TO: James L. App, City Manager

FROM: Doug Monn, Public Works Director

SUBJECT: Local Limits Laboratory Services

DATE: September 2, 2008

NEEDS: For City Council to consider awarding analytical laboratory work to Fruit Growers Laboratory, Inc. to develop technically based local limits for the Industrial Waste Program.

FACTS:

1. The Federal Code of Regulations (CFR) requires Publicly Owned Treatment Works (POTWs) to develop and enforce limits of the character and volume of pollutants being discharged into their wastewater treatment system..

2. The limits are required to protect the treatment facility and limit adaverse water quality impacts.

3. The Wastewater Treatment Plant's (WWTP) has had numerous permit violations for salts. The current discharge permit requires the City to establish numeric concentration limits for TDS, sodium, sulfate, and chloride in WWTP influent. These pollutants are included in the Local Limits study.

4. The City contracted with Cornerstone Engineering, Inc. in March 2008 to provide consulting services for the Industrial Waste Program. They prepared a local limits work plan which includes sampling for 28 pollutants at six locations in the WWTP and two locations in the collections system over five consecutive days. The plan follows the EPA Guidelines.

5. The local limits must be technically based, evaluated and confirmed.

6. Quotes were requested from three EPA-approved California Laboratories for the study. Clinical Laboratory of San Bernadino did not submit a bid. Abalone Coast Bacteriology was not able to meet the parameters of the bid specifications. The following quotes were received:

Clinical Laboratory of San Bernadino	$00,000
Abalone Coast Bacteriology	$13,029
Fruit Growers Laboratory, Inc.	$14,132

7. The quote submitted by Fruit Growers Laboratory Inc. is complete and satisfies bid specifications.

ANALYSIS & CONCLUSION: The development of technically based local limits is imperative to comply with discharge requirements in the permit. The Environmental Protection Agency (EPA) recommends that POTWs review the adequacy of local limits if current wastewater treatment plant fails to achieve applicable permit requirements including water quality objectives of receiving waters.

POLICY REFERENCE: 40 CFR Parts 403.5(c)(2)
Waste Discharge Requirements Order No. R3-2004-0031, NPDES Permit N0. CA0047593 Wastewater Treatment Facility, San Luis Obispo County, WDID 3 400105001

FISCAL IMPACT: Wastewater Treatment of the Wastewater Division has a line item for Special Projects (Budget NO 601.310.5235.164). Of the $120,000 budgeted for Special Projects, there exists a balance of $116,800.

OPTIONS:

a. City Council authorize staff to contract with Fruit Growers Laboratory Inc. to perform analytical laboratory services for the local limits sampling project for a not-to-exceed budget $14,132.

b. Amend, modify, or reject the above option.

Prepared by: Patti Gwathmey, Industrial Waste Manager

Attachments (3)
1) Local Limits Sampling Plan
2) Price quote from Fruit Growers Laboratory Inc.
3) Resolution

CORNERSTONE

ENGINEERING

CONSULTING CIVIL ENGINEERS & LAND SURVEYORS

June 26, 2008

DRAFT

Local Limits Work Plan

for the

City of Paso Robles

Prepared for:
City of Paso Robles

Prepared by:
Cornerstone Engineering, Inc.

REGISTERED PROFESSIONAL ENGINEER
DERRILL G. WHITTEN, JR.
No. C-051930
Exp. 6/30/10
CIVIL
STATE OF CALIFORNIA

7/21/08

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INTRODUCTION

Publicly Owned Treatment Works (POTWs) are responsible for limiting, where necessary, the character and volume of pollutants being discharged into their wastewater treatment system in order to protect the treatment facility against pass through and interference, adverse receiving water quality impacts, and worker health and safety problems. POTWs must prevent conditions that would interfere with improving opportunities for beneficial use of sludge. POTWs control the discharge of toxic pollutants to their wastewater treatment facilities through the development and implementation of Pretreatment Standards, called local limits.

The primary objective of the City's Pretreatment Program is to maintain compliance with the waste discharge requirements in the WWTP permit. The program is also designed to prevent:

- Interference with WWTP treatment operations
- Pass-through of conventional and toxic pollutants
- Contamination of municipal biosolids
- Worker exposure to chemical hazards

To meet these objectives, local limits are set to control inputs to the WWTP from industrial users (IUs). The procedure for deriving local limits is described in *Local Limits Development Guidance*, U.S. EPA, 2004 (Local Limits Guidance).

This work plan is based on fulfilling data requirements specified in the Local Limits Guidance to update the City's local limits. The major elements of this work plan include the following:

- Approach for determining local limits monitoring requirements
- Collection system and WWTP monitoring plan to provide information required for sampling and local limits development
- Considerations and procedures associated with the local limits sampling process

LEGAL AUTHORITY CITATIONS

40 CFR 403.2: Objectives of the General Pretreatment Regulations are to prevent Pass Through, Interference, and improve opportunities to recycle and reclaim wastewater and sludges.

40 CFR 403.5(c)(1): Each POTW shall continue to develop local limits as necessary and effectively enforce these limits.

40 CFR 403.5(c)(2): All other POTWs shall develop and enforce local limits where Interference or Pass Through have been seen.

40 CFR 403.5(d): Local Limits shall be Pretreatment Standards for the purposes of the CWA.

GENERAL REQUIRMENTS

In order to establish technically-based local limits POTWs must use the best available technical information to identify pollutants of concern and the maximum loading that can be accepted by the treatment facility. Conceptually, the maximum daily loading of a pollutant that can be accepted is the maximum quantity (pounds per day) of a pollutant or the Maximum Allowable Headworks Load (MAHL) that may enter a POTW. Pollutant loading that is greater than the MAHL, would be predicted to cause an impact, either in the receiving water or in the biosolids.

The MAHL is the total amount of a pollutant that can be received by the POTW. It can be broken down into separate waste streams from the following sources:

1. Domestic: This is the loading from domestic only sources. This would include homes, apartments, condos, etc. The WWTP was specifically built to serve these customers and treat domestic quality waste.
2. Significant Industrial Users: These are the industrial users that are considered significant as defined at 40 CFR 403.3(t). The WWTP must permit, inspect, and sample these SIUs. The allowable loading by all SIUs is the total amount allocated through permits (not the actual quantity that they discharge). This total loading is based upon the calculated Maximum Allowable Industrial Loading (MAIL) for each pollutant.
3. Non-Significant (Commercial) Industrial Users: This portion of the MAHL represents all of the non-domestic users, except for the SIUs listed above but does include commercial users. This class of Users may contribute significant loadings to WWTPs and require significant efforts by the WWTP to control. The most common users in this class are dental offices, photo processors, radiator shops, commercial laundries, etc. This will be referred to as the calculated Maximum Allowable Commercial Loading (MACL) for each pollutant throughout this Strategy.
4. WWTP Safety and Expansion Factor: This is the amount set aside to account for growth in the sewerage system and to provide a margin of protection to the WWTP against slug loads due to accidental discharges and population growth.

