REGIONAL WATER QUALITY CONTROL PLANT

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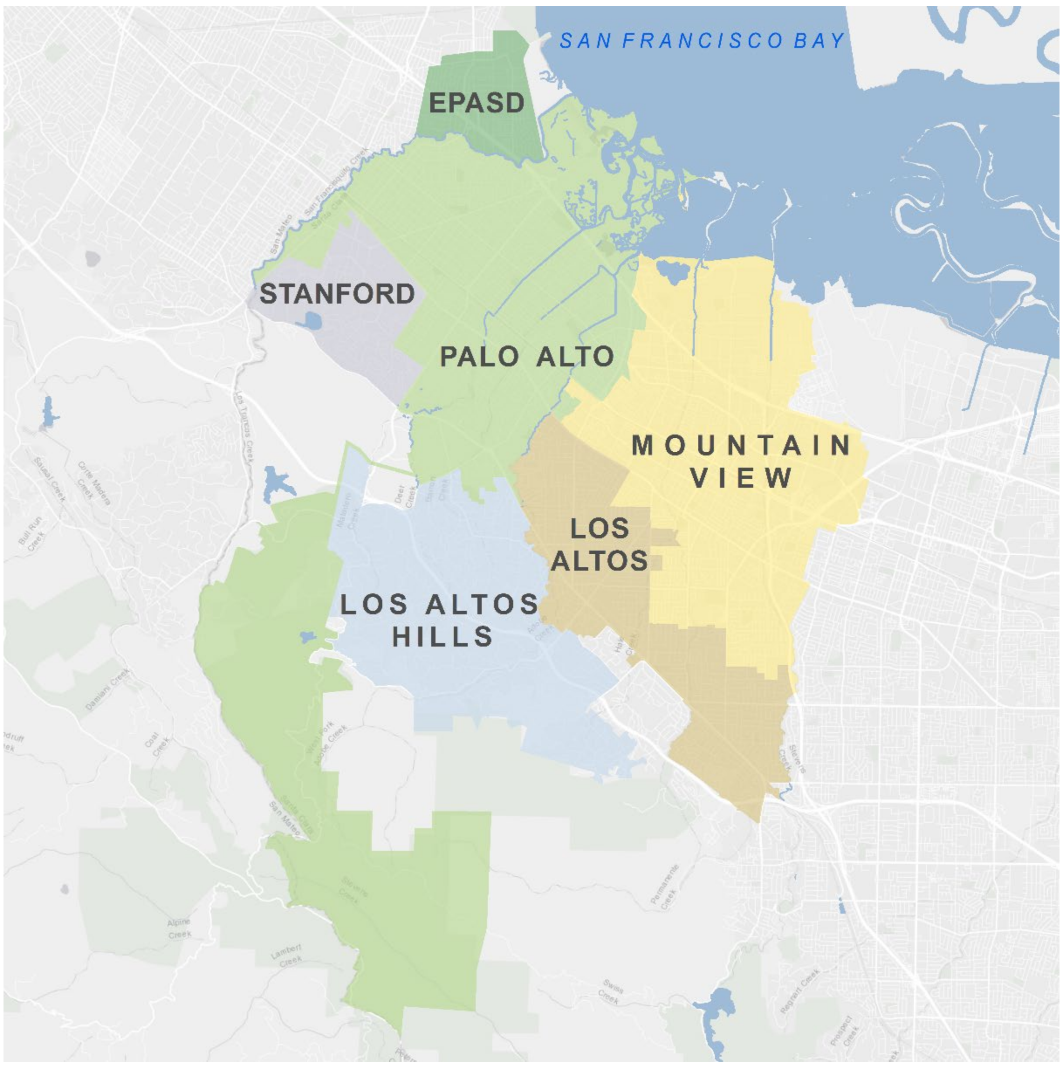
2023
PRETREATMENT PROGRAM ANNUAL REPORT



Operated by the City of Palo Alto for the East Palo Alto Sanitary District, Los Altos, Los Altos Hills, Mountain View, Palo Alto, and Stanford

PALO ALTO REGIONAL WATER QUALITY CONTROL PLANT
2023 PRETREATMENT PROGRAM ANNUAL REPORT

Report Date:	February 28, 2024
Period Covered by This Report:	January 1, 2023 to December 31, 2023
Period Covered by Previous Report:	January 1, 2022 to December 31, 2022
NPDES Permit Holder:	City of Palo Alto
Name of Wastewater Treatment Plant:	Palo Alto Regional Water Quality Control Plant
NPDES Permit Number:	CA0037834

Person to contact concerning information contained in this report:

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I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

2/20/24
Date

James D. Allen
Signature of Official

JAMES ALLEN
Manager, Palo Alto Regional Water Quality Control Plant

PALO ALTO REGIONAL WATER QUALITY CONTROL PLANT
2023 PRETREATMENT PROGRAM ANNUAL REPORT
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B. INTRODUCTION

B.1 BACKGROUND

The Palo Alto Regional Water Quality Control Plant (RWQCP or Plant) provides advanced secondary treatment of domestic, commercial, and industrial wastewater collected from the cities of Los Altos, Palo Alto, and Mountain View; the Town of Los Altos Hills; the East Palo Alto Sanitary District; and the unincorporated area of the Stanford University campus (Partner Agencies or Partners). The RWQCP service area population is approximately 236,000 people. Wastewater treatment processes at the Plant include screening and grit removal, primary sedimentation, biological treatment (fixed film reactors and nitrified-activated sludge), secondary clarification, filtration (dual media filter), and ultraviolet (UV) disinfection. The hydraulic capacity of all treatment units is 80 MGD, except for the fixed film reactors and the dual media filters which are 39 MGD. The Plant's design flow rate is 39 MGD, determined by the process capacity of the fixed film reactors and the dual media filters. The Plant discharges under NPDES Permit No. CA0037834, Order No. R2-2019-0015, adopted by the San Francisco Bay Regional Water Quality Control Board on April 10, 2019.

In 2023, the Plant's average daily influent flow was 19.97 MGD. Of the wastewater flow to the RWQCP, about 60 percent is estimated to come from domestic sources, 30 percent from commercial businesses and institutions, and ten percent from industrial sources (of which approximately two percent is from permitted industrial dischargers).

The City of Palo Alto wastewater collection system consists of approximately 200 miles of pipe, ranging from 4 to 72 inches in diameter, and one small lift station. Outside the City of Palo Alto, wastewater is conveyed to the Plant by several satellite collection systems owned and operated by the Partner Agencies. Each Partner Agency is responsible for an ongoing program of maintenance and capital improvements for sewer lines and pump stations within its respective jurisdiction to ensure adequate capacity and reliability. The responsibilities include managing overflows, controlling inflow and infiltration, and implementing collection system maintenance.

The communities served by the RWQCP are composed primarily of low-density residential housing. Several industrial areas and commercial districts are contained within the service area. The majority of the service area has been fully developed and major increases in population or industrial discharges to the Plant are not anticipated. Recent years have seen a trend towards high density infill and the conversion of under-utilized light industrial and commercial properties into residential and mixed commercial residential properties. A shift continues toward office space, software development, and research and development facilities with few remaining large industrial facilities.

