTFALL 003



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REGISTERED LAND SURVEYOR
TENNESSEE NO. 2494

CHATTANOOGA CREEK - OUTFALL 003
CITY OF CHATTANOOGA, HAMILTON COUNTY, TENNESSEE

REVISIONS

CROSS SECTIONS

DRAWN: NB
DESIGN:
APPROVED: DGB

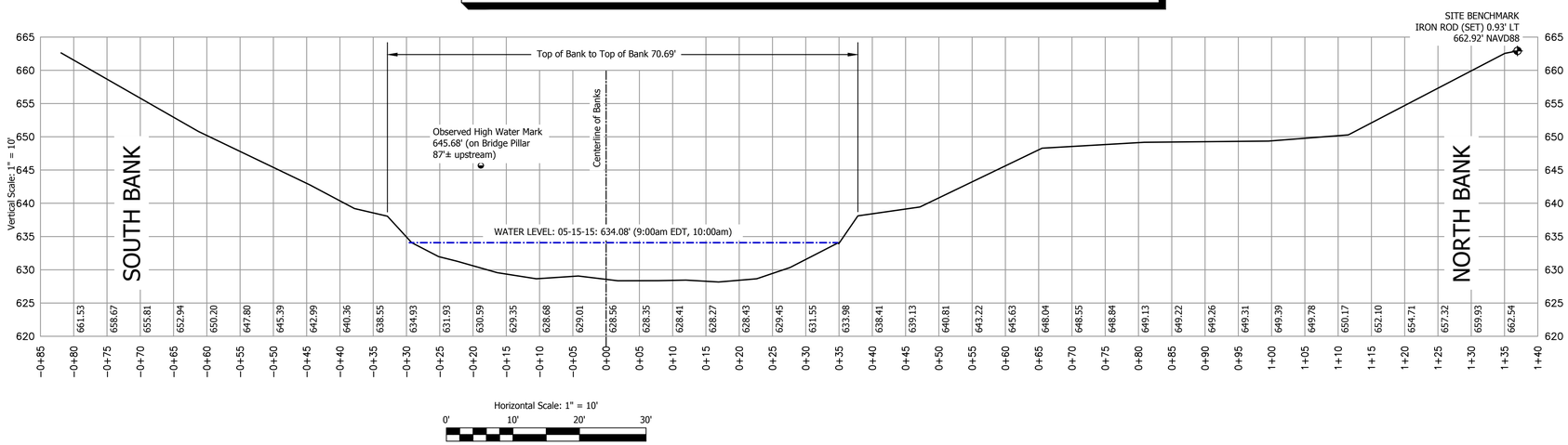
DWG. NO. 12021 TASK 10.4.DWG
DATE: 05-25-15
SCALE: 1" =10'

SHEET NO.
4.0

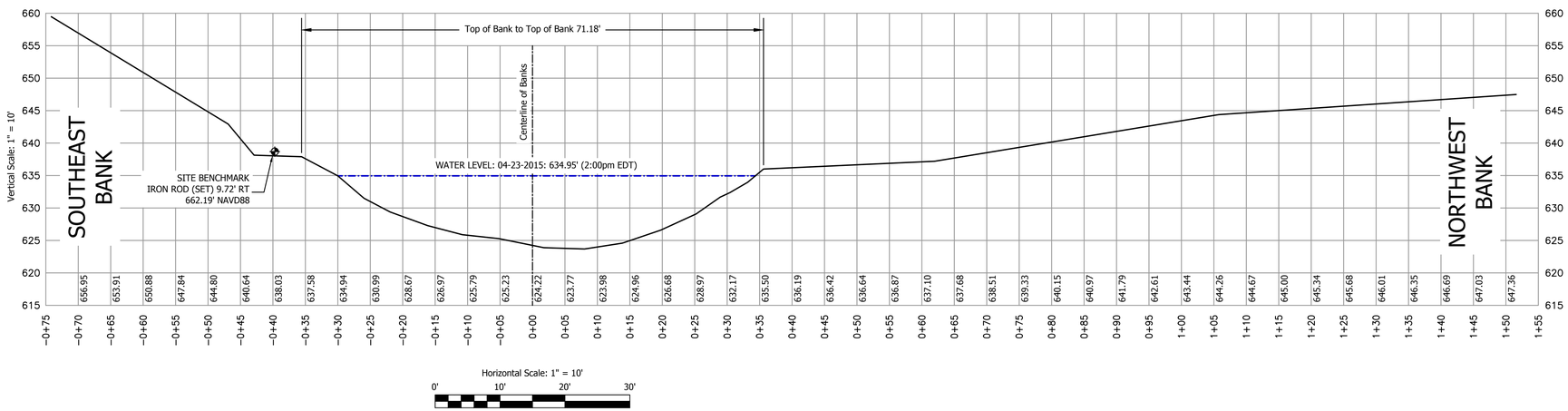
PROJECT NO.
12-021

SEE NOTES & LEGEND
SHEET 1.0

CROSS SECTION OF CHATTANOOGA CREEK - LOCATION PCCMP-3



CROSS SECTION OF CHATTANOOGA CREEK - LOCATION PCCMP-6



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(423) 892-4780

DIXON G. BRACKETT
REGISTERED LAND SURVEYOR
TENNESSEE NO. 2494

CHATTANOOGA CREEK - PCCMP-3 & -6
CITY OF CHATTANOOGA, HAMILTON COUNTY, TENNESSEE

REVISIONS

DRAWN: NB
DESIGN:
APPROVED: DGB

DWG. NO. 12021 TASK 10.4.DWG
DATE: 05-25-15
SCALE: 1" = 10'

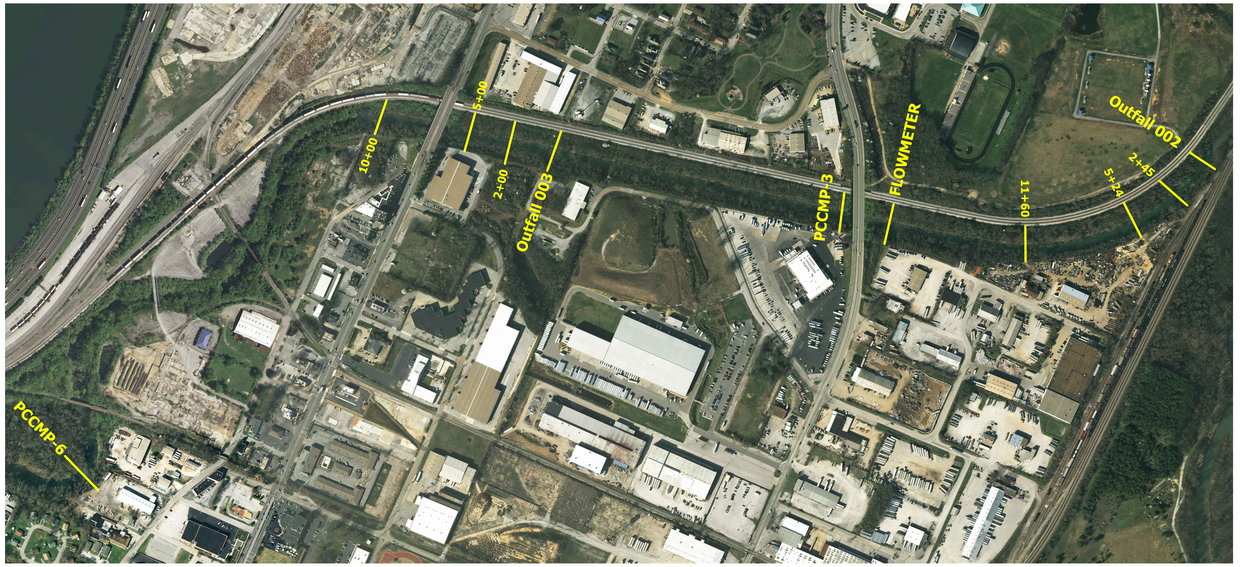
PROJECT NO.
12-021

CROSS SECTIONS

SHEET NO.
5.0

KEY PLAN

Scale: 1" = 400'



NOTES:

1. NORTH ARROW IDENTIFICATION: TENNESSEE STATE PLANE COORDINATE SYSTEM, NAD83 (CORS), DETERMINED BY GPS SURVEY.
2. ELEVATION DATUM: NAVD88. RELATIVE ELEVATIONS BETWEEN BENCHMARKS SHOWN AT EACH CROSS SECTION DETERMINED BY GPS SURVEY BASED ON CONTINUOUSLY OPERATING REFERENCE STATIONS (CORS).
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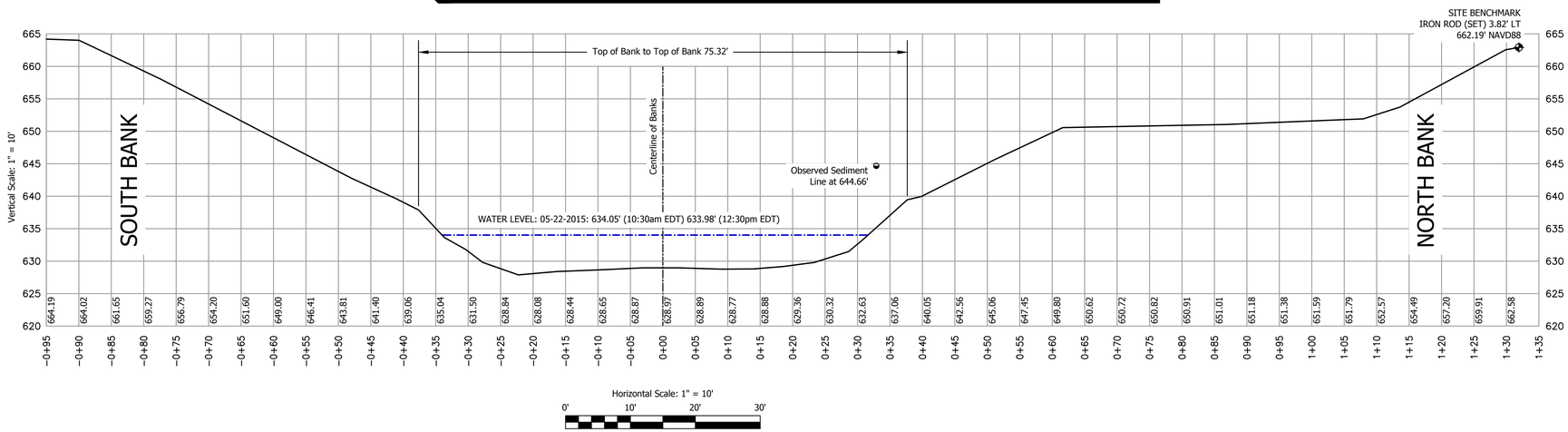
6. CROSS SECTIONS ARE NOT REPRESENTED AS BEING EXACTLY PERPENDICULAR TO ANY DESIGNED OR EXISTING CREEK CENTERLINE. THE ANGLE OF CROSS SECTIONS ACROSS CREEK IS AS SHOWN ON KEY PLAN ABOVE.
7. STATIONS DOWNSTREAM OF OUTLETS SHOWN HEREON ARE APPROXIMATE ONLY.
8. CROSS SECTIONS SHOWN HEREON ARE ORIENTED IN THE DOWNSTREAM DIRECTION. STATIONS FOR CROSS SECTIONS ARE BASED ON THE APPROXIMATE CENTER OF BANKS AS INDICATED ON EACH CROSS SECTION, AND ARE NOT BASED UPON ANY DESIGNED OR EXISTING "CREEK CENTERLINE", WHICH WAS NOT SURVEYED HEREON.
9. DATE OF LAST FIELD SURVEY: 05-22-2015. "WATER LEVEL" ELEVATIONS SHOWN HEREON ARE AS FOUND AT THE TIME AND DATA NOTED.

LEGEND

- 631.55 × — SPOT ELEVATION
- SITE BENCHMARK
- SIGN
- CENTERLINE OF CREEK BANKS
- TOP — TOP — TOP OF BANK
- TOE — TOE — TOE OF SLOPE
- WATER LEVEL

CROSS SECTION OF CHATTANOOGA CREEK - FLOWMETER LOCATION



earthworx, llc
4510 Turntable Rd, Suite 120
Chattanooga, Tennessee 37421
(423) 892-4780

DIXON G. BRACKETT
REGISTERED LAND SURVEYOR
TENNESSEE NO. 2494

CHATTANOOGA CREEK
CITY OF CHATTANOOGA, HAMILTON COUNTY, TENNESSEE

REVISIONS

CROSS SECTION
FLOWMETER LOCATION

DRAWN: NB
DESIGN:
APPROVED: DGB

DWG. NO. 12021 TASK 10.4.DWG
DATE: 05-25-15
SCALE: 1" =10'

SHEET NO.
6.0

PROJECT NO.
12-021

Appendix G

Cormix Results and Mixing Plots

```
CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 10.0GT
                       HYDRO1:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Central CSOTF
  DESIGN CASE:                  Base Case (Average) E. coli NF
  FILE NAME:                    J:\C6A02300\Task 6-Consent Decree Planning\Task 6B -
General Planning and Studies\LTCP\PCCMP\Sampling and Monitoring\Cormix\Modeling\Aug
2017 Modeling\Scenario 1\Base Case (Average) E. coli NF.prd
  Using subsystem CORMIX1:     Single Port Discharges
  Start of session:             08/25/2017--11:44:26
******************************************************************************
SUMMARY OF INPUT DATA:
------------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                          BS      = 12.80 m
  Channel regularity             ICHREG  = 2
  Ambient flowrate               QA      = 21.95 m^3/s
  Average depth                  HA      = 3.29 m
  Depth at discharge             HD      = 3.00 m
  Ambient velocity               UA      = 0.5208 m/s
  Darcy-Weisbach friction factor F       = 0.0330
    Calculated from Manning's n          = 0.025
  Wind velocity                  UW      = 2 m/s
  Stratification Type            STRCND  = U
  Surface temperature                    = 19.10 degC
  Bottom temperature                     = 19.10 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density                RHOAS   = 998.3866 kg/m^3
  Bottom density                 RHOAB   = 998.3866 kg/m^3
------------------------------------------------------------------------------
DISCHARGE PARAMETERS:            Single Port Discharge
  Nearest bank                           = right
  Distance to bank               DISTB   = 0 m
  Port diameter                  D0      = 0.9997 m
  Port cross-sectional area      A0      = 0.7850 m^2
  Discharge velocity             U0      = 1.71 m/s
  Discharge flowrate             Q0      = 1.339308 m^3/s
  Discharge port height          H0      = 1.00 m
  Vertical discharge angle       THETA   = 0 deg
  Horizontal discharge angle     SIGMA   = 90 deg
  Discharge temperature (freshwater)     = 18.5 degC
  Corresponding density          RHO0    = 998.5028 kg/m^3
  Density difference             DRHO    = -0.1162 kg/m^3
  Buoyant acceleration           GP0     = -0.0011 m/s^2
  Discharge concentration        C0      = 235230 bacteria-counts
  Surface heat exchange coeff.   KS      = 0 m/s
  Coefficient of decay           KD      = 0.000015 /s
------------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 0.89 m         Lm  = 2.90 m         Lb  = 0.01 m
  LM  = 47.53 m         Lm' = 99999 m         Lb' = 99999 m
------------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Port densimetric Froude number FR0     = 50.51
  Velocity ratio                 R       = 3.28
------------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = no
  Regulatory mixing zone                 = no
```

```
  Region of interest                    = 30479.70 m downstream
*******************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *------------------------*
  | FLOW CLASS   = NH5 |
  *------------------------*
  This flow configuration applies to a layer corresponding to the full water
  depth at the discharge site.
  Applicable layer depth = water depth = 3.00 m

  Limiting Dilution S = (QA/Q0)+ 1.0 = 17.4

*******************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

-------------------------------------------------------------------------------
X-Y-Z Coordinate system:
  Origin is located at the BOTTOM below the port/diffuser center:
    0 m from the right bank/shore.
  Number of display steps NSTEP = 100 per module.
-------------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 20248.906200 bacteria-counts
  Dilution at edge of NFR              s = 11.6
  NFR Location:                        x = 25.31 m
    (centerline coordinates)           y = 10.65 m
                                       z = 0 m
  NFR plume dimensions:  half-width (bh) = 1.60 m
                          thickness (bv) = 3.00 m
Cumulative travel time:       43.2639 sec.
-------------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is greater than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is NEGATIVELY BUOYANT and will tend to sink towards
  the bottom.
IMPORTANT NOTE:
Since the effluent is NEGATIVELY BUOYANT, it is recommended that you consider using
the Brine or Sediment options for Effluent specification for a more detailed
analysis, particularly for coastal discharges over a sloping bottom where density
currents are important.

CORMIX will however continue with the current simulation.
-------------------------------------------------------------------------------
Near-field instability behavior:
  The discharge flow will experience instabilities with full vertical mixing
  in the near-field.
  There may be benthic impact of high pollutant concentrations.
-------------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed ALREADY IN NEAR-FIELD at 25.31 m
  downstream and continues as vertically mixed into the far-field.
  Plume becomes laterally fully mixed at 343.41 m
  downstream.
-------------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts one bank only at 25.31 m downstream.
************************ TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
```

********** REGULATORY MIXING ZONE SUMMARY **********

No RMZ and no ambient water quality standard have been specified.

********** FINAL DESIGN ADVICE AND COMMENTS **********

REMINDER: The user must take note that HYDRODYNAMIC MODELING by any known technique is NOT AN EXACT SCIENCE.

Extensive comparison with field and laboratory data has shown that the CORMIX predictions on dilutions and concentrations (with associated plume geometries) are reliable for the majority of cases and are accurate to within about +-50% (standard deviation).

As a further safeguard, CORMIX will not give predictions whenever it judges the design configuration as highly complex and uncertain for prediction.

Date: 08/25/17
Time: 11:44:26

Design Case: Base Case (Average) E. coli NF
Site Name: Central CSOTF
Prepared By: Gabrielle Sobel

Project Notes:
4/27/17 event

Central and Williams discharging

near-field focus

VALIDATING INPUT DATA ...

Checking Pages for invalid or missing inputs...

Effluent Page has been validated.
Ambient Page has been validated.
Discharge Page has been validated.
Mixing Zone Page has been validated.

Finished checking Pages for invalid or missing inputs.

Loading Correct RuleBases

Validating RuleBases ...

AMBIENT DATA:

Ambient velocity = 0.5208 m/s.

Equivalent Darcy-Weisbach friction factor = 0.033

Ambient density = 998.3866 kg/m^3.

Ambient Rule Base has been validated.

DISCHARGE DATA:
CORMIX1: Single Port Discharges

Port cross-sectional area A0 = 0.785 m^2.

Discharge velocity U0= 1.706 m/s.

This is a Deeply Submerged Discharge, where the height of the discharge port (H0 = 1.000 m), above the bottom, does NOT Exceed one-third of the local ambient water depth (HD = 3.002 m)
Note: For special advice on this limitation please consult Section 7.4 of the CORMIX1 technical report (Doneker and Jirka, 1990).

The submergence of the port below the water surface is SUB0 = 2.00 m.

Discharge density RHO0 = 998.5028 kg/m^3.

The decay coefficient in units (/s) is 0.0000153 /s.

Discharge Rules for CORMIX1 have been validated

MIXING ZONE SPECIFICATION:

Mixing Zones Rule Base has been validated.

Finished validating RuleBases.

Calculating Parameters.

FLOW PARAMETERS AND LENGTH SCALES:

Relative density differences between discharge and ambient:

Ambient density at the discharge level RHOAH0 = 998.3866 kg/m^3.
Vertical mean ambient density RHOAM = 998.3866 kg/m^3.

The effluent density (998.5028 kg/m^3) is greater than the surrounding ambient water density at the discharge level (998.3866 kg/m^3).

Therefore, the effluent is NEGATIVELY BUOYANT and will tend to sink towards the bottom.
IMPORTANT NOTE:
Since the effluent is NEGATIVELY BUOYANT, it is recommended that you consider using the Brine or Sediment options for Effluent specification for a more detailed analysis, particularly for coastal discharges over a sloping bottom where density currents are important.

CORMIX will however continue with the current simulation.

Flow bulk parameters:

Discharge volume flux Q0 = 1.33931 m^3/s.
Discharge momentum flux M0 = 2.28504 m^4/s^2.

Discharge buoyancy flux J0 = -0.001529 m^4/s^3.

Flow length scales:

Jet-to-crossflow length scale Lm = 2.90 m.

Plume-to-crossflow length scale Lb = 0.01 m.

Discharge length scale LQ = 0.8860 m.

Jet-to-plume transition length scale LM = 47.53 m.

Non-dimensional parameters:

Densimetric Froude number FR0 = 50.51
Jet/crossflow velocity ratio R = 3.28

Parameters for CORMIX1 have been calculated

Classifying Flows.

FLOW CLASSIFICATION:

CORMIX1 includes SIX MAJOR CLASSES of possible flow configurations:
Classes S, IS : Flows trapped in a layer within linear stratification.
Classes V, H : Near Bottom, Positively buoyant flows in a uniform density layer.
Classes IV, IH : Near Surface, Negatively buoyant flows in a uniform density layer.
Classes NV, NH : Near Bottom, Negatively buoyant flows in uniform density layer.
Classes IPV,IPH: Near Surface, Positively buoyant flows in uniform density layer.
Classes A, AI : Flows affected by dynamic bottom or surface attachment.

The NEAR FIELD FLOW will have the following features:

The discharge near-field behavior is dominated by either the negative buoyancy of the discharge or the downward vertical orientation of the discharge port leading to bottom interaction.

The discharge flow will experience instabilities with full vertical mixing in the near-field. There may be benthic impact of high pollutant concentrations.

The following conclusion on the NEAR-FIELD FLOW CONFIGURATION applies to a layer corresponding to the FULL WATER DEPTH at the discharge site:

*** FLOW CLASS = NH5 ***

Applicable layer depth HS = 3.00 m.

*** Limiting Dilution S = (QA/Q0)+ 1.0 = 17.4 ***

Flow has been classified.

Executing the simulation... FORTRAN simulation complete.

Generating Session Report... Session Report complete.

```
CORMIX1 PREDICTION FILE:
1111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111
11111111111
                      CORMIX MIXING ZONE EXPERT SYSTEM
                  Subsystem CORMIX1: Single Port Discharges
                            CORMIX Version 10.0GT
                     HYDRO1 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
----------
-------------------------------------------------------------------------------
----------
CASE DESCRIPTION
 Site name/label:   Central CSOTF
 Design case:       Base Case (Average) E. coli NF
 FILE NAME:         J:\...ing\Scenario 1\Base Case (Average) E. coli NF.prd
 Time stamp:        08/25/2017--11:44:26

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     12.80  AS    =     42.14  QA    =     21.95  ICHREG= 2
 HA    =      3.29  HD    =      3.00
 UA    =     0.521  F     =     0.033 USTAR =0.3343E-01
 UW    =     2.000 UWSTAR=0.2198E-02
 Uniform density environment
 STRCND=  U         RHOAM =  998.3867

DISCHARGE PARAMETERS (metric units)
 BANK  =  RIGHT     DISTB =      0.00
 D0    =     1.000 A0    =     0.785 H0    =      1.00  SUB0  =      2.00
 THETA =      0.00  SIGMA =     90.00
 U0    =     1.706 Q0    =     1.339       =0.1339E+01
 RHO0  =  998.5029  DRHO0 =-.1162E+00  GP0   =-.1141E-02
 C0    =0.2352E+06  CUNITS=  bacteria-counts
 IPOLL =  2         KS    =0.0000E+00  KD    =0.1528E-04

FLUX VARIABLES (metric units)
 Q0    =0.1339E+01  M0    =0.2285E+01  J0    =-.1529E-02  SIGNJ0=     -1.0
 Associated length scales (meters)
 LQ    =      0.89  LM    =     47.53  Lm    =      2.90  Lb    =      0.01
                                       Lmp   =  99999.00  Lbp   =  99999.00

NON-DIMENSIONAL PARAMETERS
 FR0   =     50.51  R     =      3.28

FLOW CLASSIFICATION
 11111111111111111111111111111111111111111111
 1  Flow class (CORMIX1)      =    NH5    1
 1  Applicable layer depth HS =    3.00   1
 1  Limiting Dilution S =QA/Q0=    17.39  1
 11111111111111111111111111111111111111111111

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.2352E+06  CUNITS=  bacteria-counts
 NTOX  =  0
 NSTD  =  0
 REGMZ =  0
 XINT  =  30479.70  XMAX  =  30479.70

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the bottom and below the center of the port:
         0.00 m  from the RIGHT bank/shore.
    X-axis points downstream, Y-axis points to left, Z-axis points upward.
NSTEP = 100 display intervals per module
```

BEGIN MOD101: DISCHARGE MODULE

COANDA ATTACHMENT immediately following the discharge.

X	Y	Z	S	C	B	Uc	TT
0.00	0.00	0.00	1.0	0.235E+06	0.71	1.706	.00000E+00

END OF MOD101: DISCHARGE MODULE

BEGIN CORJET (MOD110): JET/PLUME NEAR-FIELD MIXING REGION

Bottom-attached jet motion.
UNSTABLE NEAR-FIELD: Jet/plume will mix over full layer depth.
Following MOD133 will include recirculation into jet region.

Profile definitions:
B = Gaussian 1/e (37%) half-width, normal to trajectory
Half wall jet, attached to bottom.
S = hydrodynamic centerline dilution
C = centerline concentration (includes reaction effects, if any)
Uc = Local centerline excess velocity (above ambient)
TT = Cumulative travel time

X	Y	Z	S	C	B	Uc	TT
0.00	0.00	0.00	1.0	0.235E+06	0.50	1.706	.88617E-02
0.00	0.24	0.00	1.0	0.235E+06	0.53	1.706	.82076E-01
0.02	0.51	0.00	1.0	0.235E+06	0.56	1.706	.16956E+00
0.04	0.78	0.00	1.0	0.235E+06	0.59	1.706	.26277E+00
0.07	1.05	0.00	1.0	0.235E+06	0.63	1.706	.36209E+00
0.11	1.31	0.00	1.0	0.235E+06	0.66	1.706	.46794E+00
0.17	1.58	0.00	1.0	0.235E+06	0.70	1.706	.58079E+00
0.23	1.81	0.00	1.0	0.235E+06	0.74	1.706	.68740E+00
0.30	2.07	0.00	1.0	0.235E+06	0.78	1.706	.81492E+00
0.39	2.33	0.00	1.0	0.229E+06	0.82	1.706	.95103E+00
0.49	2.58	0.00	1.1	0.214E+06	0.87	1.600	.10963E+01
0.60	2.82	0.00	1.2	0.201E+06	0.91	1.463	.12515E+01
0.73	3.06	0.00	1.3	0.188E+06	0.96	1.334	.14169E+01
0.86	3.30	0.00	1.3	0.176E+06	1.01	1.215	.15933E+01
0.99	3.50	0.00	1.4	0.166E+06	1.06	1.117	.17596E+01
1.15	3.72	0.00	1.5	0.155E+06	1.11	1.015	.19577E+01
1.32	3.93	0.00	1.6	0.146E+06	1.16	0.922	.21676E+01
1.49	4.14	0.00	1.7	0.137E+06	1.21	0.839	.23895E+01
1.68	4.33	0.00	1.8	0.129E+06	1.26	0.764	.26233E+01
1.87	4.52	0.00	1.9	0.121E+06	1.31	0.697	.28688E+01
2.05	4.68	0.00	2.0	0.116E+06	1.35	0.644	.30966E+01
2.25	4.86	0.00	2.1	0.109E+06	1.40	0.590	.33634E+01
2.47	5.03	0.00	2.3	0.104E+06	1.45	0.542	.36409E+01
2.68	5.19	0.00	2.4	0.990E+05	1.49	0.500	.39285E+01
2.91	5.34	0.00	2.5	0.945E+05	1.54	0.463	.42258E+01
3.13	5.49	0.00	2.6	0.904E+05	1.58	0.430	.45322E+01
3.36	5.63	0.00	2.7	0.866E+05	1.62	0.400	.48472E+01
3.57	5.75	0.00	2.8	0.836E+05	1.66	0.377	.51339E+01
3.81	5.88	0.00	2.9	0.804E+05	1.69	0.353	.54637E+01
4.05	6.01	0.00	3.0	0.775E+05	1.73	0.332	.58005E+01
4.29	6.13	0.00	3.1	0.749E+05	1.77	0.313	.61440E+01
4.53	6.25	0.00	3.2	0.724E+05	1.80	0.296	.64936E+01