Hauled waste is not currently received at the WWTP. If this situation changes in the future, then consideration should be given to the portion of the MAHL that would be contributed by this source.

CONSTITUENTS OF CONCERN

The purpose of developing local limits is to prevent interference of WWTP treatment operations, protect worker health and safety, prevent pass-through of conventional and toxic pollutants, and prevent contamination of biosolids. Since the development of the City's existing local limits, the City has been re-issued subsequent NPDES permits with new effluent water quality limitations. These changes indicate a need to update the local limits. A list of Constituents of Concern (COCs) has been developed for the field testing and evaluation of new local limits. This list has been developed through the evaluation of several factors including:

- Salts, metals and other conventional pollutants listed in the WWTP permitted limits.
- COCs that might be expected from existing IUs.
- WWTP COCs that are known to impact the quality of the plant Biosolids

The list of COCs along with the listing criteria is as follows in Table 1:

Table 1. Constituents of Concern and Driving Factor for Inclusion

Pollutant	Driving Factor[1]
Conventional	
Ammonia (as N)	I,IU,P
Biochemical oxygen demand (BOD)	P, IU
Chloride	I,P
Nitrate (as N)	P
Nitrite (as N)	P
Oil & grease	P. IU
Sulfate (as SO_4)	P
Surfactants (MBAS)	I,IU
Total dissolved solids (TDS)	P,IU
Total suspended solids (TSS)	P
Priority Pollutant Metals & Cyanide	
Antimony	B
Arsenic	P,B,I
Beryllium	B
Cadmium	P,B,I
Chromium (total)	P,B,I,IU
Copper	P,B,I,IU
Lead	P,B,I
Mercury	P,B,I
Nickel	P,B,I,IU
Selenium	P,B
Silver	I,IU
Thallium	B
Zinc	P,B,I,IU
Cyanide	I,P,IU
Other Trace Metals	
Boron	P
Manganese	B
Molybdenum	B
Sodium	P

[1] I = treatment process inhibition; B = biosolids quality regulations; P = NPDES permit effluent water quality limitation; IU = potential industrial user discharge.

SAMPLING PLAN

The sampling plan shall account for the following:

1. The consideration of sampling locations is critical to establishing the allocation of COC concentrations from all the known sources (industrial, commercial, domestic, etc.) In addition, samples are required at locations inside the treatment plant to develop data on removal efficiency for the plant processes. Sampling locations and criteria are described below:

   a. **Influent Samples:** Will be collected of raw wastewater prior to mixing with any wastestreams that are returned to the headworks of the WWTP (e.g. sludge digester decant and filter press filtrate).

   b. **Primary Effluent Samples**: Will be collected following the primary treatment. Primary Effluent Samples will provide data needed to calculate removal efficiency of the primary treatment and is needed for COCs which could inhibit or damage the biological treatment processes in the biofilters.

   c. **Secondary Effluent Samples**: Should enable the collection of samples prior to the chlorination basins. This data is needed for COCs where secondary treatment removal efficiency data is needed, and where chlorination would impact the concentration levels (eg. Chlorides, ammonia, etc.)

   d. **Final Effluent Samples**: Sampling location should be after the final treatment provided (as specified in the NPDES permit). This would be the outfall location at the point where the plant discharges to the river.

   e. **Primary Sludge**: Grab samples of primary sludge is needed to calculate the raw sludge loading on the digesters.

   f. **Biosolids**: Sampling locations should be after all biosolids treatment, chemical addition, and dewatering processes. The sampling location for compliance determination is at the end of the treatment or last sludge handling process just prior to final use or disposal.

   g. **Industrial/Commercial**: Sampling the industrial/commercial wastewater contribution may be accomplished by isolating and sampling an area(s) of the collection system known to only receive primarily industrial/commercial waste. such as photo finishers, medical offices, grocery stores, restaurants, light industry, and , automotive garages. This is potentially a very significant contribution to the total headworks load.

   h. **Domestic Only**: Sampling the wastewater contribution may be accomplished by isolating and sampling an area(s) of the collection system known to only receive domestic waste.

   i. **SIUs:** contributions shall be evaluated from historical data generated by past testing data on file with the City.

2. Grab samples are required for ammonia, cyanide, mercury, oil and grease, and MBAS. All other sampling will be time proportional composite samples.

3. Identification of containers, preservatives, holding times, and shipping/storage procedures for all samples must be addressed.

4. Identification of analytical methods required for the analysis of each pollutant including the required method detection limit. Refer to Appendix A; Table A-1. Maximum Reporting Limits and Analytical Methods.

5. The WWTP unit process hydraulic detention times between the sampling of each sampling location to take into account detention time through the wastewater treatment facility. For example, if the detention time through the plant is 24 hours, the effluent sample should be collected 24 hours after the influent sample.

6. Identification of data to be recorded for each sample. [date, time, initials of sampler, preservation, location, sample type, wastewater flow etc.].

7. Sludge flows to disposal, % solids of the sludge to disposal, and the density/specific gravity of sludge to disposal.

8. When evaluating the adequacy of sampling locations, a POTW should consider whether:

   a. Sampling locations are representative of the entire wastestream being sampled;

   b. Sampling locations provide for a well mixed wastestream;

   c. Automatic composite sampling techniques will be used, except where grab samples are required;

   d. Sampling locations are readily accessible;

   e. Sampling locations are free from conditions that may bias sample results.

9. Sampling Locations and Schedule. For this local limits monitoring study, wastewater samples will be collected during dry, normal operating conditions in the collection system, influent, primary treatment effluent, secondary treatment effluent, final effluent, and primary sludge, and biosolids. A general sampling

schedule is provided in Table 2.A detailed summary of daily activities necessary to complete the local limits monitoring requirements are provided in Appendix B.

Table 2. Sampling Locations and Schedule

Location (Site ID)	Consecutive Days of Sampling		
	Conventional	Priority Pollutant Metals & Cyanide	Other Trace Elements
Collection System (CS – Res)	5	5	5
Collection System (CS – Comm)	5	5	5
WWTP Influent (IN)	5	5	5
WWTP Primary Treatment Effluent (PE)	-	5*	-
WWTP Secondary Treatment Effluent (SE)	5	5	-
WWTP Final Effluent (FE)	5	5	5
WWTP Raw Primary Sludge (RPS)	-	2	-
WWTP Biosolids Disposal Point (B)	-	2	2

* Only Zinc and Cyanide are sampled

10. Local limits monitoring involves collection of both composite and grab samples. A summary of sample collection and analysis requirements is presented in Table 3. A partial list of equipment required for sample collection is presented in Appendix C. All samples will be collected using clean techniques (see Appendix D). Samples will be iced or chilled to 6°C in a refrigerated unit, from the time of collection to delivery to the analytical laboratory, to minimize sample degradation. Recommended analytical methods and maximum reporting limits are provided in Appendix A.