B.2 CONTRIBUTING JURISDICTION AGREEMENTS

RWQCP has jurisdictional agreements with its Partners that delineate Pretreatment Program (Program) responsibilities. The City of Palo Alto administers the Program for the entire service area, except in the City of Mountain View. City of Mountain View staff administers most Program elements in the City of Mountain View with the exception of industrial user and vehicle service facility monitoring, which is performed by RWQCP staff. The roles and responsibilities for each Partner are described in the following Partner Agreements:

- Contract No. C237 Between the City of Palo Alto and the East Palo Alto Sanitary District, May 5, 2021, as amended;
- Contract No. C869 Between the City of Palo Alto and the Board of Trustees of the Leland Stanford Junior University, November 30, 1956, as amended;
- Agreement No. 2876 Between the City of Palo Alto and the Town of Los Altos Hills, March 18, 1968, as amended; and
- Contract No. C2963 Between the City of Palo Alto, the City of Mountain View and the City of Los Altos, October 10, 1968, as amended.

B.3 2022 PRETREATMENT COMPLIANCE AUDIT SUMMARY

On October 12, 2022, the California State Water Resources Control Board (State Water Board) conducted an audit of the RWQCP's Pretreatment Program. The Pretreatment Compliance Audit (PCA) included an in-depth interview with City of Palo Alto and City of Mountain View staff regarding details of the Program, followed by site inspections on November 10 and 11, 2022 at two Significant Industrial Users (Applied Nanostructures, Inc. and Hammon Plating Corporation). The State Water Board also performed an extensive file review of Pretreatment Program documents as well as industrial user files for Applied Nanostructures, Inc., Hammon Plating Corporation, and Maxar Space, LLC. The RWQCP received the final PCA Report and transmittal letter from the State Water Board on June 21, 2023. The Report includes nine primary requirements and four recommendations. The RWQCP submitted its response to the Report to the State Water Board on August 17, 2023. A summary of the requirements and recommendations included in the Report, as well as the RWQCP's responses to each can be found in Appendix 1.

C. DEFINITIONS

A list and definition of key terms used to describe or characterize elements of the RWQCP's Pretreatment Program are available online at the following link:

https://codelibrary.amlegal.com/codes/paloalto/latest/paloalto_ca/0-0-0-71304

D. DISCUSSION OF UPSET, INTERFERENCE, AND PASS THROUGH

In 2023, there were no discharges from nondomestic users that were known or suspected of causing RWQCP upset, interference, or pass through.

E. INFLUENT, EFFLUENT, AND BIOSOLIDS MONITORING RESULTS

E.1.1 SAMPLING PROCEDURES

I. SAMPLE LOCATIONS

1. **Influent Grab –** A sample of untreated wastewater at entry point of plant collected from the sample port of the influent pumping station. This location corresponds to Station INF-001 as set forth in the RWQCP's NPDES Permit, CA-0037384.

2. **Influent Composite** – A sample of untreated wastewater sampled by the pre-programed automated flow-proportional refrigerated composite sampler and collected at entry point of the plant. This location corresponds to Station INF-001 as set forth in the RWQCP's NPDES Permit, CA-0037384.

3. **Effluent Grab –** For all effluent grab samples except for enterococci, a sample of treated water at the point following UV disinfection and before contact with any receiving water collected from the line discharging into the effluent sample sink. The microbiology enterococci sample is collected on top of the UV system. This location corresponds to Station EFF-001 as set forth in the RWQCP's NPDES Permit, CA-0037384.

4. **Effluent Composite** – A sample of treated water collected by the pre-programmed automated flow-proportional refrigerated composite samplers. This location corresponds to Station EFF-001 as set forth in the RWQCP's NPDES Permit, CA-0037384.

5. **Biosolids Sludge Cake Composite –** A sample of biosolids sludge cake collected at the belt press discharge chute at the top floor of the sludge dewatering building. This location corresponds to Station BIO-001 as set forth in the RWQCP's NPDES Permit, CA-0037384.

II. SAMPLE TYPES

Automatic Flow-Proportional Composite – A flow-proportional composite includes sample volumes that change in direct relationship to flow rate. Both the final effluent and influent composite samples are required by this method. Samples collected from the automatic unit include metals (no mercury), biochemical oxygen demand (BOD), ammonia (NH_3), total suspended solids (TSS), and chronic and acute toxicity. Samples are collected over a 24-hr. period and loadings are based on corresponding flow data.

Peak Flow Grab – Individual grabs are collected at INF-001 and EFF-001 locations during the plant's final effluent peak flow. Analysis can include:

volatile organic compounds (VOC), mercury (Hg), cyanide (CN), base/neutrals and acid extractable organic compounds (BNA), oil and grease, turbidity, fecal coliform, and enterococci.

Composite Grabs – Performed only in the case of an automatic composite sampler failure, where the sample is compromised and does not reflect a representative sample for the 24-hr. period. If there is no time to reschedule composite from the automatic sampler then individual grab samples are collected covering the compliance period at 0800, 1300, 1600, 2400, and 0759.

Biosolids Composite – Individual sludge cake grab samples are collected once every 6 hours at 0300, 0900, 1500, and 2100 over a 5-day period and composited as the BIO-001 sample.

III. SAMPLE CONTAINERS

Sample containers are made of glass, polypropylene, or polyethylene plastic. The specific sample container size, material, and sterilization are specified in the individual work instructions and are selected to be appropriate for the tests performed. When sample containers are not purchased for single use, they are cleaned internally by the laboratory based on their analytical purpose and previous content. General cleaning methods are summarized below.

Sample Container Type	Cleaning Method
Metal and Volatile Analysis	none – single use containers
Composite Sample Jugs	Soaked and washed with non-phosphate detergent followed by deionized water rinse, then 1:1 diluted nitric acid rinse then a final rinse with deionized water.
Reusable Sample Containers	dishwasher cycle containing non-phosphate detergent, followed by a final rinse with distilled water

IV. PRESERVATION AND HOLD TIMES

WASTEWATER (INF-001 and EFF-001)

Analytical Parameter	Holding Time	Container Type	Sample Size	Preservation
Metals (not Hg)	6 months	Plastic/Glass	400 mL	HNO_3 to pH <2; Dissolved = Filter onsite within 15 minutes of sampling
Mercury (Hg)	28 days	plastic/glass	100 mL	HNO_3 to pH <2
Purgeable halocarbons (VOC)	14 days (with Preservative)	Amber Glass, VOA vials with Teflon Septa	40 mL	≤6°C; If chlorine Present +ascorbic acid (0.1 to 0.6g/L), HCL to pH 2.
2 chloroethylvinyl ether (2-CEVE) (VOC)	14 days	Amber Glass, VOA vials with Teflon Septa	40 mL	≤6°C;14 day-If chlorine present + ascorbic acid (0.1 to 0.6g/L)
Purgeable aromatics (VOC)	14 day (with Preservative)			≤6°C;14 day-If chlorine present + ascorbic acid (0.1 to 0.6g/L), HCL to pH 2.
Acrolein and acrylonitrile (VOC)	3 days			≤6°C; -If chlorine present + 0.008 % $Na_2S_20_3$
Organics, Semi volatile + PCB's (Base/Neutrals and Acid Extractables) + PCB's	7 days until extraction; 40 days after extraction	Glass, FP Lined cap	1000 mL	≤6°C; If chlorine present + 0.008% $Na_2S_2O_3$
Cyanide, Total	14 days	Plastic/Glass	1000 mL	≤6°C + NaOH to pH>10; reducing agent if oxidizer present
Tetra- through Octa-Chlorinated Dioxins and Furans	1 year	Glass	1000 mL	≤6°C; If chlorine present + 0.008% $Na_2S_2O_3$; pH < 9