4.78	6.36	0.00	3.4	0.701E+05	1.84	0.280	.68491E+01
5.02	6.47	0.00	3.5	0.680E+05	1.87	0.266	.72100E+01
5.24	6.56	0.00	3.5	0.663E+05	1.90	0.255	.75350E+01
5.49	6.67	0.00	3.7	0.644E+05	1.93	0.243	.79052E+01
5.74	6.77	0.00	3.8	0.627E+05	1.96	0.232	.82799E+01
6.00	6.86	0.00	3.8	0.611E+05	1.98	0.222	.86588E+01
6.25	6.96	0.00	3.9	0.596E+05	2.01	0.213	.90416E+01
6.50	7.05	0.00	4.0	0.582E+05	2.04	0.205	.94281E+01
6.73	7.13	0.00	4.1	0.570E+05	2.06	0.198	.97747E+01
6.99	7.21	0.00	4.2	0.557E+05	2.09	0.191	.10168E+02
7.24	7.30	0.00	4.3	0.546E+05	2.11	0.184	.10564E+02
7.50	7.38	0.00	4.4	0.534E+05	2.14	0.178	.10963E+02
7.76	7.46	0.00	4.5	0.524E+05	2.16	0.172	.11365E+02
8.02	7.54	0.00	4.6	0.514E+05	2.19	0.167	.11769E+02
8.28	7.61	0.00	4.7	0.504E+05	2.21	0.162	.12176E+02
8.51	7.68	0.00	4.7	0.496E+05	2.23	0.158	.12540E+02
8.77	7.75	0.00	4.8	0.487E+05	2.25	0.153	.12951E+02
9.03	7.83	0.00	4.9	0.479E+05	2.27	0.149	.13365E+02
9.29	7.90	0.00	5.0	0.471E+05	2.29	0.145	.13781E+02
9.55	7.96	0.00	5.1	0.463E+05	2.31	0.142	.14198E+02
9.81	8.03	0.00	5.2	0.456E+05	2.33	0.138	.14618E+02
10.05	8.09	0.00	5.2	0.449E+05	2.35	0.135	.14992E+02
10.31	8.15	0.00	5.3	0.443E+05	2.37	0.132	.15415E+02
10.57	8.22	0.00	5.4	0.436E+05	2.39	0.129	.15839E+02
10.83	8.28	0.00	5.5	0.430E+05	2.41	0.126	.16265E+02
11.10	8.34	0.00	5.5	0.424E+05	2.43	0.123	.16693E+02
11.36	8.40	0.00	5.6	0.418E+05	2.44	0.121	.17122E+02
11.62	8.46	0.00	5.7	0.413E+05	2.46	0.118	.17552E+02
11.86	8.51	0.00	5.8	0.408E+05	2.48	0.116	.17936E+02
12.12	8.57	0.00	5.8	0.403E+05	2.49	0.114	.18369E+02
12.39	8.63	0.00	5.9	0.398E+05	2.51	0.112	.18803E+02
12.65	8.68	0.00	6.0	0.393E+05	2.53	0.110	.19238E+02
12.92	8.74	0.00	6.1	0.388E+05	2.54	0.108	.19675E+02
13.18	8.79	0.00	6.1	0.383E+05	2.56	0.106	.20112E+02
13.45	8.84	0.00	6.2	0.379E+05	2.58	0.104	.20551E+02
13.68	8.89	0.00	6.3	0.375E+05	2.59	0.103	.20942E+02
13.95	8.94	0.00	6.3	0.371E+05	2.60	0.101	.21383E+02
14.21	8.99	0.00	6.4	0.367E+05	2.62	0.100	.21824E+02
14.48	9.04	0.00	6.5	0.363E+05	2.64	0.098	.22267E+02
14.74	9.09	0.00	6.5	0.359E+05	2.65	0.097	.22710E+02
15.01	9.14	0.00	6.6	0.356E+05	2.66	0.095	.23155E+02
15.25	9.18	0.00	6.7	0.353E+05	2.68	0.094	.23550E+02
15.51	9.23	0.00	6.7	0.349E+05	2.69	0.093	.23996E+02
15.78	9.27	0.00	6.8	0.346E+05	2.71	0.091	.24443E+02
16.04	9.32	0.00	6.9	0.342E+05	2.72	0.090	.24891E+02
16.31	9.36	0.00	6.9	0.339E+05	2.73	0.089	.25339E+02
16.58	9.41	0.00	7.0	0.336E+05	2.75	0.088	.25788E+02
16.84	9.45	0.00	7.1	0.333E+05	2.76	0.086	.26238E+02
17.08	9.49	0.00	7.1	0.330E+05	2.77	0.086	.26638E+02
17.35	9.54	0.00	7.2	0.327E+05	2.78	0.084	.27089E+02
17.61	9.58	0.00	7.2	0.324E+05	2.80	0.083	.27541E+02
17.88	9.62	0.00	7.3	0.322E+05	2.81	0.082	.27993E+02
18.15	9.66	0.00	7.4	0.319E+05	2.82	0.081	.28446E+02
18.42	9.70	0.00	7.4	0.316E+05	2.83	0.081	.28900E+02
18.65	9.74	0.00	7.5	0.314E+05	2.85	0.080	.29304E+02
18.92	9.78	0.00	7.5	0.312E+05	2.86	0.079	.29759E+02
19.19	9.82	0.00	7.6	0.309E+05	2.87	0.078	.30214E+02
19.45	9.86	0.00	7.7	0.307E+05	2.88	0.077	.30670E+02
19.72	9.90	0.00	7.7	0.304E+05	2.89	0.076	.31126E+02
19.99	9.94	0.00	7.8	0.302E+05	2.90	0.075	.31583E+02
20.26	9.98	0.00	7.8	0.300E+05	2.92	0.075	.32041E+02
20.49	10.01	0.00	7.9	0.298E+05	2.93	0.074	.32448E+02
20.76	10.05	0.00	8.0	0.295E+05	2.94	0.073	.32906E+02

21.03	10.08	0.00	8.0	0.293E+05	2.95	0.073	.33365E+02
21.30	10.12	0.00	8.1	0.291E+05	2.96	0.072	.33825E+02
21.56	10.16	0.00	8.1	0.289E+05	2.97	0.071	.34285E+02
21.83	10.19	0.00	8.2	0.287E+05	2.98	0.071	.34745E+02
22.10	10.23	0.00	8.2	0.285E+05	2.99	0.070	.35206E+02
22.34	10.26	0.00	8.3	0.284E+05	3.00	0.069	.35609E+02

Cumulative travel time = 35.6089 sec (0.01 hrs)

END OF CORJET (MOD110): JET/PLUME NEAR-FIELD MIXING REGION

BEGIN MOD133: LAYER BOUNDARY IMPINGEMENT/FULL VERTICAL MIXING

Control volume inflow:

X	Y	Z	S	C	B	TT
22.34	10.26	0.00	8.3	0.284E+05	3.00	.35609E+02

Profile definitions:
- BV = layer depth (vertically mixed)
- BH = top-hat half-width, in horizontal plane normal to trajectory
- ZU = upper plume boundary (Z-coordinate)
- ZL = lower plume boundary (Z-coordinate)
- S = hydrodynamic average (bulk) dilution
- C = average (bulk) concentration (includes reaction effects, if any)
- TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
19.34	10.65	0.00	8.3	0.284E+05	0.00	0.00	0.00	0.00	.35609E+02
19.93	10.65	0.00	8.3	0.284E+05	3.00	0.51	3.00	0.00	.35609E+02
20.53	10.65	0.00	8.3	0.284E+05	3.00	0.72	3.00	0.00	.35609E+02
21.13	10.65	0.00	8.3	0.284E+05	3.00	0.88	3.00	0.00	.35609E+02
21.73	10.65	0.00	8.3	0.284E+05	3.00	1.01	3.00	0.00	.35609E+02
22.33	10.65	0.00	8.3	0.284E+05	3.00	1.13	3.00	0.00	.35609E+02
22.92	10.65	0.00	8.8	0.268E+05	3.00	1.24	3.00	0.00	.37113E+02
23.52	10.65	0.00	9.8	0.239E+05	3.00	1.34	3.00	0.00	.38651E+02
24.12	10.65	0.00	10.8	0.217E+05	3.00	1.43	3.00	0.00	.40189E+02
24.72	10.65	0.00	11.4	0.207E+05	3.00	1.52	3.00	0.00	.41726E+02
25.31	10.65	0.00	11.6	0.202E+05	3.00	1.60	3.00	0.00	.43264E+02

Cumulative travel time = 43.2639 sec (0.01 hrs)

END OF MOD133: LAYER BOUNDARY IMPINGEMENT/FULL VERTICAL MIXING

BEGIN MOD154: VERTICALLY MIXED PLUME IN WEAK CROSS-FLOW

Phase 1: Vertically mixed, Phase 2: Re-stratified

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 Phase 1: The plume is VERTICALLY FULLY MIXED over the entire layer depth.
 This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

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 Phase 2: The flow has RESTRATIFIED at the beginning of this zone.

 This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

END OF MOD154: VERTICALLY MIXED PLUME IN WEAK CROSS-FLOW
------------------------------------------------------------------------------
----------
** End of NEAR-FIELD REGION (NFR) **

 Bank nearest to plume centerline has changed.
   Nearest bank is now on LEFT.

 The initial plume WIDTH values in the next far-field module will be
  CORRECTED by a factor  2.93 to conserve the mass flux in the far-field!
 The correction factor is quite large because of the small ambient velocity
   relative to the strong mixing characteristics of the discharge!
   This indicates localized RECIRCULATION REGIONS and INTERNAL HYDRAULIC JUMPS.
   Width predictions show discontinuities. Dilution values should be acceptable.

 In this design case, the discharge is located CLOSE TO BANK/SHORE.
 Some lateral boundary interaction occurs at end of the near-field.
   This may be related to a design case with a very LOW AMBIENT VELOCITY.
   The dilution values in one or more of the preceding zones may be too high.
 Carefully evaluate results in near-field and check degree of interaction.

 Consider locating outfall further away from bank or shore.
 In the next prediction module, the plume centerline will be set
   to follow the bank/shore.
------------------------------------------------------------------------------
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BEGIN MOD141: BUOYANT AMBIENT SPREADING

 Plume is ATTACHED to LEFT  bank/shore.
   Plume width is now determined from LEFT  bank/shore.

 Discharge is non-buoyant or weakly buoyant.
 Therefore BUOYANT SPREADING REGIME is ABSENT.

END OF MOD141: BUOYANT AMBIENT SPREADING
------------------------------------------------------------------------------
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 Due to the attachment or proximity of the plume to the bottom, the bottom
   coordinate for the FAR-FIELD differs from the ambient depth, ZFB = 0 m.
 In a subsequent analysis set "depth at discharge" equal to "ambient depth".
------------------------------------------------------------------------------
----------
BEGIN MOD161: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.201E-01 m^2/s
  Horizontal diffusivity (initial value) = 0.502E-01 m^2/s

 The passive diffusion plume is VERTICALLY FULLY MIXED at beginning of region.

 Profile definitions:
   BV = Gaussian s.d.*sqrt(pi/2) (46%) thickness, measured vertically
      = or equal to layer depth, if fully mixed
   BH = Gaussian s.d.*sqrt(pi/2) (46%) half-width,
        measured horizontally in Y-direction
```

ZU = upper plume boundary (Z-coordinate)
ZL = lower plume boundary (Z-coordinate)
S = hydrodynamic centerline dilution
C = centerline concentration (includes reaction effects, if any)
TT = Cumulative travel time

Plume Stage 2 (bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
25.31	12.80	0.00	11.6	0.202E+05	3.29	8.55	3.29	0.00	.43264E+02
329.86	12.80	0.00	17.2	0.136E+05	3.00	12.65	3.00	0.00	.59442E+03

The passive diffusion plume becomes LATERALLY FULLY MIXED over the channel width during the current prediction interval.
The x-coordinate of bank attachment is 343.41 m.

634.40	12.80	0.00	21.3	0.108E+05	3.00	12.80	3.00	0.00	.11456E+04

Effluent is FULLY MIXED over the entire channel cross-section.
Except for possible far-field decay or reaction processes, there are NO FURTHER CHANGES with downstream direction.

938.95	12.80	0.00	17.4	0.132E+05	3.00	12.80	3.00	0.00	.16967E+04
1243.49	12.80	0.00	17.4	0.131E+05	3.00	12.80	3.00	0.00	.22479E+04
1548.03	12.80	0.00	17.4	0.130E+05	3.00	12.80	3.00	0.00	.27990E+04
1852.58	12.80	0.00	17.4	0.129E+05	3.00	12.80	3.00	0.00	.33502E+04
2157.12	12.80	0.00	17.4	0.127E+05	3.00	12.80	3.00	0.00	.39014E+04
2461.67	12.80	0.00	17.4	0.126E+05	3.00	12.80	3.00	0.00	.44525E+04
2766.21	12.80	0.00	17.4	0.125E+05	3.00	12.80	3.00	0.00	.50037E+04
3070.75	12.80	0.00	17.4	0.124E+05	3.00	12.80	3.00	0.00	.55548E+04
3375.30	12.80	0.00	17.4	0.123E+05	3.00	12.80	3.00	0.00	.61060E+04
3679.84	12.80	0.00	17.4	0.122E+05	3.00	12.80	3.00	0.00	.66572E+04
3984.39	12.80	0.00	17.4	0.121E+05	3.00	12.80	3.00	0.00	.72083E+04
4288.93	12.80	0.00	17.4	0.120E+05	3.00	12.80	3.00	0.00	.77595E+04
4593.47	12.80	0.00	17.4	0.119E+05	3.00	12.80	3.00	0.00	.83106E+04
4898.02	12.80	0.00	17.4	0.118E+05	3.00	12.80	3.00	0.00	.88618E+04
5202.56	12.80	0.00	17.4	0.117E+05	3.00	12.80	3.00	0.00	.94129E+04
5507.10	12.80	0.00	17.4	0.116E+05	3.00	12.80	3.00	0.00	.99641E+04
5811.65	12.80	0.00	17.4	0.115E+05	3.00	12.80	3.00	0.00	.10515E+05
6116.19	12.80	0.00	17.4	0.114E+05	3.00	12.80	3.00	0.00	.11066E+05
6420.74	12.80	0.00	17.4	0.113E+05	3.00	12.80	3.00	0.00	.11618E+05
6725.28	12.80	0.00	17.4	0.112E+05	3.00	12.80	3.00	0.00	.12169E+05
7029.82	12.80	0.00	17.4	0.111E+05	3.00	12.80	3.00	0.00	.12720E+05

7334.37	12.80	0.00	17.4	0.110E+05	3.00	12.80	3.00	0.00
.13271E+05								
7638.91	12.80	0.00	17.4	0.110E+05	3.00	12.80	3.00	0.00
.13822E+05								
7943.46	12.80	0.00	17.4	0.109E+05	3.00	12.80	3.00	0.00
.14373E+05								
8248.00	12.80	0.00	17.4	0.108E+05	3.00	12.80	3.00	0.00
.14925E+05								
8552.54	12.80	0.00	17.4	0.107E+05	3.00	12.80	3.00	0.00
.15476E+05								
8857.09	12.80	0.00	17.4	0.106E+05	3.00	12.80	3.00	0.00
.16027E+05								
9161.63	12.80	0.00	17.4	0.105E+05	3.00	12.80	3.00	0.00
.16578E+05								
9466.18	12.80	0.00	17.4	0.104E+05	3.00	12.80	3.00	0.00
.17129E+05								
9770.72	12.80	0.00	17.4	0.103E+05	3.00	12.80	3.00	0.00
.17680E+05								
10075.26	12.80	0.00	17.4	0.102E+05	3.00	12.80	3.00	0.00
.18231E+05								
10379.81	12.80	0.00	17.4	0.102E+05	3.00	12.80	3.00	0.00
.18783E+05								
10684.35	12.80	0.00	17.4	0.101E+05	3.00	12.80	3.00	0.00
.19334E+05								
10988.90	12.80	0.00	17.4	0.999E+04	3.00	12.80	3.00	0.00
.19885E+05								
11293.44	12.80	0.00	17.4	0.990E+04	3.00	12.80	3.00	0.00
.20436E+05								
11597.98	12.80	0.00	17.4	0.982E+04	3.00	12.80	3.00	0.00
.20987E+05								
11902.53	12.80	0.00	17.4	0.974E+04	3.00	12.80	3.00	0.00
.21538E+05								
12207.07	12.80	0.00	17.4	0.965E+04	3.00	12.80	3.00	0.00
.22090E+05								
12511.62	12.80	0.00	17.4	0.957E+04	3.00	12.80	3.00	0.00
.22641E+05								
12816.16	12.80	0.00	17.4	0.949E+04	3.00	12.80	3.00	0.00
.23192E+05								
13120.70	12.80	0.00	17.4	0.941E+04	3.00	12.80	3.00	0.00
.23743E+05								
13425.25	12.80	0.00	17.4	0.933E+04	3.00	12.80	3.00	0.00
.24294E+05								
13729.79	12.80	0.00	17.4	0.926E+04	3.00	12.80	3.00	0.00
.24845E+05								
14034.33	12.80	0.00	17.4	0.918E+04	3.00	12.80	3.00	0.00
.25396E+05								
14338.88	12.80	0.00	17.4	0.910E+04	3.00	12.80	3.00	0.00
.25948E+05								
14643.42	12.80	0.00	17.4	0.903E+04	3.00	12.80	3.00	0.00
.26499E+05								
14947.97	12.80	0.00	17.4	0.895E+04	3.00	12.80	3.00	0.00
.27050E+05								
15252.51	12.80	0.00	17.4	0.887E+04	3.00	12.80	3.00	0.00
.27601E+05								
15557.05	12.80	0.00	17.4	0.880E+04	3.00	12.80	3.00	0.00
.28152E+05								
15861.60	12.80	0.00	17.4	0.873E+04	3.00	12.80	3.00	0.00
.28703E+05								
16166.14	12.80	0.00	17.4	0.865E+04	3.00	12.80	3.00	0.00
.29255E+05								
16470.69	12.80	0.00	17.4	0.858E+04	3.00	12.80	3.00	0.00
.29806E+05								
16775.23	12.80	0.00	17.4	0.851E+04	3.00	12.80	3.00	0.00

.30357E+05								
17079.77	12.80	0.00	17.4	0.844E+04	3.00	12.80	3.00	0.00
.30908E+05								
17384.31	12.80	0.00	17.4	0.837E+04	3.00	12.80	3.00	0.00
.31459E+05								
17688.86	12.80	0.00	17.4	0.830E+04	3.00	12.80	3.00	0.00
.32010E+05								
17993.40	12.80	0.00	17.4	0.823E+04	3.00	12.80	3.00	0.00
.32562E+05								
18297.94	12.80	0.00	17.4	0.816E+04	3.00	12.80	3.00	0.00
.33113E+05								
18602.49	12.80	0.00	17.4	0.809E+04	3.00	12.80	3.00	0.00
.33664E+05								
18907.03	12.80	0.00	17.4	0.802E+04	3.00	12.80	3.00	0.00
.34215E+05								
19211.57	12.80	0.00	17.4	0.795E+04	3.00	12.80	3.00	0.00
.34766E+05								
19516.12	12.80	0.00	17.4	0.789E+04	3.00	12.80	3.00	0.00
.35317E+05								
19820.66	12.80	0.00	17.4	0.782E+04	3.00	12.80	3.00	0.00
.35868E+05								
20125.20	12.80	0.00	17.4	0.776E+04	3.00	12.80	3.00	0.00
.36420E+05								
20429.74	12.80	0.00	17.4	0.769E+04	3.00	12.80	3.00	0.00
.36971E+05								
20734.29	12.80	0.00	17.4	0.763E+04	3.00	12.80	3.00	0.00
.37522E+05								
21038.83	12.80	0.00	17.4	0.756E+04	3.00	12.80	3.00	0.00
.38073E+05								
21343.37	12.80	0.00	17.4	0.750E+04	3.00	12.80	3.00	0.00
.38624E+05								
21647.92	12.80	0.00	17.4	0.744E+04	3.00	12.80	3.00	0.00
.39175E+05								
21952.46	12.80	0.00	17.4	0.737E+04	3.00	12.80	3.00	0.00
.39727E+05								
22257.00	12.80	0.00	17.4	0.731E+04	3.00	12.80	3.00	0.00
.40278E+05								
22561.54	12.80	0.00	17.4	0.725E+04	3.00	12.80	3.00	0.00
.40829E+05								
22866.09	12.80	0.00	17.4	0.719E+04	3.00	12.80	3.00	0.00
.41380E+05								
23170.63	12.80	0.00	17.4	0.713E+04	3.00	12.80	3.00	0.00
.41931E+05								
23475.17	12.80	0.00	17.4	0.707E+04	3.00	12.80	3.00	0.00
.42482E+05								
23779.72	12.80	0.00	17.4	0.701E+04	3.00	12.80	3.00	0.00
.43033E+05								
24084.26	12.80	0.00	17.4	0.695E+04	3.00	12.80	3.00	0.00
.43585E+05								
24388.80	12.80	0.00	17.4	0.689E+04	3.00	12.80	3.00	0.00
.44136E+05								
24693.35	12.80	0.00	17.4	0.684E+04	3.00	12.80	3.00	0.00
.44687E+05								
24997.89	12.80	0.00	17.4	0.678E+04	3.00	12.80	3.00	0.00
.45238E+05								
25302.43	12.80	0.00	17.4	0.672E+04	3.00	12.80	3.00	0.00
.45789E+05								
25606.97	12.80	0.00	17.4	0.667E+04	3.00	12.80	3.00	0.00
.46340E+05								
25911.52	12.80	0.00	17.4	0.661E+04	3.00	12.80	3.00	0.00
.46892E+05								
26216.06	12.80	0.00	17.4	0.655E+04	3.00	12.80	3.00	0.00
.47443E+05								

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  26520.60    12.80    0.00    17.4 0.650E+04   3.00    12.80    3.00    0.00
.47994E+05
  26825.15    12.80    0.00    17.4 0.644E+04   3.00    12.80    3.00    0.00
.48545E+05
  27129.69    12.80    0.00    17.4 0.639E+04   3.00    12.80    3.00    0.00
.49096E+05
  27434.23    12.80    0.00    17.4 0.634E+04   3.00    12.80    3.00    0.00
.49647E+05
  27738.78    12.80    0.00    17.4 0.628E+04   3.00    12.80    3.00    0.00
.50199E+05
  28043.32    12.80    0.00    17.4 0.623E+04   3.00    12.80    3.00    0.00
.50750E+05
  28347.86    12.80    0.00    17.4 0.618E+04   3.00    12.80    3.00    0.00
.51301E+05
  28652.40    12.80    0.00    17.4 0.613E+04   3.00    12.80    3.00    0.00
.51852E+05
  28956.95    12.80    0.00    17.4 0.608E+04   3.00    12.80    3.00    0.00
.52403E+05
  29261.49    12.80    0.00    17.4 0.602E+04   3.00    12.80    3.00    0.00
.52954E+05
  29566.03    12.80    0.00    17.4 0.597E+04   3.00    12.80    3.00    0.00
.53505E+05
  29870.58    12.80    0.00    17.4 0.592E+04   3.00    12.80    3.00    0.00
.54057E+05
  30175.12    12.80    0.00    17.4 0.587E+04   3.00    12.80    3.00    0.00
.54608E+05
  30479.66    12.80    0.00    17.4 0.583E+04   3.00    12.80    3.00    0.00
.55159E+05
 Cumulative travel time =       55158.9766 sec  (   15.32 hrs)

 Simulation limit based on maximum specified distance =  30479.70 m.
   This is the REGION OF INTEREST limitation.

END OF MOD161: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT
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CORMIX1: Single Port Discharges              End of Prediction File
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********** FLOW CLASS DESCRIPTION **********

The following description of flow class NH5 applies to the FULL WATER DEPTH at the discharge site.

FLOW_CLASS_NH5

A submerged negatively buoyant effluent issues horizontally or near-horizontally from the discharge port. The discharge is cross-flowing or counterflowing with respect to the ambient current.

The discharge configuration is hydrodynamically "unstable", that is the discharge strength (measured by its momentum flux) dominates the flow in relation to the limited layer depth. The effect of buoyancy is negligible and the initial discharge is usually attached to the bottom.

This may be a complicated and perhaps undesirable discharge configuration. The laterally discharging jet the tends toward full vertical mixing and will block the ambient flow. This will cause a recirculating eddy region downstream of the discharge.

1) Momentum-dominated near-field jet (bottom-attached): The flow is dominated by the effluent momentum (jet-like). The jet attaches to the bottom and is weakly advected by the ambient flow.

2) Strongly deflected wall jet: After some distance, the bottom jet is strongly deflected and advected by the ambient flow. (This flow region may be absent for very shallow water depths.)

3) Layer boundary contact / full vertical mixing: After some distance the jet has grown vertically over the full layer depth. From now on the flow is vertically mixed, but may re-stratify later on.

4) Vertically mixed plume in cross-flow: The discharge induced momentum flux is still controlling the flow. However, lateral entrainment and diffusion lead to a spreading of the plume and additional mixing. Initially, the plume is cross-flowing, but it becomes progressively deflected into the direction of the ambient flow. At the beginning, the plume is vertically mixed over the full layer depth. At some distance, re-stratification may take place depending on the strength and direction of the plume buoyancy.

*** The zones listed above constitute the NEAR-FIELD REGION in which strong initial mixing takes place. ***

5) Buoyant spreading at layer boundary: The plume spreads laterally along the layer boundary (surface or pycnocline) while it is being advected by the ambient current. The plume thickness may decrease during this phase. The mixing rate is relatively small. The plume may interact with a nearby bank or shoreline.

6) Passive ambient mixing: The vertically fully mixed plume is further advected by the ambient flow and spreads laterally through turbulent diffusion. The plume may interact laterally with any nearby bank or shoreline.

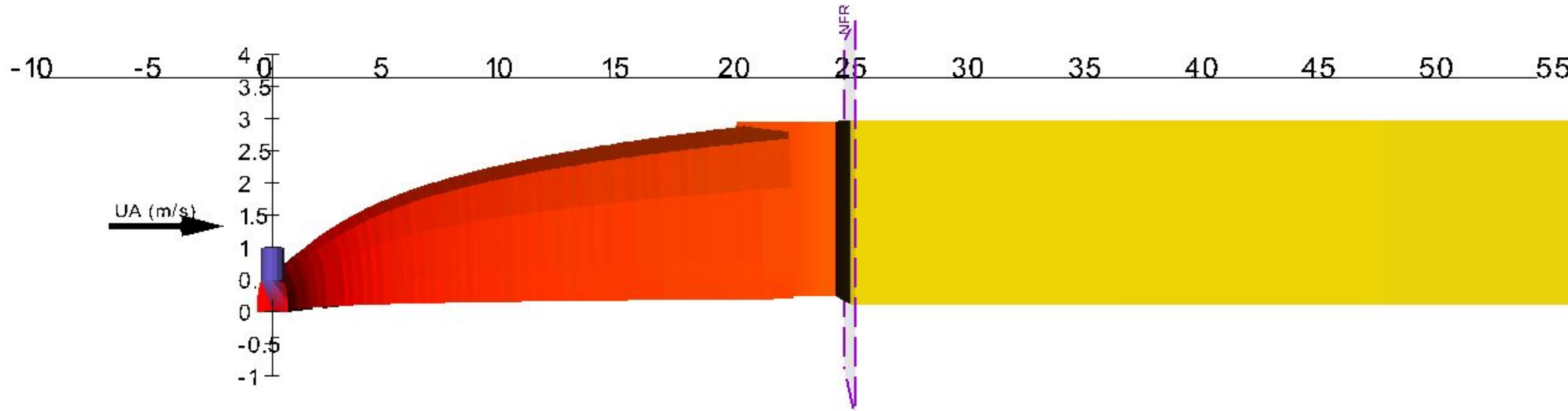
*** Predictions will be terminated in zones 5 or 6 depending on the definitions of the REGULATORY MIXING ZONE or the REGION OF INTEREST. ***

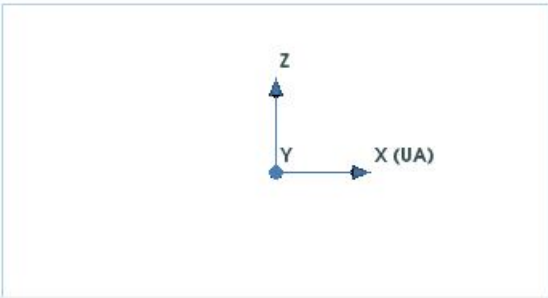
SPECIAL CASE: If the ambient is stagnant, so that advection and

diffusion by the ambient flow (zones 5 and 6) cannot be considered. The mixing is limited to the discharge-induced mixing zones (zones 1 and 2) and the predictions will be terminated at this stage. Such predictions will present a conservative lower bound on the mixing capacity as they neglect any further mixing beyond the stage where the jet has grown to the full layer depth. Such stagnant water predictions may be a useful initial mixing indicator for a given site and discharge design.

For practical final predictions, however, the advection and diffusion of the ambient flow - no matter how small in magnitude - should be considered.

END OF FLOW CLASS DESCRIPTION **********





Discharge Excess (bacteria-counts)

1 3 8 22 62 174 490 1375 3862 10843 30445 85479 240000

Base Case (Average) E. coli NF

Flow Class: NH5 Origin: Ambient Bottom
CORMIX1 Simulation Length units in meters
Distortion Scale: Y:X = 1 Z:X = 2.8
Visualization up to X = 634 m (out of ROI X = 30480 m)

Plume Centerline
End of Near Field Region (NFR)
Cormix Module Boundary (MOD)

Warnings:
> Coanda Attachment immediately following the discharge
> Close to Bank/Shore. Boundary interaction at end of near field
> Low ambient velocity

```
CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 10.0GT
                       HYDRO1:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Central CSOTF
  DESIGN CASE:                  Base Case (Average) E. coli FF
  FILE NAME:                    J:\C6A02300\Task 6-Consent Decree Planning\Task 6B -
General Planning and Studies\LTCP\PCCMP\Sampling and Monitoring\Cormix\Modeling\Aug
2017 Modeling\Scenario 2\Base Case (Average) E. coli FF.prd
  Using subsystem CORMIX1:     Single Port Discharges
  Start of session:             08/25/2017--13:32:25
******************************************************************************
SUMMARY OF INPUT DATA:
------------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                         BS       = 12.19 m
  Channel regularity            ICHREG   = 2
  Ambient flowrate              QA       = 21.95 m^3/s
  Average depth                 HA       = 3.08 m
  Depth at discharge            HD       = 4.00 m
  Ambient velocity              UA       = 0.5847 m/s
  Darcy-Weisbach friction factor F       = 0.0337
    Calculated from Manning's n          = 0.025
  Wind velocity                 UW       = 2 m/s
  Stratification Type           STRCND   = U
  Surface temperature                    = 19.10 degC
  Bottom temperature                     = 19.10 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density               RHOAS    = 998.3866 kg/m^3
  Bottom density                RHOAB    = 998.3866 kg/m^3
------------------------------------------------------------------------------
DISCHARGE PARAMETERS:           Single Port Discharge
  Nearest bank                           = right
  Distance to bank              DISTB    = 0 m
  Port diameter                 D0       = 1.3320 m
  Port cross-sectional area     A0       = 1.3934 m^2
  Discharge velocity            U0       = 0.96 m/s
  Discharge flowrate            Q0       = 1.339308 m^3/s
  Discharge port height         H0       = 1.07 m
  Vertical discharge angle      THETA    = 0 deg
  Horizontal discharge angle    SIGMA    = 90 deg
  Discharge temperature (freshwater)     = 18.5 degC
  Corresponding density         RHO0     = 998.5028 kg/m^3
  Density difference            DRHO     = -0.1162 kg/m^3
  Buoyant acceleration          GP0      = -0.0011 m/s^2
  Discharge concentration       C0       = 235230 bacteria-counts
  Surface heat exchange coeff.  KS       = 0 m/s
  Coefficient of decay          KD       = 0.000015 /s
------------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 1.18 m         Lm  = 1.94 m         Lb  = 0.01 m
  LM  = 30.91 m         Lm' = 99999 m         Lb' = 99999 m
------------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Port densimetric Froude number  FR0    = 24.65
  Velocity ratio                  R      = 1.64
------------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = no
  Regulatory mixing zone                 = no
```

```
  Region of interest                    = 30479.70 m downstream
*******************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *------------------------*
  | FLOW CLASS   = NH4A5 |
  *------------------------*
  This flow configuration applies to a layer corresponding to the full water
  depth at the discharge site.
  Applicable layer depth = water depth = 4.00 m

  Limiting Dilution S = (QA/Q0)+ 1.0 = 17.4

*******************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

-------------------------------------------------------------------------------
X-Y-Z Coordinate system:
  Origin is located at the BOTTOM below the port/diffuser center:
    0 m from the right bank/shore.
  Number of display steps NSTEP = 100 per module.
-------------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 60249.281200 bacteria-counts
  Dilution at edge of NFR              s = 3.9
  NFR Location:                        x = 6.89 m
    (centerline coordinates)           y = 4.33 m
                                       z = 0 m
  NFR plume dimensions:  half-width (bh) = 2.11 m
                          thickness (bv) = 2.11 m
Cumulative travel time:       12.1131 sec.
-------------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is greater than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is NEGATIVELY BUOYANT and will tend to sink towards
  the bottom.
IMPORTANT NOTE:
Since the effluent is NEGATIVELY BUOYANT, it is recommended that you consider using
the Brine or Sediment options for Effluent specification for a more detailed
analysis, particularly for coastal discharges over a sloping bottom where density
currents are important.

