

TASK ORDER NO. 17

SCOPE OF SERVICES AND FEE PROPOSAL

**Surface Water Discharge – Study
City of New Port Richey
October 31, 2018**

Task Order No. 17 between McKim & Creed, Inc., hereinafter referred to as CONSULTANT, and the City of New Port Richey hereinafter referred to as CITY, shall be as described below.

PROJECT DESCRIPTION

Administrative Order AO-005-SWD-17 issued by the Florida Department of Environmental Protection (FDEP) with the CITY's Domestic Wastewater Facility Permit required the submission of a Plan of Study (POS) to evaluate the receiving waters under the numeric nutrient criteria. The Final POS was submitted to the FDEP on June 20, 2018 and accepted by FDEP on July 13, 2018. When accepting the POS, the FDEP directed the CITY to perform the study in accordance with the approved POS and the schedule in the POS.

In response to the CITY's request, the CONSULTANT will provide the **Scope of Work** outlined below. The scope reflected is in accordance with the approved POS.

Task 1 – Project Management

- A. Develop project documents and filing systems for the project that include project set-up, project schedule, electronic files. Conduct internal kick-off meeting. Prepare project invoices and status reports. For budgetary purposes, we have assumed the project duration to be no more than 15 months.

Task 2 – Background Water Quality Monitoring

- A. Monthly Copper Sampling. Monthly sampling of plant effluent will be collected for copper analysis. Monthly sampling for copper will also be performed in Cross Bayou upstream and downstream of discharge point D-001. The total number of samples at each location will be based on total depth at time of sampling. Therefore, the maximum number of samples that will be collected is eight (8); one sample from the effluent and the 'UP' monitoring location and two samples from monitoring locations MP-1, MP-2, and MP-3 (refer to the attached Figure 6 copied from the approved POS). The copper sampling will continue for a period of one year.

- B. Diel Water Quality Monitoring. During each quarterly monitoring event, diel water quality including pH, specific conductivity, DO, salinity, and temperature will be monitored at 15-minute intervals over a 48-hour period at monitoring locations MP-1 and MP-3. This in-situ data collection will occur specifically during a neap tide.

Because of the conditions of the MP-3 location, essentially open ocean, we propose to utilize HOBO data loggers. HOBO data loggers are small, self-contained, and rugged loggers that can be completely submerged long-term without any connection to a computer to be able to measure and record the various parameters.

Prior to deployment all sensors will be calibrated to field testing acceptance criteria for dissolved oxygen, pH, and specific conductivity as outlined in DEP-SOP-001/01 FT 1000 General Field Testing and Measurement. Pre-deployment calibration and post-deployment verification data sheets will be completed for each maintenance visit and a record will be maintained on file through the life of the project.

- C. Water Quality Monitoring. Water quality grab samples will be collected on a quarterly basis, except for copper, which will be collected monthly, to capture background conditions in the upstream and downstream receiving waters in Cross Bayou. Water quality sampling will be collected from the four proposed monitoring locations, UP, MP-1, MP-2, and MP-3. In addition to the four monitoring locations, one (1) duplicate sample, one field blank, one equipment blank, and one trip blank will be collected for each parameter each year during the study period. Samples will be collected during a falling tide within the diel monitoring 48-hour time period. Samples will be collected for a duration of one year.

The various parameters to be analyzed are summarized in the table below which was copied from the approved POS. The total number of water quality grab samples will be determined based on the total depth at the time of sampling. In general, if total depth is less than or equal to 3 feet, a single grab sample will be collected at 0.60 ratio to the total depth. If the total depth is greater than 3 feet, a surface sample will be collected within the first 1 foot and a second sample will be collected at depth of 0.60 ratio to the total depth.

Summary of Measured Parameters

Parameter	Units	Class III Standard (Ch. 62-302)	Method	Mean Detection Limit	Practical Quantification Limit
CBOD5	mg/L	NA	SM5210B	2	2
TSS	mg/L	NA	SM2540D	1	1
Chlorophyll α (corrected)*	ug/L as AGM	1.0	SM10200H	1	1
Total Recoverable Copper	ug/L	3.7	SW6010	0.84	8
Ammonia as N**	mg/L	***	E350.1	0.02495	0.1
Total Nitrogen*	mg/L	0.65	Calculation	0.048	0.048
Total Phosphorus*	mg/L	0.034	E365.4	0.04561	0.2
Chlorine	mg/L	< 0.01	CL4500	0.0877	0.05
Chlorodibromomethane	ug/L	< 34+	SW8260B	0.557	1
Dichlorobromomethane	ug/L	< 22+	SW8260B	0.492	1

* NNC standard.