BIOSOLIDS (BIO-001)

Analytical Parameter	Holding Time	Container Type	Sample Size	Preservation
TTLC/STLC Metals	6 months	Glass, FP Lined cap	8 oz	≤ 6°C
Cyanide	14 days	Glass, FP Lined cap	8 oz	≤ 6°C
Hg	28 days	Glass, FP Lined cap	8 oz	≤ 6°C
BNA	14 days before extraction; 40 days after extraction	Glass, FP Lined cap	8 oz	≤ 6°C
VOC	14 days	Glass, FP Lined cap	8 oz	≤ 6°C

V. COLLECTION & COMPOSITING METHOD

1. GENERAL PROTOCOL FOR COLLECTION OF SAMPLES

Field personnel protection equipment consists of gloves, safety glasses, plant uniform, and steel toe boots. Samples were collected in area free of excessive dust or rain or other sources of contamination when practical. Sample lids were kept closed until right before sample collection in order to limit exposure to outside contaminants.

2. COLLECTION METHODS

a. Automatic Flow-Proportional Composite Samples

Samples are collected by Hach SD900 AWR refrigerated units and combined as one sample into a Nalgene carboy, a back-up sampler Hach AS950 AWR is on standby in case there is an issue. The flow proportioned samples are pumped by a peristaltic calibrated pump inside the refrigerated unit. The carboy sample is mixed thoroughly before pouring aliquots into specific analyte sample bottles. During the collection and before analysis they are stored in the sampler unit in conditions ≤ 6^0C.

b. Direct Grab Collection

Samples are directly collected from the sampling location as individual grab samples for analytes such as VOC, BNA, CN, and Hg.

3. COLLECTING GRAB SAMPLES AT COMPLIANCE LOCATIONS

a. EFF-001 **–** Sample is collected by placing sample bottle directly under the effluent line; there are no valves to open as the location has a continuous stream of effluent flowing. If necessary, the analyst will adjust the effluent flow rate from the sink to ensure a moderate stream in order to fill the bottle without causing splashing.

b. INF-001 **–** Sample is collected by lowering a stainless-steel bucket down several feet into the influent sample location. The sample is poured directly from the bucket into the sample bottles.

c. Specific Analyte Conditions

i. VOC – The sample is initially collected in a glass beaker and tested for residual chlorine, if present dechlorinating agent must be added. The beaker's content is transferred to the vial by angling the vial slightly to prevent air bubble entrapment. When the vial is nearly full it is tilted to the vertical position to create a meniscus so that there is no headspace. The sample should not overflow, as the preservative could be washed out. The vial is capped so that no air bubbles are present in the bottle and rolled or shaken gently to fully mix preservatives. (*Note:* Teflon side of cap liner should be faced down and in contact with the water.

ii. Hg – The sample is collected by two personnel using the "Clean Hands Dirty Hands" technique where one person the "clean hands" has direct contact with the sample and inside bag and the "dirty hands" designee handles only the exterior bag. Samples are stored in an iced cooler for transport and kept in Ziploc bags to eliminate contamination.

iii. Composite Grabs – Individual samples are directly collected into their prescribed sample bottles during the required compliance period.

d. Compositing Grabs – Each grab sample aliquot collected for a composite is either volumetrically flow-weighted for composition prior to analysis or mathematically flow-weighted after analysis, depending on the parameter to be tested. The flow must be recorded for each grab at the time of the event.

4. **BIOSOLIDS COMPOSITE**

Twenty samples are collected over 5 days with a clean Teflon shovel. Each of those samples is collected over a period of a few minutes from each working belt, enough to collect approximately 4oz of sample. The sample is placed into a clean 4-8oz Teflon cup into the refrigerator until all of the sampling events are collected. At the end of the five days approximately 5g + 0.1g of each sample is composited into a 1L wide mouth glass container with enough headspace to mix thoroughly. Once fully mixed, the composite is aliquoted to different sample bottles for shipment to the contract laboratory for analysis.

VI. METHOD OF SAMPLE DECHLORINATION

Samples are treated with neutralizing additives as described in individual sampling work instructions and in compliance with 40 CFR Part 136. For the majority of the analytical methods sodium thiosulfate is utilized to neutralize oxidants.

1. EFFLUENT SAMPLES

Dechlorination of effluent samples is not required since the RWQCP switched to UV disinfection instead of chlorine, but microbiology samples are still treated with sodium thiosulfate as a precautionary measure.

2. INFLUENT SAMPLES

Dechlorination of influent samples is not required since the RWQCP does not chlorinate the plant influent but samples are still verified if the method requires it.

VII. QUALITY CONTROL (QC) SAMPLES

The RWQCP follows the quality control requirements prescribed by the analytical methods. The following are examples of the types of quality control mechanisms used to verify the accuracy and precision of sampling techniques employed as well as to identify potential contamination of a sample through equipment and transportation.

1. TRAVEL BLANKS

Travel blanks are used to monitor the contamination from shipment and storage of sample containers and samples. Travel blanks are generally prepared by the laboratory and sent to the field with the empty sample containers. The blanks remain unopened until they are returned to the laboratory along with the rest of the shipment of samples.

2. FIELD REAGENT BLANKS

A sample of analyte-free water poured by the courier in the field into designated bottle, preserved and shipped to the laboratory with field samples.

3. FIELD DUPLICATES

Field duplicates are collected to monitor the combined precision of sampling and analysis operations. The precision of field duplicates is generally not as close as that of laboratory duplicates, due to the additional variable (sample collection).

4. SAMPLE DUPLICATES

Replicates analyzed from the same bottle to determine the precision of the analytical process.

5. METHOD BLANKS

Blanks used to monitor the contamination from the laboratory reagent water used in the tests and the laboratory environment that the test is performed.

6. MATRIX SPIKED SAMPLES

Laboratory samples are routinely spiked with a known amount of the analyte(s) of interest to assess any sample matrix interferences or effects and to determine the accuracy of the analytical process or system. The addition of a matrix spike duplicate is used to assess the precision of the analytical process.

VIII. DATA VALIDATION

1. QA/QC CRITERIA

Acceptance criteria for the above listed chemical parameters follow protocol and/or guidelines of the EPA (40 CFR 136, EPA SW-846, EPA 600/4-79/020), Standard Methods for the Examination of Water and Wastewater and the California Environmental Laboratory Accreditation Program of the State Water Resources Control Board.