CORMIX will however continue with the current simulation.
-------------------------------------------------------------------------------
Benthic attachment:
  For the present combination of discharge and ambient conditions, the
  discharge plume becomes attached to the channel bottom within the NFR
  immediately following the efflux.  High benthic concentrations may occur.
-------------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed at 348.28 m downstream
  and laterally fully mixed at 235.86 m downstream.
-------------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts one bank only at 43.92 m downstream.
************************ TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
********************** REGULATORY MIXING ZONE SUMMARY ***********************
No RMZ and no ambient water quality standard have been specified.
```

********** FINAL DESIGN ADVICE AND COMMENTS **********

REMINDER: The user must take note that HYDRODYNAMIC MODELING by any known technique is NOT AN EXACT SCIENCE.

Extensive comparison with field and laboratory data has shown that the CORMIX predictions on dilutions and concentrations (with associated plume geometries) are reliable for the majority of cases and are accurate to within about +-50% (standard deviation).

As a further safeguard, CORMIX will not give predictions whenever it judges the design configuration as highly complex and uncertain for prediction.

Date: 08/25/17
Time: 12:32:30

Design Case: Base Case (Average) E. coli FF
Site Name: Central CSOTF
Prepared By: Gabrielle Sobel

Project Notes:
4/27/17 event

Central and Williams discharging

far-field focus

VALIDATING INPUT DATA ...

Checking Pages for invalid or missing inputs...

Effluent Page has been validated.
Ambient Page has been validated.
Discharge Page has been validated.
Mixing Zone Page has been validated.

Finished checking Pages for invalid or missing inputs.

Loading Correct RuleBases

Validating RuleBases ...

AMBIENT DATA:

Ambient velocity = 0.5847 m/s.

Equivalent Darcy-Weisbach friction factor = 0.034

Ambient density = 998.3866 kg/m^3.

Ambient Rule Base has been validated.

DISCHARGE DATA:
CORMIX1: Single Port Discharges

Port cross-sectional area A0 = 1.393 m^2.

Discharge velocity U0= 0.961 m/s.

This is a Deeply Submerged Discharge, where the height of the discharge port (H0 = 1.067 m), above the bottom, does NOT Exceed one-third of the local ambient water depth (HD = 3.999 m)
Note: For special advice on this limitation please consult Section 7.4 of the CORMIX1 technical report (Doneker and Jirka, 1990).

The submergence of the port below the water surface is SUB0 = 2.93 m.

Discharge density RHO0 = 998.5028 kg/m^3.

The decay coefficient in units (/s) is 0.0000153 /s.

Discharge Rules for CORMIX1 have been validated

MIXING ZONE SPECIFICATION:

Mixing Zones Rule Base has been validated.

Finished validating RuleBases.

Calculating Parameters.

FLOW PARAMETERS AND LENGTH SCALES:

Relative density differences between discharge and ambient:

Ambient density at the discharge level RHOAH0 = 998.3866 kg/m^3.
Vertical mean ambient density RHOAM = 998.3866 kg/m^3.

The effluent density (998.5028 kg/m^3) is greater than the surrounding ambient water density at the discharge level (998.3866 kg/m^3).

Therefore, the effluent is NEGATIVELY BUOYANT and will tend to sink towards the bottom.
IMPORTANT NOTE:
Since the effluent is NEGATIVELY BUOYANT, it is recommended that you consider using the Brine or Sediment options for Effluent specification for a more detailed analysis, particularly for coastal discharges over a sloping bottom where density currents are important.

CORMIX will however continue with the current simulation.

Flow bulk parameters:

Discharge volume flux Q0 = 1.33931 m^3/s.
Discharge momentum flux M0 = 1.28730 m^4/s^2.

Discharge buoyancy flux J0 = -0.001529 m^4/s^3.

Flow length scales:

Jet-to-crossflow length scale Lm = 1.94 m.

Plume-to-crossflow length scale Lb = 0.01 m.

Discharge length scale LQ = 1.1804 m.

Jet-to-plume transition length scale LM = 30.91 m.

Non-dimensional parameters:

Densimetric Froude number FR0 = 24.65
Jet/crossflow velocity ratio R = 1.64

Parameters for CORMIX1 have been calculated

Classifying Flows.

FLOW CLASSIFICATION:

CORMIX1 includes SIX MAJOR CLASSES of possible flow configurations:
Classes S, IS : Flows trapped in a layer within linear stratification.
Classes V, H : Near Bottom, Positively buoyant flows in a uniform density layer.
Classes IV, IH : Near Surface, Negatively buoyant flows in a uniform density layer.
Classes NV, NH : Near Bottom, Negatively buoyant flows in uniform density layer.
Classes IPV,IPH: Near Surface, Positively buoyant flows in uniform density layer.
Classes A, AI : Flows affected by dynamic bottom or surface attachment.

The NEAR FIELD FLOW will have the following features:

The discharge near-field behavior is dominated by either the negative buoyancy of the discharge or the downward vertical orientation of the discharge port leading to bottom interaction.

The near-horizontal discharge flow will dynamically attach to the nearby bottom in the near-field of the discharge (Coanda attachment).

There may be benthic impact of high pollutant concentrations.

The following conclusion on the NEAR-FIELD FLOW CONFIGURATION applies to a layer corresponding to the FULL WATER DEPTH at the discharge site:

*** FLOW CLASS = NH4A5 ***

Applicable layer depth HS = 4.00 m.

*** Limiting Dilution S = (QA/Q0)+ 1.0 = 17.4 ***

Flow has been classified.

Executing the simulation... FORTRAN simulation complete.

Generating Session Report... Session Report complete.

```
CORMIX1 PREDICTION FILE:
1111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111
11111111111
                      CORMIX MIXING ZONE EXPERT SYSTEM
                  Subsystem CORMIX1: Single Port Discharges
                            CORMIX Version 10.0GT
                     HYDRO1 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
----------
-------------------------------------------------------------------------------
----------
CASE DESCRIPTION
 Site name/label:   Central CSOTF
 Design case:       Base Case (Average) E. coli FF
 FILE NAME:         J:\...ing\Scenario 2\Base Case (Average) E. coli FF.prd
 Time stamp:        08/25/2017--12:32:30

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     12.19  AS    =     37.53  QA    =     21.95  ICHREG= 2
 HA    =      3.08  HD    =      4.00
 UA    =     0.585  F     =     0.034 USTAR =0.3796E-01
 UW    =     2.000 UWSTAR=0.2198E-02
 Uniform density environment
 STRCND=  U         RHOAM =  998.3867

DISCHARGE PARAMETERS (metric units)
 BANK  =  RIGHT     DISTB =      0.00
 D0    =     1.332 A0    =     1.393 H0    =      1.07  SUB0  =      2.93
 THETA =      0.00  SIGMA =     90.00
 U0    =     0.961 Q0    =     1.339       =0.1339E+01
 RHO0  =  998.5029  DRHO0 =-.1162E+00  GP0   =-.1141E-02
 C0    =0.2352E+06  CUNITS=  bacteria-counts
 IPOLL =  2         KS    =0.0000E+00  KD    =0.1528E-04

FLUX VARIABLES (metric units)
 Q0    =0.1339E+01  M0    =0.1287E+01  J0    =-.1529E-02  SIGNJ0=     -1.0
 Associated length scales (meters)
 LQ    =      1.18  LM    =     30.91  Lm    =      1.94  Lb    =      0.01
                                       Lmp   =  99999.00  Lbp   =  99999.00

NON-DIMENSIONAL PARAMETERS
 FR0   =     24.65  R     =      1.64

FLOW CLASSIFICATION
 11111111111111111111111111111111111111111111
 1  Flow class (CORMIX1)      =    NH4A5  1
 1  Applicable layer depth HS =    4.00   1
 1  Limiting Dilution S =QA/Q0=    17.39  1
 11111111111111111111111111111111111111111111

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.2352E+06  CUNITS=  bacteria-counts
 NTOX  =  0
 NSTD  =  0
 REGMZ =  0
 XINT  =  30479.70  XMAX  =  30479.70

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the bottom and below the center of the port:
         0.00 m  from the RIGHT bank/shore.
    X-axis points downstream, Y-axis points to left, Z-axis points upward.
NSTEP = 100 display intervals per module
```

BEGIN MOD101: DISCHARGE MODULE

COANDA ATTACHMENT immediately following the discharge.

X	Y	Z	S	C	B	Uc	TT
0.00	0.00	0.00	1.0	0.235E+06	0.94	0.961	.00000E+00

END OF MOD101: DISCHARGE MODULE

BEGIN CORJET (MOD110): JET/PLUME NEAR-FIELD MIXING REGION

Jet/plume transition motion in strong crossflow.
Bottom-attached jet motion.

Profile definitions:
B = Gaussian 1/e (37%) half-width, normal to trajectory
Half wall jet, attached to bottom.
S = hydrodynamic centerline dilution
C = centerline concentration (includes reaction effects, if any)
Uc = Local centerline excess velocity (above ambient)
TT = Cumulative travel time

X	Y	Z	S	C	B	Uc	TT
0.00	0.00	0.00	1.0	0.235E+06	0.67	0.961	.15250E-01
0.00	0.03	0.00	1.0	0.235E+06	0.67	0.961	.30612E-01
0.00	0.09	0.00	1.0	0.235E+06	0.68	0.961	.61679E-01
0.00	0.17	0.00	1.0	0.235E+06	0.69	0.961	.10917E+00
0.01	0.23	0.00	1.0	0.235E+06	0.70	0.961	.14146E+00
0.01	0.29	0.00	1.0	0.235E+06	0.70	0.961	.17427E+00
0.02	0.35	0.00	1.0	0.235E+06	0.71	0.961	.20763E+00
0.02	0.41	0.00	1.0	0.235E+06	0.72	0.961	.24156E+00
0.03	0.46	0.00	1.0	0.235E+06	0.73	0.961	.27608E+00
0.04	0.52	0.00	1.0	0.235E+06	0.74	0.961	.31121E+00
0.04	0.55	0.00	1.0	0.235E+06	0.74	0.961	.32902E+00
0.05	0.61	0.00	1.0	0.235E+06	0.75	0.961	.36512E+00
0.06	0.67	0.00	1.0	0.235E+06	0.76	0.961	.40191E+00
0.08	0.72	0.00	1.0	0.235E+06	0.77	0.961	.43939E+00
0.09	0.78	0.00	1.0	0.235E+06	0.78	0.961	.47761E+00
0.10	0.84	0.00	1.0	0.235E+06	0.79	0.961	.51659E+00
0.12	0.89	0.00	1.0	0.235E+06	0.80	0.961	.55635E+00
0.13	0.95	0.00	1.0	0.235E+06	0.81	0.961	.59693E+00
0.15	1.00	0.00	1.0	0.235E+06	0.82	0.961	.63834E+00
0.17	1.06	0.00	1.0	0.235E+06	0.83	0.961	.68063E+00
0.19	1.11	0.00	1.0	0.235E+06	0.84	0.961	.72381E+00
0.21	1.17	0.00	1.0	0.235E+06	0.85	0.961	.76790E+00
0.23	1.22	0.00	1.0	0.235E+06	0.86	0.961	.81295E+00
0.26	1.27	0.00	1.0	0.235E+06	0.87	0.961	.85896E+00
0.28	1.33	0.00	1.0	0.235E+06	0.88	0.961	.90596E+00
0.30	1.38	0.00	1.0	0.235E+06	0.90	0.941	.95398E+00
0.33	1.43	0.00	1.0	0.235E+06	0.91	0.905	.10030E+01
0.36	1.48	0.00	1.0	0.235E+06	0.92	0.870	.10531E+01
0.39	1.53	0.00	1.0	0.235E+06	0.93	0.835	.11043E+01
0.42	1.58	0.00	1.0	0.235E+06	0.94	0.802	.11566E+01
0.45	1.63	0.00	1.0	0.235E+06	0.95	0.769	.12099E+01
0.48	1.68	0.00	1.0	0.235E+06	0.97	0.738	.12643E+01
0.51	1.73	0.00	1.0	0.233E+06	0.98	0.707	.13199E+01

0.54	1.78	0.00	1.0 0.228E+06	0.99	0.677	.13766E+01
0.58	1.83	0.00	1.1 0.224E+06	1.00	0.649	.14343E+01
0.61	1.87	0.00	1.1 0.219E+06	1.01	0.621	.14932E+01
0.65	1.92	0.00	1.1 0.215E+06	1.03	0.595	.15532E+01
0.69	1.96	0.00	1.1 0.211E+06	1.04	0.569	.16143E+01
0.72	2.01	0.00	1.1 0.207E+06	1.05	0.545	.16765E+01
0.76	2.05	0.00	1.2 0.204E+06	1.06	0.522	.17398E+01
0.80	2.09	0.00	1.2 0.200E+06	1.07	0.499	.18041E+01
0.84	2.14	0.00	1.2 0.196E+06	1.08	0.478	.18695E+01
0.88	2.18	0.00	1.2 0.193E+06	1.09	0.457	.19360E+01
0.92	2.22	0.00	1.2 0.189E+06	1.11	0.438	.20034E+01
0.97	2.26	0.00	1.3 0.186E+06	1.12	0.419	.20719E+01
1.01	2.30	0.00	1.3 0.183E+06	1.13	0.402	.21413E+01
1.05	2.34	0.00	1.3 0.180E+06	1.14	0.385	.22117E+01
1.10	2.38	0.00	1.3 0.177E+06	1.15	0.369	.22830E+01
1.14	2.41	0.00	1.3 0.174E+06	1.16	0.353	.23552E+01
1.19	2.45	0.00	1.4 0.172E+06	1.17	0.339	.24283E+01
1.23	2.49	0.00	1.4 0.169E+06	1.18	0.325	.25023E+01
1.28	2.52	0.00	1.4 0.167E+06	1.19	0.312	.25771E+01
1.32	2.56	0.00	1.4 0.164E+06	1.20	0.299	.26528E+01
1.37	2.59	0.00	1.5 0.162E+06	1.21	0.287	.27292E+01
1.42	2.63	0.00	1.5 0.159E+06	1.22	0.276	.28064E+01
1.46	2.66	0.00	1.5 0.157E+06	1.23	0.265	.28843E+01
1.51	2.70	0.00	1.5 0.155E+06	1.24	0.255	.29630E+01
1.56	2.73	0.00	1.5 0.153E+06	1.25	0.245	.30423E+01
1.61	2.76	0.00	1.6 0.151E+06	1.25	0.236	.31223E+01
1.66	2.79	0.00	1.6 0.149E+06	1.26	0.227	.32030E+01
1.71	2.82	0.00	1.6 0.147E+06	1.27	0.218	.32843E+01
1.76	2.85	0.00	1.6 0.145E+06	1.28	0.210	.33662E+01
1.80	2.88	0.00	1.6 0.144E+06	1.29	0.203	.34487E+01
1.85	2.91	0.00	1.7 0.142E+06	1.30	0.195	.35318E+01
1.91	2.94	0.00	1.7 0.140E+06	1.30	0.188	.36154E+01
1.96	2.97	0.00	1.7 0.139E+06	1.31	0.182	.36995E+01
2.01	3.00	0.00	1.7 0.137E+06	1.32	0.175	.37842E+01
2.06	3.03	0.00	1.7 0.135E+06	1.33	0.169	.38693E+01
2.11	3.06	0.00	1.8 0.134E+06	1.34	0.164	.39549E+01
2.16	3.08	0.00	1.8 0.133E+06	1.34	0.158	.40409E+01
2.21	3.11	0.00	1.8 0.131E+06	1.35	0.153	.41275E+01
2.26	3.14	0.00	1.8 0.130E+06	1.36	0.148	.42144E+01
2.31	3.17	0.00	1.8 0.128E+06	1.37	0.143	.43017E+01
2.37	3.19	0.00	1.8 0.127E+06	1.37	0.138	.43895E+01
2.42	3.22	0.00	1.9 0.126E+06	1.38	0.134	.44776E+01
2.47	3.24	0.00	1.9 0.125E+06	1.39	0.129	.45661E+01
2.52	3.27	0.00	1.9 0.124E+06	1.39	0.125	.46549E+01
2.58	3.29	0.00	1.9 0.122E+06	1.40	0.121	.47441E+01
2.63	3.32	0.00	1.9 0.121E+06	1.41	0.118	.48336E+01
2.68	3.34	0.00	2.0 0.120E+06	1.41	0.114	.49234E+01
2.74	3.36	0.00	2.0 0.119E+06	1.42	0.111	.50136E+01
2.79	3.39	0.00	2.0 0.118E+06	1.43	0.107	.51040E+01
2.84	3.41	0.00	2.0 0.117E+06	1.43	0.104	.51948E+01
2.90	3.43	0.00	2.0 0.116E+06	1.44	0.101	.52858E+01
2.95	3.46	0.00	2.0 0.115E+06	1.44	0.098	.53770E+01
3.00	3.48	0.00	2.1 0.114E+06	1.45	0.095	.54686E+01
3.06	3.50	0.00	2.1 0.113E+06	1.46	0.092	.55604E+01
3.11	3.52	0.00	2.1 0.112E+06	1.46	0.090	.56524E+01
3.16	3.55	0.00	2.1 0.112E+06	1.47	0.087	.57447E+01
3.22	3.57	0.00	2.1 0.111E+06	1.47	0.085	.58372E+01
3.27	3.59	0.00	2.1 0.110E+06	1.48	0.082	.59299E+01
3.33	3.61	0.00	2.2 0.109E+06	1.49	0.080	.60229E+01
3.38	3.63	0.00	2.2 0.108E+06	1.49	0.078	.61160E+01
3.44	3.65	0.00	2.2 0.107E+06	1.50	0.076	.62093E+01
3.49	3.67	0.00	2.2 0.107E+06	1.50	0.074	.63029E+01
3.55	3.69	0.00	2.2 0.106E+06	1.51	0.072	.63966E+01

3.60	3.71	0.00	2.2	0.105E+06	1.51	0.070	.64905E+01
3.65	3.73	0.00	2.3	0.105E+06	1.52	0.068	.65846E+01
3.71	3.75	0.00	2.3	0.104E+06	1.52	0.066	.66789E+01
3.76	3.77	0.00	2.3	0.103E+06	1.53	0.064	.67733E+01
3.82	3.79	0.00	2.3	0.102E+06	1.53	0.063	.68678E+01

Cumulative travel time = 6.8678 sec (0.00 hrs)

END OF CORJET (MOD110): JET/PLUME NEAR-FIELD MIXING REGION

BEGIN MOD131: LAYER BOUNDARY/TERMINAL LAYER APPROACH

Control volume inflow:

X	Y	Z	S	C	B	TT
3.82	3.79	0.00	2.3	0.102E+06	1.53	.68678E+01

Profile definitions:
BV = top-hat thickness, measured vertically
BH = top-hat half-width, measured horizontally in Y-direction
ZU = upper plume boundary (Z-coordinate)
ZL = lower plume boundary (Z-coordinate)
S = hydrodynamic average (bulk) dilution
C = average (bulk) concentration (includes reaction effects, if any)
TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
2.37	3.54	0.00	2.3	0.102E+06	0.00	0.00	0.00	0.00	.68678E+01
2.82	3.62	0.00	2.3	0.102E+06	1.33	0.67	1.33	0.00	.68678E+01
3.27	3.69	0.00	2.3	0.102E+06	1.58	0.95	1.58	0.00	.68678E+01
3.73	3.77	0.00	2.3	0.102E+06	1.74	1.16	1.74	0.00	.68678E+01
4.18	3.85	0.00	2.4	0.988E+05	1.85	1.34	1.85	0.00	.74805E+01
4.63	3.93	0.00	2.7	0.875E+05	1.94	1.50	1.94	0.00	.82526E+01
5.08	4.01	0.00	3.1	0.762E+05	2.01	1.64	2.01	0.00	.90247E+01
5.53	4.09	0.00	3.4	0.683E+05	2.05	1.77	2.05	0.00	.97968E+01
5.98	4.17	0.00	3.7	0.638E+05	2.09	1.89	2.09	0.00	.10569E+02
6.43	4.25	0.00	3.8	0.616E+05	2.11	2.01	2.11	0.00	.11341E+02
6.89	4.33	0.00	3.9	0.602E+05	2.11	2.11	2.11	0.00	.12113E+02

Cumulative travel time = 12.1131 sec (0.00 hrs)

END OF MOD131: LAYER BOUNDARY/TERMINAL LAYER APPROACH

** End of NEAR-FIELD REGION (NFR) **

BEGIN MOD141: BUOYANT AMBIENT SPREADING

Discharge is non-buoyant or weakly buoyant.
Therefore BUOYANT SPREADING REGIME is ABSENT.

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END OF MOD141: BUOYANT AMBIENT SPREADING
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 Due to the attachment or proximity of the plume to the bottom, the bottom
   coordinate for the FAR-FIELD differs from the ambient depth, ZFB = 0 m.
 In a subsequent analysis set "depth at discharge" equal to "ambient depth".
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BEGIN MOD161: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.304E-01 m^2/s
  Horizontal diffusivity (initial value) = 0.759E-01 m^2/s

 Profile definitions:
   BV = Gaussian s.d.*sqrt(pi/2) (46%) thickness, measured vertically
      = or equal to layer depth, if fully mixed
   BH = Gaussian s.d.*sqrt(pi/2) (46%) half-width,
        measured horizontally in Y-direction
   ZU = upper plume boundary (Z-coordinate)
   ZL = lower plume boundary (Z-coordinate)
   S  = hydrodynamic centerline dilution
   C  = centerline concentration (includes reaction effects, if any)
   TT = Cumulative travel time

 Plume Stage 1 (not bank attached):
       X        Y       Z        S       C       BV       BH      ZU      ZL
TT
      6.89     4.33    0.00     3.9 0.602E+05   2.11     2.11    2.11    0.00
.12113E+02
      7.26     4.33    0.00     4.0 0.591E+05   2.12     2.15    2.12    0.00
.12710E+02
      7.63     4.33    0.00     4.1 0.580E+05   2.13     2.18    2.13    0.00
.13307E+02
      8.00     4.33    0.00     4.1 0.570E+05   2.14     2.21    2.14    0.00
.13904E+02
      8.37     4.33    0.00     4.2 0.559E+05   2.14     2.25    2.14    0.00
.14501E+02
      8.74     4.33    0.00     4.3 0.550E+05   2.15     2.28    2.15    0.00
.15098E+02
      9.11     4.33    0.00     4.4 0.540E+05   2.16     2.31    2.16    0.00
.15695E+02
      9.48     4.33    0.00     4.4 0.531E+05   2.17     2.34    2.17    0.00
.16292E+02
      9.85     4.33    0.00     4.5 0.523E+05   2.18     2.37    2.18    0.00
.16889E+02
     10.22     4.33    0.00     4.6 0.514E+05   2.18     2.40    2.18    0.00
.17486E+02
     10.59     4.33    0.00     4.6 0.506E+05   2.19     2.43    2.19    0.00
.18083E+02
     10.96     4.33    0.00     4.7 0.498E+05   2.20     2.46    2.20    0.00
.18680E+02
     11.33     4.33    0.00     4.8 0.491E+05   2.21     2.49    2.21    0.00
.19276E+02
     11.70     4.33    0.00     4.9 0.484E+05   2.22     2.51    2.22    0.00
.19873E+02
     12.07     4.33    0.00     4.9 0.476E+05   2.22     2.54    2.22    0.00
.20470E+02
     12.44     4.33    0.00     5.0 0.470E+05   2.23     2.57    2.23    0.00
.21067E+02
     12.81     4.33    0.00     5.1 0.463E+05   2.24     2.60    2.24    0.00
.21664E+02
     13.18     4.33    0.00     5.2 0.456E+05   2.25     2.63    2.25    0.00
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.22261E+02								
13.55	4.33	0.00	5.2	0.450E+05	2.26	2.65	2.26	0.00
.22858E+02								
13.92	4.33	0.00	5.3	0.444E+05	2.26	2.68	2.26	0.00
.23455E+02								
14.29	4.33	0.00	5.4	0.438E+05	2.27	2.71	2.27	0.00
.24052E+02								
14.66	4.33	0.00	5.4	0.432E+05	2.28	2.73	2.28	0.00
.24649E+02								
15.03	4.33	0.00	5.5	0.427E+05	2.29	2.76	2.29	0.00
.25246E+02								
15.40	4.33	0.00	5.6	0.421E+05	2.30	2.78	2.30	0.00
.25843E+02								
15.77	4.33	0.00	5.7	0.416E+05	2.30	2.81	2.30	0.00
.26440E+02								
16.14	4.33	0.00	5.7	0.411E+05	2.31	2.83	2.31	0.00
.27037E+02								
16.51	4.33	0.00	5.8	0.406E+05	2.32	2.86	2.32	0.00
.27634E+02								
16.89	4.33	0.00	5.9	0.401E+05	2.33	2.88	2.33	0.00
.28231E+02								
17.26	4.33	0.00	5.9	0.396E+05	2.34	2.91	2.34	0.00
.28828E+02								
17.63	4.33	0.00	6.0	0.391E+05	2.35	2.93	2.35	0.00
.29425E+02								
18.00	4.33	0.00	6.1	0.387E+05	2.35	2.96	2.35	0.00
.30022E+02								
18.37	4.33	0.00	6.2	0.382E+05	2.36	2.98	2.36	0.00
.30618E+02								
18.74	4.33	0.00	6.2	0.378E+05	2.37	3.00	2.37	0.00
.31215E+02								
19.11	4.33	0.00	6.3	0.374E+05	2.38	3.03	2.38	0.00
.31812E+02								
19.48	4.33	0.00	6.4	0.369E+05	2.39	3.05	2.39	0.00
.32409E+02								
19.85	4.33	0.00	6.4	0.365E+05	2.40	3.07	2.40	0.00
.33006E+02								
20.22	4.33	0.00	6.5	0.361E+05	2.41	3.10	2.41	0.00
.33603E+02								
20.59	4.33	0.00	6.6	0.357E+05	2.41	3.12	2.41	0.00
.34200E+02								
20.96	4.33	0.00	6.6	0.354E+05	2.42	3.14	2.42	0.00
.34797E+02								
21.33	4.33	0.00	6.7	0.350E+05	2.43	3.17	2.43	0.00
.35394E+02								
21.70	4.33	0.00	6.8	0.346E+05	2.44	3.19	2.44	0.00
.35991E+02								
22.07	4.33	0.00	6.9	0.343E+05	2.45	3.21	2.45	0.00
.36588E+02								
22.44	4.33	0.00	6.9	0.339E+05	2.46	3.23	2.46	0.00
.37185E+02								
22.81	4.33	0.00	7.0	0.336E+05	2.46	3.25	2.46	0.00
.37782E+02								
23.18	4.33	0.00	7.1	0.332E+05	2.47	3.28	2.47	0.00
.38379E+02								
23.55	4.33	0.00	7.1	0.329E+05	2.48	3.30	2.48	0.00
.38976E+02								
23.92	4.33	0.00	7.2	0.326E+05	2.49	3.32	2.49	0.00
.39573E+02								
24.29	4.33	0.00	7.3	0.323E+05	2.50	3.34	2.50	0.00
.40170E+02								
24.66	4.33	0.00	7.4	0.319E+05	2.51	3.36	2.51	0.00
.40767E+02								

25.03	4.33	0.00	7.4	0.316E+05	2.52	3.38	2.52	0.00
.41364E+02								
25.40	4.33	0.00	7.5	0.313E+05	2.52	3.40	2.52	0.00
.41961E+02								
25.77	4.33	0.00	7.6	0.310E+05	2.53	3.43	2.53	0.00
.42557E+02								
26.14	4.33	0.00	7.6	0.308E+05	2.54	3.45	2.54	0.00
.43154E+02								
26.51	4.33	0.00	7.7	0.305E+05	2.55	3.47	2.55	0.00
.43751E+02								
26.88	4.33	0.00	7.8	0.302E+05	2.56	3.49	2.56	0.00
.44348E+02								
27.25	4.33	0.00	7.9	0.299E+05	2.57	3.51	2.57	0.00
.44945E+02								
27.63	4.33	0.00	7.9	0.296E+05	2.57	3.53	2.57	0.00
.45542E+02								
28.00	4.33	0.00	8.0	0.294E+05	2.58	3.55	2.58	0.00
.46139E+02								
28.37	4.33	0.00	8.1	0.291E+05	2.59	3.57	2.59	0.00
.46736E+02								
28.74	4.33	0.00	8.1	0.289E+05	2.60	3.59	2.60	0.00
.47333E+02								
29.11	4.33	0.00	8.2	0.286E+05	2.61	3.61	2.61	0.00
.47930E+02								
29.48	4.33	0.00	8.3	0.284E+05	2.62	3.63	2.62	0.00
.48527E+02								
29.85	4.33	0.00	8.4	0.281E+05	2.62	3.65	2.62	0.00
.49124E+02								
30.22	4.33	0.00	8.4	0.279E+05	2.63	3.67	2.63	0.00
.49721E+02								
30.59	4.33	0.00	8.5	0.276E+05	2.64	3.69	2.64	0.00
.50318E+02								
30.96	4.33	0.00	8.6	0.274E+05	2.65	3.70	2.65	0.00
.50915E+02								
31.33	4.33	0.00	8.6	0.272E+05	2.66	3.72	2.66	0.00
.51512E+02								
31.70	4.33	0.00	8.7	0.270E+05	2.67	3.74	2.67	0.00
.52109E+02								
32.07	4.33	0.00	8.8	0.267E+05	2.68	3.76	2.68	0.00
.52706E+02								
32.44	4.33	0.00	8.9	0.265E+05	2.68	3.78	2.68	0.00
.53303E+02								
32.81	4.33	0.00	8.9	0.263E+05	2.69	3.80	2.69	0.00
.53899E+02								
33.18	4.33	0.00	9.0	0.261E+05	2.70	3.82	2.70	0.00
.54496E+02								
33.55	4.33	0.00	9.1	0.259E+05	2.71	3.84	2.71	0.00
.55093E+02								
33.92	4.33	0.00	9.1	0.257E+05	2.72	3.86	2.72	0.00
.55690E+02								
34.29	4.33	0.00	9.2	0.255E+05	2.73	3.87	2.73	0.00
.56287E+02								
34.66	4.33	0.00	9.3	0.253E+05	2.73	3.89	2.73	0.00
.56884E+02								
35.03	4.33	0.00	9.4	0.251E+05	2.74	3.91	2.74	0.00
.57481E+02								
35.40	4.33	0.00	9.4	0.249E+05	2.75	3.93	2.75	0.00
.58078E+02								
35.77	4.33	0.00	9.5	0.247E+05	2.76	3.95	2.76	0.00
.58675E+02								
36.14	4.33	0.00	9.6	0.245E+05	2.77	3.96	2.77	0.00
.59272E+02								
36.51	4.33	0.00	9.7	0.243E+05	2.78	3.98	2.78	0.00

.59869E+02
36.88 4.33 0.00 9.7 0.242E+05 2.78 4.00 2.78 0.00
.60466E+02
37.25 4.33 0.00 9.8 0.240E+05 2.79 4.02 2.79 0.00
.61063E+02
37.62 4.33 0.00 9.9 0.238E+05 2.80 4.04 2.80 0.00
.61660E+02
37.99 4.33 0.00 9.9 0.236E+05 2.81 4.05 2.81 0.00
.62257E+02
38.37 4.33 0.00 10.0 0.235E+05 2.82 4.07 2.82 0.00
.62854E+02
38.74 4.33 0.00 10.1 0.233E+05 2.83 4.09 2.83 0.00
.63451E+02
39.11 4.33 0.00 10.2 0.231E+05 2.83 4.11 2.83 0.00
.64048E+02
39.48 4.33 0.00 10.2 0.230E+05 2.84 4.12 2.84 0.00
.64645E+02
39.85 4.33 0.00 10.3 0.228E+05 2.85 4.14 2.85 0.00
.65242E+02
40.22 4.33 0.00 10.4 0.226E+05 2.86 4.16 2.86 0.00
.65838E+02
40.59 4.33 0.00 10.5 0.225E+05 2.87 4.17 2.87 0.00
.66435E+02
40.96 4.33 0.00 10.5 0.223E+05 2.88 4.19 2.88 0.00
.67032E+02
41.33 4.33 0.00 10.6 0.222E+05 2.88 4.21 2.88 0.00
.67629E+02
41.70 4.33 0.00 10.7 0.220E+05 2.89 4.23 2.89 0.00
.68226E+02
42.07 4.33 0.00 10.7 0.219E+05 2.90 4.24 2.90 0.00
.68823E+02
42.44 4.33 0.00 10.8 0.217E+05 2.91 4.26 2.91 0.00
.69420E+02
42.81 4.33 0.00 10.9 0.216E+05 2.92 4.28 2.92 0.00
.70017E+02
43.18 4.33 0.00 11.0 0.214E+05 2.92 4.29 2.92 0.00
.70614E+02
43.55 4.33 0.00 11.0 0.213E+05 2.93 4.31 2.93 0.00
.71211E+02
43.92 4.33 0.00 11.1 0.212E+05 2.94 4.33 2.94 0.00
.71808E+02
Cumulative travel time = 71.8079 sec (0.02 hrs)

Plume Stage 2 (bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
43.92	0.00	0.00	11.1	0.212E+05	2.94	8.65	2.94	0.00	.71808E+02

The passive diffusion plume becomes LATERALLY FULLY MIXED over the channel width during the current prediction interval.
The x-coordinate of bank attachment is 235.86 m.
Plume interacts with SURFACE.
The passive diffusion plume becomes VERTICALLY FULLY MIXED within this prediction interval.

348.28	0.00	0.00	24.2	0.964E+04	4.00	12.19	4.00	0.00	.56240E+03

Effluent is FULLY MIXED over the entire channel cross-section.
Except for possible far-field decay or reaction processes, there are NO FURTHER CHANGES with downstream direction.

652.64	0.00	0.00	21.3	0.109E+05	4.00	12.19	4.00	0.00	.10530E+04

956.99	0.00	0.00	21.3	0.108E+05	4.00	12.19	4.00	0.00
.15436E+04								
1261.35	0.00	0.00	21.3	0.107E+05	4.00	12.19	4.00	0.00
.20342E+04								
1565.71	0.00	0.00	21.3	0.106E+05	4.00	12.19	4.00	0.00
.25248E+04								
1870.07	0.00	0.00	21.3	0.106E+05	4.00	12.19	4.00	0.00
.30153E+04								
2174.42	0.00	0.00	21.3	0.105E+05	4.00	12.19	4.00	0.00
.35059E+04								
2478.78	0.00	0.00	21.3	0.104E+05	4.00	12.19	4.00	0.00
.39965E+04								
2783.14	0.00	0.00	21.3	0.103E+05	4.00	12.19	4.00	0.00
.44871E+04								
3087.50	0.00	0.00	21.3	0.102E+05	4.00	12.19	4.00	0.00
.49777E+04								
3391.86	0.00	0.00	21.3	0.102E+05	4.00	12.19	4.00	0.00
.54683E+04								
3696.21	0.00	0.00	21.3	0.101E+05	4.00	12.19	4.00	0.00
.59589E+04								
4000.57	0.00	0.00	21.3	0.100E+05	4.00	12.19	4.00	0.00
.64495E+04								
4304.93	0.00	0.00	21.3	0.994E+04	4.00	12.19	4.00	0.00
.69401E+04								
4609.29	0.00	0.00	21.3	0.987E+04	4.00	12.19	4.00	0.00
.74307E+04								
4913.64	0.00	0.00	21.3	0.979E+04	4.00	12.19	4.00	0.00
.79212E+04								
5218.00	0.00	0.00	21.3	0.972E+04	4.00	12.19	4.00	0.00
.84118E+04								
5522.36	0.00	0.00	21.3	0.965E+04	4.00	12.19	4.00	0.00
.89024E+04								
5826.72	0.00	0.00	21.3	0.957E+04	4.00	12.19	4.00	0.00
.93930E+04								
6131.08	0.00	0.00	21.3	0.950E+04	4.00	12.19	4.00	0.00
.98836E+04								
6435.43	0.00	0.00	21.3	0.943E+04	4.00	12.19	4.00	0.00
.10374E+05								
6739.79	0.00	0.00	21.3	0.936E+04	4.00	12.19	4.00	0.00
.10865E+05								
7044.15	0.00	0.00	21.3	0.929E+04	4.00	12.19	4.00	0.00
.11355E+05								
7348.51	0.00	0.00	21.3	0.922E+04	4.00	12.19	4.00	0.00
.11846E+05								
7652.87	0.00	0.00	21.3	0.915E+04	4.00	12.19	4.00	0.00
.12337E+05								
7957.22	0.00	0.00	21.3	0.908E+04	4.00	12.19	4.00	0.00
.12827E+05								
8261.58	0.00	0.00	21.3	0.902E+04	4.00	12.19	4.00	0.00
.13318E+05								
8565.94	0.00	0.00	21.3	0.895E+04	4.00	12.19	4.00	0.00
.13808E+05								
8870.30	0.00	0.00	21.3	0.888E+04	4.00	12.19	4.00	0.00
.14299E+05								
9174.65	0.00	0.00	21.3	0.882E+04	4.00	12.19	4.00	0.00
.14789E+05								
9479.01	0.00	0.00	21.3	0.875E+04	4.00	12.19	4.00	0.00
.15280E+05								
9783.37	0.00	0.00	21.3	0.869E+04	4.00	12.19	4.00	0.00
.15771E+05								
10087.73	0.00	0.00	21.3	0.862E+04	4.00	12.19	4.00	0.00
.16261E+05								
10392.08	0.00	0.00	21.3	0.856E+04	4.00	12.19	4.00	0.00

.16752E+05								
10696.44	0.00	0.00	21.3	0.849E+04	4.00	12.19	4.00	0.00
.17242E+05								
11000.80	0.00	0.00	21.3	0.843E+04	4.00	12.19	4.00	0.00
.17733E+05								
11305.16	0.00	0.00	21.3	0.837E+04	4.00	12.19	4.00	0.00
.18224E+05								
11609.51	0.00	0.00	21.3	0.830E+04	4.00	12.19	4.00	0.00
.18714E+05								
11913.87	0.00	0.00	21.3	0.824E+04	4.00	12.19	4.00	0.00
.19205E+05								
12218.23	0.00	0.00	21.3	0.818E+04	4.00	12.19	4.00	0.00
.19695E+05								
12522.58	0.00	0.00	21.3	0.812E+04	4.00	12.19	4.00	0.00
.20186E+05								
12826.94	0.00	0.00	21.3	0.806E+04	4.00	12.19	4.00	0.00
.20677E+05								
13131.30	0.00	0.00	21.3	0.800E+04	4.00	12.19	4.00	0.00
.21167E+05								
13435.66	0.00	0.00	21.3	0.794E+04	4.00	12.19	4.00	0.00
.21658E+05								
13740.01	0.00	0.00	21.3	0.788E+04	4.00	12.19	4.00	0.00
.22148E+05								
14044.37	0.00	0.00	21.3	0.782E+04	4.00	12.19	4.00	0.00
.22639E+05								
14348.73	0.00	0.00	21.3	0.776E+04	4.00	12.19	4.00	0.00
.23130E+05								
14653.09	0.00	0.00	21.3	0.770E+04	4.00	12.19	4.00	0.00
.23620E+05								
14957.44	0.00	0.00	21.3	0.765E+04	4.00	12.19	4.00	0.00
.24111E+05								
15261.80	0.00	0.00	21.3	0.759E+04	4.00	12.19	4.00	0.00
.24601E+05								
15566.16	0.00	0.00	21.3	0.753E+04	4.00	12.19	4.00	0.00
.25092E+05								
15870.52	0.00	0.00	21.3	0.748E+04	4.00	12.19	4.00	0.00
.25582E+05								
16174.87	0.00	0.00	21.3	0.742E+04	4.00	12.19	4.00	0.00
.26073E+05								
16479.23	0.00	0.00	21.3	0.736E+04	4.00	12.19	4.00	0.00
.26564E+05								
16783.59	0.00	0.00	21.3	0.731E+04	4.00	12.19	4.00	0.00
.27054E+05								
17087.95	0.00	0.00	21.3	0.726E+04	4.00	12.19	4.00	0.00
.27545E+05								
17392.30	0.00	0.00	21.3	0.720E+04	4.00	12.19	4.00	0.00
.28035E+05								
17696.66	0.00	0.00	21.3	0.715E+04	4.00	12.19	4.00	0.00
.28526E+05								
18001.02	0.00	0.00	21.3	0.709E+04	4.00	12.19	4.00	0.00
.29017E+05								
18305.38	0.00	0.00	21.3	0.704E+04	4.00	12.19	4.00	0.00
.29507E+05								
18609.73	0.00	0.00	21.3	0.699E+04	4.00	12.19	4.00	0.00
.29998E+05								
18914.09	0.00	0.00	21.3	0.694E+04	4.00	12.19	4.00	0.00
.30488E+05								
19218.45	0.00	0.00	21.3	0.688E+04	4.00	12.19	4.00	0.00
.30979E+05								
19522.81	0.00	0.00	21.3	0.683E+04	4.00	12.19	4.00	0.00
.31470E+05								
19827.16	0.00	0.00	21.3	0.678E+04	4.00	12.19	4.00	0.00
.31960E+05								

20131.52	0.00	0.00	21.3	0.673E+04	4.00	12.19	4.00	0.00
.32451E+05								
20435.88	0.00	0.00	21.3	0.668E+04	4.00	12.19	4.00	0.00
.32941E+05								
20740.24	0.00	0.00	21.3	0.663E+04	4.00	12.19	4.00	0.00
.33432E+05								
21044.59	0.00	0.00	21.3	0.658E+04	4.00	12.19	4.00	0.00
.33922E+05								
21348.95	0.00	0.00	21.3	0.653E+04	4.00	12.19	4.00	0.00
.34413E+05								
21653.31	0.00	0.00	21.3	0.648E+04	4.00	12.19	4.00	0.00
.34904E+05								
21957.67	0.00	0.00	21.3	0.644E+04	4.00	12.19	4.00	0.00
.35394E+05								
22262.02	0.00	0.00	21.3	0.639E+04	4.00	12.19	4.00	0.00
.35885E+05								
22566.38	0.00	0.00	21.3	0.634E+04	4.00	12.19	4.00	0.00
.36375E+05								
22870.74	0.00	0.00	21.3	0.629E+04	4.00	12.19	4.00	0.00
.36866E+05								
23175.10	0.00	0.00	21.3	0.625E+04	4.00	12.19	4.00	0.00
.37357E+05								
23479.45	0.00	0.00	21.3	0.620E+04	4.00	12.19	4.00	0.00
.37847E+05								
23783.81	0.00	0.00	21.3	0.615E+04	4.00	12.19	4.00	0.00
.38338E+05								
24088.17	0.00	0.00	21.3	0.611E+04	4.00	12.19	4.00	0.00
.38828E+05								
24392.53	0.00	0.00	21.3	0.606E+04	4.00	12.19	4.00	0.00
.39319E+05								
24696.88	0.00	0.00	21.3	0.602E+04	4.00	12.19	4.00	0.00
.39810E+05								
25001.24	0.00	0.00	21.3	0.597E+04	4.00	12.19	4.00	0.00
.40300E+05								
25305.60	0.00	0.00	21.3	0.593E+04	4.00	12.19	4.00	0.00
.40791E+05								
25609.96	0.00	0.00	21.3	0.588E+04	4.00	12.19	4.00	0.00
.41281E+05								
25914.31	0.00	0.00	21.3	0.584E+04	4.00	12.19	4.00	0.00
.41772E+05								
26218.67	0.00	0.00	21.3	0.579E+04	4.00	12.19	4.00	0.00
.42262E+05								
26523.03	0.00	0.00	21.3	0.575E+04	4.00	12.19	4.00	0.00
.42753E+05								
26827.38	0.00	0.00	21.3	0.571E+04	4.00	12.19	4.00	0.00
.43244E+05								
27131.74	0.00	0.00	21.3	0.567E+04	4.00	12.19	4.00	0.00
.43734E+05								
27436.10	0.00	0.00	21.3	0.562E+04	4.00	12.19	4.00	0.00
.44225E+05								
27740.46	0.00	0.00	21.3	0.558E+04	4.00	12.19	4.00	0.00
.44715E+05								
28044.81	0.00	0.00	21.3	0.554E+04	4.00	12.19	4.00	0.00
.45206E+05								
28349.17	0.00	0.00	21.3	0.550E+04	4.00	12.19	4.00	0.00
.45697E+05								
28653.53	0.00	0.00	21.3	0.546E+04	4.00	12.19	4.00	0.00
.46187E+05								
28957.89	0.00	0.00	21.3	0.542E+04	4.00	12.19	4.00	0.00
.46678E+05								
29262.24	0.00	0.00	21.3	0.538E+04	4.00	12.19	4.00	0.00
.47168E+05								
29566.60	0.00	0.00	21.3	0.534E+04	4.00	12.19	4.00	0.00