Table 3. Sample Collection and Analyses Requirements

Pollutant	Sample Type	Minimum Sample Size	Preservation[1]	Maximum Hold Time
Ammonia (as N)	Grab	500 mL HDPE	H_2SO_4 to pH<2	28 days
BOD	Composite	Glass BOD container		48 hours
Chloride	Composite	1 L HDPE		48 hours
Nitrate (as N)				48 hours
Nitrite (as N)				48 hours
Sulfate (as SO_4)				48 hours

Pollutant	Sample Type	Minimum Sample Size	Preservation[1]	Maximum Hold Time
Priority pollutant-metals (total recoverable)[2]	Composite	500 mL HDPE	HNO_3 to pH<2	6 months
Other trace elements[3]				
TDS	Composite	500 mL HDPE		7 days
TSS				7 days
Cyanide	Grab	500 mL HDPE	NaOH to pH>12	14 days
Mercury	Grab	500 mL glass, double-bagged	HCl to pH<2	28 days
Oil & grease	Grab	1 L glass	HCl to pH<2	28 days
Surfactants (MBAS)	Grab	500 mL HDPE		48 hours

[1] All samples should be cooled to 0-6°C.

[2] Priority pollutant metals = See Table A-1

[3] Wastewater other trace elements = See Table A-1

11. All sample containers will be labeled with the following information:

    a. Project name

    b. Sample location and site ID

    c. Date of sample collection

    d. Time of sample collection

    e. Analysis to be performed

    Time of sample collection is the time that a grab sample was taken or the end of the composite period for composite samples.

12. **Composite Sampling**: Time composite samples will be collected. Prior to the start of sampling, new composite sampler intake tubing, new peristaltic silicone pump tubing, and the Teflon intake strainer will be acid-washed. The composite sampler will be calibrated to ensure accurate operation. All composite samples will be collected in clean/acid-washed borosilicate glass sample containers. Specific cleaning protocols to be used are included in Appendix D.

13. **Grab Sampling**: Grab samples will be collected once per day during the sampling period at locations close to the composite sampler intake to ensure that composite and grab samples are collected at the same location. Grab samples are associated with the composite sample removed from the sampling unit on the same day that the grab samples are collected (e.g., Day 1 grab sample is

collected when Day 1 composite sample is removed from the sampler). Grab samples will be collected directly into laboratory-provided sample containers. If necessary, the sample container will be fastened to a grab pole. The "pole side" of the container will always be directed downstream of the sample container to minimize potential for contamination by the grab pole.

14. **Field Measurements**: At the time of grab sample collection, pH, and temperature will be measured and recorded using equipment calibrated according to instrument specifications at all locations except for the biosolids disposal point.

QUALITY ASSURANCE/QUALITY CONTROL

A QA/QC plan will be implemented as part of the local limits monitoring program to ensure that analytical data can be used with confidence. QA/QC procedures to be initiated include the following:

- Field controls
- Laboratory controls
- Sample chain-of-custody
- Data verification and validation

On days when samples are collected for QA/QC purposes, extra volume may be required for analyses. Once the filled composite containers are retrieved from the sampler, the sample will be split into the appropriate sample containers as specified by the analytical method. For grab sample QA/QC, it may be necessary to collect extra individual grab samples. After samples are split into the appropriate containers, samples will be packaged appropriately, iced, and delivered/shipped to the analytical laboratory. *Note: Some QA/QC samples require additional sample volume or blank water and the appropriate volumes will need to be collected during monitoring.* A schedule for all QA/QC activities is included in Table 4.

Table 4. Quality Assurance/Quality Control Schedule

Day	QA/QC Type
Collection System (CS) Residential and Commercial	
Day 0 – sampler start	Composite field blank (Conv., Other trace elements; Priority pollutant-metals)
Day 3	Laboratory duplicate (Conventional)
Day 4	MS/MSD (Cyanide; Mercury; Priority pollutant-metals)
WWTP Influent (IN)	
Day 0 – sampler start	Composite field blank (Conventional; Other trace elements; Priority pollutant-metals)
Day 2	Field Duplicate for all COCs
Day 4	Laboratory duplicate (Other trace elements)
WWTP Primary Treatment Effluent (PE)	
Day 0 – sampler start	Composite field blank (Zinc)
Day 4	MS/MSD (Cyanide and Zinc)
WWTP Secondary Treatment Effluent (SE)	
Day 0 – sampler start	Composite field blank (Priority pollutant-metals)
Day 3	MS/MSD (Cyanide; Mercury; Priority pollutant-metals)
Day 4	Field duplicate (Cyanide; Mercury; Priority pollutant-metals)
WWTP Final Effluent (FE)	

Day 0 – sampler start	Composite field blank (Conventional, Other trace elements; Priority pollutant-metals)
Day 2	MS/MSD (Priority pollutant-metals)
Day 3	Field duplicate (Other Trace Elements)
WWTP ***Biosolids Disposal Point (B)***	
Day 1	MS/MSD (Priority pollutant-metals; Manganese; Molybdenum; Mercury)

Field Controls

Field controls are QA/QC procedures that are conducted prior to and during local limits monitoring until samples are delivered to the analytical laboratory in order to minimize errors and potential sample contamination. Field controls that will be initiated include the following:

- Maintaining a field log
- Using clean techniques to minimize sample contamination
- Submitting field blank samples
- Submitting field duplicate samples

Field Log

The purpose of a field log is to record sampling information and field observations during sampling that may explain any uncharacteristic analytical results. An example field log is presented in Appendix E. Sampling information to be included in the field log include the date and time of sampling collection, sampling team, container identification numbers, and types of samples (composite or grab) that were collected. Field observations will be noted in the field log for any abnormalities at the sampling location (i.e., color, odor). Field measurements for pH, and temperature will also be recorded in the field log.

Clean Techniques

Clean techniques involve use of clean containers for sample collection, clean powder-free nitrile gloves during sample collection and handling, acid-washed tubing for the suction line, and acid-washed silicone tubing for the peristaltic pump tubing. A complete discussion of clean techniques is included in Appendix D. Adherence to clean technique protocols will minimize the chance of field contamination.