2. ANALYTICAL METHODOLOGY

Methods and techniques used for all chemical determinations strictly adhere to procedures published by the EPA (40 CFR 136, EPA SW-846, EPA 600/4-79/020) or as published in the approved edition of Standard Methods for the Examination of Water and Wastewater. The RWQCP laboratory uses its approved fields of accreditation certified under California's Environmental Accreditation Program (ELAP).

3. CERTIFICATION STATEMENT

QA/QC CERTIFICATION STATEMENT

Quality Assurance/Quality Control validation data was reviewed for each of the analytical measurements performed and deemed acceptable. Acceptance criteria were established using methodologies from Standard Methods for the Examination of Water and Wastewater, EPA references (40 CFR 136, EPA SW-846, EPA 600/4-79/020), or as specified by the California Environmental Laboratory Accreditation Program of the State Water Resources Control Board.

All data for compliance samples related to the plant and for any other samples performed in-house were approved by the RWQCP Laboratory Manager. All data for industrial waste monitoring obtained from contract laboratories were approved by the Pretreatment Program Manager. The Plant Manager certifies the data for the CIWQS submittal.

02/20/2024
Date

Signature of Official
Samantha Bialorucki
RWQCP Lab Manager

2/20/24
Date

Signature of Official
Samantha Engelage
Senior Engineer/Pretreatment Program Manager

E.1.2 ANALYSIS OF THE RESULTS

E.1.2.1 INFLUENT & EFFLUENT ANALYTICAL RESULTS

Wet season samples were collected on 2/6/2023. Analytical results in the influent indicated the presence of the following volatile organic compounds: benzene (DNQ 0.040 µg/L), bromodichloromethane (1.8 µg/L), bromoform (DNQ 0.30 µg/L), chloroform (2.2 µg/L), dibromochloromethane (1.7 µg/L), tetrachloroethene (DNQ 0.039 µg/L), toluene (1.1 µg/L), trichloroethene (0.69 µg/L), and vinyl chloride (0.015 µg/L). Analytical results of semi-volatile organic compounds in the influent indicated the presence of bis (2-ethylhexyl) phthalate (DNQ 6.5 µg/L), di-n-butyl phthalate (2.7 µg/L), diethyl phthalate (DNQ 1.7 µg/L), 3 & 4-methylphenol (m,p-cresol) (100 µg/L), and phenol (14 µg/L).

Four of the nine volatile organic compounds detected in the wet season influent were detected in the corresponding effluent sample: bromodichloromethane (0.31 µg/L), chloroform (0.33 µg/L), dibromochloromethane (0.28 µg/L), and toluene (DNQ 0.41 µg/L). Similarly, only two of the five semi-volatile organic compounds detected in the influent were detected in the corresponding effluent sample: bis (2-ethylhexyl) phthalate (DNQ 0.25 µg/L) and di-n-butyl phthalate (DNQ 0.041 µg/L). All six compounds were detected significantly below their influent concentrations suggesting removal through the wastewater treatment plant. Additionally, the wet season effluent sample contained three compounds that weren't detected in the corresponding influent sample: fluoranthene (DNQ 0.0060 µg/L), phenanthrene (0.011 µg/L), and 2,4,6-trichlorophenol (0.028 µg/L) suggesting compound transformation occurred within the wastewater treatment plant and/or an introduced positive analytical bias as indicated by the method blank contamination. Despite their detection in the effluent, all volatile and semi-volatile organic compounds had influent concentrations sufficiently low to not cause interference, upset, or pass-through at the RWQCP.

Dry season samples were collected on 8/16/2023. Analytical results in the influent indicated the presence of the following volatile organic compounds: benzene (DNQ 0.11 µg/L), bromodichloromethane (DNQ 0.030 µg/L), chloroform (4.1 µg/L), dibromochloromethane (DNQ 0.076 µg/L), methylene chloride (DNQ 1.3 µg/L), tetrachloroethene (DNQ 0.056 µg/L), toluene (1.1 µg/L), and trichloroethene (0.61 µg/L).. Analytical results of semi-volatile organic compounds in the influent indicated the presence of 3 & 4-methylphenol (m,p-cresol) (DNQ 85 µg/L) and phenol (20 µg/L). RWQCP effluent was not analyzed for volatile or semi-volatile organic compounds in the dry season of 2023. Despite their detection in the influent, all volatile and semi-volatile organic compounds were at concentrations low enough to not cause interference, upset, or pass-through the RWQCP

E.1.2.2. BIOSOLIDS RESULTS

For volatile and semi-volatile organic pollutants analysis, biosolids samples are collected once per year after being dewatered in belt filter presses. Samples were collected over 5 days from 3/2/2023 to 3/6/2023 and composited. The solids percent of the sample was 27.5%. Analytical results from the biosolids indicated the presence of the following volatile organic compounds: acetone (14 mg/kg-dry), 2-butanone (2.9 mg/kg-dry), chloroform (DNQ 0.013 mg/kg-dry), and 4-isopropyl toluene (DNQ 0.049 mg/kg-dry). Analytical results indicated the presence of the following semi-volatile organic compounds in the biosolids: bis (2-ethylhexyl) phthalate (3.4 mg/kg-dry), butylbenzyl phthalate (0.78 mg/kg-dry), and di-n-butyl phthalate (2.6 mg/kg-dry).

Biosolids metals samples were collected every two months. Samples are collected over a 5-day period and composited. The percent solids of the samples ranged between 27.5% and 32.0% with an annual average of 29.9%. Beryllium and cadmium were detected below reporting limits. Arsenic and mercury biosolids concentrations were similar to the previous year's. Chromium, copper, selenium, zinc, and lead biosolids concentrations were higher than the previous year's by 32, 9, 46, 16, 34, 27, and 15 % respectively.

E.2 TABULAR SUMMARY OF COMPOUNDS DETECTED

A tabular summary of the volatile organic compounds (VOC) and semi-volatile organic compounds detected for the monitoring data generated during 2023 can be found below. Influent and effluent monitoring data for metals and cyanide can be found in Section E.4 of this report.