```
.47659E+05
  29870.96     0.00    0.00    21.3 0.530E+04   4.00    12.19    4.00    0.00
.48150E+05
  30175.32     0.00    0.00    21.3 0.526E+04   4.00    12.19    4.00    0.00
.48640E+05
  30479.67     0.00    0.00    21.3 0.522E+04   4.00    12.19    4.00    0.00
.49131E+05
 Cumulative travel time =       49130.7734 sec  (   13.65 hrs)

 Simulation limit based on maximum specified distance =  30479.70 m.
   This is the REGION OF INTEREST limitation.

END OF MOD161: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT
------------------------------------------------------------------------------------
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------------------------------------------------------------------------------------
----------
CORMIX1: Single Port Discharges              End of Prediction File
11111111111111111111111111111111111111111111111111111111111111111111111111111111
11111111111
```

********** FLOW CLASS DESCRIPTION **********

The following description of flow class NH4A5 applies to the FULL WATER DEPTH at the discharge site.

Since the flow experiences bottom attachment, the description for the ACTUAL ATTACHED FLOW CLASS A5 is given below.

FLOW_CLASS_(..)A5

Controlled primarily by the geometry of the discharge, the near-field of this flow configuration is dominated by Coanda attachment. The port orientation is more or less horizontal and/or the height of the discharge port above the bottom is too small. This leads to rapid dynamic attachment (Coanda attachment) of the discharge flow to the bottom and the formation of a wall jet. The discharge flow will remain attached to the bottom due to its weak or negative buoyancy.

In the absence of Coanda attachment the dominant flow class would be given by the prefix (..). You may request detailed information on that flow class further below. Additional advice on how to prevent bottom attachment (e.g. by increasing the vertical angle of the discharge port) will be provided in the summary program element SUM.

The following flow zones exist:

1) Weakly deflected wall jet in crossflow: The rapidly attaching discharge flow (wall jet) is initially dominated by the effluent momentum and weakly deflected by the ambient current.

2) Lift-off: Because of the positive buoyancy the plume detaches from the bottom and starts to rise upward.

3) Strongly deflected plume in crossflow: After the maximum height of rise, the negative discharge buoyancy becomes the dominating factor giving plume-like flow. The strongly deflected plume is slowly descending toward the bottom.

4) Surface approach: The bent-over submerged plume approaches the surface boundary. Within a short distance the concentration distribution becomes relatively uniform across the plume width and thickness.

Or, alternatively, for strongly negatively buoyant discharges (primary flow class NH2) instead of zones 2, 3 and 4 there is:
5) Bottom boundary impingement / upstream spreading: The weakly bent jet/plume approaches the bottom. After impingement the flow spreads more or less radially along the layer boundary. In particular, the flow spreads some distance upstream against the ambient flow, and laterally across the ambient flow. This spreading is dominated by the strong buoyancy of the discharge.

*** The zones listed above constitute the NEAR-FIELD REGION in which strong initial mixing takes place. ***

6) Buoyant spreading at bottom: The plume spreads laterally along the bottom while it is being advected by the ambient current. The plume thickness may decrease during this phase. The mixing rate is relatively small. The plume may interact with a nearby bank or shoreline.

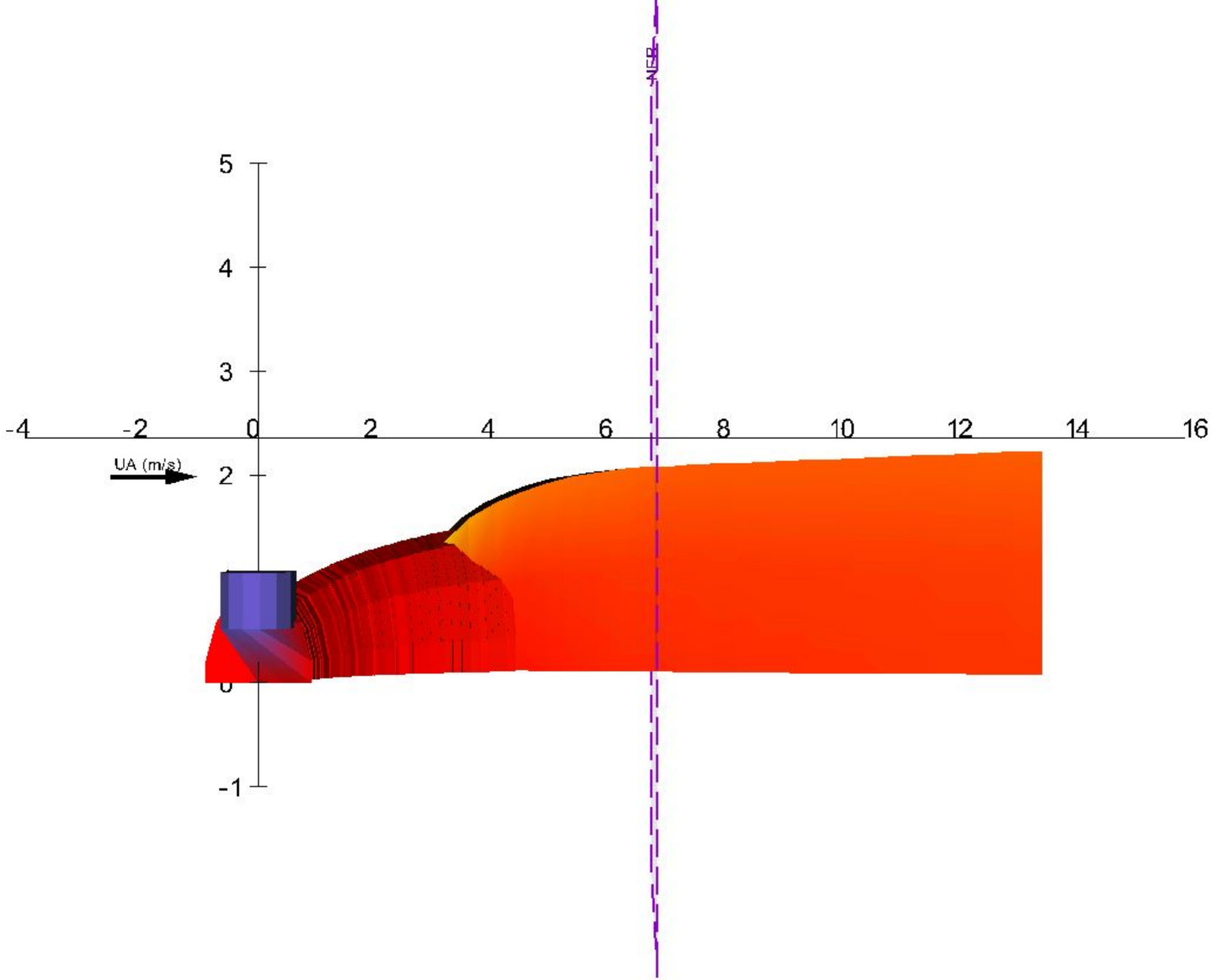
7) Passive ambient mixing: After some distance the background turbulence in the ambient shear flow becomes the dominating mixing mechanism. The passive plume is growing in depth and in width. The plume may interact with the channel bottom and/or banks.

*** Predictions will be terminated in zone 6 or 7 depending on the definitions of the REGULATORY MIXING ZONE or the REGION OF INTEREST. ***

SPECIAL CASE: If the ambient is stagnant, then advection and diffusion by the ambient flow (zones 6 and 7) cannot be considered. The mixing is limited to the NEAR-FIELD REGION (zones 1 to 5) and the predictions will be terminated at this stage. Such stagnant water predictions may be a useful initial mixing indicator for a given site and discharge design.

For practical final predictions, however, the advection and diffusion of the ambient flow - no matter how small in magnitude - should be considered.

END OF FLOW CLASS DESCRIPTION **********



Discharge Excess (bacteria-counts)

1 3 8 22 62 174 490 1375 3862 10843 30445 85479 240000

Base Case (Average) E. coli FF

Flow Class: NH4A5 Origin: Ambient Bottom
CORMIX1 Simulation Length units in meters
Distortion Scale: Y:X = 1 Z:X = 1.8
Visualization up to X = 13.92 m (out of ROI X = 30480 n

Plume Centerline
End of Near Field Region (NFR)
Cormix Module Boundary (MOD)

Warnings:
> Coanda Attachment immediately following the discharge

```
CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 10.0GT
                       HYDRO1:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Central CSOTF
  DESIGN CASE:                  Central Base Case E.coli NF
  FILE NAME:                    J:\C6A02300\Task 6-Consent Decree Planning\Task 6B -
General Planning and Studies\LTCP\PCCMP\Sampling and Monitoring\Cormix\Modeling\Aug
2017 Modeling\Scenario 3\Central Base Case E. coli NF.prd
  Using subsystem CORMIX1:     Single Port Discharges
  Start of session:             08/25/2017--13:42:17
******************************************************************************
SUMMARY OF INPUT DATA:
------------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                          BS      = 10.67 m
  Channel regularity             ICHREG  = 2
  Ambient flowrate               QA      = 14.49 m^3/s
  Average depth                  HA      = 2.58 m
  Depth at discharge             HD      = 1.99 m
  Ambient velocity               UA      = 0.5258 m/s
  Darcy-Weisbach friction factor F       = 0.0357
    Calculated from Manning's n          = 0.025
  Wind velocity                  UW      = 2 m/s
  Stratification Type            STRCND  = U
  Surface temperature                    = 14.5 degC
  Bottom temperature                     = 14.5 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density                RHOAS   = 999.1750 kg/m^3
  Bottom density                 RHOAB   = 999.1750 kg/m^3
------------------------------------------------------------------------------
DISCHARGE PARAMETERS:            Single Port Discharge
  Nearest bank                           = right
  Distance to bank               DISTB   = 0 m
  Port diameter                  D0      = 0.6401 m
  Port cross-sectional area      A0      = 0.3218 m^2
  Discharge velocity             U0      = 3.27 m/s
  Discharge flowrate             Q0      = 1.053081 m^3/s
  Discharge port height          H0      = 1.34 m
  Vertical discharge angle       THETA   = 0 deg
  Horizontal discharge angle     SIGMA   = 90 deg
  Discharge temperature (freshwater)     = 15.70 degC
  Corresponding density          RHO0    = 998.9926 kg/m^3
  Density difference             DRHO    = 0.1824 kg/m^3
  Buoyant acceleration           GP0     = 0.0018 m/s^2
  Discharge concentration        C0      = 294800 bacteria-counts
  Surface heat exchange coeff.   KS      = 0 m/s
  Coefficient of decay           KD      = 0.000015 /s
------------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 0.57 m         Lm  = 3.53 m         Lb  = 0.01 m
  LM  = 58.25 m         Lm' = 99999 m         Lb' = 99999 m
------------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Port densimetric Froude number FR0     = 96.67
  Velocity ratio                 R       = 6.22
------------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = no
  Regulatory mixing zone                 = no
```

  Region of interest = 30479.70 m downstream
****
HYDRODYNAMIC CLASSIFICATION:

  | FLOW CLASS   = IPH5 |

  This flow configuration applies to a layer corresponding to the full water depth at the discharge site.
  Applicable layer depth = water depth = 1.99 m

  Limiting Dilution S = (QA/Q0)+ 1.0 = 14.8

****
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

X-Y-Z Coordinate system:
  Origin is located at the BOTTOM below the port/diffuser center:
    0 m from the right bank/shore.
  Number of display steps NSTEP = 100 per module.

NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing. It has no regulatory implication. However, this information may be useful for the discharge designer because the mixing in the NFR is usually sensitive to the discharge design conditions.
  Pollutant concentration at NFR edge c = 38501.621100 bacteria-counts
  Dilution at edge of NFR s = 7.7
  NFR Location: x = 7.39 m
    (centerline coordinates) y = 9.41 m
  z = 1.99 m
  NFR plume dimensions: half-width (bh) = 1.17 m
  thickness (bv) = 1.99 m
Cumulative travel time: 10.8093 sec.

Buoyancy assessment:
  The effluent density is less than the surrounding ambient water density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards the surface.

Near-field instability behavior:
  The discharge flow will experience instabilities with full vertical mixing in the near-field.
  There may be benthic impact of high pollutant concentrations.

FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed ALREADY IN NEAR-FIELD at 7.39 m downstream and continues as vertically mixed into the far-field.
  Plume becomes laterally fully mixed at 434.90 m downstream.

PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts one bank only at 7.39 m downstream.
********** TOXIC DILUTION ZONE SUMMARY **********
No TDZ was specified for this simulation.
********** REGULATORY MIXING ZONE SUMMARY **********
No RMZ and no ambient water quality standard have been specified.
********** FINAL DESIGN ADVICE AND COMMENTS **********
REMINDER: The user must take note that HYDRODYNAMIC MODELING by any known technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the CORMIX predictions on dilutions and concentrations (with associated

plume geometries) are reliable for the majority of cases and are accurate to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges the design configuration as highly complex and uncertain for prediction.

Date: 08/25/17
Time: 13:42:17

Design Case: Central Base Case E.coli NF
Site Name: Central CSOTF
Prepared By: Gabrielle Sobel

Project Notes:

1/20/17 event
central discharging only
near-field focus

VALIDATING INPUT DATA ...

Checking Pages for invalid or missing inputs...

Effluent Page has been validated.
Ambient Page has been validated.
Discharge Page has been validated.
Mixing Zone Page has been validated.

Finished checking Pages for invalid or missing inputs.

Loading Correct RuleBases

Validating RuleBases ...

AMBIENT DATA:

Ambient velocity = 0.5258 m/s.

Equivalent Darcy-Weisbach friction factor = 0.036

Ambient density = 999.1750 kg/m^3.

Ambient Rule Base has been validated.

DISCHARGE DATA:
CORMIX1: Single Port Discharges

Port cross-sectional area A0 = 0.322 m^2.

Discharge flowrate Q0 = 1.053 m^3/s.

Discharge velocity U0 = 3.273 m/s.
Note:
Discharge Velocity (U0) < 2.5 m/s may in some cases be recommended to avoid possible adverse conditions for sensitive fish populations.

This is a Slightly Submerged or Above Surface Discharge, where the height of the discharge port (H0 = 1.341 m) and the local ambient water depth (HD = 1.987 m).

The submergence of the port below the water surface is SUB0 = 0.65 m.

Discharge density RHO0 = 998.9926 kg/m^3.

The decay coefficient in units (/s) is 0.0000153 /s.

Discharge Rules for CORMIX1 have been validated

MIXING ZONE SPECIFICATION:

Mixing Zones Rule Base has been validated.

Finished validating RuleBases.

Calculating Parameters.

FLOW PARAMETERS AND LENGTH SCALES:

Relative density differences between discharge and ambient:

Ambient density at the discharge level RHOAH0 = 999.1750 kg/m^3.
Vertical mean ambient density RHOAM = 999.1750 kg/m^3.

The effluent density (998.9926 kg/m^3) is less than the surrounding ambient water density at the discharge level (999.1750 kg/m^3).

Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards the surface.

Flow bulk parameters:

Discharge volume flux Q0 = 1.05308 m^3/s.
Discharge momentum flux M0 = 3.44639 m^4/s^2.

Discharge buoyancy flux J0 = 0.001886 m^4/s^3.

Flow length scales:

Jet-to-crossflow length scale Lm = 3.53 m.

Plume-to-crossflow length scale Lb = 0.01 m.

Discharge length scale LQ = 0.5673 m.

Jet-to-plume transition length scale LM = 58.25 m.

Non-dimensional parameters:

Densimetric Froude number FR0 = 96.67
Jet/crossflow velocity ratio R = 6.22

Parameters for CORMIX1 have been calculated

Classifying Flows.

FLOW CLASSIFICATION:

CORMIX1 includes SIX MAJOR CLASSES of possible flow configurations:
Classes S, IS : Flows trapped in a layer within linear stratification.
Classes V, H : Near Bottom, Positively buoyant flows in a uniform density layer.
Classes IV, IH : Near Surface, Negatively buoyant flows in a uniform density layer.
Classes NV, NH : Near Bottom, Negatively buoyant flows in uniform density layer.
Classes IPV,IPH: Near Surface, Positively buoyant flows in uniform density layer.
Classes A, AI : Flows affected by dynamic bottom or surface attachment.

The NEAR FIELD FLOW will have the following features:

The discharge near-field behavior is dominated by either the positive buoyancy of the discharge or the upward vertical orientation of the discharge port leading to surface interaction.

The discharge flow will experience instabilities with full vertical mixing in the near-field. There may be surface contact with high pollutant concentrations.

The following conclusion on the NEAR-FIELD FLOW CONFIGURATION applies to a layer corresponding to the FULL WATER DEPTH at the discharge site:

*** FLOW CLASS = IPH5 ***

Applicable layer depth HS = 1.99 m.

*** Limiting Dilution S = (QA/Q0)+ 1.0 = 14.8 ***

Flow has been classified.

Executing the simulation... FORTRAN simulation complete.

Generating Session Report... Session Report complete.