** Has a specific equation that is based on the 30 day average. However, the proposed monitoring will not be monitored for 30 consecutive days. The equation will be used for comparison purposes only.

$$*** \text{ 30 - day Average} = 0.8876 \times \left(\frac{0.0278}{1 + 10^{7.688 - pH}} + \frac{1.1994}{1 + 10^{pH - 7.688}} \right) \times (2.126 \times 10^{0.028 \times (20 - \text{MAX}(T, 7))})$$

+ Annual Average.

- D. Quarterly Biological Monitoring. Biological sampling will include macroinvertebrates and phytoplankton analysis. Biological sampling will be conducted a total of four times during the one year monitoring period, including at least one in the wet season and one in the dry season. Samples will be collected at all four monitoring locations, UP, MP-1, MP-2, and MP-3.

All biological samples will be sent to Water and Air Research, Inc. of Gainesville, Florida for sorting and taxonomic enumeration. Laboratory procedures including, documentation, subsampling methods, identification requirements, and quality control/assurance measures will be derived from the approved FDEP SOP's. All sorted detritus material and extracted organisms will be maintained at Water and Air Research laboratories through the completion of the project.

- E. Monitoring Schedule. Monitoring is scheduled to be conducted for one year. A more detailed breakdown of monitoring tasks for each area of study is provided in table below which was copied from the approved POS. As noted previously, copper will be collected monthly.

Monitoring Schedule

Sampling Type	Description	Month (1 Year Total Duration)											
		1	2	3	4	5	6	7	8	9	10	11	12
Diel Water Quality Monitoring	48 Hr Sonde Deployment		Q1			Q2			Q3			Q4	
Water Quality Sampling	Laboratory Analysis		Q1			Q2			Q3			Q4	
Biological Sampling	Laboratory Analysis		Q1			Q2			Q3			Q4	
Final Summary Report													A

Q - Quarterly (every three months).
 A - At end of monitoring period.

Task 3 – Discharge Water Quality Monitoring

- A. In the event of a discharge to D-001, water quality and biological sampling as outline in Tasks 2C and 2D above, will be collected at the discharge point and the proposed sampling locations upstream and downstream (total of 5 locations - refer to the attached Figure 6 copied from the approved POS) within 48-hours following the start of discharge. Additional water quality and biological samples will be collected depending on the duration of the discharge. An additional sample will be collected if discharge continues for seven (7) consecutive days after the start of discharge. If the discharge continues for more than 30 consecutive calendar days, water quality samples will be collected once every 30 days. Upon the cessation of discharge, a final sample will be collected within a maximum of seven (7) days following cessation. The table below summarizes the frequency and location based on the length of discharge.

Discharge Sampling Summary

Parameter	Frequency	Location
Full Suite ¹	Within 48 hrs of start of discharge	UP, DISCHARGE, MP#1, MP#2, MP#3
Full Suite ¹	7 days after start of discharge	UP, DISCHARGE, MP#1, MP#2, MP#3
Full Suite ¹	Once every 30 days ²	UP, DISCHARGE, MP#1, MP#2, MP#3
Full Suite ¹	Within 7 days of cessation of discharge	UP, DISCHARGE, MP#1, MP#2, MP#3

¹ Full suite includes all parameters listed in the Summary of Measured Parameters Table in Task 2C and the biological sampling described in Task 2D.

² If the discharge to D-001 continues for more than 30 consecutive calendar days

- B. If a discharge to D-001 does not occur during the one year of quarterly sampling, it is understood that additional quarterly sampling is not required. It is also understood that for the purpose of this study, discharge water quality monitoring sampling will occur if and when a discharge happens during the current NPDES permit term for a maximum of four (4) events.

Task 4 – One Year Data Analysis and Reporting

- A. Background Water Quality Monitoring. A copy of the analytical results will be provided quarterly to the City. This will include providing raw data sets in laboratory reporting format as well as in excel format. Monthly and quarterly analytical, instantaneous and

diel physiochemical data will be summarized using standard summary statistics and will include mean, median, and standard deviation calculations. All data will be summarized in a letter report and will be considered the quarterly product to complete the quarterly sampling event. The letter report will also include observations that are pertinent to the study, report on the existing conditions of the equipment and monitoring locations, include photographs taken during the monitoring period, and will discuss concerns or recommendations for the successful completion of the one year study.