INFLUENT VOLATILE ORGANIC COMPOUND REPORT
WET SEASON 2023
Contract Lab: McCampbell Analytical, Inc.- EPA 624.1

NOTES:
Units = ug/L
ND = compound was not detected at or above the Method Detection Limit (MDL)
J Qualifier = data not quantifiable (DNQ) result between MDL and Reporting Limit (RL) and is an estimated value

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M000215-01 INF-001	2302484-001B	Water	02/06/2023 12:10	GC38 02152330.D	263879

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Benzene	**0.040**	J	0.034	0.20	1	02/16/2023 02:05
Bromodichloromethane	**1.8**		0.022	0.050	1	02/16/2023 02:05
Bromoform	**0.30**	J	0.10	0.50	1	02/16/2023 02:05
Bromomethane	ND		0.26	0.50	1	02/16/2023 02:05
Carbon tetrachloride	ND		0.033	0.050	1	02/16/2023 02:05
Chlorobenzene	ND		0.092	0.50	1	02/16/2023 02:05
Chloroethane	ND		0.23	0.50	1	02/16/2023 02:05
Chloroform	**2.2**		0.015	0.10	1	02/16/2023 02:05
Chloromethane	ND		0.18	0.50	1	02/16/2023 02:05
Dibromochloromethane	**1.7**		0.069	0.15	1	02/16/2023 02:05
1,2-Dichlorobenzene	ND		0.11	0.50	1	02/16/2023 02:05
1,3-Dichlorobenzene	ND		0.12	0.50	1	02/16/2023 02:05
1,4-Dichlorobenzene	ND		0.11	0.50	1	02/16/2023 02:05
1,1-Dichloroethane	ND		0.14	0.50	1	02/16/2023 02:05
1,2-Dichloroethane (1,2-DCA)	ND		0.011	0.020	1	02/16/2023 02:05
1,1-Dichloroethene	ND		0.0036	0.010	1	02/16/2023 02:05
trans-1,2-Dichloroethene	ND		0.12	0.50	1	02/16/2023 02:05
1,2-Dichloropropane	ND		0.029	0.20	1	02/16/2023 02:05
cis-1,3-Dichloropropene	ND		0.13	0.50	1	02/16/2023 02:05
trans-1,3-Dichloropropene	ND		0.20	0.50	1	02/16/2023 02:05
Ethylbenzene	ND		0.14	0.50	1	02/16/2023 02:05
Methylene chloride	ND		0.75	2.0	1	02/16/2023 02:05
1,1,2,2-Tetrachloroethane	ND		0.018	0.020	1	02/16/2023 02:05
Tetrachloroethene	**0.039**	J	0.028	0.20	1	02/16/2023 02:05
Toluene	**1.1**		0.096	0.50	1	02/16/2023 02:05
1,1,1-Trichloroethane	ND		0.14	0.50	1	02/16/2023 02:05
1,1,2-Trichloroethane	ND		0.026	0.20	1	02/16/2023 02:05
Trichloroethene	**0.69**		0.030	0.50	1	02/16/2023 02:05
Trichlorofluoromethane	ND		0.13	0.50	1	02/16/2023 02:05
Vinyl chloride	**0.015**		0.0027	0.0050	1	02/16/2023 02:05

Surrogates	REC (%)	Limits	
Dibromofluoromethane	120	70-130	02/16/2023 02:05
Toluene-d8	122	70-130	02/16/2023 02:05
4-BFB	96	70-130	02/16/2023 02:05

INFLUENT VOLATILE ORGANIC COMPOUND REPORT
WET SEASON 2023
Contract Lab: McCampbell Analytical, Inc.- EPA 624.1
(continued)

Acrolein, Acrylonitrile, & 2-Chloroethyl Vinyl Ether

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M000215-01 INF-001	2302484-001B	Water	02/06/2023 12:10	GC10 02072314.D	263363

Analytes	Result	MDL	RL	DF	Date Analyzed
Acrolein (Propenal)	ND	3.9	5.0	1	02/07/2023 22:28
Acrylonitrile	ND	0.23	2.0	1	02/07/2023 22:28
2-Chloroethyl Vinyl Ether	ND	0.44	1.0	1	02/07/2023 22:28

Surrogates	REC (%)	Limits	
Dibromofluoromethane	118	65-165	02/07/2023 22:28

INFLUENT SEMI-VOLATILE ORGANIC COMPOUND REPORT
WET SEASON 2023
Contract Lab: McCampbell Analytical, Inc.- EPA 625.1

NOTES:
Units = ug/L
ND = compound was not detected at or above the Method Detection Limit (MDL)
J Qualifier = data not quantifiable (DNQ) result between MDL and the Reporting Limit (RL) and is an estimated value

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M000215-01 INF-001	2302484-001A	Water	02/06/2023 12:10	GC47 02082320.D	263226

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Acenaphthene	ND		0.10	0.25	50	02/08/2023 18:13
Acenaphthylene	ND		0.047	0.25	50	02/08/2023 18:13
Anthracene	ND		0.14	0.25	50	02/08/2023 18:13
Benzidine	ND		120	250	50	02/08/2023 18:13
Benzo (a) anthracene	ND		0.61	2.5	50	02/08/2023 18:13
Benzo (a) pyrene	ND		0.16	0.25	50	02/08/2023 18:13
Benzo (b) fluoranthene	ND		0.29	1.0	50	02/08/2023 18:13
Benzo (g,h,i) perylene	ND		0.26	1.0	50	02/08/2023 18:13
Benzo (k) fluoranthene	ND		0.26	1.0	50	02/08/2023 18:13
Benzyl Alcohol	ND		160	250	50	02/08/2023 18:13
Bis (2-chloroethoxy) Methane	ND		13	51	50	02/08/2023 18:13
Bis (2-chloroethyl) Ether	ND		0.10	0.25	50	02/08/2023 18:13
Bis (2-chloroisopropyl) Ether	ND		0.76	2.5	50	02/08/2023 18:13
Bis (2-ethylhexyl) Adipate	ND		14	51	50	02/08/2023 18:13
Bis (2-ethylhexyl) Phthalate	**6.5**	J	2.3	10	50	02/08/2023 18:13
4-Bromophenyl Phenyl Ether	ND		7.6	51	50	02/08/2023 18:13
Butylbenzyl Phthalate	ND		0.38	2.5	50	02/08/2023 18:13
4-Chloroaniline	ND		0.071	0.25	50	02/08/2023 18:13
4-Chloro-3-methylphenol	ND		19	51	50	02/08/2023 18:13
2-Chloronaphthalene	ND		11	51	50	02/08/2023 18:13
2-Chlorophenol	ND		0.66	2.5	50	02/08/2023 18:13
4-Chlorophenyl Phenyl Ether	ND		11	51	50	02/08/2023 18:13
Carbazole	ND		16	51	50	02/08/2023 18:13
Chrysene	ND		0.10	0.25	50	02/08/2023 18:13
Dibenzo (a,h) anthracene	ND		0.29	1.0	50	02/08/2023 18:13
n-Decane	ND		14	51	50	02/08/2023 18:13
Dibenzofuran	ND		0.076	0.25	50	02/08/2023 18:13
Di-n-butyl Phthalate	**2.7**		0.92	2.5	50	02/08/2023 18:13
1,2-Dichlorobenzene	ND		8.7	51	50	02/08/2023 18:13
1,3-Dichlorobenzene	ND		14	51	50	02/08/2023 18:13
1,4-Dichlorobenzene	ND		14	51	50	02/08/2023 18:13
3,3-Dichlorobenzidine	ND		0.12	0.25	50	02/08/2023 18:13
2,4-Dichlorophenol	ND		0.15	0.51	50	02/08/2023 18:13
Diethyl Phthalate	**1.7**	J	0.81	2.5	50	02/08/2023 18:13
2,4-Dimethylphenol	ND		25	51	50	02/08/2023 18:13
Dimethyl Phthalate	ND		0.24	0.51	50	02/08/2023 18:13
4,6-Dinitro-2-methylphenol	ND		97	250	50	02/08/2023 18:13