Field Blank

The purpose of field blank collection is to check for potential contamination that may occur during equipment handling and sample collection. Field blanks will be collected under field conditions to best simulate field procedures. Blank water will be provided by the analytical laboratory performing field blank analyses. Field blanks will be generated for the following pollutants:

- Conventional
- Trace elements
- Priority pollutant metals

The following steps will be followed for composite field blank collection:

- Using clean techniques, install clean silicone pump tubing into sampler peristaltic pump. Connect intake side of the silicone tubing to the clean Teflon tubing.
- Remove end cap from the intake end of the clean Teflon tubing and place intake end cap of the tubing inside the full laboratory-provided blank water container. Remove end cap from the outlet side of the silicone tubing and place outlet end of the tubing into a clean composite cleaner.
- Press "pump forward" on the automatic sampler. Allow pumping to continue until the blank water has been pumped through the tubing and into the composite sample container. Then press "stop".
- Remove outlet of the silicone tubing from the composite sample container and cover with a new glove or plastic bag. Then pour the blank water from the composite sample container into the appropriate pre-labeled sample container(s) while using clean techniques. Place the full sample container(s) on ice.
- Return the outlet of the silicone tubing to the composite sample container. Place inlet of the Teflon tube into the next container of blank water, and proceed with Step 3. After all composite field blanks have been collected, install clean Teflon strainer on the intake end of the Teflon tubing, return outlet of the silicone tubing to the composite sample container, and set up the sampler for composite sample collection.

Field Duplicate

The purpose of field duplicates is to check for constancy in field sampling procedures. Field duplicate analyses will be performed for all COCs. Typically, double the normal composite sample volume is required.

Laboratory Controls

The analytical laboratory will conduct QA/QC procedures including the following:

- Laboratory duplicates
- Standard laboratory calibration procedures
- Matrix spikes/matrix spike duplicates (MS/MSD)
- Laboratory control standards (LCS) and method blanks

Laboratory Duplicates

The purpose of laboratory duplicates is to check for constancy in laboratory and analytical procedures. Laboratory duplicate analyses will be performed for all COCs. Typically, double the normal composite sample volume is required.

Standard Laboratory Calibration Procedures

The analytical laboratory will calibrate equipment according to standard laboratory procedures in order to prevent analytical inaccuracies.

Matrix Spike/Matrix Spike Duplicate

MS/MSD analyses will be performed by the analytical laboratory for priority pollutant-metals samples to check for accuracy and precision, and to demonstrate acceptable pollutant recovery. Triple the normal sample volume is required. MS/MSD analyses will be conducted for every ten samples for the following COCs only:

- Cyanide
- Mercury
- Priority pollutant metals

Laboratory Control Standards and Method Blanks

The analytical laboratory will conduct Laboratory Control Standards (LCS) and method blank analyses. LCS analyses are intended to provide information on the accuracy of the analytical method and on laboratory performance. The purpose of the method blank is to determine the existence and extent of contamination resulting from laboratory activities. If there is contamination in the method blank, the associated data must be carefully evaluated to determine if the data are valid.

Chain-of-Custody

Chain-of-custody procedures include the following:

- Proper labeling of samples
- Use of chain-of-custody forms for all samples
- Prompt sample delivery to the laboratory

The following notes will be added to chain-of-custody forms:

- Low detection limits for priority pollutant-metals, Mercury and Cyanide
- Field duplicate analyses for specific samples as noted in Table 4.
- MS/MSD on specific samples as noted in Table 4.

Data Verification and Validation

After analytical results are received from the laboratory, data will be verified and validated using the following procedures:

- Check adequacy of results obtained from the analyses of the blanks, spikes, and duplicates (according to acceptability criteria set forth in Standard Methods).
- Check data set for outlier values and accordingly, re-analyzing samples where appropriate.
- Perform in-house verification of all analytical results.

APPENDICES

Appendix A: Maximum Reporting Limits and Analytical Methods

Table A-1. Maximum Reporting Limits and Analytical Methods

Pollutant	Maximum Reporting Limit	Units	Analytical Method	Driving Factor[1]	Sampling Location[2]
Conventional					
Ammonia (as N)	0.1	mg/L	SM 4500-NH_3 C	I,IU,P	IN,SE,FE ,CS
Biochemical oxygen demand (BOD)	5	mg/L	SM 5210B	P,IU	IN, FE,CS
Chloride	1	mg/L	EPA 300.0	I,P	IN, FE,CS
Nitrate (as N)	0.1	mg/L	EPA 300.0	P	IN,FE,CS
Nitrite (as N)	0.1	mg/L	EPA 300.0	P	IN,FE,CS
Oil & grease	3	mg/L	EPA 1664	P	IN,FE, CS
Sulfate (as SO_4)	1	mg/L	EPA 300.0	P	IN,FE, CS
Surfactants (MBAS)	0.05	mg/L	SM 5540	I,IU	IN,SE,FE,CS
Total dissolved solids (TDS)	10	mg/L	EPA 160.1	P	IN,FE,CS
Total suspended solids (TSS)	3	mg/L	EPA 160.2	P	CS
Priority Pollutant Metals & Cyanide					
Antimony	0.5	ug/L	EPA 200.8	B	IN,FE, RPS, CS, B
Arsenic	0.5	ug/L	EPA 200.8	P,B,I	IN,SE,FE,RPS,CS,B
Beryllium	0.1	ug/L	EPA 200.8	B	IN,FE,RPS, CS, B
Cadmium	0.1	ug/L	EPA 200.8	P,B,I	IN,SE,FE,RPS,CS,B
Chromium	0.5	ug/L	EPA 200.8	P,B,I,IU	IN,SE,FE,RPS,CS,B
Copper	0.5	ug/L	EPA 200.8	P,B,I	IN,SE,FE,RPS,CS,B
Lead	0.25	ug/L	EPA 200.8	P,B,I	IN,SE,FE,RPS,CS,B
Mercury	0.0005	ug/L	EPA 1631	P,B,I	IN,SE,FE,RPS,CS,B
Nickel	0.5	ug/L	EPA 200.8	P,B,I IU	IN,SE,FE,RPS,CS,B
Selenium	1	ug/L	EPA 200.8	P,B	IN,FE,RPS,CS,B
Silver	1	ug/L	EPA 200.8	I,IU	IN,FE, RPS, CS, B
Thallium	0.1	ug/L	EPA 200.8	B	IN,FE, RPS, CS, B
Zinc	1	ug/L	EPA 200.8	P,B,I IU	IN,PE,SE,FE,RPS,CS,B
Cyanide	3	ug/L	SM 4500-CN E	I,P,IU	IN,PE,SE,FE,RPS,CS,B
Other Trace Metals					
Boron	0.1	mg/L	EPA 200.7	P	IN,FE,CS
Manganese	0.05	mg/L	EPA 200.7	B	IN,FE,CS,B
Molybdenum	0.2	mg/L	EPA 200.7	B	IN,FE,CS,B

Pollutant	Maximum Reporting Limit	Units	Analytical Method	Driving Factor[1]	Sampling Location[2]
Sodium	1	mg/L	SM 3111B	P	IN,FE,CS

[1] I = treatment process inhibition; B = biosolids quality regulations; P = NPDES permit effluent water quality limitation; IU = potential industrial user discharge; O = other; None = no driving factors for local limits derivation.