```
CORMIX1 PREDICTION FILE:
1111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111
11111111111
                      CORMIX MIXING ZONE EXPERT SYSTEM
                   Subsystem CORMIX1: Single Port Discharges
                             CORMIX Version 10.0GT
                       HYDRO1 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
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-------------------------------------------------------------------------------
----------
CASE DESCRIPTION
 Site name/label:   Central CSOTF
 Design case:       Central Base Case E.coli NF
 FILE NAME:         J:\...eling\Scenario 3\Central Base Case E. coli NF.prd
 Time stamp:        08/25/2017--13:42:17

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     10.67  AS    =     27.56  QA    =     14.49  ICHREG= 2
 HA    =      2.58  HD    =      1.99
 UA    =     0.526  F     =     0.036 USTAR =0.3515E-01
 UW    =     2.000 UWSTAR=0.2198E-02
 Uniform density environment
 STRCND=  U         RHOAM =  999.1750

DISCHARGE PARAMETERS (metric units)
 BANK  =  RIGHT     DISTB =      0.00
 D0    =     0.640 A0    =     0.322 H0    =      1.34  SUB0  =      0.65
 THETA =      0.00  SIGMA =     90.00
 U0    =     3.273 Q0    =     1.053       =0.1053E+01
 RHO0  =  998.9926  DRHO0 =0.1825E+00  GP0   =0.1791E-02
 C0    =0.2948E+06  CUNITS=  bacteria-counts
 IPOLL =  2         KS    =0.0000E+00  KD    =0.1528E-04

FLUX VARIABLES (metric units)
 Q0    =0.1053E+01  M0    =0.3446E+01  J0    =0.1886E-02  SIGNJ0=      1.0
 Associated length scales (meters)
 LQ    =     0.57  LM    =     58.25  Lm    =      3.53  Lb    =      0.01
                                      Lmp   =  99999.00  Lbp   =  99999.00

NON-DIMENSIONAL PARAMETERS
 FR0   =     96.67  R     =      6.22

FLOW CLASSIFICATION
 11111111111111111111111111111111111111111111
 1  Flow class (CORMIX1)      =    IPH5   1
 1  Applicable layer depth HS =    1.99   1
 1  Limiting Dilution S =QA/Q0=    14.76  1
 11111111111111111111111111111111111111111111

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.2948E+06  CUNITS=  bacteria-counts
 NTOX  =  0
 NSTD  =  0
 REGMZ =  0
 XINT  =  30479.70  XMAX  =  30479.70

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the bottom and below the center of the port:
         0.00 m  from the RIGHT bank/shore.
    X-axis points downstream, Y-axis points to left, Z-axis points upward.
NSTEP = 100 display intervals per module
```

BEGIN MOD101: DISCHARGE MODULE

COANDA ATTACHMENT immediately following the discharge.

X	Y	Z	S	C	B	Uc	TT
0.00	0.00	1.99	1.0	0.295E+06	0.45	3.273	.00000E+00

END OF MOD101: DISCHARGE MODULE

BEGIN CORJET (MOD110): JET/PLUME NEAR-FIELD MIXING REGION

Surface-attached jet motion.
UNSTABLE NEAR-FIELD: Jet/plume will mix over full layer depth.
Following MOD133 will include recirculation into jet region.

Profile definitions:
B = Gaussian 1/e (37%) half-width, normal to trajectory
Half wall jet, attached to bottom.
S = hydrodynamic centerline dilution
C = centerline concentration (includes reaction effects, if any)
Uc = Local centerline excess velocity (above ambient)
TT = Cumulative travel time

X	Y	Z	S	C	B	Uc	TT
0.00	0.00	1.99	1.0	0.295E+06	0.32	3.273	.30573E-02
0.00	0.10	1.99	1.0	0.295E+06	0.33	3.273	.18662E-01
0.00	0.20	1.99	1.0	0.295E+06	0.34	3.273	.34799E-01
0.00	0.32	1.99	1.0	0.295E+06	0.36	3.273	.54873E-01
0.01	0.42	1.99	1.0	0.295E+06	0.37	3.273	.72196E-01
0.01	0.54	1.99	1.0	0.295E+06	0.38	3.273	.93705E-01
0.02	0.64	1.99	1.0	0.295E+06	0.39	3.273	.11224E+00
0.02	0.75	1.99	1.0	0.295E+06	0.41	3.273	.13521E+00
0.03	0.85	1.99	1.0	0.295E+06	0.42	3.273	.15497E+00
0.04	0.97	1.99	1.0	0.295E+06	0.43	3.273	.17944E+00
0.05	1.07	1.99	1.0	0.295E+06	0.44	3.273	.20046E+00
0.06	1.19	1.99	1.0	0.295E+06	0.46	3.273	.22646E+00
0.07	1.29	1.99	1.0	0.295E+06	0.47	3.273	.24877E+00
0.08	1.41	1.99	1.0	0.295E+06	0.48	3.273	.27634E+00
0.10	1.51	1.99	1.0	0.295E+06	0.50	3.273	.29997E+00
0.11	1.60	1.99	1.0	0.295E+06	0.51	3.273	.32423E+00
0.13	1.72	1.99	1.0	0.295E+06	0.52	3.273	.35415E+00
0.14	1.82	1.99	1.0	0.294E+06	0.54	3.273	.37979E+00
0.16	1.94	1.99	1.0	0.285E+06	0.55	3.273	.41139E+00
0.18	2.04	1.99	1.1	0.279E+06	0.56	3.273	.43845E+00
0.20	2.15	1.99	1.1	0.271E+06	0.58	3.273	.47180E+00
0.22	2.25	1.99	1.1	0.264E+06	0.59	3.273	.50033E+00
0.25	2.37	1.99	1.1	0.257E+06	0.61	3.236	.53547E+00
0.27	2.46	1.99	1.2	0.251E+06	0.62	3.153	.56552E+00
0.30	2.58	1.99	1.2	0.244E+06	0.64	3.056	.60251E+00
0.33	2.68	1.99	1.2	0.238E+06	0.65	2.978	.63414E+00
0.36	2.79	1.99	1.3	0.232E+06	0.67	2.887	.67306E+00
0.38	2.89	1.99	1.3	0.226E+06	0.68	2.813	.70632E+00
0.42	3.00	1.99	1.3	0.220E+06	0.70	2.727	.74724E+00
0.45	3.10	1.99	1.4	0.215E+06	0.71	2.657	.78219E+00
0.48	3.19	1.99	1.4	0.210E+06	0.73	2.589	.81793E+00
0.52	3.30	1.99	1.4	0.205E+06	0.75	2.509	.86188E+00

0.55	3.40	1.99	1.5	0.200E+06	0.76	2.445	.89941E+00
0.59	3.51	1.99	1.5	0.195E+06	0.78	2.369	.94554E+00
0.63	3.60	1.99	1.5	0.191E+06	0.80	2.308	.98492E+00
0.67	3.71	1.99	1.6	0.186E+06	0.81	2.237	.10333E+01
0.71	3.80	1.99	1.6	0.181E+06	0.83	2.179	.10746E+01
0.76	3.91	1.99	1.7	0.177E+06	0.85	2.111	.11254E+01
0.80	4.00	1.99	1.7	0.173E+06	0.86	2.056	.11687E+01
0.85	4.11	1.99	1.8	0.168E+06	0.88	1.992	.12218E+01
0.89	4.20	1.99	1.8	0.165E+06	0.90	1.939	.12672E+01
0.95	4.31	1.99	1.8	0.160E+06	0.92	1.878	.13229E+01
0.99	4.40	1.99	1.9	0.157E+06	0.94	1.829	.13703E+01
1.04	4.48	1.99	1.9	0.153E+06	0.95	1.781	.14188E+01
1.10	4.59	1.99	2.0	0.149E+06	0.97	1.724	.14783E+01
1.15	4.67	1.99	2.0	0.146E+06	0.99	1.679	.15289E+01
1.21	4.78	1.99	2.1	0.143E+06	1.01	1.626	.15911E+01
1.26	4.86	1.99	2.1	0.139E+06	1.03	1.583	.16441E+01
1.32	4.96	1.99	2.2	0.136E+06	1.05	1.532	.17090E+01
1.38	5.04	1.99	2.2	0.133E+06	1.07	1.492	.17643E+01
1.44	5.14	1.99	2.3	0.130E+06	1.09	1.444	.18321E+01
1.50	5.22	1.99	2.3	0.127E+06	1.11	1.406	.18898E+01
1.57	5.32	1.99	2.4	0.124E+06	1.13	1.361	.19604E+01
1.63	5.40	1.99	2.4	0.121E+06	1.15	1.325	.20205E+01
1.70	5.50	1.99	2.5	0.118E+06	1.17	1.283	.20941E+01
1.76	5.58	1.99	2.5	0.116E+06	1.19	1.250	.21567E+01
1.84	5.67	1.99	2.6	0.113E+06	1.21	1.210	.22333E+01
1.90	5.74	1.99	2.7	0.111E+06	1.23	1.179	.22983E+01
1.96	5.82	1.99	2.7	0.109E+06	1.25	1.148	.23645E+01
2.04	5.91	1.99	2.8	0.106E+06	1.27	1.112	.24454E+01
2.11	5.98	1.99	2.8	0.104E+06	1.29	1.083	.25141E+01
2.19	6.07	1.99	2.9	0.102E+06	1.31	1.050	.25980E+01
2.26	6.14	1.99	3.0	0.998E+05	1.32	1.023	.26692E+01
2.34	6.23	1.99	3.0	0.976E+05	1.35	0.992	.27561E+01
2.41	6.30	1.99	3.1	0.958E+05	1.36	0.967	.28297E+01
2.50	6.38	1.99	3.1	0.937E+05	1.39	0.938	.29197E+01
2.57	6.45	1.99	3.2	0.920E+05	1.40	0.915	.29958E+01
2.65	6.53	1.99	3.3	0.900E+05	1.43	0.888	.30887E+01
2.73	6.60	1.99	3.3	0.884E+05	1.44	0.866	.31673E+01
2.82	6.68	1.99	3.4	0.866E+05	1.46	0.841	.32631E+01
2.89	6.75	1.99	3.5	0.851E+05	1.48	0.821	.33441E+01
2.97	6.81	1.99	3.5	0.836E+05	1.50	0.802	.34262E+01
3.06	6.89	1.99	3.6	0.819E+05	1.52	0.779	.35262E+01
3.13	6.95	1.99	3.7	0.806E+05	1.54	0.761	.36107E+01
3.23	7.03	1.99	3.7	0.790E+05	1.56	0.740	.37135E+01
3.31	7.09	1.99	3.8	0.777E+05	1.57	0.723	.38003E+01
3.40	7.16	1.99	3.9	0.763E+05	1.59	0.704	.39059E+01
3.48	7.22	1.99	3.9	0.751E+05	1.61	0.688	.39949E+01
3.58	7.29	1.99	4.0	0.737E+05	1.63	0.670	.41032E+01
3.66	7.35	1.99	4.1	0.726E+05	1.65	0.656	.41944E+01
3.75	7.42	1.99	4.1	0.713E+05	1.67	0.639	.43053E+01
3.84	7.47	1.99	4.2	0.702E+05	1.68	0.626	.43987E+01
3.93	7.54	1.99	4.3	0.690E+05	1.70	0.610	.45121E+01
4.02	7.60	1.99	4.3	0.680E+05	1.72	0.597	.46076E+01
4.12	7.66	1.99	4.4	0.669E+05	1.74	0.583	.47235E+01
4.20	7.72	1.99	4.5	0.660E+05	1.75	0.571	.48211E+01
4.28	7.77	1.99	4.5	0.651E+05	1.77	0.560	.49195E+01
4.38	7.83	1.99	4.6	0.640E+05	1.79	0.547	.50388E+01
4.47	7.88	1.99	4.7	0.632E+05	1.80	0.537	.51392E+01
4.57	7.94	1.99	4.7	0.622E+05	1.82	0.524	.52608E+01
4.66	8.00	1.99	4.8	0.614E+05	1.83	0.515	.53631E+01
4.76	8.06	1.99	4.9	0.604E+05	1.85	0.503	.54869E+01
4.85	8.10	1.99	4.9	0.597E+05	1.87	0.494	.55910E+01
4.95	8.16	1.99	5.0	0.588E+05	1.88	0.484	.57169E+01
5.04	8.21	1.99	5.1	0.581E+05	1.90	0.475	.58227E+01

5.14	8.27	1.99	5.1	0.573E+05	1.91	0.465	.59507E+01
5.23	8.32	1.99	5.2	0.566E+05	1.93	0.457	.60582E+01
5.34	8.37	1.99	5.3	0.558E+05	1.95	0.448	.61882E+01
5.42	8.42	1.99	5.3	0.552E+05	1.96	0.441	.62973E+01
5.51	8.46	1.99	5.4	0.546E+05	1.97	0.434	.64072E+01
5.62	8.52	1.99	5.5	0.539E+05	1.99	0.426	.65275E+01

Cumulative travel time = 6.5275 sec (0.00 hrs)

END OF CORJET (MOD110): JET/PLUME NEAR-FIELD MIXING REGION

BEGIN MOD133: LAYER BOUNDARY IMPINGEMENT/FULL VERTICAL MIXING

Control volume inflow:

X	Y	Z	S	C	B	TT
5.62	8.52	1.99	5.5	0.539E+05	1.99	.65275E+01

Profile definitions:
- BV = layer depth (vertically mixed)
- BH = top-hat half-width, in horizontal plane normal to trajectory
- ZU = upper plume boundary (Z-coordinate)
- ZL = lower plume boundary (Z-coordinate)
- S = hydrodynamic average (bulk) dilution
- C = average (bulk) concentration (includes reaction effects, if any)
- TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
3.63	9.41	1.99	5.5	0.539E+05	0.00	0.00	1.99	1.99	.65275E+01
4.01	9.41	1.99	5.5	0.539E+05	1.99	0.37	1.99	0.00	.65275E+01
4.38	9.41	1.99	5.5	0.539E+05	1.99	0.52	1.99	0.00	.65275E+01
4.76	9.41	1.99	5.5	0.539E+05	1.99	0.64	1.99	0.00	.65275E+01
5.14	9.41	1.99	5.5	0.539E+05	1.99	0.74	1.99	0.00	.65275E+01
5.51	9.41	1.99	5.5	0.539E+05	1.99	0.82	1.99	0.00	.65275E+01
5.89	9.41	1.99	5.7	0.521E+05	1.99	0.90	1.99	0.00	.71796E+01
6.26	9.41	1.99	6.4	0.463E+05	1.99	0.98	1.99	0.00	.80870E+01
6.64	9.41	1.99	7.1	0.417E+05	1.99	1.04	1.99	0.00	.89944E+01
7.02	9.41	1.99	7.5	0.394E+05	1.99	1.11	1.99	0.00	.99018E+01
7.39	9.41	1.99	7.7	0.385E+05	1.99	1.17	1.99	0.00	.10809E+02

Cumulative travel time = 10.8093 sec (0.00 hrs)

END OF MOD133: LAYER BOUNDARY IMPINGEMENT/FULL VERTICAL MIXING

BEGIN MOD154: VERTICALLY MIXED PLUME IN WEAK CROSS-FLOW

Phase 1: Vertically mixed, Phase 2: Re-stratified

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 Phase 1: The plume is VERTICALLY FULLY MIXED over the entire layer depth.
 This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

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 Phase 2: The flow has RESTRATIFIED at the beginning of this zone.

 This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

END OF MOD154: VERTICALLY MIXED PLUME IN WEAK CROSS-FLOW
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** End of NEAR-FIELD REGION (NFR) **

 Bank nearest to plume centerline has changed.
   Nearest bank is now on LEFT.

 The initial plume WIDTH values in the next far-field module will be
  CORRECTED by a factor  3.09 to conserve the mass flux in the far-field!
 The correction factor is quite large because of the small ambient velocity
   relative to the strong mixing characteristics of the discharge!
   This indicates localized RECIRCULATION REGIONS and INTERNAL HYDRAULIC JUMPS.
   Width predictions show discontinuities. Dilution values should be acceptable.

 In this design case, the discharge is located CLOSE TO BANK/SHORE.
 Some lateral boundary interaction occurs at end of the near-field.
   This may be related to a design case with a very LOW AMBIENT VELOCITY.
   The dilution values in one or more of the preceding zones may be too high.
 Carefully evaluate results in near-field and check degree of interaction.

 Consider locating outfall further away from bank or shore.
 In the next prediction module, the plume centerline will be set
   to follow the bank/shore.
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BEGIN MOD141: BUOYANT AMBIENT SPREADING

 Plume is ATTACHED to LEFT  bank/shore.
   Plume width is now determined from LEFT  bank/shore.

 Discharge is non-buoyant or weakly buoyant.
 Therefore BUOYANT SPREADING REGIME is ABSENT.

END OF MOD141: BUOYANT AMBIENT SPREADING
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 Due to the attachment or proximity of the plume to the bottom, the bottom
   coordinate for the FAR-FIELD differs from the ambient depth, ZFB = 0 m.
 In a subsequent analysis set "depth at discharge" equal to "ambient depth".
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BEGIN MOD161: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.140E-01 m^2/s
  Horizontal diffusivity (initial value) = 0.349E-01 m^2/s

 The passive diffusion plume is VERTICALLY FULLY MIXED at beginning of region.

 Profile definitions:
   BV = Gaussian s.d.*sqrt(pi/2) (46%) thickness, measured vertically
      = or equal to layer depth, if fully mixed
   BH = Gaussian s.d.*sqrt(pi/2) (46%) half-width,
        measured horizontally in Y-direction
```

ZU = upper plume boundary (Z-coordinate)
ZL = lower plume boundary (Z-coordinate)
S = hydrodynamic centerline dilution
C = centerline concentration (includes reaction effects, if any)
TT = Cumulative travel time

Plume Stage 2 (bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
7.39	10.67	1.99	7.7	0.385E+05	2.58	5.53	1.99	0.00	.10809E+02
312.12	10.67	1.99	13.1	0.223E+05	1.99	9.48	1.99	0.00	.55106E+03

The passive diffusion plume becomes LATERALLY FULLY MIXED over the channel width during the current prediction interval.
The x-coordinate of bank attachment is 434.90 m.

616.84	10.67	1.99	16.9	0.172E+05	1.99	10.67	1.99	0.00	.10913E+04

Effluent is FULLY MIXED over the entire channel cross-section.
Except for possible far-field decay or reaction processes, there are NO FURTHER CHANGES with downstream direction.

921.56	10.67	1.99	14.8	0.195E+05	1.99	10.67	1.99	0.00	.16315E+04
1226.29	10.67	1.99	14.8	0.193E+05	1.99	10.67	1.99	0.00	.21718E+04
1531.01	10.67	1.99	14.8	0.192E+05	1.99	10.67	1.99	0.00	.27120E+04
1835.73	10.67	1.99	14.8	0.190E+05	1.99	10.67	1.99	0.00	.32523E+04
2140.45	10.67	1.99	14.8	0.188E+05	1.99	10.67	1.99	0.00	.37925E+04
2445.18	10.67	1.99	14.8	0.187E+05	1.99	10.67	1.99	0.00	.43328E+04
2749.90	10.67	1.99	14.8	0.185E+05	1.99	10.67	1.99	0.00	.48730E+04
3054.62	10.67	1.99	14.8	0.184E+05	1.99	10.67	1.99	0.00	.54133E+04
3359.35	10.67	1.99	14.8	0.182E+05	1.99	10.67	1.99	0.00	.59535E+04
3664.07	10.67	1.99	14.8	0.181E+05	1.99	10.67	1.99	0.00	.64938E+04
3968.79	10.67	1.99	14.8	0.179E+05	1.99	10.67	1.99	0.00	.70340E+04
4273.52	10.67	1.99	14.8	0.178E+05	1.99	10.67	1.99	0.00	.75743E+04
4578.24	10.67	1.99	14.8	0.176E+05	1.99	10.67	1.99	0.00	.81145E+04
4882.96	10.67	1.99	14.8	0.175E+05	1.99	10.67	1.99	0.00	.86547E+04
5187.69	10.67	1.99	14.8	0.174E+05	1.99	10.67	1.99	0.00	.91950E+04
5492.41	10.67	1.99	14.8	0.172E+05	1.99	10.67	1.99	0.00	.97352E+04
5797.13	10.67	1.99	14.8	0.171E+05	1.99	10.67	1.99	0.00	.10275E+05
6101.86	10.67	1.99	14.8	0.169E+05	1.99	10.67	1.99	0.00	.10816E+05
6406.58	10.67	1.99	14.8	0.168E+05	1.99	10.67	1.99	0.00	.11356E+05
6711.30	10.67	1.99	14.8	0.167E+05	1.99	10.67	1.99	0.00	.11896E+05
7016.02	10.67	1.99	14.8	0.165E+05	1.99	10.67	1.99	0.00	.12436E+05

7320.75	10.67	1.99	14.8	0.164E+05	1.99	10.67	1.99	0.00
.12977E+05								
7625.47	10.67	1.99	14.8	0.162E+05	1.99	10.67	1.99	0.00
.13517E+05								
7930.19	10.67	1.99	14.8	0.161E+05	1.99	10.67	1.99	0.00
.14057E+05								
8234.92	10.67	1.99	14.8	0.160E+05	1.99	10.67	1.99	0.00
.14597E+05								
8539.64	10.67	1.99	14.8	0.158E+05	1.99	10.67	1.99	0.00
.15138E+05								
8844.36	10.67	1.99	14.8	0.157E+05	1.99	10.67	1.99	0.00
.15678E+05								
9149.08	10.67	1.99	14.8	0.156E+05	1.99	10.67	1.99	0.00
.16218E+05								
9453.81	10.67	1.99	14.8	0.155E+05	1.99	10.67	1.99	0.00
.16758E+05								
9758.53	10.67	1.99	14.8	0.153E+05	1.99	10.67	1.99	0.00
.17299E+05								
10063.25	10.67	1.99	14.8	0.152E+05	1.99	10.67	1.99	0.00
.17839E+05								
10367.98	10.67	1.99	14.8	0.151E+05	1.99	10.67	1.99	0.00
.18379E+05								
10672.70	10.67	1.99	14.8	0.150E+05	1.99	10.67	1.99	0.00
.18919E+05								
10977.42	10.67	1.99	14.8	0.148E+05	1.99	10.67	1.99	0.00
.19460E+05								
11282.14	10.67	1.99	14.8	0.147E+05	1.99	10.67	1.99	0.00
.20000E+05								
11586.87	10.67	1.99	14.8	0.146E+05	1.99	10.67	1.99	0.00
.20540E+05								
11891.59	10.67	1.99	14.8	0.145E+05	1.99	10.67	1.99	0.00
.21080E+05								
12196.31	10.67	1.99	14.8	0.144E+05	1.99	10.67	1.99	0.00
.21621E+05								
12501.03	10.67	1.99	14.8	0.142E+05	1.99	10.67	1.99	0.00
.22161E+05								
12805.76	10.67	1.99	14.8	0.141E+05	1.99	10.67	1.99	0.00
.22701E+05								
13110.48	10.67	1.99	14.8	0.140E+05	1.99	10.67	1.99	0.00
.23241E+05								
13415.20	10.67	1.99	14.8	0.139E+05	1.99	10.67	1.99	0.00
.23782E+05								
13719.92	10.67	1.99	14.8	0.138E+05	1.99	10.67	1.99	0.00
.24322E+05								
14024.65	10.67	1.99	14.8	0.137E+05	1.99	10.67	1.99	0.00
.24862E+05								
14329.37	10.67	1.99	14.8	0.135E+05	1.99	10.67	1.99	0.00
.25402E+05								
14634.09	10.67	1.99	14.8	0.134E+05	1.99	10.67	1.99	0.00
.25943E+05								
14938.82	10.67	1.99	14.8	0.133E+05	1.99	10.67	1.99	0.00
.26483E+05								
15243.54	10.67	1.99	14.8	0.132E+05	1.99	10.67	1.99	0.00
.27023E+05								
15548.26	10.67	1.99	14.8	0.131E+05	1.99	10.67	1.99	0.00
.27563E+05								
15852.98	10.67	1.99	14.8	0.130E+05	1.99	10.67	1.99	0.00
.28104E+05								
16157.71	10.67	1.99	14.8	0.129E+05	1.99	10.67	1.99	0.00
.28644E+05								
16462.43	10.67	1.99	14.8	0.128E+05	1.99	10.67	1.99	0.00
.29184E+05								
16767.15	10.67	1.99	14.8	0.127E+05	1.99	10.67	1.99	0.00

.29724E+05								
17071.88	10.67	1.99	14.8	0.126E+05	1.99	10.67	1.99	0.00
.30265E+05								
17376.60	10.67	1.99	14.8	0.125E+05	1.99	10.67	1.99	0.00
.30805E+05								
17681.32	10.67	1.99	14.8	0.124E+05	1.99	10.67	1.99	0.00
.31345E+05								
17986.04	10.67	1.99	14.8	0.123E+05	1.99	10.67	1.99	0.00
.31885E+05								
18290.77	10.67	1.99	14.8	0.122E+05	1.99	10.67	1.99	0.00
.32426E+05								
18595.49	10.67	1.99	14.8	0.121E+05	1.99	10.67	1.99	0.00
.32966E+05								
18900.21	10.67	1.99	14.8	0.120E+05	1.99	10.67	1.99	0.00
.33506E+05								
19204.93	10.67	1.99	14.8	0.119E+05	1.99	10.67	1.99	0.00
.34046E+05								
19509.66	10.67	1.99	14.8	0.118E+05	1.99	10.67	1.99	0.00
.34587E+05								
19814.38	10.67	1.99	14.8	0.117E+05	1.99	10.67	1.99	0.00
.35127E+05								
20119.10	10.67	1.99	14.8	0.116E+05	1.99	10.67	1.99	0.00
.35667E+05								
20423.82	10.67	1.99	14.8	0.115E+05	1.99	10.67	1.99	0.00
.36207E+05								
20728.55	10.67	1.99	14.8	0.114E+05	1.99	10.67	1.99	0.00
.36748E+05								
21033.27	10.67	1.99	14.8	0.113E+05	1.99	10.67	1.99	0.00
.37288E+05								
21337.99	10.67	1.99	14.8	0.112E+05	1.99	10.67	1.99	0.00
.37828E+05								
21642.71	10.67	1.99	14.8	0.111E+05	1.99	10.67	1.99	0.00
.38368E+05								
21947.44	10.67	1.99	14.8	0.110E+05	1.99	10.67	1.99	0.00
.38908E+05								
22252.16	10.67	1.99	14.8	0.109E+05	1.99	10.67	1.99	0.00
.39449E+05								
22556.88	10.67	1.99	14.8	0.108E+05	1.99	10.67	1.99	0.00
.39989E+05								
22861.61	10.67	1.99	14.8	0.108E+05	1.99	10.67	1.99	0.00
.40529E+05								
23166.33	10.67	1.99	14.8	0.107E+05	1.99	10.67	1.99	0.00
.41069E+05								
23471.05	10.67	1.99	14.8	0.106E+05	1.99	10.67	1.99	0.00
.41610E+05								
23775.77	10.67	1.99	14.8	0.105E+05	1.99	10.67	1.99	0.00
.42150E+05								
24080.50	10.67	1.99	14.8	0.104E+05	1.99	10.67	1.99	0.00
.42690E+05								
24385.22	10.67	1.99	14.8	0.103E+05	1.99	10.67	1.99	0.00
.43230E+05								
24689.94	10.67	1.99	14.8	0.102E+05	1.99	10.67	1.99	0.00
.43771E+05								
24994.66	10.67	1.99	14.8	0.101E+05	1.99	10.67	1.99	0.00
.44311E+05								
25299.39	10.67	1.99	14.8	0.101E+05	1.99	10.67	1.99	0.00
.44851E+05								
25604.11	10.67	1.99	14.8	0.998E+04	1.99	10.67	1.99	0.00
.45391E+05								
25908.83	10.67	1.99	14.8	0.990E+04	1.99	10.67	1.99	0.00
.45932E+05								
26213.55	10.67	1.99	14.8	0.982E+04	1.99	10.67	1.99	0.00
.46472E+05								

```
  26518.28    10.67    1.99    14.8 0.974E+04   1.99    10.67    1.99    0.00
.47012E+05
  26823.00    10.67    1.99    14.8 0.966E+04   1.99    10.67    1.99    0.00
.47552E+05
  27127.72    10.67    1.99    14.8 0.958E+04   1.99    10.67    1.99    0.00
.48093E+05
  27432.45    10.67    1.99    14.8 0.950E+04   1.99    10.67    1.99    0.00
.48633E+05
  27737.17    10.67    1.99    14.8 0.942E+04   1.99    10.67    1.99    0.00
.49173E+05
  28041.89    10.67    1.99    14.8 0.934E+04   1.99    10.67    1.99    0.00
.49713E+05
  28346.61    10.67    1.99    14.8 0.927E+04   1.99    10.67    1.99    0.00
.50254E+05
  28651.34    10.67    1.99    14.8 0.919E+04   1.99    10.67    1.99    0.00
.50794E+05
  28956.06    10.67    1.99    14.8 0.912E+04   1.99    10.67    1.99    0.00
.51334E+05
  29260.78    10.67    1.99    14.8 0.904E+04   1.99    10.67    1.99    0.00
.51874E+05
  29565.50    10.67    1.99    14.8 0.897E+04   1.99    10.67    1.99    0.00
.52415E+05
  29870.23    10.67    1.99    14.8 0.889E+04   1.99    10.67    1.99    0.00
.52955E+05
  30174.95    10.67    1.99    14.8 0.882E+04   1.99    10.67    1.99    0.00
.53495E+05
  30479.67    10.67    1.99    14.8 0.875E+04   1.99    10.67    1.99    0.00
.54035E+05
 Cumulative travel time =       54035.4102 sec  (   15.01 hrs)

 Simulation limit based on maximum specified distance =  30479.70 m.
   This is the REGION OF INTEREST limitation.

END OF MOD161: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT
------------------------------------------------------------------------------
----------
------------------------------------------------------------------------------
----------
CORMIX1: Single Port Discharges              End of Prediction File
1111111111111111111111111111111111111111111111111111111111111111111111111111
11111111111
```

********** FLOW CLASS DESCRIPTION **********

The following description of flow class IPH5 applies to the FULL WATER DEPTH at the discharge site.