INFLUENT SEMI-VOLATILE ORGANIC COMPOUND REPORT
WET SEASON 2023
Contract Lab: McCampbell Analytical, Inc.- EPA 625.1
(continued)

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M000215-01 INF-001	2302484-001A	Water	02/06/2023 12:10	GC47 02082320.D	263226

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		19	51	50	02/08/2023 18:13
2,4-Dinitrotoluene	ND		1.0	2.5	50	02/08/2023 18:13
2,6-Dinitrotoluene	ND		0.97	2.5	50	02/08/2023 18:13
Di-n-octyl Phthalate	ND		39	51	50	02/08/2023 18:13
1,2-Diphenylhydrazine	ND		10	51	50	02/08/2023 18:13
Fluoranthene	ND		0.14	0.51	50	02/08/2023 18:13
Fluorene	ND		0.15	0.51	50	02/08/2023 18:13
Hexachlorobenzene	ND		0.081	0.25	50	02/08/2023 18:13
Hexachlorobutadiene	ND		0.10	0.25	50	02/08/2023 18:13
Hexachlorocyclopentadiene	ND		120	250	50	02/08/2023 18:13
Hexachloroethane	ND		0.15	0.51	50	02/08/2023 18:13
Indeno (1,2,3-cd) pyrene	ND		0.37	1.0	50	02/08/2023 18:13
Isophorone	ND		47	100	50	02/08/2023 18:13
2-Methylnaphthalene	ND		0.076	0.25	50	02/08/2023 18:13
2-Methylphenol (o-Cresol)	ND		17	51	50	02/08/2023 18:13
3 & 4-Methylphenol (m,p-Cresol)	**100**		13	51	50	02/08/2023 18:13
Naphthalene	ND		0.61	2.5	50	02/08/2023 18:13
2-Nitroaniline	ND		66	250	50	02/08/2023 18:13
3-Nitroaniline	ND		92	250	50	02/08/2023 18:13
4-Nitroaniline	ND		97	250	50	02/08/2023 18:13
Nitrobenzene	ND		15	51	50	02/08/2023 18:13
2-Nitrophenol	ND		87	250	50	02/08/2023 18:13
4-Nitrophenol	ND		81	250	50	02/08/2023 18:13
N-Nitrosodimethylamine	ND		97	250	50	02/08/2023 18:13
N-Nitrosodiphenylamine	ND		12	51	50	02/08/2023 18:13
N-Nitrosodi-n-propylamine	ND		18	51	50	02/08/2023 18:13
n-Octadecane	ND		5.6	51	50	02/08/2023 18:13
Pentachlorophenol	ND		4.5	13	50	02/08/2023 18:13
Phenanthrene	ND		0.13	0.25	50	02/08/2023 18:13
Phenol	**14**		2.9	10	50	02/08/2023 18:13
Pyrene	ND		0.097	0.25	50	02/08/2023 18:13
Pyridine	ND		12	51	50	02/08/2023 18:13
1,2,4-Trichlorobenzene	ND		9.7	51	50	02/08/2023 18:13
2,4,5-Trichlorophenol	ND		0.13	0.51	50	02/08/2023 18:13
2,4,6-Trichlorophenol	ND		0.19	0.51	50	02/08/2023 18:13

Surrogates	REC (%)	Qualifiers	Limits	
2-Fluorophenol	65		20-103	02/08/2023 18:13
Phenol-d5	128	S	20-120	02/08/2023 18:13
Nitrobenzene-d5	94		61-130	02/08/2023 18:13
2-Fluorobiphenyl	100		63-115	02/08/2023 18:13
2,4,6-Tribromophenol	182	S	48-149	02/08/2023 18:13
4-Terphenyl-d14	72		32-113	02/08/2023 18:13

INFLUENT VOLATILE ORGANIC COMPOUND REPORT
DRY SEASON 2023
Contract Lab: McCampbell Analytical, Inc. - EPA 624.1

NOTES:
Units = ug/L
ND = compound was not detected at or above the Method Detection Limit (MDL)
J Qualifier = data not quantifiable (DNQ) result between MDL and the Reporting Limit (RL) and is an estimated value

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M001228-01 INF-001	2308D46-001B	Water	08/16/2023 12:07	GC16 08222344.D	276591

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Benzene	**0.11**	J	0.034	0.20	1	08/23/2023 13:27
Bromodichloromethane	**0.030**	J	0.022	0.050	1	08/23/2023 13:27
Bromoform	ND		0.10	0.50	1	08/23/2023 13:27
Bromomethane	ND		0.26	0.50	1	08/23/2023 13:27
Carbon tetrachloride	ND		0.033	0.050	1	08/23/2023 13:27
Chlorobenzene	ND		0.092	0.50	1	08/23/2023 13:27
Chloroethane	ND		0.23	0.50	1	08/23/2023 13:27
Chloroform	**4.1**		0.015	0.10	1	08/23/2023 13:27
Chloromethane	ND		0.18	0.50	1	08/23/2023 13:27
Dibromochloromethane	**0.076**	J	0.069	0.15	1	08/23/2023 13:27
1,2-Dichlorobenzene	ND		0.11	0.50	1	08/23/2023 13:27
1,3-Dichlorobenzene	ND		0.12	0.50	1	08/23/2023 13:27
1,4-Dichlorobenzene	ND		0.11	0.50	1	08/23/2023 13:27
1,1-Dichloroethane	ND		0.14	0.50	1	08/23/2023 13:27
1,2-Dichloroethane (1,2-DCA)	ND		0.011	0.020	1	08/23/2023 13:27
1,1-Dichloroethene	ND		0.0036	0.010	1	08/23/2023 13:27
trans-1,2-Dichloroethene	ND		0.12	0.50	1	08/23/2023 13:27
1,2-Dichloropropane	ND		0.029	0.20	1	08/23/2023 13:27
cis-1,3-Dichloropropene	ND		0.13	0.50	1	08/23/2023 13:27
trans-1,3-Dichloropropene	ND		0.20	0.50	1	08/23/2023 13:27
Ethylbenzene	ND		0.14	0.50	1	08/23/2023 13:27
Methylene chloride	**1.3**	J	0.75	2.0	1	08/23/2023 13:27
1,1,2,2-Tetrachloroethane	ND		0.018	0.020	1	08/23/2023 13:27
Tetrachloroethene	**0.056**	J	0.028	0.20	1	08/23/2023 13:27
Toluene	**1.1**		0.096	0.50	1	08/23/2023 13:27
1,1,1-Trichloroethane	ND		0.14	0.50	1	08/23/2023 13:27
1,1,2-Trichloroethane	ND		0.026	0.20	1	08/23/2023 13:27
Trichloroethene	**0.61**		0.030	0.50	1	08/23/2023 13:27
Trichlorofluoromethane	ND		0.13	0.50	1	08/23/2023 13:27
Vinyl chloride	ND		0.0027	0.0050	1	08/23/2023 13:27