[2] IN = influent; PE = primary treatment effluent; SE = secondary treatment effluent; FE = final effluent; RPS = raw primary sludge; CS = collection system; B = biosolids disposal point; Included = pollutant is included in analysis suite.

Appendix B: Daily Sampling Activities Summary

In addition to collecting samples, other tasks will be performed during the sampling period include the following:

Day 0 activities

- Set-up composite sampler with new Teflon and silicone tubing and new strainer.
- Install new battery for sampler.
- Calibrate and program composite sampler.
- Install clean composite sample container.
- Take Field Sample
- Start composite sampler.

Sampling period daily activities

- Remove full composite sample container from composite sampler.
- Install clean composite sample container and start sampler.
- Pour off composite sample container contents into appropriate individual containers.
- Prepare samples for delivery to laboratory for analyses.

The following table lists the COCs that will be collected on each day, including the QA/QC samples, as well as the volume of composite sample required, and the number and type of containers that need to be filled.

Table B-1. Daily Sampling Activities

Sampling Day	Samples to Collect		Sample Containers Required
	Composite	Grab	
Collection System (Residential and Commercial)			
Day 0	Field blank [1]		1 – 1 L HDPE 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE
Day 1	BOD Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS TSS	Ammonia (as N) Cyanide Mercury Oil & grease Surfactants (MBAS)	1 – BOD container 1 – 1 L HDPE 1 – 500 mL HDPE HNO_3 2 – 500 mL HDPE 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 1 L glass HCl
Day 2	BOD Chloride Nitrate (as N) Nitrite (as N)	Ammonia (as N) Cyanide Mercury Oil & grease	1 – BOD container 1 – 1 L HDPE 1 – 500 mL HDPE HNO_3 2 – 500 mL HDPE

Sampling Day	Samples to Collect		Sample Containers Required
	Composite	Grab	
	Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS TSS	Surfactants (MBAS)	1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 1 L glass HCl
Day 3	BOD Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS TSS Lab Duplicate – Conv.	Ammonia (as N) Cyanide Mercury Oil & grease Surfactants (MBAS) Lab Duplicate – Conv.	2 – BOD container 2 – 1 L HDPE 1 – 500 mL HDPE HNO_3 4 – 500 mL HDPE 2 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 2 – 1 L glass HCl
Day 4	BOD Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS TSS MS/MSD PP Metals	Ammonia (as N) Cyanide Mercury Oil & grease Surfactants (MBAS) MS/MSD Mercury and Cyanide	1 – BOD container 1 – 1 L HDPE 3 – 500 mL HDPE HNO_3 2 – 500 mL HDPE 1 – 500 mL HDPE H_2SO_4 3 – 500 mL HDPE NaOH 3 – 500 mL glass HCl 1 – 1 L glass HCl
Day 5	BOD Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS TSS	Ammonia (as N) Cyanide Mercury Oil & grease Surfactants (MBAS)	1 – BOD container 1 – 1 L HDPE 1 – 500 mL HDPE HNO_3 2 – 500 mL HDPE 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 1 L glass HCl
WWTP Influent			
Day 0	Field blank [1]		1 – 1 L HDPE 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE
Day 1	BOD Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS	Ammonia (as N) Cyanide Mercury Oil & grease Surfactants (MBAS)	1 – BOD container 1 – 1 L HDPE 1 – 500 mL HDPE HNO_3 2 – 500 mL HDPE 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 1 L glass HCl
Day 2	BOD	Ammonia (as N)	2 – BOD container

Sampling Day	Samples to Collect		Sample Containers Required
	Composite	Grab	
	Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS Field Duplicates for All COCs	Cyanide Mercury Oil & grease Surfactants (MBAS) Field Duplicates for All COCs	2 – 1 L HDPE 2 – 500 mL HDPE HNO_3 4 – 500 mL HDPE 2 – 500 mL HDPE H_2SO_4 2 – 500 mL HDPE NaOH 2 – 500 mL glass HCl 2 – 1 L glass HCl
Day 3	BOD Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS	Ammonia (as N) Cyanide Mercury Oil & grease Surfactants (MBAS)	1 – BOD container 1 – 1 L HDPE 1 – 500 mL HDPE HNO_3 2 – 500 mL HDPE 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 1 L glass HCl
Day 4	BOD Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS Lab Duplicate - Other trace elements	Ammonia (as N) Cyanide Mercury Oil & grease Surfactants (MBAS)	1 – BOD container 1 – 1 L HDPE 2 – 500 mL HDPE HNO_3 2 – 500 mL HDPE 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 1 L glass HCl
Day 5	BOD Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS	Ammonia (as N) Cyanide Mercury Oil & grease Surfactants (MBAS)	1 – BOD container 1 – 1 L HDPE 1 – 500 mL HDPE HNO_3 2 – 500 mL HDPE 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 1 L glass HCl
WWTP Primary Treatment Effluent (PE)			
Day 0	Field blank [2]		1 – 500 mL HDPE HNO_3
Day 1	Zinc	Cyanide	1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE NaOH
Day 2	Zinc	Cyanide	1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE NaOH
Day 3	Zinc	Cyanide	1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE NaOH
Day 4	Zinc MS/MSD	Cyanide MS/MSD	2 – 500 mL HDPE HNO_3 2 – 500 mL HDPE NaOH

Sampling Day	Samples to Collect		Sample Containers Required
	Composite	Grab	
Day 5	Zinc	Cyanide	1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE NaOH
WWTP Secondary Treatment Effluent (SE)			
Day 0	Field blank [3]		1 – 500 mL HDPE HNO_3
Day 1	Priority pollutant-metals	Ammonia (as N) Cyanide Mercury Surfactants (MBAS)	1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 500 mL HDPE
Day 2	Priority pollutant-metals	Ammonia (as N) Cyanide Mercury Surfactants (MBAS)	1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 500 mL HDPE
Day 3	Priority pollutant-metals MS/ MSD- PP Metals, Cyanide and Mercury	Ammonia (as N) Cyanide Mercury Surfactants (MBAS)	2 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 2 – 500 mL HDPE NaOH 2 – 500 mL glass HCl 1 – 500 mL HDPE
Day 4	Priority pollutant-metals Field Duplicate - Priority pollutant-metals	Ammonia (as N) Cyanide Mercury Surfactants (MBAS) Field Duplicate – Cyanide Field Duplicate - Mercury	2 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 2 – 500 mL HDPE NaOH 2 – 500 mL glass HCl 1 – 500 mL HDPE
Day 5	Priority pollutant-metals	Ammonia (as N) Cyanide Mercury Surfactants (MBAS)	1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 500 mL HDPE
WWTP Final Effluent			
Day 0	Field blank [1]		1 – 1 L HDPE 1 – 500 mL HDPE 1 – 500 mL HDPE HNO_3
Day 1	BOD Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS	Ammonia (as N) Cyanide Mercury Oil & grease Surfactants (MBAS)	1 – BOD container 1 – 1 L HDPE 1 – 500 mL HDPE HNO_3 2 – 500 mL HDPE 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 1 L glass HCl
Day 2	BOD Chloride	Ammonia (as N) Cyanide	1 – BOD container 1 – 1 L HDPE