FLOW_CLASS_IPH5

A sligthly submerged positively buoyant effluent issues horizontally or near-horizontally from the discharge port. The discharge is cross-flowing or counterflowing with respect to the ambient current.

The discharge configuration is hydrodynamically "unstable", that is the discharge strength (measured by its momentum flux) dominates the flow in relation to the limited layer depth. The effect of buoyancy is negligible and the initial discharge is usually attached to the surface.

This may be a complicated and perhaps undesirable discharge configuration. The laterally discharging jet the tends toward full vertical mixing and will block the ambient flow. This will cause a recirculating eddy region downstream of the discharge.

1) Momentum-dominated near-field jet (surface-attached): The flow is dominated by the effluent momentum (jet-like). The jet attaches to the surface and is weakly advected by the ambient flow.

2) Strongly deflected wall jet: After some distance, the surface jet is strongly deflected and advected by the ambient flow. (This flow region may be absent for very shallow water depths.)

3) Layer boundary contact / full vertical mixing: After some distance the jet has grown vertically over the full layer depth. From now on the flow is vertically mixed, but may re-stratify later on.

4) Vertically mixed plume in cross-flow: The discharge induced momentum flux is still controlling the flow. However, lateral entrainment and diffusion lead to a spreading of the plume and additional mixing. Initially, the plume is cross-flowing, but it becomes progressively deflected into the direction of the ambient flow. At the beginning, the plume is vertically mixed over the full layer depth. At some distance, re-stratification may take place depending on the strength and direction of the plume buoyancy.

*** The zones listed above constitute the NEAR-FIELD REGION in which strong initial mixing takes place. ***

5) Buoyant spreading at layer boundary: The plume spreads laterally along the layer boundary (bottom or pycnocline) while it is being advected by the ambient current. The plume thickness may decrease during this phase. The mixing rate is relatively small. The plume may interact with a nearby bank or shoreline.

6) Passive ambient mixing: The vertically fully mixed plume is further advected by the ambient flow and spreads laterally through turbulent diffusion. The plume may interact laterally with any nearby bank or shoreline.

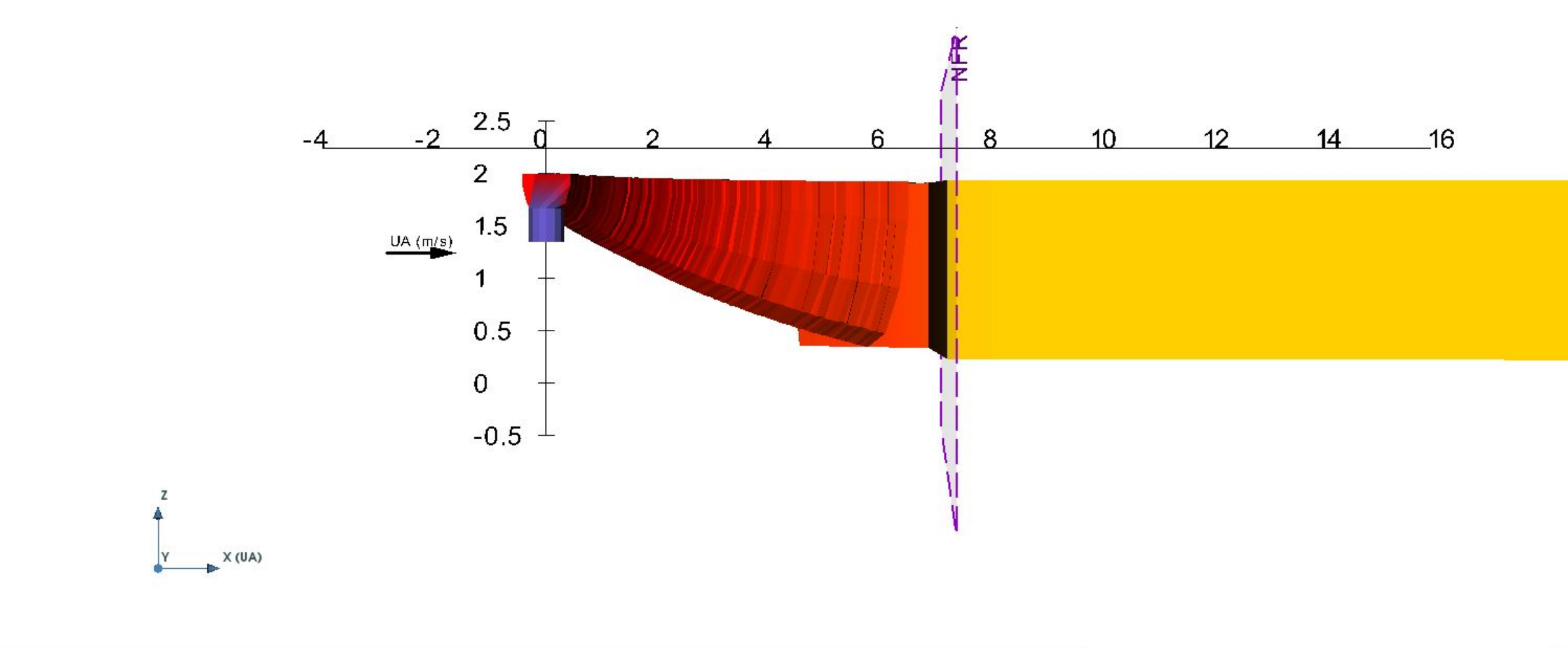
*** Predictions will be terminated in zones 5 or 6 depending on the definitions of the REGULATORY MIXING ZONE or the REGION OF INTEREST. ***

SPECIAL CASE: If the ambient is stagnant, so that advection and

diffusion by the ambient flow (zones 5 and 6) cannot be considered. The mixing is limited to the discharge-induced mixing zones (zones 1 and 2) and the predictions will be terminated at this stage. Such predictions will present a conservative lower bound on the mixing capacity as they neglect any further mixing beyond the stage where the jet has grown to the full layer depth. Such stagnant water predictions may be a useful initial mixing indicator for a given site and discharge design.

For practical final predictions, however, the advection and diffusion of the ambient flow - no matter how small in magnitude - should be considered.

END OF FLOW CLASS DESCRIPTION **********



Discharge Excess (bacteria-counts)

1.0 8.2 66.9 547.7 4481.4 36666.4 300000.0

Central Base Case E. coli NF

Flow Class: IPH5 Origin: Ambient Bottom

CORMIX1 Simulation Length units in meters

Distortion Scale: Y:X = 1 Z:X = 1.9

Visualization up to X = 617 m (out of ROI X = 30480 m)

Plume Centerline

End of Near Field Region (NFR)

Cormix Module Boundary (MOD)

Warnings:

> Coanda Attachment immediately following the discharge

> Close to Bank/Shore. Boundary interaction at end of near field

> Low ambient velocity

```
CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 10.0GT
                       HYDRO1:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Central CSOTF
  DESIGN CASE:                  Central Base Case E.coli FF
  FILE NAME:                    J:\C6A02300\Task 6-Consent Decree Planning\Task 6B -
General Planning and Studies\LTCP\PCCMP\Sampling and Monitoring\Cormix\Modeling\Aug
2017 Modeling\Scenario 4\Central Base Case E. coli FF.prd
  Using subsystem CORMIX1:     Single Port Discharges
  Start of session:             08/25/2017--14:18:07
******************************************************************************
SUMMARY OF INPUT DATA:
------------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                          BS      = 9.30 m
  Channel regularity             ICHREG  = 2
  Ambient flowrate               QA      = 14.49 m^3/s
  Average depth                  HA      = 2.94 m
  Depth at discharge             HD      = 3.82 m
  Ambient velocity               UA      = 0.5300 m/s
  Darcy-Weisbach friction factor F       = 0.0342
    Calculated from Manning's n          = 0.025
  Wind velocity                  UW      = 2 m/s
  Stratification Type            STRCND  = U
  Surface temperature                    = 14.5 degC
  Bottom temperature                     = 14.5 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density                RHOAS   = 999.1750 kg/m^3
  Bottom density                 RHOAB   = 999.1750 kg/m^3
------------------------------------------------------------------------------
DISCHARGE PARAMETERS:            Single Port Discharge
  Nearest bank                           = right
  Distance to bank               DISTB   = 0 m
  Port diameter                  D0      = 1.2710 m
  Port cross-sectional area      A0      = 1.2688 m^2
  Discharge velocity             U0      = 0.83 m/s
  Discharge flowrate             Q0      = 1.053081 m^3/s
  Discharge port height          H0      = 1.07 m
  Vertical discharge angle       THETA   = 0 deg
  Horizontal discharge angle     SIGMA   = 90 deg
  Discharge temperature (freshwater)     = 15.70 degC
  Corresponding density          RHO0    = 998.9926 kg/m^3
  Density difference             DRHO    = 0.1824 kg/m^3
  Buoyant acceleration           GP0     = 0.0018 m/s^2
  Discharge concentration        C0      = 294800 bacteria-counts
  Surface heat exchange coeff.   KS      = 0 m/s
  Coefficient of decay           KD      = 0.000015 /s
------------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 1.13 m         Lm  = 1.76 m         Lb  = 0.01 m
  LM  = 20.82 m         Lm' = 99999 m         Lb' = 99999 m
------------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Port densimetric Froude number FR0     = 17.40
  Velocity ratio                 R       = 1.57
------------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = no
  Regulatory mixing zone                 = no
```

```
  Region of interest                    = 30479.70 m downstream
********************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *------------------------*
  | FLOW CLASS   = H5-90 |
  *------------------------*
  This flow configuration applies to a layer corresponding to the full water
  depth at the discharge site.
  Applicable layer depth = water depth = 3.82 m

  Limiting Dilution S = (QA/Q0)+ 1.0 = 14.8

********************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

--------------------------------------------------------------------------------
X-Y-Z Coordinate system:
  Origin is located at the BOTTOM below the port/diffuser center:
    0 m from the right bank/shore.
  Number of display steps NSTEP = 100 per module.
--------------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 12631.930700 bacteria-counts
  Dilution at edge of NFR              s = 23.2
  NFR Location:                        x = 234.17 m
    (centerline coordinates)           y = 12.33 m
                                       z = 3.82 m
  NFR plume dimensions:  half-width (bh) = 1.97 m
                           thickness (bv) = 3.82 m
Cumulative travel time:       440.1029 sec.

WARNING:
 The LIMITING DILUTION (given by ambient flow/discharge ratio) is = 14.76
 This value is below the computed dilution of 23.18 at the end of the
 Near Field Region (NFR). Mixing for this discharge configuration is
 constrained by the ambient flow.
 Please carefully review the prediction file for additional warnings and
information.
--------------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is less than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards
  the surface.
--------------------------------------------------------------------------------
Near-field instability behavior:
  The discharge flow will experience instabilities with full vertical mixing
  in the near-field.
  There may be benthic impact of high pollutant concentrations.
--------------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed ALREADY IN NEAR-FIELD at 0 m
  downstream and continues as vertically mixed into the far-field.
--------------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section does not contact bank.
************************ TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
*********************** REGULATORY MIXING ZONE SUMMARY ***********************
```

No RMZ and no ambient water quality standard have been specified.
********** FINAL DESIGN ADVICE AND COMMENTS **********
REMINDER: The user must take note that HYDRODYNAMIC MODELING by any known technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the CORMIX predictions on dilutions and concentrations (with associated plume geometries) are reliable for the majority of cases and are accurate to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges the design configuration as highly complex and uncertain for prediction.

Date: 08/25/17
Time: 14:18:06

Design Case: Central Base Case E.coli FF
Site Name: Central CSOTF
Prepared By: Gabrielle Sobel

Project Notes:

1/20/17 event
central discharging only
far-field focus

VALIDATING INPUT DATA ...

Checking Pages for invalid or missing inputs...

Effluent Page has been validated.
Ambient Page has been validated.
Discharge Page has been validated.
Mixing Zone Page has been validated.

Finished checking Pages for invalid or missing inputs.

Loading Correct RuleBases

Validating RuleBases ...

AMBIENT DATA:

Ambient velocity = 0.5300 m/s.

Equivalent Darcy-Weisbach friction factor = 0.034

Ambient density = 999.1750 kg/m^3.

Ambient Rule Base has been validated.

DISCHARGE DATA:
CORMIX1: Single Port Discharges

Port cross-sectional area A0 = 1.269 m^2.

Discharge velocity U0= 0.830 m/s.

This is a Deeply Submerged Discharge, where the height of the discharge port (H0 = 1.067 m), above the bottom, does NOT Exceed one-third of the local ambient water depth (HD = 3.822 m)
Note: For special advice on this limitation please consult Section 7.4 of the CORMIX1 technical report (Doneker and Jirka, 1990).

The submergence of the port below the water surface is SUB0 = 2.76 m.

Discharge density RHO0 = 998.9926 kg/m^3.

The decay coefficient in units (/s) is 0.0000153 /s.

Discharge Rules for CORMIX1 have been validated

MIXING ZONE SPECIFICATION:

Mixing Zones Rule Base has been validated.

Finished validating RuleBases.

Calculating Parameters.

FLOW PARAMETERS AND LENGTH SCALES:

Relative density differences between discharge and ambient:

Ambient density at the discharge level RHOAH0 = 999.1750 kg/m^3.
Vertical mean ambient density RHOAM = 999.1750 kg/m^3.

The effluent density (998.9926 kg/m^3) is less than the surrounding ambient water density at the discharge level (999.1750 kg/m^3).

Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards the surface.

Flow bulk parameters:

Discharge volume flux Q0 = 1.05308 m^3/s.
Discharge momentum flux M0 = 0.87404 m^4/s^2.

Discharge buoyancy flux J0 = 0.001886 m^4/s^3.

Flow length scales:

Jet-to-crossflow length scale Lm = 1.76 m.

Plume-to-crossflow length scale Lb = 0.01 m.

Discharge length scale LQ = 1.1264 m.

Jet-to-plume transition length scale LM = 20.82 m.

Non-dimensional parameters:

Densimetric Froude number FR0 = 17.40
Jet/crossflow velocity ratio R = 1.57

Parameters for CORMIX1 have been calculated

Classifying Flows.

FLOW CLASSIFICATION:

CORMIX1 includes SIX MAJOR CLASSES of possible flow configurations:
Classes S, IS : Flows trapped in a layer within linear stratification.
Classes V, H : Near Bottom, Positively buoyant flows in a uniform density layer.
Classes IV, IH : Near Surface, Negatively buoyant flows in a uniform density layer.
Classes NV, NH : Near Bottom, Negatively buoyant flows in uniform density layer.
Classes IPV,IPH: Near Surface, Positively buoyant flows in uniform density layer.
Classes A, AI : Flows affected by dynamic bottom or surface attachment.

The NEAR FIELD FLOW will have the following features:

The discharge near-field behavior is dominated by either the positive buoyancy of the discharge or the upward vertical orientation of the discharge port.
There is the possibility of dynamic bottom attachment.

The discharge flow will experience instabilities with full vertical mixing in the near-field. There may be benthic impact of high pollutant concentrations.

The following conclusion on the NEAR-FIELD FLOW CONFIGURATION applies to a layer

corresponding to the FULL WATER DEPTH at the discharge site:

*** FLOW CLASS = H5-90 ***

Applicable layer depth HS = 3.82 m.

*** Limiting Dilution S = (QA/Q0)+ 1.0 = 14.8 ***

Flow has been classified.

Executing the simulation... FORTRAN simulation complete.

Generating Session Report... Session Report complete.

```
CORMIX1 PREDICTION FILE:
11111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111
11111111111
                      CORMIX MIXING ZONE EXPERT SYSTEM
                   Subsystem CORMIX1: Single Port Discharges
                             CORMIX Version 10.0GT
                       HYDRO1 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
----------
-------------------------------------------------------------------------------
----------
CASE DESCRIPTION
 Site name/label:   Central CSOTF
 Design case:       Central Base Case E.coli FF
 FILE NAME:         J:\...eling\Scenario 4\Central Base Case E. coli FF.prd
 Time stamp:        08/25/2017--14:18:07

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =      9.30  AS    =     27.34  QA    =     14.49  ICHREG= 2
 HA    =      2.94  HD    =      3.82
 UA    =     0.530  F     =     0.034 USTAR =0.3467E-01
 UW    =     2.000 UWSTAR=0.2198E-02
 Uniform density environment
 STRCND=  U         RHOAM =  999.1750

DISCHARGE PARAMETERS (metric units)
 BANK  =  RIGHT     DISTB =      0.00
 D0    =     1.271 A0    =     1.269 H0    =      1.07  SUB0  =      2.76
 THETA =      0.00  SIGMA =     90.00
 U0    =     0.830 Q0    =     1.053       =0.1053E+01
 RHO0  =  998.9926  DRHO0 =0.1825E+00  GP0   =0.1791E-02
 C0    =0.2948E+06  CUNITS=  bacteria-counts
 IPOLL =  2         KS    =0.0000E+00  KD    =0.1528E-04

FLUX VARIABLES (metric units)
 Q0    =0.1053E+01  M0    =0.8740E+00  J0    =0.1886E-02  SIGNJ0=      1.0
 Associated length scales (meters)
 LQ    =     1.13  LM    =     20.82  Lm    =      1.76  Lb    =      0.01
                                      Lmp   =  99999.00  Lbp   =  99999.00

NON-DIMENSIONAL PARAMETERS
 FR0   =     17.40  R     =      1.57

FLOW CLASSIFICATION
 1111111111111111111111111111111111111111111
 1  Flow class (CORMIX1)      =    H5-90  1
 1  Applicable layer depth HS =    3.82   1
 1  Limiting Dilution S =QA/Q0=    14.76  1
 1111111111111111111111111111111111111111111

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.2948E+06  CUNITS=  bacteria-counts
 NTOX  =  0
 NSTD  =  0
 REGMZ =  0
 XINT  =  30479.70  XMAX  =  30479.70

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the bottom and below the center of the port:
         0.00 m  from the RIGHT bank/shore.
    X-axis points downstream, Y-axis points to left, Z-axis points upward.
NSTEP = 100 display intervals per module
```

BEGIN MOD101: DISCHARGE MODULE

COANDA ATTACHMENT immediately following the discharge.

X	Y	Z	S	C	B	Uc	TT
0.00	0.00	0.00	1.0	0.295E+06	0.90	0.830	.00000E+00

END OF MOD101: DISCHARGE MODULE

BEGIN CORJET (MOD110): JET/PLUME NEAR-FIELD MIXING REGION

Bottom-attached jet motion.
UNSTABLE NEAR-FIELD: Jet/plume will mix over full layer depth.
Following MOD133 will include recirculation into jet region.

Profile definitions:
B = Gaussian 1/e (37%) half-width, normal to trajectory
Half wall jet, attached to bottom.
S = hydrodynamic centerline dilution
C = centerline concentration (includes reaction effects, if any)
Uc = Local centerline excess velocity (above ambient)
TT = Cumulative travel time

X	Y	Z	S	C	B	Uc	TT
0.00	0.00	0.00	1.0	0.295E+06	0.64	0.830	.23266E-01
0.89	2.04	0.00	1.3	0.235E+06	1.05	0.336	.21979E+01
2.91	3.19	0.00	2.1	0.143E+06	1.36	0.060	.60361E+01
5.13	3.89	0.00	2.6	0.111E+06	1.54	0.013	.10379E+02
7.40	4.40	0.00	3.1	0.946E+05	1.67	-0.001	.14845E+02
9.70	4.81	0.00	3.5	0.837E+05	1.77	-0.007	.19276E+02
11.97	5.15	0.00	3.9	0.760E+05	1.86	-0.010	.23581E+02
14.28	5.45	0.00	4.2	0.700E+05	1.94	-0.011	.27930E+02
16.59	5.72	0.00	4.5	0.652E+05	2.01	-0.012	.32262E+02
18.91	5.96	0.00	4.8	0.612E+05	2.07	-0.012	.36585E+02
21.23	6.18	0.00	5.1	0.579E+05	2.13	-0.012	.40903E+02
23.56	6.38	0.00	5.3	0.551E+05	2.18	-0.012	.45217E+02
25.84	6.56	0.00	5.6	0.527E+05	2.23	-0.012	.49458E+02
28.17	6.73	0.00	5.8	0.505E+05	2.28	-0.012	.53769E+02
30.49	6.90	0.00	6.1	0.486E+05	2.32	-0.012	.58081E+02
32.82	7.05	0.00	6.3	0.469E+05	2.36	-0.012	.62392E+02
35.15	7.20	0.00	6.5	0.454E+05	2.40	-0.012	.66703E+02
37.48	7.34	0.00	6.7	0.440E+05	2.44	-0.012	.71016E+02
39.76	7.47	0.00	6.9	0.427E+05	2.47	-0.011	.75258E+02
42.09	7.59	0.00	7.1	0.415E+05	2.51	-0.011	.79572E+02
44.42	7.72	0.00	7.3	0.405E+05	2.54	-0.011	.83886E+02
46.75	7.83	0.00	7.5	0.394E+05	2.57	-0.011	.88202E+02
49.08	7.95	0.00	7.6	0.385E+05	2.60	-0.011	.92519E+02
51.41	8.05	0.00	7.8	0.376E+05	2.63	-0.010	.96836E+02
53.70	8.16	0.00	8.0	0.368E+05	2.66	-0.010	.10108E+03
56.03	8.26	0.00	8.2	0.361E+05	2.69	-0.010	.10540E+03
58.36	8.36	0.00	8.3	0.353E+05	2.72	-0.010	.10972E+03
60.69	8.45	0.00	8.5	0.347E+05	2.74	-0.010	.11405E+03
63.02	8.54	0.00	8.6	0.340E+05	2.77	-0.010	.11837E+03
65.31	8.63	0.00	8.8	0.334E+05	2.79	-0.010	.12262E+03
67.64	8.72	0.00	9.0	0.329E+05	2.82	-0.010	.12694E+03
69.97	8.80	0.00	9.1	0.323E+05	2.84	-0.009	.13127E+03

72.30	8.89	0.00	9.3	0.318E+05	2.86	-0.009	.13559E+03
74.63	8.97	0.00	9.4	0.313E+05	2.89	-0.009	.13992E+03
76.96	9.05	0.00	9.5	0.308E+05	2.91	-0.009	.14425E+03
79.25	9.12	0.00	9.7	0.304E+05	2.93	-0.009	.14850E+03
81.58	9.20	0.00	9.8	0.299E+05	2.95	-0.009	.15283E+03
83.91	9.27	0.00	10.0	0.295E+05	2.97	-0.009	.15716E+03
86.24	9.35	0.00	10.1	0.291E+05	2.99	-0.009	.16149E+03
88.57	9.42	0.00	10.2	0.287E+05	3.01	-0.009	.16582E+03
90.90	9.49	0.00	10.4	0.283E+05	3.03	-0.008	.17016E+03
93.19	9.55	0.00	10.5	0.280E+05	3.05	-0.008	.17442E+03
95.53	9.62	0.00	10.6	0.276E+05	3.07	-0.008	.17875E+03
97.86	9.69	0.00	10.8	0.273E+05	3.09	-0.008	.18308E+03
100.19	9.75	0.00	10.9	0.270E+05	3.10	-0.008	.18742E+03
102.52	9.81	0.00	11.0	0.267E+05	3.12	-0.008	.19175E+03
104.85	9.88	0.00	11.1	0.264E+05	3.14	-0.008	.19609E+03
107.14	9.94	0.00	11.3	0.261E+05	3.16	-0.008	.20035E+03
109.47	10.00	0.00	11.4	0.258E+05	3.17	-0.008	.20469E+03
111.80	10.06	0.00	11.5	0.255E+05	3.19	-0.008	.20902E+03
114.13	10.11	0.00	11.6	0.253E+05	3.21	-0.008	.21336E+03
116.46	10.17	0.00	11.7	0.250E+05	3.22	-0.008	.21770E+03
118.79	10.23	0.00	11.9	0.248E+05	3.24	-0.008	.22204E+03
121.09	10.28	0.00	12.0	0.245E+05	3.25	-0.007	.22631E+03
123.42	10.34	0.00	12.1	0.243E+05	3.27	-0.007	.23064E+03
125.75	10.39	0.00	12.2	0.241E+05	3.28	-0.007	.23498E+03
128.08	10.44	0.00	12.3	0.239E+05	3.30	-0.007	.23932E+03
130.41	10.50	0.00	12.4	0.236E+05	3.31	-0.007	.24366E+03
132.70	10.55	0.00	12.5	0.234E+05	3.33	-0.007	.24793E+03
135.03	10.60	0.00	12.6	0.232E+05	3.34	-0.007	.25228E+03
137.37	10.65	0.00	12.8	0.230E+05	3.36	-0.007	.25662E+03
139.70	10.70	0.00	12.9	0.228E+05	3.37	-0.007	.26096E+03
142.03	10.75	0.00	13.0	0.226E+05	3.39	-0.007	.26530E+03
144.36	10.80	0.00	13.1	0.224E+05	3.40	-0.007	.26965E+03
146.65	10.84	0.00	13.2	0.223E+05	3.41	-0.007	.27392E+03
148.98	10.89	0.00	13.3	0.221E+05	3.43	-0.007	.27826E+03
151.31	10.94	0.00	13.4	0.219E+05	3.44	-0.007	.28261E+03
153.64	10.98	0.00	13.5	0.217E+05	3.45	-0.007	.28695E+03
155.98	11.03	0.00	13.6	0.216E+05	3.47	-0.007	.29130E+03
158.31	11.08	0.00	13.7	0.214E+05	3.48	-0.007	.29564E+03
160.60	11.12	0.00	13.8	0.213E+05	3.49	-0.007	.29992E+03
162.93	11.16	0.00	13.9	0.211E+05	3.50	-0.007	.30426E+03
165.26	11.21	0.00	14.0	0.210E+05	3.52	-0.007	.30861E+03
167.59	11.25	0.00	14.1	0.208E+05	3.53	-0.006	.31296E+03
169.92	11.29	0.00	14.2	0.207E+05	3.54	-0.006	.31730E+03
172.26	11.34	0.00	14.3	0.205E+05	3.55	-0.006	.32165E+03
174.55	11.38	0.00	14.4	0.204E+05	3.56	-0.006	.32593E+03
176.88	11.42	0.00	14.5	0.202E+05	3.58	-0.006	.33027E+03
179.21	11.46	0.00	14.6	0.201E+05	3.59	-0.006	.33462E+03
181.54	11.50	0.00	14.7	0.200E+05	3.60	-0.006	.33897E+03
183.87	11.54	0.00	14.8	0.198E+05	3.61	-0.006	.34332E+03
186.17	11.58	0.00	14.9	0.197E+05	3.62	-0.006	.34760E+03
188.50	11.62	0.00	15.0	0.196E+05	3.63	-0.006	.35195E+03
190.83	11.66	0.00	15.1	0.195E+05	3.65	-0.006	.35630E+03
193.16	11.70	0.00	15.1	0.194E+05	3.66	-0.006	.36065E+03
195.49	11.74	0.00	15.2	0.192E+05	3.67	-0.006	.36500E+03
197.82	11.77	0.00	15.3	0.191E+05	3.68	-0.006	.36935E+03
200.12	11.81	0.00	15.4	0.190E+05	3.69	-0.006	.37363E+03
202.45	11.85	0.00	15.5	0.189E+05	3.70	-0.006	.37798E+03
204.78	11.89	0.00	15.6	0.188E+05	3.71	-0.006	.38233E+03
207.11	11.92	0.00	15.7	0.187E+05	3.72	-0.006	.38668E+03
209.44	11.96	0.00	15.8	0.186E+05	3.73	-0.006	.39103E+03
211.77	11.99	0.00	15.9	0.185E+05	3.74	-0.006	.39538E+03
214.06	12.03	0.00	16.0	0.184E+05	3.75	-0.006	.39967E+03
216.40	12.07	0.00	16.0	0.183E+05	3.76	-0.006	.40402E+03

218.73	12.10	0.00	16.1	0.182E+05	3.77	-0.006	.40837E+03
221.06	12.14	0.00	16.2	0.181E+05	3.78	-0.006	.41272E+03
223.39	12.17	0.00	16.3	0.180E+05	3.79	-0.006	.41708E+03
225.72	12.20	0.00	16.4	0.179E+05	3.80	-0.006	.42143E+03
228.01	12.24	0.00	16.5	0.178E+05	3.81	-0.006	.42571E+03
230.35	12.27	0.00	16.6	0.177E+05	3.82	-0.006	.43004E+03

Cumulative travel time = 430.0423 sec (0.12 hrs)

END OF CORJET (MOD110): JET/PLUME NEAR-FIELD MIXING REGION

BEGIN MOD133: LAYER BOUNDARY IMPINGEMENT/FULL VERTICAL MIXING

Control volume inflow:

X	Y	Z	S	C	B	TT
230.35	12.27	0.00	16.6	0.177E+05	3.82	.43004E+03

Profile definitions:
- BV = layer depth (vertically mixed)
- BH = top-hat half-width, in horizontal plane normal to trajectory
- ZU = upper plume boundary (Z-coordinate)
- ZL = lower plume boundary (Z-coordinate)
- S = hydrodynamic average (bulk) dilution
- C = average (bulk) concentration (includes reaction effects, if any)
- TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
226.52	12.33	3.82	16.6	0.177E+05	0.00	0.00	3.82	3.82	.43004E+03
227.29	12.33	3.82	16.6	0.177E+05	3.82	0.62	3.82	0.00	.43004E+03
228.05	12.33	3.82	16.6	0.177E+05	3.82	0.88	3.82	0.00	.43004E+03
228.82	12.33	3.82	16.6	0.177E+05	3.82	1.08	3.82	0.00	.43004E+03
229.58	12.33	3.82	16.6	0.177E+05	3.82	1.25	3.82	0.00	.43004E+03
230.35	12.33	3.82	16.6	0.177E+05	3.82	1.40	3.82	0.00	.43004E+03
231.11	12.33	3.82	17.5	0.167E+05	3.82	1.53	3.82	0.00	.43205E+03
231.87	12.33	3.82	19.7	0.149E+05	3.82	1.65	3.82	0.00	.43407E+03
232.64	12.33	3.82	21.6	0.135E+05	3.82	1.77	3.82	0.00	.43608E+03
233.40	12.33	3.82	22.7	0.129E+05	3.82	1.87	3.82	0.00	.43809E+03
234.17	12.33	3.82	23.2	0.126E+05	3.82	1.97	3.82	0.00	.44010E+03

Cumulative travel time = 440.1027 sec (0.12 hrs)

END OF MOD133: LAYER BOUNDARY IMPINGEMENT/FULL VERTICAL MIXING

BEGIN MOD154: VERTICALLY MIXED PLUME IN WEAK CROSS-FLOW

Phase 1: Vertically mixed, Phase 2: Re-stratified

```
 Phase 1: The plume is VERTICALLY FULLY MIXED over the entire layer depth.
 This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

------------------------------------------------------------------------------
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 Phase 2: The flow has RESTRATIFIED at the beginning of this zone.

 This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

END OF MOD154: VERTICALLY MIXED PLUME IN WEAK CROSS-FLOW
------------------------------------------------------------------------------
----------
** End of NEAR-FIELD REGION (NFR) **

 Bank nearest to plume centerline has changed.
   Nearest bank is now on LEFT.

 The initial plume WIDTH values in the next far-field module will be
  CORRECTED by a factor  2.85 to conserve the mass flux in the far-field!
 The correction factor is quite large because of the small ambient velocity
   relative to the strong mixing characteristics of the discharge!
   This indicates localized RECIRCULATION REGIONS and INTERNAL HYDRAULIC JUMPS.
   Width predictions show discontinuities. Dilution values should be acceptable.

 Because of the strong horizontal momentum flux of this discharge, severe
   PLUME INTERACTION WITH THE OPPOSITE BANK occurs.

 Consider a different discharge design with a reduced offshore momentum flux.

 The LIMITING DILUTION (given by ambient flow/discharge ratio) is:    14.8
   This value is LESS than the predicted dilution of    23.2 at the end
   of the NFR.
 Mixing for this discharge configuration is constrained by LOW AMBIENT FLOW!
 No predictive techniques available for this situation; SIMULATION ENDS.
------------------------------------------------------------------------------
----------
CORMIX1: Single Port Discharges              End of Prediction File
11111111111111111111111111111111111111111111111111111111111111111111111111111
11111111111
```

********** FLOW CLASS DESCRIPTION **********

The following description of flow class H5-90 applies to the FULL WATER DEPTH at the discharge site.