Surrogates	REC (%)	Limits	
Dibromofluoromethane	110	70-130	08/23/2023 13:27
Toluene-d8	110	70-130	08/23/2023 13:27
4-BFB	96	70-130	08/23/2023 13:27

INFLUENT VOLATILE ORGANIC COMPOUND REPORT
DRY SEASON 2023
Contract Lab: McCampbell Analytical, Inc. - EPA 624.1
(continued)

Acrolein, Acrylonitrile, & 2-Chloroethyl Vinyl Ether

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M001228-01 INF-001	2308D46-001A	Water	08/16/2023 12:07	GC10 08172326.D	276360

Analytes	Result	MDL	RL	DF	Date Analyzed
Acrolein (Propenal)	ND	3.7	5.0	1	08/18/2023 13:35
Acrylonitrile	ND	0.27	2.0	1	08/18/2023 13:35
2-Chloroethyl Vinyl Ether	ND	0.52	1.0	1	08/18/2023 13:35

Surrogates	REC (%)	Limits	Date Analyzed
Dibromofluoromethane	97	70-130	08/18/2023 13:35

INFLUENT SEMI-VOLATILE ORGANIC COMPOUND REPORT
DRY SEASON 2023
Contract Lab: McCampbell Analytical, Inc. - EPA 625.1

NOTES:
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ND = compound was not detected at or above the Method Detection Limit (MDL)
J Qualifier = data not quantifiable (DNQ) result between MDL and the Reporting Limit (RL) and is an estimated value

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M001192-01 INF-001	2308853-005C	Water	08/08/2023 12:05	GC21 08152322.D	275821

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Acenaphthene	ND		0.30	0.52	100	08/15/2023 17:01
Acenaphthylene	ND		0.19	0.52	100	08/15/2023 17:01
Anthracene	ND		0.21	0.52	100	08/15/2023 17:01
Benzidine	ND		280	520	100	08/15/2023 17:01
Benzo (a) anthracene	ND		2.1	5.2	100	08/15/2023 17:01
Benzo (a) pyrene	ND		0.52	0.52	100	08/15/2023 17:01
Benzo (b) fluoranthene	ND		0.55	1.0	100	08/15/2023 17:01
Benzo (g,h,i) perylene	ND		0.41	1.0	100	08/15/2023 17:01
Benzo (k) fluoranthene	ND		0.52	1.0	100	08/15/2023 17:01
Benzyl Alcohol	ND		200	520	100	08/15/2023 17:01
Bis (2-chloroethoxy) Methane	ND		53	100	100	08/15/2023 17:01
Bis (2-chloroethyl) Ether	ND		0.52	0.52	100	08/15/2023 17:01
Bis (2-chloroisopropyl) Ether	ND		0.51	1.0	100	08/15/2023 17:01
Bis (2-ethylhexyl) Adipate	ND		82	100	100	08/15/2023 17:01
Bis (2-ethylhexyl) Phthalate	ND		14	26	100	08/15/2023 17:01
4-Bromophenyl Phenyl Ether	ND		30	100	100	08/15/2023 17:01
Butylbenzyl Phthalate	ND		8.4	26	100	08/15/2023 17:01
4-Chloroaniline	ND		0.21	0.52	100	08/15/2023 17:01
4-Chloro-3-methylphenol	ND		61	100	100	08/15/2023 17:01
2-Chloronaphthalene	ND		58	100	100	08/15/2023 17:01
2-Chlorophenol	ND		3.7	5.2	100	08/15/2023 17:01
4-Chlorophenyl Phenyl Ether	ND		51	100	100	08/15/2023 17:01
Carbazole	ND		44	100	100	08/15/2023 17:01
Chrysene	ND		0.28	0.52	100	08/15/2023 17:01
Dibenzo (a,h) anthracene	ND		0.54	1.0	100	08/15/2023 17:01
n-Decane	ND		72	100	100	08/15/2023 17:01
Dibenzofuran	ND		0.15	0.52	100	08/15/2023 17:01
Di-n-butyl Phthalate	ND		8.1	26	100	08/15/2023 17:01
1,2-Dichlorobenzene	ND		55	100	100	08/15/2023 17:01
1,3-Dichlorobenzene	ND		61	100	100	08/15/2023 17:01
1,4-Dichlorobenzene	ND		46	100	100	08/15/2023 17:01
3,3-Dichlorobenzidine	ND		0.65	1.0	100	08/15/2023 17:01
2,4-Dichlorophenol	ND		0.58	1.0	100	08/15/2023 17:01
Diethyl Phthalate	ND		2.2	5.2	100	08/15/2023 17:01
2,4-Dimethylphenol	ND		55	100	100	08/15/2023 17:01
Dimethyl Phthalate	ND		0.61	1.0	100	08/15/2023 17:01
4,6-Dinitro-2-methylphenol	ND		390	520	100	08/15/2023 17:01

INFLUENT SEMI-VOLATILE ORGANIC COMPOUND REPORT
DRY SEASON 2023
Contract Lab: McCampbell Analytical, Inc. - EPA 625.1
(continued)

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M001192-01 INF-001	2308853-005C	Water	08/08/2023 12:05	GC21 08152322.D	275821

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		71	100	100	08/15/2023 17:01
2,4-Dinitrotoluene	ND		2.8	5.2	100	08/15/2023 17:01
2,6-Dinitrotoluene	ND		3.1	5.2	100	08/15/2023 17:01
Di-n-octyl Phthalate	ND		120	260	100	08/15/2023 17:01
1,2-Diphenylhydrazine	ND		44	100	100	08/15/2023 17:01
Fluoranthene	ND		0.40	1.0	100	08/15/2023 17:01
Fluorene	ND		0.19	1.0	100	08/15/2023 17:01
Hexachlorobenzene	ND		0.18	0.52	100	08/15/2023 17:01
Hexachlorobutadiene	ND		0.11	0.52	100	08/15/2023 17:01
Hexachlorocyclopentadiene	ND		240	520	100	08/15/2023 17:01
Hexachloroethane	ND		0.35	1.0	100	08/15/2023 17:01
Indeno (1,2,3-cd) pyrene	ND		0.73	1.0	100	08/15/2023 17:01
Isophorone	ND		47	100	100	08/15/2023 17:01
2-Methylnaphthalene	ND		0.23	0.52	100	08/15/2023 17:01
2-Methylphenol (o-Cresol)	ND		66	100	100	08/15/2023 17:01
3 & 4-Methylphenol (m,p-Cresol)	**85**	J	73	100	100	08/15/2023 17:01
Naphthalene	ND		0.66	1.0	100	08/15/2023 17:01
2-Nitroaniline	ND		310	520	100	08/15/2023 17:01
3-Nitroaniline	ND		410	520	100	08/15/2023 17:01
4-Nitroaniline	ND		250	520	100	08/15/2023 17:01
Nitrobenzene	ND		63	100	100	08/15/2023 17:01
2-Nitrophenol	ND		310	520	100	08/15/2023 17:01
4-Nitrophenol	ND		370	520	100	08/15/2023 17:01
N-Nitrosodimethylamine	ND		370	520	100	08/15/2023 17:01
N-Nitrosodiphenylamine	ND		37	100	100	08/15/2023 17:01
N-Nitrosodi-n-propylamine	ND		62	100	100	08/15/2023 17:01
n-Octadecane	ND		56	100	100	08/15/2023 17:01
Pentachlorophenol	ND		17	26	100	08/15/2023 17:01
Phenanthrene	ND		0.37	0.52	100	08/15/2023 17:01
Phenol	**20**		2.0	4.2	100	08/15/2023 17:01
Pyrene	ND		0.29	0.52	100	08/15/2023 17:01
Pyridine	ND		93	100	100	08/15/2023 17:01
1,2,4-Trichlorobenzene	ND		54	100	100	08/15/2023 17:01
2,4,5-Trichlorophenol	ND		0.67	1.0	100	08/15/2023 17:01
2,4,6-Trichlorophenol	ND		0.55	1.0	100	08/15/2023 17:01