- B. The macroinvertebrate community will be assessed using the Shannon-Weiner Diversity Index, as well as other commonly used diversity indices, including evenness, species richness, effective species richness, and density and a copy of the results provided to the City.
- C. Discharge Water Quality Monitoring. Discharge analytical and instantaneous data will be summarized using standard summary statistics and will include mean, median, and standard deviation calculations. A copy of the analytical results will be provided to the City.
- D. One-Year Summary Report. Upon the completion of the one-year study, a Final Report will be prepared to provide and summarize the data collected, statistical analysis results and conclusions. Data collected from the monthly copper testing, quarterly water quality testing, and quarterly biological sampling will be provided and summarized in the annual report at a minimum. Discharge events that occur during the one-year monitoring period will also be included.

Task 5 – Subsequent Year Discharge Reports

- A. If discharge at D-001 does not occur during the one-year monitoring period, sampling in subsequent years following the discharge schedule as outline in Task 3 will be summarized in an annual report. This annual report will be submitted by March 1st of each subsequent year. If discharge does not occur during each subsequent year, a letter will be submitted to document there were no discharge events during that year.

CITY STAFF ASSISTANCE

The CITY will be asked to provide assistance to the Project Team in order to complete the project on a timely basis. The following is a list of items requested from the CITY.

1. Access to the WWTP for the purpose of obtaining samples.
2. Copies of all discharge monitoring reports.
3. Copies of flow data and analytical sampling results during wet weather surface water discharge events.

DELIVERABLES

1. Background quarterly water quality monitoring letter reports (four reports – one per quarter) in Adobe pdf format
2. Draft One-Year Summary Report in Adobe pdf format.
3. Final One-Year Summary Report, three signed and sealed paper copies and one in Adobe pdf format.
4. Subsequent Year Discharge Reports, three signed and sealed paper copies and one in Adobe pdf format.

COORDINATION

Work performed as part of this Task Order will be coordinated through Roger Goodwin, Water Pollution Control Operations Manager. Correspondence to the CONSULTANT will be directed to Mitch Chiavaroli, PE.

CONSULTANT'S COMPENSATION

For the above described Scope of Services in Task Order No. 17, the CITY will compensate the CONSULTANT in accordance with the following fee schedule:

Task 1 - Project Management – Lump sum fee of \$10,840.00 based on a 15 months project duration.

Task 2A – Monthly Copper Sampling - \$750 per sampling event. For budgetary purposes, we assumed 12 sampling events for a total of \$9,000.00.

Task 2B – Diel Water Quality Monitoring - \$3,112.50 per sampling event. For budgetary purposes, we assumed 4 sampling events for a total of \$12,450.00.

Task 2C – Water Quality Monitoring - \$2,785.00 per sampling event. For budgetary purposes, we assumed 4 sampling events for a total of \$11,140.00.

Task 2D – Quarterly Biological Monitoring - \$12,690.00 per sampling event. For budgetary purposes, we assumed 4 sampling events for a total of \$50,760.00.

Task 3 – Discharge Water Quality Monitoring - \$19,610.00 per sampling event. For budgetary purposes, we assumed 2 sampling events (initial sampling event within 48 hours of the occurrence of discharge and second sampling event within 7 days of the cessation of the wet weather discharge) for a total of \$39,220.00.

Task 4A – Background Water Quality Monitoring Reporting – Lump sum fee of \$9,050.00 based a total of four (4) quarterly reports.

Task 4C - Discharge Water Quality Monitoring Reporting – lump sum fee of \$1,900.00 per discharge event.

Task 4D – One-Year Summary Report – Lump sum fee of \$10,400.00.

Task 5 – Subsequent Year Discharge Reports – Not to exceed fee of \$3,950.00 per year, dependent on whether a discharge occurred in the year.

ADDITIONAL SERVICES REQUIRING AUTHORIZATION IN ADVANCE

If required by the CONSULTANT and authorized by the CITY, additional services related to this Task Order shall be provided by the CONSULTANT for additional professional fees negotiated with and agreed to by the CITY.

SCHEDULE

Background sampling will be performed monthly or quarterly as described in Task 2 for a period of 12 consecutive months. Background water quality monitoring reports will be submitted within 30 days of the end of the quarter. The One-Year Summary Report, and all subsequent year discharge reports will be submitted by March 1st of the following year.

Wet weather discharge sampling will be performed in accordance with the schedule identified in the Discharge Sampling Summary Table in Task 3. Discharge water quality monitoring reports will be submitted within 45 days of the cessation of the wet weather discharge.