Sampling Day	Samples to Collect		Sample Containers Required
	Composite	Grab	
	Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS MS/MSD – P.P. Metals	Mercury Oil & grease Surfactants (MBAS)	3 – 500 mL HDPE HNO_3 2 – 500 mL HDPE 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 1 L glass HCl
Day 3	BOD Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS Field Duplicate - Other trace elements	Ammonia (as N) Cyanide Mercury Oil & grease Surfactants (MBAS)	1 – BOD container 1 – 1 L HDPE 2 – 500 mL HDPE HNO_3 2 – 500 mL HDPE 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 1 L glass HCl
Day 4	BOD Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS	Ammonia (as N) Cyanide Mercury Oil & grease Surfactants (MBAS)	1 – BOD container 1 – 1 L HDPE 1 – 500 mL HDPE HNO_3 2 – 500 mL HDPE 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 1 L glass HCl
Day 5	BOD Chloride Nitrate (as N) Nitrite (as N) Sulfate (as SO_4) Other trace elements Priority pollutant-metals TDS	Ammonia (as N) Cyanide Mercury Oil & grease Surfactants (MBAS)	1 – BOD container 1 – 1 L HDPE 1 – 500 mL HDPE HNO_3 2 – 500 mL HDPE 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 1 L glass HCl
WWTP Raw Primary Sludge (RPS)			
Day 1		Priority pollutant-metals Cyanide Mercury	1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3
Day 2		Priority pollutant-metals Cyanide Mercury	1 – 500 mL HDPE NaOH 1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3
WWTP Biosolids Disposal Point			
Day 1		Priority pollutant-metals Manganese Molybdenum Mercury	2 – 500 mL HDPE HNO_3 2 – 500 mL glass HCl

Sampling Day	Samples to Collect		Sample Containers Required
	Composite	Grab	
		Percent solids Biosolids density MS/MSD for all COCs	
Day 2		Priority pollutant-metals Manganese Molybdenum Mercury Percent solids Biosolids density	1 – 500 mL HDPE HNO_3 1 – 500 mL glass HCl

[1] Collection System, WWTP Influent, Primary Effluent, Secondary Effluent & WWTP Final Effluent composite field blank – Conventional (without BOD); Other trace elements; Priority pollutant-metals (total recoverable).

[2] Primary Treatment Effluent & Secondary Treatment Effluent composite field blank – Zinc only.

[3] Secondary Treatment Effluent & Secondary Treatment Effluent composite field blank – Priority Pollutant Metals.

Appendix C: Monitoring Equipment List

At a minimum, the following list of equipment will be required for local limits monitoring sample collection:

- Six (6) (IN, PE, SE, FE, CS-Comm., CS-Res.) automated peristaltic samplers for composite sample collection.

GLASS JARS (10) for Samplers

New Teflon tubing for composite sample collection.

New silicone pump tubing for composite sample collection.

Teflon strainers for influent and collection system intake tubes.

Powder-free nitrile gloves for clean sampling.

- Sampling containers and field blank water as listed in the following tables:

Table C-1. Sample Container Requirements by Site

Collection System (CS - Residential)		
Sample Type	**Pollutant Requirements**	**Containers**
Composite (collected in 10 L borosilicate glass jar)	BOD (+1 Lab Duplicate)	6 – BOD container
	Chloride; Nitrate (as N); Nitrite (as N); Sulfate (as SO_4) (+1 field blank)(+1 Lab Duplicate)	7 – 1 L HDPE
	Other trace elements (+1 field blank)	8 – 500 mL HDPE HNO_3
	Priority pollutant-metals (+1 field blank, +1 MS/MSD)	
	TDS; TSS (+1 field blank)(+1 Lab Duplicate)	7 – 500 mL HDPE
Grab	Ammonia (as N) (+1 Lab Duplicate)	6 – 500 mL HDPE H_2SO_4
	Cyanide (+1 MS/MSD)	7 – 500 mL HDPE NaOH
	Mercury (+1 MS/MSD)	7 – 500 mL glass HCl
	Oil & grease (+1 Lab Duplicate)	6 – 1 L glass HCl
	Surfactants (MBAS) (+1 Lab Duplicate)	6 – 500 mL HDPE
Collection System (CS - Commercial)		
Sample Type	**Pollutant Requirements**	**Containers**
Composite (collected in 10 L borosilicate glass jar)	BOD (+1 Lab Duplicate)	6 – BOD container
	Chloride; Nitrate (as N); Nitrite (as N); Sulfate (as SO_4) (+1 field blank)(+1 Lab Duplicate)	7 – 1 L HDPE
	Other trace elements (+1 field blank)	8 – 500 mL HDPE HNO_3
	Priority pollutant-metals (+1 field blank, +1 MS/MSD)	
	TDS; TSS (+1 field blank)(+1 Lab	7 – 500 mL HDPE