FLOW_CLASS_H5-90

A submerged buoyant effluent issues horizontally or near-horizontally from the discharge port. The discharge is at, or approximately at, a right angle with the ambient current.

The discharge configuration is hydrodynamically "unstable", that is the discharge strength (measured by its momentum flux) dominates the flow in relation to the limited layer depth. The effect of buoyancy is negligible and the initial discharge is usually attached to the bottom.

This may be a complicated and perhaps undesirable discharge configuration. The laterally discharging jet the tends toward full vertical mixing and will block the ambient flow. This will cause a recirculating eddy region downstream of the discharge.

1) Momentum-dominated near-field jet (bottom-attached): The flow is dominated by the effluent momentum (jet-like). The jet attaches to the bottom and is weakly advected by the ambient flow.

2) Strongly deflected wall jet: After some distance, the bottom jet is strongly deflected and advected by the ambient flow. (This flow region may be absent for very shallow water depths.)

3) Layer boundary contact / full vertical mixing: After some distance the jet has grown vertically over the full layer depth. From now on the flow is vertically mixed, but may re-stratify later on.

4) Vertically mixed plume in cross-flow: The discharge induced momentum flux is still controlling the flow. However, lateral entrainment and diffusion lead to a spreading of the plume and additional mixing. Initially, the plume is cross-flowing, but it becomes progressively deflected into the direction of the ambient flow. At the beginning, the plume is vertically mixed over the full layer depth. At some distance, re-stratification may take place depending on the strength and direction of the plume buoyancy.

*** The zones listed above constitute the NEAR-FIELD REGION in which strong initial mixing takes place. ***

5) Buoyant spreading at layer boundary: The plume spreads laterally along the layer boundary (surface or pycnocline) while it is being advected by the ambient current. The plume thickness may decrease during this phase. The mixing rate is relatively small. The plume may interact with a nearby bank or shoreline.

6) Passive ambient mixing: The vertically fully mixed plume is further advected by the ambient flow and spreads laterally through turbulent diffusion. The plume may interact laterally with any nearby bank or shoreline.

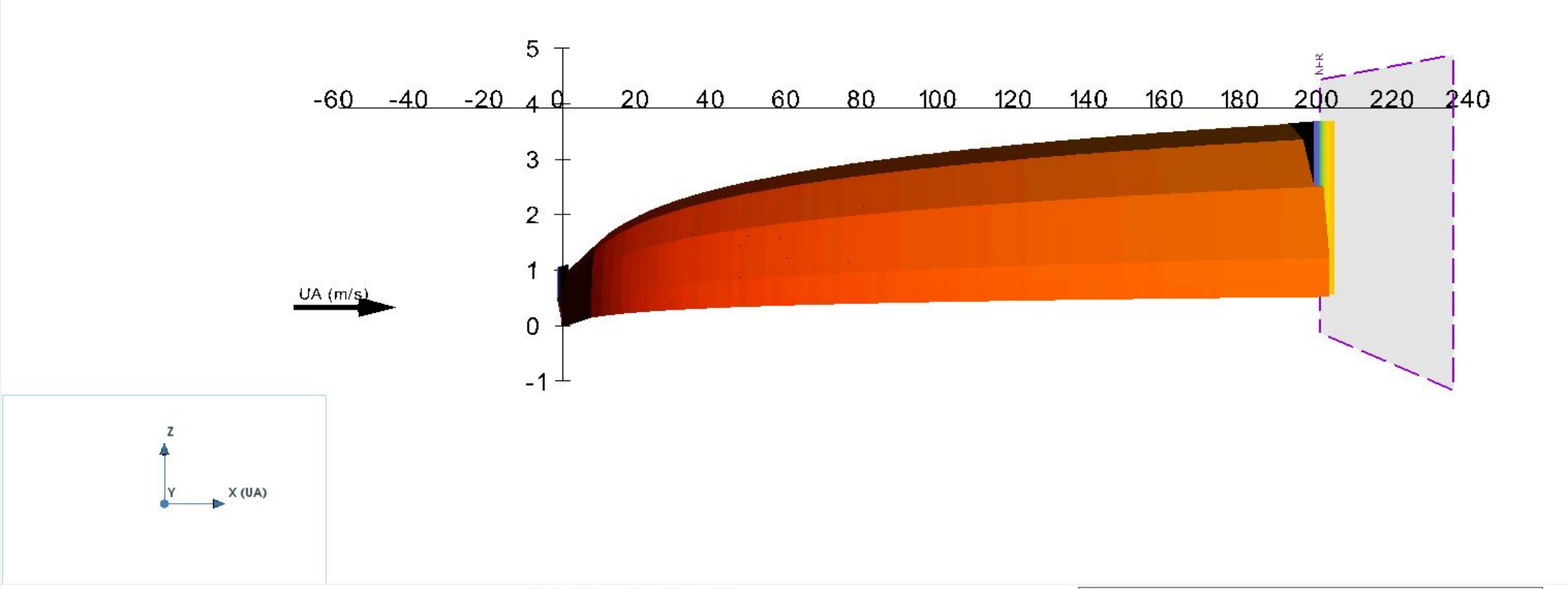
*** Predictions will be terminated in zones 5 or 6 depending on the definitions of the REGULATORY MIXING ZONE or the REGION OF INTEREST. ***

SPECIAL CASE: If the ambient is stagnant, so that advection and

diffusion by the ambient flow (zones 5 and 6) cannot be considered. The mixing is limited to the discharge-induced mixing zones (zones 1 and 2) and the predictions will be terminated at this stage. Such predictions will present a conservative lower bound on the mixing capacity as they neglect any further mixing beyond the stage where the jet has grown to the full layer depth. Such stagnant water predictions may be a useful initial mixing indicator for a given site and discharge design.

For practical final predictions, however, the advection and diffusion of the ambient flow - no matter how small in magnitude - should be considered.

END OF FLOW CLASS DESCRIPTION **********



Discharge Excess (bacteria-counts)

1.0 8.2 66.9 547.7 4481.4 36666.4 300000.0

Central Base Case E. coli FF

Flow Class: H5-90 Origin: Ambient Bottom
CORMIX1 Simulation Length units in meters
Distortion Scale: Y:X = 11 Z:X = 15
Visualization up to X = 234 m (out of ROI X = 234 m)

Plume Centerline
End of Near Field Region (NFR)
Cormix Module Boundary (MOD)

Warnings:
> Coanda Attachment immediately following the discharge
> Low ambient flow

```
CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 10.0GT
                       HYDRO1:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Williams CSOTF
  DESIGN CASE:                  Williams Base Case E. Coli NF
  FILE NAME:                    J:\C6A02300\Task 6-Consent Decree Planning\Task 6B -
General Planning and Studies\LTCP\PCCMP\Sampling and Monitoring\Cormix\Modeling\Aug
2017 Modeling\Scenario 5\Williams Base Case E. coli NF.prd
  Using subsystem CORMIX1:     Single Port Discharges
  Start of session:             08/28/2017--08:41:46
*******************************************************************************
SUMMARY OF INPUT DATA:
-------------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                          BS      = 12.50 m
  Channel regularity             ICHREG  = 2
  Ambient flowrate               QA      = 47.07 m^3/s
  Average depth                  HA      = 2.85 m
  Depth at discharge             HD      = 2.08 m
  Ambient velocity               UA      = 1.3217 m/s
  Darcy-Weisbach friction factor F       = 0.0346
    Calculated from Manning's n          = 0.025
  Wind velocity                  UW      = 2 m/s
  Stratification Type            STRCND  = U
  Surface temperature                    = 17.60 degC
  Bottom temperature                     = 17.60 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density                RHOAS   = 998.6698 kg/m^3
  Bottom density                 RHOAB   = 998.6698 kg/m^3
-------------------------------------------------------------------------------
DISCHARGE PARAMETERS:            Single Port Discharge
  Nearest bank                           = right
  Distance to bank               DISTB   = 0 m
  Port diameter                  D0      = 0.6919 m
  Port cross-sectional area      A0      = 0.3760 m^2
  Discharge velocity             U0      = 0.60 m/s
  Discharge flowrate             Q0      = 0.227388 m^3/s
  Discharge port height          H0      = 1.65 m
  Vertical discharge angle       THETA   = 0 deg
  Horizontal discharge angle     SIGMA   = 90 deg
  Discharge temperature (freshwater)     = 17.70 degC
  Corresponding density          RHO0    = 998.6517 kg/m^3
  Density difference             DRHO    = 0.0181 kg/m^3
  Buoyant acceleration           GP0     = 0.0002 m/s^2
  Discharge concentration        C0      = 14800 bacteria-counts
  Surface heat exchange coeff.   KS      = 0 m/s
  Coefficient of decay           KD      = 0.000015 /s
-------------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 0.61 m         Lm  = 0.28 m         Lb  = 0.00 m
  LM  = 35.51 m         Lm' = 99999 m         Lb' = 99999 m
-------------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Port densimetric Froude number  FR0    = 54.52
  Velocity ratio                  R      = 0.46
-------------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = no
  Regulatory mixing zone                 = no
```

Region of interest = 30479.70 m downstream
****
HYDRODYNAMIC CLASSIFICATION:

| FLOW CLASS = IPH4A2I |

This flow configuration applies to a layer corresponding to the full water depth at the discharge site.
Applicable layer depth = water depth = 2.08 m

Limiting Dilution S = (QA/Q0)+ 1.0 = 208.0

****
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

X-Y-Z Coordinate system:
Origin is located at the BOTTOM below the port/diffuser center:
0 m from the right bank/shore.
Number of display steps NSTEP = 100 per module.

NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing. It has no regulatory implication. However, this information may be useful for the discharge designer because the mixing in the NFR is usually sensitive to the discharge design conditions.
Pollutant concentration at NFR edge c = 1916.015700 bacteria-counts
Dilution at edge of NFR s = 7.7
NFR Location: x = 3.07 m
(centerline coordinates) y = 0.28 m
z = 2.08 m
NFR plume dimensions: half-width (bh) = 0.92 m
thickness (bv) = 0.92 m
Cumulative travel time: 2.3196 sec.

Buoyancy assessment:
The effluent density is less than the surrounding ambient water density at the discharge level.
Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards the surface.

Benthic attachment:
For the present combination of discharge and ambient conditions, the discharge plume becomes attached to the channel bottom within the NFR immediately following the efflux. High benthic concentrations may occur.

Weak contact/interaction of the discharge plume with one bank/shore occurs within the NFR.

PLUME BANK CONTACT SUMMARY:
Plume in bounded section contacts one bank only at -0.52 m downstream.
********** TOXIC DILUTION ZONE SUMMARY **********
No TDZ was specified for this simulation.
********** REGULATORY MIXING ZONE SUMMARY **********
No RMZ and no ambient water quality standard have been specified.
********** FINAL DESIGN ADVICE AND COMMENTS **********
REMINDER: The user must take note that HYDRODYNAMIC MODELING by any known technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the CORMIX predictions on dilutions and concentrations (with associated plume geometries) are reliable for the majority of cases and are accurate to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges

the design configuration as highly complex and uncertain for prediction.

Date: 08/28/17
Time: 09:18:46

Design Case: Williams Base Case E. Coli NF
Site Name: Williams CSOTF
Prepared By: Gabrielle Sobel

Project Notes:

4/23/17 event

Near-field focus

VALIDATING INPUT DATA ...

Checking Pages for invalid or missing inputs...

Effluent Page has been validated.
Ambient Page has been validated.
Discharge Page has been validated.
Mixing Zone Page has been validated.

Finished checking Pages for invalid or missing inputs.

Loading Correct RuleBases

Validating RuleBases ...

AMBIENT DATA:

Ambient velocity = 1.3217 m/s.

Equivalent Darcy-Weisbach friction factor = 0.035

Ambient density = 998.6698 kg/m^3.

Ambient Rule Base has been validated.

DISCHARGE DATA:
CORMIX1: Single Port Discharges

Port cross-sectional area A0 = 0.376 m^2.

Discharge velocity U0= 0.605 m/s.

This is a Slightly Submerged or Above Surface Discharge, where the height of the discharge port (H0 = 1.646 m) and the local ambient water depth (HD = 2.079 m).

The submergence of the port below the water surface is SUB0 = 0.43 m.

Discharge density RHO0 = 998.6517 kg/m^3.

The decay coefficient in units (/s) is 0.0000153 /s.

Discharge Rules for CORMIX1 have been validated

MIXING ZONE SPECIFICATION:

Mixing Zones Rule Base has been validated.

Finished validating RuleBases.

Calculating Parameters.

FLOW PARAMETERS AND LENGTH SCALES:

Relative density differences between discharge and ambient:

Ambient density at the discharge level RHOAH0 = 998.6698 kg/m^3.
Vertical mean ambient density RHOAM = 998.6698 kg/m^3.

The effluent density (998.6517 kg/m^3) is less than the surrounding ambient water density at the discharge level (998.6698 kg/m^3).

Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards the surface.

Flow bulk parameters:

Discharge volume flux Q0 = 0.22739 m^3/s.
Discharge momentum flux M0 = 0.13752 m^4/s^2.

Discharge buoyancy flux J0 = 0.000040 m^4/s^3.

Flow length scales:

Jet-to-crossflow length scale Lm = 0.28 m.

Plume-to-crossflow length scale Lb = 0.00 m.

Discharge length scale LQ = 0.6132 m.

Jet-to-plume transition length scale LM = 35.51 m.

Non-dimensional parameters:

Densimetric Froude number FR0 = 54.52
Jet/crossflow velocity ratio R = 0.46

Parameters for CORMIX1 have been calculated

Classifying Flows.

FLOW CLASSIFICATION:

CORMIX1 includes SIX MAJOR CLASSES of possible flow configurations:
Classes S, IS : Flows trapped in a layer within linear stratification.
Classes V, H : Near Bottom, Positively buoyant flows in a uniform density layer.
Classes IV, IH : Near Surface, Negatively buoyant flows in a uniform density layer.
Classes NV, NH : Near Bottom, Negatively buoyant flows in uniform density layer.
Classes IPV,IPH: Near Surface, Positively buoyant flows in uniform density layer.
Classes A, AI : Flows affected by dynamic bottom or surface attachment.

The NEAR FIELD FLOW will have the following features:

The discharge near-field behavior is dominated by either the positive buoyancy of the discharge or the upward vertical orientation of the discharge port leading to surface interaction.

The near-horizontal discharge flow will dynamically attach to the nearby surface in the near-field of the discharge (Coanda attachment).

There may be surface impact of high pollutant concentrations.

Because of the strong ambient current, the discharge flow will dynamically attach to the surface in the near-field (wake attachment).

There may be surface impact of high pollutant concentrations.

The following conclusion on the NEAR-FIELD FLOW CONFIGURATION applies to a layer corresponding to the FULL WATER DEPTH at the discharge site:

*** FLOW CLASS = IPH4A2I ***

Applicable layer depth HS = 2.08 m.

*** Limiting Dilution S = (QA/QO)+ 1.0 = 208.0 ***

Flow has been classified.

Executing the simulation... FORTRAN simulation complete.

Generating Session Report... Session Report complete.

```
CORMIX1 PREDICTION FILE:
1111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111
11111111111
                      CORMIX MIXING ZONE EXPERT SYSTEM
                   Subsystem CORMIX1: Single Port Discharges
                             CORMIX Version 10.0GT
                       HYDRO1 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
----------
-------------------------------------------------------------------------------
----------
CASE DESCRIPTION
 Site name/label:   Williams CSOTF
 Design case:       Williams Base Case E. Coli NF
 FILE NAME:         J:\...ling\Scenario 5\Williams Base Case E. coli NF.prd
 Time stamp:        08/28/2017--08:41:46

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     12.50  AS    =     35.61  QA    =     47.07  ICHREG= 2
 HA    =      2.85  HD    =      2.08
 UA    =     1.322  F     =     0.035 USTAR =0.8692E-01
 UW    =     2.000 UWSTAR=0.2198E-02
 Uniform density environment
 STRCND=  U         RHOAM =  998.6698

DISCHARGE PARAMETERS (metric units)
 BANK  =  RIGHT     DISTB =      0.00
 D0    =     0.692 A0    =     0.376 H0    =      1.65  SUB0  =      0.43
 THETA =      0.00  SIGMA =     90.00
 U0    =     0.605 Q0    =     0.227       =0.2274E+00
 RHO0  =  998.6517  DRHO0 =0.1813E-01  GP0   =0.1780E-03
 C0    =0.1480E+05  CUNITS=  bacteria-counts
 IPOLL =  2         KS    =0.0000E+00  KD    =0.1528E-04

FLUX VARIABLES (metric units)
 Q0    =0.2274E+00  M0    =0.1375E+00  J0    =0.4048E-04  SIGNJ0=      1.0
 Associated length scales (meters)
 LQ    =      0.61  LM    =     35.51  Lm    =      0.28  Lb    =      0.00
                                       Lmp   =  99999.00  Lbp   =  99999.00

NON-DIMENSIONAL PARAMETERS
 FR0   =     54.52  R     =      0.46

FLOW CLASSIFICATION
 11111111111111111111111111111111111111111111
 1  Flow class (CORMIX1)      =    IPH4A2I1
 1  Applicable layer depth HS =    2.08   1
 1  Limiting Dilution S =QA/Q0=   208.01  1
 11111111111111111111111111111111111111111111

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.1480E+05  CUNITS=  bacteria-counts
 NTOX  =  0
 NSTD  =  0
 REGMZ =  0
 XINT  =  30479.70  XMAX  =  30479.70

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the bottom and below the center of the port:
         0.00 m  from the RIGHT bank/shore.
    X-axis points downstream, Y-axis points to left, Z-axis points upward.
NSTEP = 100 display intervals per module
```

BEGIN MOD101: DISCHARGE MODULE

WAKE ATTACHMENT immediately following the discharge.

X	Y	Z	S	C	B	Uc	TT
0.00	0.00	2.08	1.0	0.148E+05	0.59	0.605	.00000E+00

END OF MOD101: DISCHARGE MODULE

BEGIN MOD151: WAKE RECIRCULATION

Control volume inflow:

X	Y	Z	S	C	B	TT
0.00	0.00	2.08	1.0	0.148E+05	0.59	.00000E+00

Profile definitions:
BV = top-hat thickness, measured vertically
BH = top-hat half-width, measured horizontally in Y-direction
ZU = upper plume boundary (Z-coordinate)
ZL = lower plume boundary (Z-coordinate)
S = hydrodynamic average (bulk) dilution
C = average (bulk) concentration (includes reaction effects, if any)
TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
0.00	0.28	2.08	1.0	0.148E+05	0.59	0.59	2.08	1.49	.00000E+00
0.31	0.28	2.08	1.3	0.117E+05	0.69	0.69	2.08	1.39	.23196E+00
0.61	0.28	2.08	2.0	0.742E+04	0.74	0.74	2.08	1.34	.46392E+00
0.92	0.28	2.08	3.0	0.488E+04	0.77	0.77	2.08	1.31	.69588E+00
1.23	0.28	2.08	4.2	0.354E+04	0.80	0.80	2.08	1.28	.92785E+00
1.53	0.28	2.08	5.3	0.282E+04	0.82	0.82	2.08	1.26	.11598E+01
1.84	0.28	2.08	6.1	0.241E+04	0.84	0.84	2.08	1.23	.13918E+01
2.15	0.28	2.08	6.8	0.218E+04	0.87	0.87	2.08	1.21	.16237E+01
2.45	0.28	2.08	7.2	0.205E+04	0.88	0.88	2.08	1.19	.18557E+01
2.76	0.28	2.08	7.5	0.198E+04	0.90	0.90	2.08	1.18	.20877E+01
3.07	0.28	2.08	7.7	0.192E+04	0.92	0.92	2.08	1.16	.23196E+01

Cumulative travel time = 2.3196 sec (0.00 hrs)

END OF MOD151: WAKE RECIRCULATION

BEGIN MOD141: BUOYANT AMBIENT SPREADING

```
 Discharge is non-buoyant or weakly buoyant.
 Therefore BUOYANT SPREADING REGIME is ABSENT.

END OF MOD141: BUOYANT AMBIENT SPREADING
------------------------------------------------------------------------------
----------
** End of NEAR-FIELD REGION (NFR) **

 WAKE FLOW CONDITIONS: The discharge velocity (U0) is less than or equal to the
 ambient velocity (Ua) and results in wake flow conditions. There is no discharge
 momentum induced mixing. The mixing characteristics are UNDESIRABLE.

 In this design case, the discharge is located CLOSE TO BANK/SHORE.
 Some lateral boundary interaction occurs at end of the near-field.
   This may be related to a design case with a very LOW AMBIENT VELOCITY.
   The dilution values in one or more of the preceding zones may be too high.
 Carefully evaluate results in near-field and check degree of interaction.

 Consider locating outfall further away from bank or shore.
 In the next prediction module, the plume centerline will be set
   to follow the bank/shore.
 Bottom coordinate for FAR-FIELD is determined by average depth, ZFB = -0.77m
------------------------------------------------------------------------------
----------
BEGIN MOD161: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.361E-01 m^2/s
  Horizontal diffusivity (initial value) = 0.904E-01 m^2/s

 Plume becomes FULLY MIXED before regulatory mixing zone or region
   of interest has been reached.

END OF MOD161: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT
------------------------------------------------------------------------------
----------
------------------------------------------------------------------------------
----------
CORMIX1: Single Port Discharges              End of Prediction File
1111111111111111111111111111111111111111111111111111111111111111111111111111
11111111111
```

********** FLOW CLASS DESCRIPTION **********

The following description of flow class IPH4A2I applies to the FULL WATER DEPTH at the discharge site.

Since the flow experiences bottom attachment, the description for the ACTUAL ATTACHED FLOW CLASS A2I is given below.

FLOW_CLASS_(..)A2I

Irrespective of the buoyancy or direction of the discharge, the near-field of this flow configuration is dominated by wake attachment. The ambient crossflow effect is strong and/or the submergence of the discharge port below the surface is too small. This leads to rapid attachment of the discharge flow to the surface with a recirculation wake in the lee of the discharge structure. Following the recirculation the discharge flow will remain attached to the surface due to its weaker positive buoyancy.

In the absence of wake attachment the dominant flow class would be given by the prefix (..). You may request detailed information on that flow class further below. Additional advice on how to prevent surface attachment (e.g. by increasing the submergence of the discharge port) will be provided in the summary program element SUM.

The following flow zones exist:

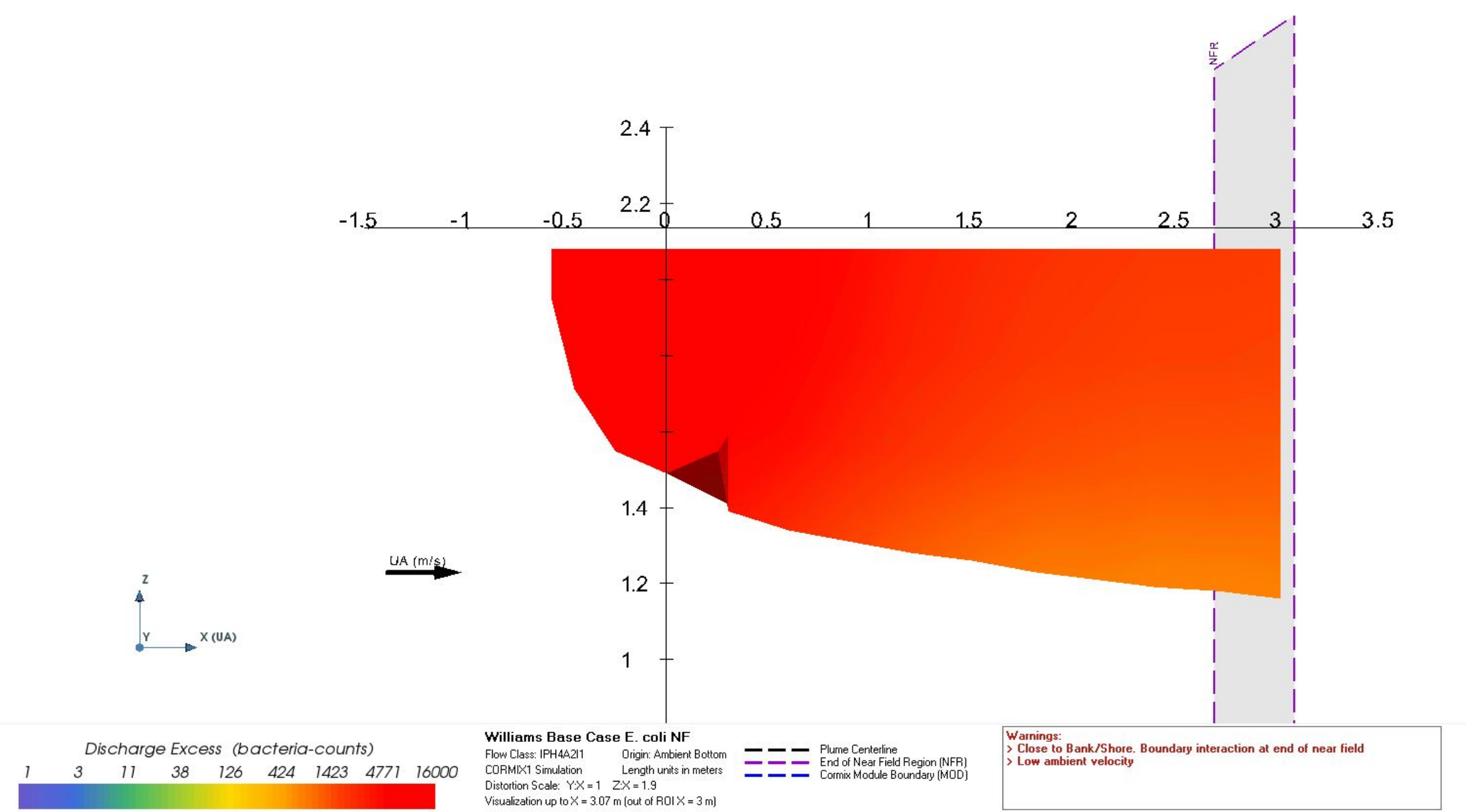
1) Recirculation zone: The discharge flow becomes quickly deflected by the ambient flow and attaches to the surface. A recirculation eddy exists in the lee of the discharge structure.