	Duplicate)	
Grab	Ammonia (as N) (+1 Lab Duplicate)	6 – 500 mL HDPE H_2SO_4
	Cyanide (+1 MS/MSD)	7 – 500 mL HDPE NaOH
	Mercury (+1 MS/MSD)	7 – 500 mL glass HCl
	Oil & grease (+1 Lab Duplicate)	6 – 1 L glass HCl
	Surfactants (MBAS) (+1 Lab Duplicate)	6 – 500 mL HDPE
WWTP Influent (IN)		
Sample Type	**Pollutant Requirements**	**Containers**
Composite (collected in 10 L borosilicate glass jar)	BOD (+1 field duplicate)	6 – BOD container
	Chloride; Nitrate (as N); Nitrite (as N); Sulfate (as SO_4) (+1 field blank) (+1 field duplicate)	7 – 1 L HDPE
	Other trace elements (+1 field blank) (+1 Lab Duplicate) (+1 field duplicate)	8– 500 mL HDPE HNO_3
	Priority pollutant-metals (+1 field blank) (+1 field duplicate)	
	TDS; TSS (+1 field blank) (+1 field duplicate)	7 – 500 mL HDPE
Grab	Ammonia (as N) (+1 field duplicate)	6 – 500 mL HDPE H_2SO_4
	Cyanide (+1 field duplicate)	6 – 500 mL HDPE NaOH
	Mercury (+1 field duplicate)	6 – 500 mL glass HCl
	Oil & grease(+1 field duplicate)	6 – 1 L glass HCl
	Surfactants (MBAS) (+1 field duplicate)	6 – 500 mL HDPE
WWTP Primary Treatment Effluent (PE)		
Sample Type	**Pollutant Requirements**	**Containers**
Composite (collected in 10 L borosilicate glass jar)	Zinc (+1 field blank)	6 – 500 mL HDPE HNO_3
Grab	Cyanide	5 – 500 mL HDPE NaOH
WWTP Secondary Treatment Effluent (SE)		
Sample Type	**Pollutant Requirements**	**Containers**
Composite (collected in 10 L borosilicate glass jar)		
	Priority pollutant-metals (+1 field blank, +1 Field Duplicate)(+1 MS/MSD)	8 – 500 mL HDPE HNO_3
Grab	Ammonia (as N)	5 – 500 mL HDPE H_2SO_4
	Surfactants (MBAS)	5 – 500 mL HDPE
	Mercury (+1 field duplicate) (+1 MS/MSD)	7 – 500 mL glass HCl
	Cyanide (+1 field duplicate) (+1 MS/MSD)	7 – 500 mL HDPE NaOH

WWTP Final Effluent (FE)		
Sample Type	**Pollutant Requirements**	**Containers**
Composite (collected in 10 L borosilicate glass jar)	BOD	5 – BOD container
	Chloride; Nitrate (as N); Nitrite (as N); Sulfate (as SO_4) (+1 field blank)	6 – 1 L HDPE
	Other trace elements (+1 field blank) (+1 field duplicate)	9– 500 mL HDPE HNO_3
	Priority pollutant-metals (+1 field blank) (+1 MS/MSD)	
	TDS (+1 field blank)	6 – 500 mL HDPE
Grab	Ammonia (as N)	5 – 500 mL HDPE H_2SO_4
	Cyanide	5 – 500 mL HDPE NaOH
	Mercury	5 – 500 mL glass HCl
	Oil & grease	5 – 1 L glass HCl
	Surfactants (MBAS)	5 – 500 mL HDPE
WWTP Raw Primary Sludge (RPS)		
Sample Type	**Pollutant Requirements**	**Containers**
Grab	Cyanide	2 – 500 mL HDPE NaOH
	Mercury	2 – 500 mL glass HCl
	Priority pollutant-metals	2 – 500 mL HDPE HNO_3
WWTP Biosolids Disposal Point (B)		
Sample Type	**Pollutant Requirements**	**Containers**
Grab	Metals, Manganese, Molybdenum (+1 MS/MSD)	3 – 500 mL HDPE HNO_3
	Mercury (+1 MS/MSD)	3 – 500 mL glass HCl

Table C-2. Total Sample Container and Blank Water Requirements

Container Type	Number	Blank Water Requirements
10 L Borosilicate Glass Jar (Sampler)	10	
BOD container	23	0
1 L HDPE	27	5
500 mL HDPE	55	4
500 mL HDPE HNO_3	52	9
500 mL HDPE H_2SO_4	28	0
500 mL HDPE NaOH	39	0
500 mL glass HCl	37	0
1 L glass HCL	23	0

Appendix D: Clean Sampling & Container/Equipment Cleaning Protocols

The following sampling techniques are required to collect and handle wastewater samples in a way that does not result in contamination, loss, or change in the chemical form of the COC. Samples are collected using protocols, as summarized below:

- Samples are collected only into pre-cleaned sample containers.
- Clean, powder-free nitrile gloves are required to be worn for collection of samples for priority pollutant-metals.
- Gloves are changed whenever something not known to be clean has been touched.
- For this monitoring plan, gloves must be worn whenever handling the composite containers, lids, suction tubing, or strainers.
- To reduce potential contamination, sample collection personnel must adhere to the following rules while collecting samples:
    - No smoking.
    - Never sample near a running vehicle.
    - Do not eat or drink during sample collection.
    - Do not breathe, sneeze, or cough in the direction of an open sample container.

SAMPLE CONTAINER AND EQUIPMENT CLEANING PROTOCOLS

10-Liter Composite Containers

- Rinse container with warm tap water three times as soon as possible after emptying sample.
- Rinse 3 times in acid solution.
- Rinse 3 times with DI water.
- Cap container with cleaned lid as specified below.

Tubing, Lids, and Strainers

- Use new tubing on all samplers.
- Prior to use rinse samplers and tubing as follows:
    - Rinse 3 times in acid solution.
    - Rinse 3 times with DI water.
    - Seal the tubing on both ends with clean latex material.
    - Individually double-bag tubing in new properly-labeled polyethylene bags.
- Prior to use clean and rinse the strainers:
    - Rinse 3 times in acid solution.
    - Rinse 3 times with DI water.
    - Individually double-bag strainers in new zip-lock bags.

Cleaning Solutions

2% HNO_3 (Nitric Acid)= 80 mL concentrated HNO_3 (16 N) per gallon of Milli-Q water

DI Water = Deionized Water

Equipment Handling

- Safety precaution – All of the appropriate safety equipment must be worn by personnel involved in cleaning of containers due to the corrosive nature of the chemicals being used to clean the containers and tubing. This safety equipment must include protective gloves, lab coats, chemically-resistant aprons, goggles with side shields, and respirators. All Materials and Safety Data Sheets (MSDSs) must be read and signed off by personnel.
- Powder-free nitrile gloves must be worn while cleaning and handling contains and equipment. Care must be taken at all times to avoid introduction of contamination from any source.

Appendix E: Example Field Log

GENERAL INFORMATION

Station: Collection System (CS)______________ Date: ____________

Day of Sampling: ____1_____.

Personnel: ____

FIELD OBSERVATIONS

Time	Temp (^0C)	pH

SAMPLE COLLECTION

Composite Collection Time:

BOD	
Chloride	
Nitrate (as N)	
Nitrite (as N)	
Sulfate (as SO_4)	
Other trace elements	
Priority pollutant-metals	
TDS	
TSS	

Grab Collection Time:

Field blank	
Ammonia (as N)	
Cyanide	
Mercury	
Oil & grease	
Surfactants (MBAS)	

FGL ENVIRONMENTAL

ANALYTICAL CHEMISTS

Email

Date: August 4, 2008

To: **City of El Paso de Robles - 2022721**
Attn: Patti Gwathmey
Email: pgwathmey@prcity.com

From: **Denis Barry - Marketing Director**
denisb@fglinc.com Phone:(805) 392-2032 Fax: (805) 525-4172

Subject: **Price Quote No: SP20080725_10 Local Limits Study**

Dear Patti:

I refer to your letter of July 22nd regarding the above. Hereunder is the price quote you requested. Please use the "SP" number above for further reference to this quote.