2) Buoyant spreading at surface: In case of positive discharge buoyancy only, the plume spreads laterally along the surface while it is being advected by the ambient current. The plume thickness may decrease during this phase. The mixing rate is relatively small. The plume may interact with a nearby bank or shoreline.

3) Passive ambient mixing: After some distance the background turbulence in the ambient shear flow becomes the dominating mixing mechanism. The passive plume is growing in thickness and in width. The plume may interact with the layer upper boundary and/or banks.

*** The ambient flow plays an important role in this flow configuration. Hence, all the zones listed above constitute the NEAR-FIELD REGION with strong initial mixing. Predictions will be terminated in zones 2 or 3 depending on the definitions of the REGULATORY MIXING ZONE or the REGION OF INTEREST. ***

END OF FLOW CLASS DESCRIPTION **********


NFR
2.4
2.2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
3
3.5
1.4
1.2
1
UA (m/s)
Z
Y
X (UA)
Discharge Excess (bacteria-counts)
1
3
11
38
126
424
1423
4771
16000
Williams Base Case E. coli NF
Flow Class: IPH4A2I1
Origin: Ambient Bottom
CORMIX1 Simulation
Length units in meters
Distortion Scale: Y:X = 1 Z:X = 1.9
Visualization up to X = 3.07 m (out of ROI X = 3 m)
Plume Centerline
End of Near Field Region (NFR)
Cormix Module Boundary (MOD)
Warnings:
> Close to Bank/Shore. Boundary interaction at end of near field
> Low ambient velocity

```
CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 10.0GT
                       HYDRO1:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Williams CSOTF
  DESIGN CASE:                  Williams Base Case E. coli
  FILE NAME:                    J:\C6A02300\Task 6-Consent Decree Planning\Task 6B -
General Planning and Studies\LTCP\PCCMP\Sampling and Monitoring\Cormix\Modeling\Aug
2017 Modeling\Scenario 6\Williams Base Case E. coli FF.prd
  Using subsystem CORMIX1:     Single Port Discharges
  Start of session:             08/28/2017--09:01:18
*******************************************************************************
SUMMARY OF INPUT DATA:
-------------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                          BS      = 13.41 m
  Channel regularity             ICHREG  = 2
  Ambient flowrate               QA      = 47.07 m^3/s
  Average depth                  HA      = 2.84 m
  Depth at discharge             HD      = 3.66 m
  Ambient velocity               UA      = 1.2349 m/s
  Darcy-Weisbach friction factor F       = 0.0346
    Calculated from Manning's n          = 0.025
  Wind velocity                  UW      = 2 m/s
  Stratification Type            STRCND  = U
  Surface temperature                    = 17.60 degC
  Bottom temperature                     = 17.60 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density                RHOAS   = 998.6698 kg/m^3
  Bottom density                 RHOAB   = 998.6698 kg/m^3
-------------------------------------------------------------------------------
DISCHARGE PARAMETERS:            Single Port Discharge
  Nearest bank                           = right
  Distance to bank               DISTB   = 0 m
  Port diameter                  D0      = 1.2192 m
  Port cross-sectional area      A0      = 1.1675 m^2
  Discharge velocity             U0      = 0.19 m/s
  Discharge flowrate             Q0      = 0.227388 m^3/s
  Discharge port height          H0      = 1.22 m
  Vertical discharge angle       THETA   = 0 deg
  Horizontal discharge angle     SIGMA   = 90 deg
  Discharge temperature (freshwater)     = 17.70 degC
  Corresponding density          RHO0    = 998.6517 kg/m^3
  Density difference             DRHO    = 0.0181 kg/m^3
  Buoyant acceleration           GP0     = 0.0002 m/s^2
  Discharge concentration        C0      = 14800 bacteria-counts
  Surface heat exchange coeff.   KS      = 0 m/s
  Coefficient of decay           KD      = 0.000015 /s
-------------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 1.08 m         Lm  = 0.17 m         Lb  = 0.00 m
  LM  = 15.18 m         Lm' = 99999 m         Lb' = 99999 m
-------------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Port densimetric Froude number FR0     = 13.23
  Velocity ratio                 R       = 0.16
-------------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = no
  Regulatory mixing zone                 = no
```

```
  Region of interest                    = 30479.70 m downstream
**************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *-----------------------*
  | FLOW CLASS   = H2A2 |
  *-----------------------*
  This flow configuration applies to a layer corresponding to the full water
  depth at the discharge site.
  Applicable layer depth = water depth = 3.66 m

  Limiting Dilution S = (QA/Q0)+ 1.0 = 208.0

**************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

--------------------------------------------------------------------------
X-Y-Z Coordinate system:
  Origin is located at the BOTTOM below the port/diffuser center:
    0 m from the right bank/shore.
  Number of display steps NSTEP = 100 per module.
--------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 585.283600 bacteria-counts
  Dilution at edge of NFR              s = 25.3
  NFR Location:                        x = 5.74 m
    (centerline coordinates)           y = 0.17 m
                                       z = 0 m
  NFR plume dimensions:  half-width (bh) = 1.72 m
                          thickness (bv) = 1.72 m
Cumulative travel time:       4.6471 sec.
--------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is less than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards
  the surface.
--------------------------------------------------------------------------
Benthic attachment:
  For the present combination of discharge and ambient conditions, the
  discharge plume becomes attached to the channel bottom within the NFR
  immediately following the efflux.  High benthic concentrations may occur.
--------------------------------------------------------------------------
Weak contact/interaction of the discharge plume with one bank/shore occurs
  within the NFR.
--------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts one bank only at -2.06 m downstream.
************************ TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
********************** REGULATORY MIXING ZONE SUMMARY **********************
No RMZ and no ambient water quality standard have been specified.
********************** FINAL DESIGN ADVICE AND COMMENTS **********************
REMINDER:  The user must take note that HYDRODYNAMIC MODELING by any known
  technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the
  CORMIX predictions on dilutions and concentrations (with associated
  plume geometries) are reliable for the majority of cases and are accurate
  to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges
```

the design configuration as highly complex and uncertain for prediction.

Date: 08/28/17
Time: 09:12:59

Design Case: Williams Base Case E. coli
Site Name: Williams CSOTF
Prepared By: Gabrielle Sobel

Project Notes:

4/23/17 event
Far-field focus

VALIDATING INPUT DATA ...

Checking Pages for invalid or missing inputs...

Effluent Page has been validated.
Ambient Page has been validated.
Discharge Page has been validated.
Mixing Zone Page has been validated.

Finished checking Pages for invalid or missing inputs.

Loading Correct RuleBases

Validating RuleBases ...

AMBIENT DATA:

Ambient velocity = 1.2349 m/s.

Equivalent Darcy-Weisbach friction factor = 0.035

Ambient density = 998.6698 kg/m^3.

Ambient Rule Base has been validated.

DISCHARGE DATA:
CORMIX1: Single Port Discharges

Port cross-sectional area A0 = 1.167 m^2.

Discharge velocity U0= 0.195 m/s.

This is a Deeply Submerged Discharge, where the height of the discharge port (H0 = 1.219 m), above the bottom, does NOT Exceed one-third of the local ambient water depth (HD = 3.658 m)
Note: For special advice on this limitation please consult Section 7.4 of the CORMIX1 technical report (Doneker and Jirka, 1990).

The submergence of the port below the water surface is SUB0 = 2.44 m.

Discharge density RHO0 = 998.6517 kg/m^3.

The decay coefficient in units (/s) is 0.0000153 /s.

Discharge Rules for CORMIX1 have been validated

MIXING ZONE SPECIFICATION:

Mixing Zones Rule Base has been validated.

Finished validating RuleBases.

Calculating Parameters.

FLOW PARAMETERS AND LENGTH SCALES:

Relative density differences between discharge and ambient:

Ambient density at the discharge level RHOAH0 = 998.6698 kg/m^3.
Vertical mean ambient density RHOAM = 998.6698 kg/m^3.

The effluent density (998.6517 kg/m^3) is less than the surrounding ambient water density at the discharge level (998.6698 kg/m^3).

Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards the surface.

Flow bulk parameters:

Discharge volume flux Q0 = 0.22739 m^3/s.
Discharge momentum flux M0 = 0.04429 m^4/s^2.

Discharge buoyancy flux J0 = 0.000040 m^4/s^3.

Flow length scales:

Jet-to-crossflow length scale Lm = 0.17 m.

Plume-to-crossflow length scale Lb = 0.00 m.

Discharge length scale LQ = 1.0805 m.

Jet-to-plume transition length scale LM = 15.18 m.

Non-dimensional parameters:

Densimetric Froude number FR0 = 13.23
Jet/crossflow velocity ratio R = 0.16

Parameters for CORMIX1 have been calculated

Classifying Flows.

FLOW CLASSIFICATION:

CORMIX1 includes SIX MAJOR CLASSES of possible flow configurations:
Classes S, IS : Flows trapped in a layer within linear stratification.
Classes V, H : Near Bottom, Positively buoyant flows in a uniform density layer.
Classes IV, IH : Near Surface, Negatively buoyant flows in a uniform density layer.
Classes NV, NH : Near Bottom, Negatively buoyant flows in uniform density layer.
Classes IPV,IPH: Near Surface, Positively buoyant flows in uniform density layer.
Classes A, AI : Flows affected by dynamic bottom or surface attachment.

The NEAR FIELD FLOW will have the following features:

The discharge near-field behavior is dominated by either the positive buoyancy of the discharge or the upward vertical orientation of the discharge port.
There is the possibility of dynamic bottom attachment.

Because of the strong ambient current, the discharge flow will dynamically attach to the bottom in the near-field (wake attachment).

There may be benthic impact of high pollutant concentrations.

The following conclusion on the NEAR-FIELD FLOW CONFIGURATION applies to a layer corresponding to the FULL WATER DEPTH at the discharge site:

*** FLOW CLASS = H2A2 ***

Applicable layer depth HS = 3.66 m.

*** Limiting Dilution S = (QA/Q0)+ 1.0 = 208.0 ***

Flow has been classified.

Executing the simulation... FORTRAN simulation complete.

Generating Session Report... Session Report complete.

```
CORMIX1 PREDICTION FILE:
1111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111
11111111111
                      CORMIX MIXING ZONE EXPERT SYSTEM
                  Subsystem CORMIX1: Single Port Discharges
                            CORMIX Version 10.0GT
                     HYDRO1 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
----------
-------------------------------------------------------------------------------
----------
CASE DESCRIPTION
 Site name/label:   Williams CSOTF
 Design case:       Williams Base Case E. coli
 FILE NAME:         J:\...ling\Scenario 6\Williams Base Case E. coli FF.prd
 Time stamp:        08/28/2017--09:01:18

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     13.41  AS    =     38.12  QA    =     47.07  ICHREG= 2
 HA    =      2.84  HD    =      3.66
 UA    =     1.235  F     =     0.035 USTAR =0.8125E-01
 UW    =     2.000 UWSTAR=0.2198E-02
 Uniform density environment
 STRCND=  U         RHOAM =  998.6698

DISCHARGE PARAMETERS (metric units)
 BANK  =  RIGHT     DISTB =      0.00
 D0    =     1.219 A0    =     1.167 H0    =      1.22  SUB0  =      2.44
 THETA =      0.00  SIGMA =     90.00
 U0    =     0.195 Q0    =     0.227       =0.2274E+00
 RHO0  =  998.6517  DRHO0 =0.1813E-01  GP0   =0.1780E-03
 C0    =0.1480E+05  CUNITS=  bacteria-counts
 IPOLL =  2         KS    =0.0000E+00  KD    =0.1528E-04

FLUX VARIABLES (metric units)
 Q0    =0.2274E+00  M0    =0.4429E-01  J0    =0.4048E-04  SIGNJ0=      1.0
 Associated length scales (meters)
 LQ    =     1.08  LM    =     15.18  Lm    =     0.17  Lb    =     0.00
                                      Lmp   =  99999.00  Lbp   =  99999.00

NON-DIMENSIONAL PARAMETERS
 FR0   =     13.23  R     =      0.16

FLOW CLASSIFICATION
 1111111111111111111111111111111111111111111
 1  Flow class (CORMIX1)      =    H2A2   1
 1  Applicable layer depth HS =    3.66   1
 1  Limiting Dilution S =QA/Q0=   208.01  1
 1111111111111111111111111111111111111111111

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.1480E+05  CUNITS=  bacteria-counts
 NTOX  =  0
 NSTD  =  0
 REGMZ =  0
 XINT  =  30479.70  XMAX  =  30479.70

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the bottom and below the center of the port:
         0.00 m  from the RIGHT bank/shore.
    X-axis points downstream, Y-axis points to left, Z-axis points upward.
NSTEP = 100 display intervals per module
```

BEGIN MOD101: DISCHARGE MODULE

WAKE ATTACHMENT immediately following the discharge.

X	Y	Z	S	C	B	Uc	TT
0.00	0.00	0.00	1.0	0.148E+05	0.61	0.195	.00000E+00

END OF MOD101: DISCHARGE MODULE

BEGIN MOD151: WAKE RECIRCULATION

Control volume inflow:

X	Y	Z	S	C	B	TT
0.00	0.00	0.00	1.0	0.148E+05	0.61	.00000E+00

Profile definitions:
BV = top-hat thickness, measured vertically
BH = top-hat half-width, measured horizontally in Y-direction
ZU = upper plume boundary (Z-coordinate)
ZL = lower plume boundary (Z-coordinate)
S = hydrodynamic average (bulk) dilution
C = average (bulk) concentration (includes reaction effects, if any)
TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
0.00	0.17	0.00	1.0	0.148E+05	0.61	0.61	0.61	0.00	.00000E+00
0.57	0.17	0.00	2.0	0.758E+04	0.96	0.96	0.96	0.00	.46471E+00
1.15	0.17	0.00	4.6	0.322E+04	1.11	1.11	1.11	0.00	.92942E+00
1.72	0.17	0.00	8.3	0.177E+04	1.22	1.22	1.22	0.00	.13941E+01
2.30	0.17	0.00	12.5	0.119E+04	1.31	1.31	1.31	0.00	.18588E+01
2.87	0.17	0.00	16.4	0.905E+03	1.40	1.40	1.40	0.00	.23236E+01
3.44	0.17	0.00	19.5	0.758E+03	1.47	1.47	1.47	0.00	.27883E+01
4.02	0.17	0.00	21.9	0.677E+03	1.54	1.54	1.54	0.00	.32530E+01
4.59	0.17	0.00	23.4	0.632E+03	1.60	1.60	1.60	0.00	.37177E+01
5.16	0.17	0.00	24.3	0.608E+03	1.66	1.66	1.66	0.00	.41824E+01
5.74	0.17	0.00	25.3	0.585E+03	1.72	1.72	1.72	0.00	.46471E+01

Cumulative travel time = 4.6471 sec (0.00 hrs)

END OF MOD151: WAKE RECIRCULATION

** End of NEAR-FIELD REGION (NFR) **

WAKE FLOW CONDITIONS: The discharge velocity (U0) is less than or equal to the

ambient velocity (Ua) and results in wake flow conditions. There is no discharge momentum induced mixing. The mixing characteristics are UNDESIRABLE.

In this design case, the discharge is located CLOSE TO BANK/SHORE.
Some lateral boundary interaction occurs at end of the near-field.
  This may be related to a design case with a very LOW AMBIENT VELOCITY.
  The dilution values in one or more of the preceding zones may be too high.
Carefully evaluate results in near-field and check degree of interaction.

Consider locating outfall further away from bank or shore.
In the next prediction module, the plume centerline will be set
  to follow the bank/shore.
Due to the attachment or proximity of the plume to the bottom, the bottom
  coordinate for the FAR-FIELD differs from the ambient depth, ZFB = 0 m.
In a subsequent analysis set "depth at discharge" equal to "ambient depth".

BEGIN MOD161: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.594E-01 m^2/s
  Horizontal diffusivity (initial value) = 0.149E+00 m^2/s

Plume becomes FULLY MIXED before regulatory mixing zone or region
  of interest has been reached.

END OF MOD161: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

CORMIX1: Single Port Discharges End of Prediction File

********** FLOW CLASS DESCRIPTION **********

The following description of flow class H2A2 applies to the FULL WATER DEPTH at the discharge site.

Since the flow experiences bottom attachment, the description for the ACTUAL ATTACHED FLOW CLASS A2 is given below.

FLOW_CLASS_(..)A2

Irrespective of the buoyancy or direction of the discharge, the near-field of this flow configuration is dominated by wake attachment. The ambient crossflow effect is strong and/or the height of the discharge port above the bottom is too small. This leads to rapid attachment of the discharge flow to the bottom with a recirculation wake in the lee of the discharge structure. Following the recirculation the discharge flow will remain attached to the bottom due to its weaker negative buoyancy.

In the absence of wake attachment the dominant flow class would be given by the prefix (..). You may request detailed information on that flow class further below. Additional advice on how to prevent bottom attachment (e.g. by increasing the height of the discharge port) will be provided in the summary program element SUM.

The following flow zones exist:

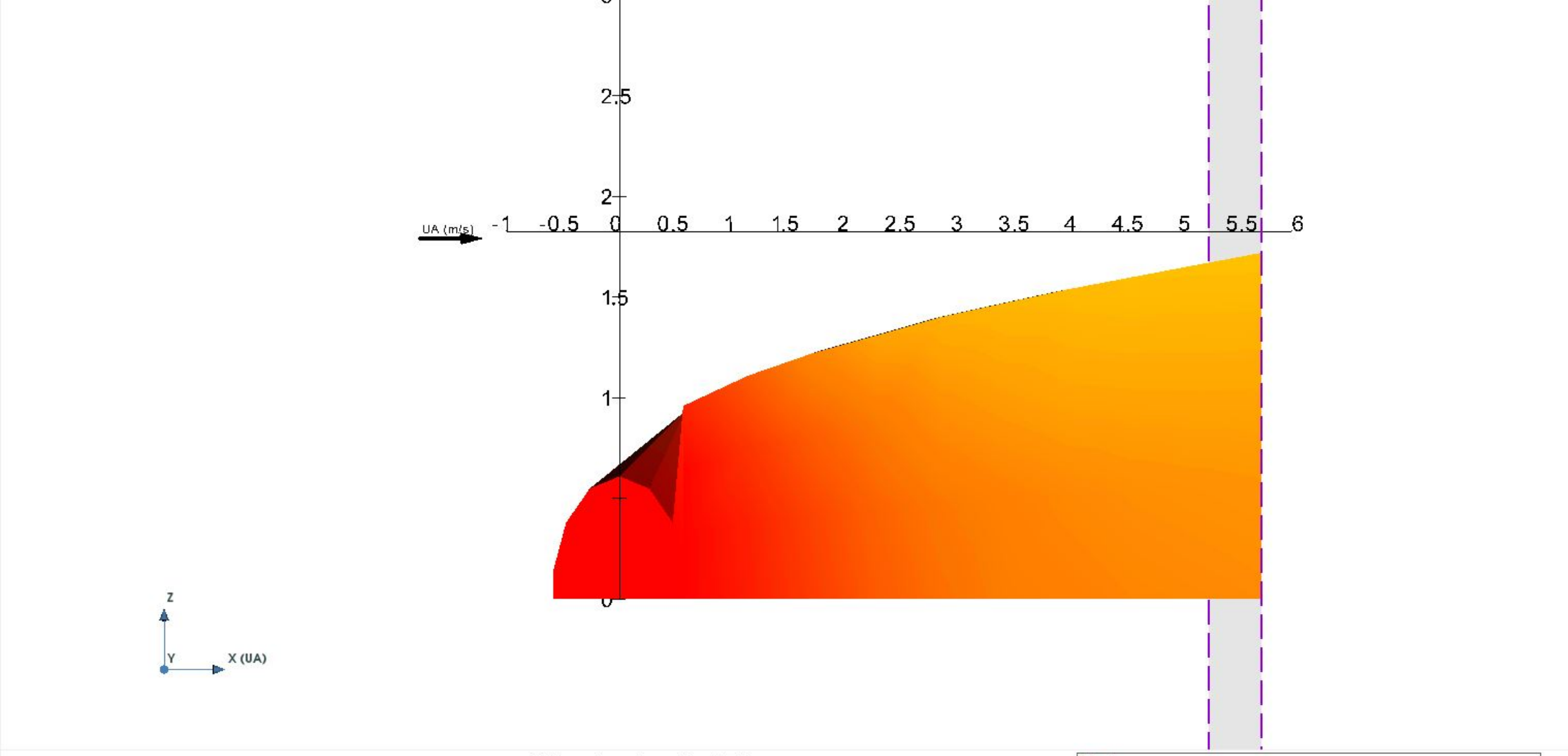
1) Recirculation zone: The discharge flow becomes quickly deflected by the ambient flow and attaches to the bottom. A recirculation eddy exists in the lee of the discharge structure.

2) Buoyant spreading at bottom: In case of negative discharge buoyancy only, the plume spreads laterally along the bottom while it is being advected by the ambient current. The plume thickness may decrease during this phase. The mixing rate is relatively small. The plume may interact with a nearby bank or shoreline.

3) Passive ambient mixing: After some distance the background turbulence in the ambient shear flow becomes the dominating mixing mechanism. The passive plume is growing in thickness and in width. The plume may interact with the layer upper boundary and/or banks.

*** The ambient flow plays an important role in this flow configuration. Hence, all the zones listed above constitute the NEAR-FIELD REGION with strong initial mixing. Predictions will be terminated in zones 2 or 3 depending on the definitions of the REGULATORY MIXING ZONE or the REGION OF INTEREST. ***

END OF FLOW CLASS DESCRIPTION **********



Discharge Excess (bacteria-counts)

1 3 11 38 126 424 1423 4771 16000

Williams Base Case E. coli FF

Flow Class: H2A2 Origin: Ambient Bottom
CORMIX1 Simulation Length units in meters
Distortion Scale: Y:X = 1.4 Z:X = 1.8
Visualization up to X = 5.74 m (out of ROI X = 6 m)

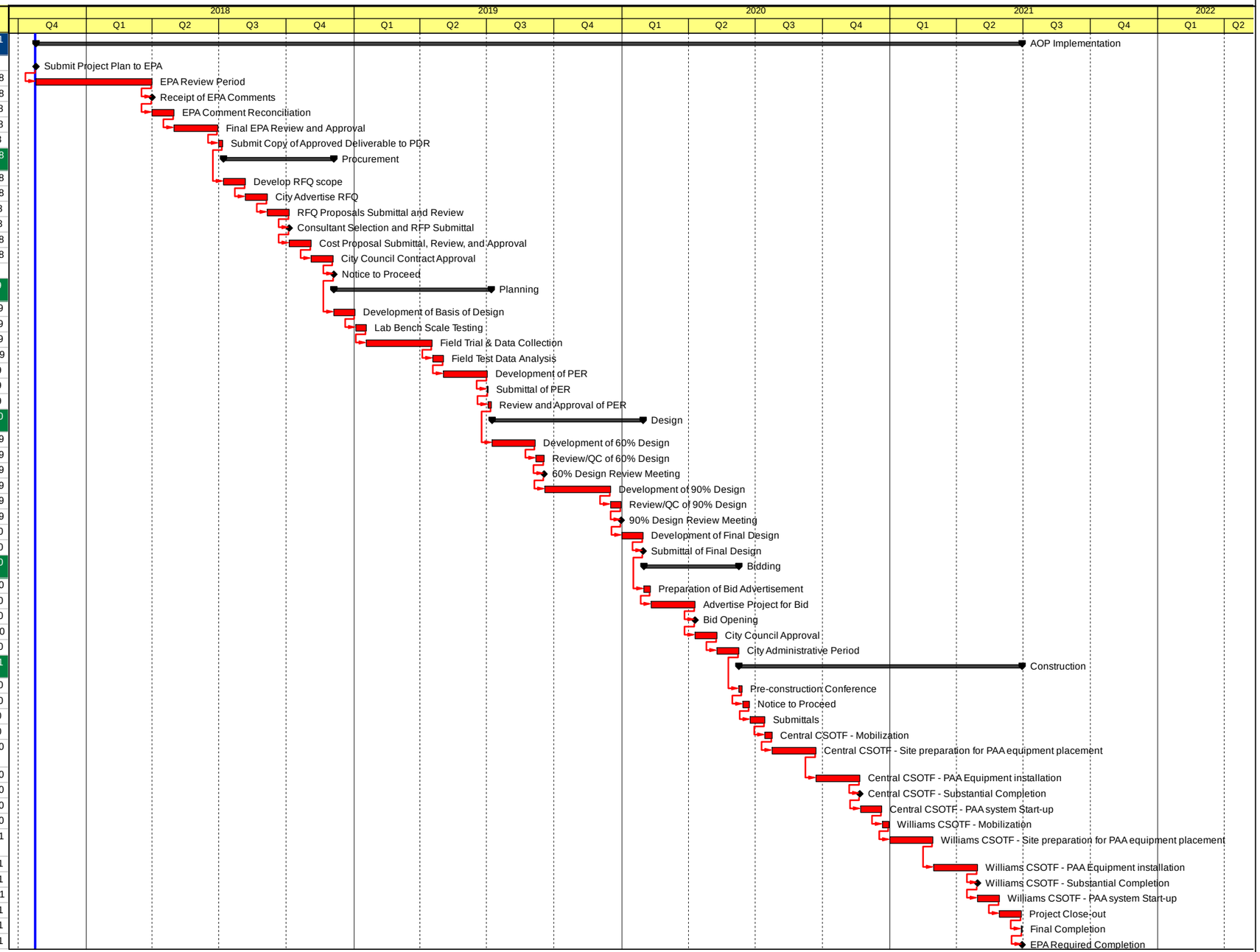
Plume Centerline
End of Near Field Region (NFR)
Cormix Module Boundary (MOD)

Warnings:
> Close to Bank/Shore. Boundary interaction at end of near field
> Low ambient velocity

Appendix H

Estimated Implementation Schedule

Activity ID	Activity Name	At Completion Duration	Start	Finish
AOP Implementation		1345	24-Oct-17	29-Jun-21
A1000	Submit Project Plan to EPA	0	24-Oct-17	
A1010	EPA Review Period	159	24-Oct-17	31-Mar-18
A1160	Receipt of EPA Comments	0		31-Mar-18
A1170	EPA Comment Reconciliation	30	01-Apr-18	30-Apr-18
A1180	Final EPA Review and Approval	60	01-May-18	29-Jun-18
A1190	Submit Copy of Approved Deliverable to PDR	7	30-Jun-18	06-Jul-18
Procurement		150	07-Jul-18	04-Dec-18
A1150	Develop RFQ scope	30	07-Jul-18	05-Aug-18
A1200	City Advertise RFQ	30	06-Aug-18	04-Sep-18
A1210	RFQ Proposals Submittal and Review	30	05-Sep-18	04-Oct-18
A1220	Consultant Selection and RFP Submittal	0		04-Oct-18
A1230	Cost Proposal Submittal, Review, and Approval	30	05-Oct-18	03-Nov-18
A1240	City Council Contract Approval	30	04-Nov-18	03-Dec-18
A1250	Notice to Proceed	0	04-Dec-18	
Planning		216	04-Dec-18	07-Jul-19
A1290	Development of Basis of Design	30	04-Dec-18	02-Jan-19
A1070	Lab Bench Scale Testing	15	03-Jan-19	17-Jan-19
A1080	Field Trial & Data Collection	90	18-Jan-19	17-Apr-19
A1090	Field Test Data Analysis	15	18-Apr-19	02-May-19
A1260	Development of PER	60	03-May-19	01-Jul-19
A1270	Submittal of PER	1	02-Jul-19	02-Jul-19
A1280	Review and Approval of PER	5	03-Jul-19	07-Jul-19
Design		207	08-Jul-19	30-Jan-20
A1300	Development of 60% Design	60	08-Jul-19	05-Sep-19
A1310	Review/QC of 60% Design	12	06-Sep-19	17-Sep-19
A1320	60% Design Review Meeting	0		17-Sep-19
A1330	Development of 90% Design	90	18-Sep-19	16-Dec-19
A1340	Review/QC of 90% Design	15	17-Dec-19	31-Dec-19
A1350	90% Design Review Meeting	0		31-Dec-19
A1100	Development of Final Design	30	01-Jan-20	30-Jan-20
A1360	Submittal of Final Design	0		30-Jan-20
Bidding		130	31-Jan-20	08-Jun-20
A1030	Preparation of Bid Advertisement	10	31-Jan-20	09-Feb-20
A1370	Advertise Project for Bid	60	10-Feb-20	09-Apr-20
A1380	Bid Opening	0		09-Apr-20
A1390	City Council Approval	30	10-Apr-20	09-May-20
A1400	City Administrative Period	30	10-May-20	08-Jun-20
Construction		386	09-Jun-20	29-Jun-21
A1420	Pre-construction Conference	5	09-Jun-20	13-Jun-20
A1410	Notice to Proceed	10	14-Jun-20	23-Jun-20
A1440	Submittals	20	24-Jun-20	13-Jul-20
A1430	Central CSOTF - Mobilization	10	14-Jul-20	23-Jul-20
A1110	Central CSOTF - Site preparation for PAA equipment placement	60	24-Jul-20	21-Sep-20
A1120	Central CSOTF - PAA Equipment installation	60	22-Sep-20	20-Nov-20
A1450	Central CSOTF - Substantial Completion	0		20-Nov-20
A1130	Central CSOTF - PAA system Start-up	30	21-Nov-20	20-Dec-20
A1470	Williams CSOTF - Mobilization	10	21-Dec-20	30-Dec-20
A1480	Williams CSOTF - Site preparation for PAA equipment placement	60	31-Dec-20	28-Feb-21
A1490	Williams CSOTF - PAA Equipment installation	60	01-Mar-21	29-Apr-21
A1500	Williams CSOTF - Substantial Completion	0		29-Apr-21
A1510	Williams CSOTF - PAA system Start-up	30	30-Apr-21	29-May-21
A1600	Project Close-out	30	30-May-21	28-Jun-21
A1590	Final Completion	1	29-Jun-21	29-Jun-21
A1700	EPA Required Completion	0		29-Jun-21



Summary
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining W...
Milestone

CHATTANOOGA CONSENT DECREE PROGRAM
CITY OF CHATTANOOGA, TN
WASTE RESOURCES DIVISION

JACOBS®