EPA Method/ Constituent	Price per Sample	No of Samples	Extended Price
Collection System (Residential & Commercial) – Composite			
BOD *(including lab duplicate)*	$38.00	6	$228.00
Chloride *(including lab duplicate)*	$22.00	6	$132.00
Nitrate *(including lab duplicate)*	$22.00	6	$132.00
Nitrite *(including lab duplicate)*	$22.00	6	$132.00
Sulfate *(including lab duplicate)*	$22.00	5	$110.00
Other Trace Elements: B, Mn, Mo, & Na	$79.00	5	$395.00
Priority Pollutants Metals: Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, & Zn	$198.00	5	$990.00
TDS *(including lab duplicate)*	$21.00	6	$126.00
TSS *(including lab duplicate)*	$21.00	6	$126.00
		Group Price:	**$2,371.00**
Collection System (Residential & Commercial) – Grab			
Ammonia *(including lab duplicate)*	$31.00	6	$186.00
Cyanide	$57.00	5	$285.00

EPA Method/ Constituent	Price per Sample	No of Samples	Extended Price
Mercury	$31.00	5	$155.00
Oil & Grease *(including lab duplicate)*	$40.00	6	$240.00
MBAS *(including lab duplicate)*	$45.00	6	$270.00
		Group Price:	**$1,136.00**
WWTP Influent - Composite			
BOD *(including lab duplicate)*	$38.00	6	$228.00
Chloride *(including lab duplicate)*	$22.00	6	$132.00
Nitrate *(including lab duplicate)*	$22.00	6	$132.00
Nitrite *(including lab duplicate)*	$22.00	6	$132.00
Sulfate *(including lab duplicate)*	$22.00	6	$132.00
Other Trace Elements: B, Mn, Mo, & Na *(including field duplicates - Day 2 & Day 4)*	$79.00	7	$553.00
Priority Pollutants Metals: Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, & Zn *(including field duplicate)*	$198.00	6	$1,188.00
TDS	$21.00	6	$126.00
		Group Price:	**$2,623.00**
WWTP Influent - Grab			
Ammonia *(including lab duplicate)*	$31.00	6	$186.00
Cyanide *(including lab duplicate)*	$57.00	6	$342.00
Mercury *(including lab duplicate)*	$31.00	6	$186.00
Oil & Grease *(including lab duplicate)*	$40.00	6	$240.00
MBAS *(including lab duplicate)*	$45.00	6	$270.00
		Group Price:	**$1,224.00**

EPA Method/ Constituent	Price per Sample	No of Samples	Extended Price
WWTP Primary Treatment Effluent(PE)- Composite			
Zinc	$20.00	5	$100.00
		Group Price:	**$100.00**
WWTP Primary Treatment Effluent(PE)- Composite			
Cyanide	$57.00	5	$285.00
		Group Price:	**$285.00**
WWTP Secondary Treatment Effluent (SE) - Composite			
Priority Pollutants Metals: Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, & Zn *(including field duplicate)*	$198.00	6	$1,188.00
		Group Price:	**$1,188.00**
WWTP Secondary Treatment Effluent (SE) - Grab			
Ammonia	$31.00	5	$155.00
Cyanide *(including field duplicate)*	$57.00	6	$342.00
Mercury *(including field duplicate)*	$31.00	6	$186.00
MBAS	$45.00	5	$225.00
		Group Price:	**$908.00**
WWTP Final Effluent - Composite			
BOD	$38.00	5	$190.00
Chloride	$22.00	5	$110.00
Nitrate	$22.00	5	$110.00
Nitrite	$22.00	5	$110.00

EPA Method/ Constituent	Price per Sample	No of Samples	Extended Price
Sulfate	$22.00	5	$110.00
Other Trace Elements: B, Mn, Mo, & Na *(including field duplicate)*	$79.00	6	$474.00
Priority Pollutants Metals: Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, & Zn	$198.00	5	$990.00
TDS	$21.00	5	$105.00
		Group Price:	**$2,199.00**
WWTP Final Effluent - Grab			
Ammonia	$31.00	5	$155.00
Cyanide	$57.00	5	$285.00
Mercury	$31.00	5	$155.00
Oil & Grease	$40.00	5	$200.00
MBAS	$45.00	5	$225.00
		Group Price:	**$1,020.00**
WWTP Raw Primary Sludge (RPS) - Grab			
Priority Pollutants Metals: Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, & Zn	$198.00	2	$396.00
Cyanide	$60.00	2	$120.00
		Group Price:	**$516.00**
WWTP Biosolids Disposal Point - Grab			
Priority Pollutants Metals: Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, & Zn	$198.00	2	$396.00
Manganese	$20.00	2	$40.00
Molybdenum	$20.00	2	$40.00

EPA Method/ Constituent	Price per Sample	No of Samples	Extended Price
% solids	$16.00	2	$32.00
Biosolids density	$27.00	2	$54.00
		Group Price:	**$562.00**

Total Price Quote : $14,132.00

- *Cost of rental of compositor is $33.00 per unit per day.*
- *The above prices include a 17.5% discount from regular pricing.*
- *A Quality Assurance/Quality Control report is supplied with all of our analyses. This assures our valued clients of accurate and defensible data.*
- *All work undertaken is subject to our terms and conditions, which are outlined in our fee schedule and/or available upon request.*

If you have any questions relating to this quote, please do not hesitate to call us.

Sincerely,
FGL ENVIRONMENTAL

Denis Barry
Marketing Director

X:\Quotes_ Progress\SP20080725_10.wpd

RESOLUTION NO. 08-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES AWARDING ANALYTICAL LABORATORY SERVICES FOR THE LOCAL LIMITS STUDY AS REQUIRED BY THE CODE OF FEDERAL REGULATIONS

WHEREAS, the Code of Federal Regulations requires the development of specific local limits.

WHEREAS, the City is required to develop numeric concentration limits for salts as specified in the National Pollutant Elimination Discharge permit issued by the Regional Water Quality Control Board.

WHEREAS, the cost of laboratory analysis for 5 consecutive days of sampling is estimated at $14,132.

NOW, THEREFORE, BE IT RESOLVED, AS FOLLOWS:

SECTION 1. The City Council of the City of El Paso de Robles does hereby award to Fruit Growers Laboratory Inc. analytical laboratory services as required for the development of local limits under 40 CFR 403.5(c)(2).

PASSED AND ADOPTED by the City Council of the City of Paso Robles this 2nd day of September 2008 by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

____
Frank R. Mecham, Mayor

ATTEST:

____
Deborah D. Robinson, Deputy City Clerk