Surrogates	REC (%)	Qualifiers	Limits	
2-Fluorophenol	4	S	20-103	08/15/2023 17:01
Phenol-d5	30		20-120	08/15/2023 17:01
Nitrobenzene-d5	281	S	61-130	08/15/2023 17:01
2-Fluorobiphenyl	80		63-115	08/15/2023 17:01
2,4,6-Tribromophenol	236	S	48-149	08/15/2023 17:01
4-Terphenyl-d14	69		32-113	08/15/2023 17:01

EFFLUENT VOLATILE ORGANIC COMPOUND REPORT
WET SEASON 2023
Contract Lab: McCampbell Analytical, Inc. - EPA 624.1

NOTES:
Units = ug/L
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J Qualifier = data not quantifiable (DNQ) result between MDL and the Reporting Limit (RL) and is an estimated value

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M000213-01 EFF-001	2302485-005E	Water	02/06/2023 12:00	GC38 02152333.D	263879

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Benzene	ND		0.034	0.20	1	02/16/2023 03:56
Bromodichloromethane	0.31		0.022	0.050	1	02/16/2023 03:56
Bromoform	ND		0.10	0.50	1	02/16/2023 03:56
Bromomethane	ND		0.26	0.50	1	02/16/2023 03:56
Carbon tetrachloride	ND		0.033	0.050	1	02/16/2023 03:56
Chlorobenzene	ND		0.092	0.50	1	02/16/2023 03:56
Chloroethane	ND		0.23	0.50	1	02/16/2023 03:56
Chloroform	0.33		0.015	0.10	1	02/16/2023 03:56
Chloromethane	ND		0.18	0.50	1	02/16/2023 03:56
Dibromochloromethane	0.28		0.069	0.15	1	02/16/2023 03:56
1,2-Dichlorobenzene	ND		0.11	0.50	1	02/16/2023 03:56
1,3-Dichlorobenzene	ND		0.12	0.50	1	02/16/2023 03:56
1,4-Dichlorobenzene	ND		0.11	0.50	1	02/16/2023 03:56
1,1-Dichloroethane	ND		0.14	0.50	1	02/16/2023 03:56
1,2-Dichloroethane (1,2-DCA)	ND		0.011	0.020	1	02/16/2023 03:56
1,1-Dichloroethene	ND		0.0036	0.010	1	02/16/2023 03:56
trans-1,2-Dichloroethene	ND		0.12	0.50	1	02/16/2023 03:56
1,2-Dichloropropane	ND		0.029	0.20	1	02/16/2023 03:56
cis-1,3-Dichloropropene	ND		0.13	0.50	1	02/16/2023 03:56
trans-1,3-Dichloropropene	ND		0.20	0.50	1	02/16/2023 03:56
Ethylbenzene	ND		0.14	0.50	1	02/16/2023 03:56
Methylene chloride	ND		0.75	2.0	1	02/16/2023 03:56
1,1,2,2-Tetrachloroethane	ND		0.018	0.020	1	02/16/2023 03:56
Tetrachloroethene	ND		0.028	0.20	1	02/16/2023 03:56
Toluene	0.41	J	0.096	0.50	1	02/16/2023 03:56
1,1,1-Trichloroethane	ND		0.14	0.50	1	02/16/2023 03:56
1,1,2-Trichloroethane	ND		0.026	0.20	1	02/16/2023 03:56
Trichloroethene	ND		0.030	0.50	1	02/16/2023 03:56
Trichlorofluoromethane	ND		0.13	0.50	1	02/16/2023 03:56
Vinyl chloride	ND		0.0027	0.0050	1	02/16/2023 03:56

Surrogates	REC (%)	Limits	
Dibromofluoromethane	122	70-130	02/16/2023 03:56
Toluene-d8	122	70-130	02/16/2023 03:56
4-BFB	97	70-130	02/16/2023 03:56

EFFLUENT VOLATILE ORGANIC COMPOUND REPORT
WET SEASON 2023
Contract Lab: McCampbell Analytical, Inc. - EPA 624.1
(continued)

Acrolein, Acrylonitrile, & 2-Chloroethyl Vinyl Ether

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M000213-01 EFF-001	2302485-005E	Water	02/06/2023 12:00	GC10 02072317.D	263363

Analytes	Result	MDL	RL	DF	Date Analyzed
Acrolein (Propenal)	ND	3.9	5.0	1	02/08/2023 00:27
Acrylonitrile	ND	0.23	2.0	1	02/08/2023 00:27
2-Chloroethyl Vinyl Ether	ND	0.44	1.0	1	02/08/2023 00:27

Surrogates	REC (%)	Limits	
Dibromofluoromethane	115	65-165	02/08/2023 00:27

EFFLUENT SEMI-VOLATILE ORGANIC COMPOUND REPORT
WET SEASON 2023
Contract Lab: McCampbell Analytical, Inc. - EPA 625.1

NOTES:
Units = ug/L
ND = compound was not detected at or above the Method Detection Limit (MDL)
J Qualifier = data not quantifiable (DNQ) result between MDL and the Reporting Limit (RL) and is an estimated value
B Qualifier = analyte detected in the associated method blank at a concentration greater than 1/10 the reported sample result

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M000213-01 EFF-001	2302485-005A	Water	02/06/2023 12:00	GC47 02082321.D	263226

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Acenaphthene	ND		0.0039	0.0098	2	02/08/2023 18:40
Acenaphthylene	ND		0.0018	0.0098	2	02/08/2023 18:40
Anthracene	ND		0.0053	0.0098	2	02/08/2023 18:40
Benzidine	ND		4.7	9.8	2	02/08/2023 18:40
Benzo (a) anthracene	ND		0.023	0.098	2	02/08/2023 18:40
Benzo (a) pyrene	ND		0.0061	0.0098	2	02/08/2023 18:40
Benzo (b) fluoranthene	ND		0.011	0.039	2	02/08/2023 18:40
Benzo (g,h,i) perylene	ND		0.010	0.039	2	02/08/2023 18:40
Benzo (k) fluoranthene	ND		0.010	0.039	2	02/08/2023 18:40
Benzyl Alcohol	ND		6.3	9.8	2	02/08/2023 18:40
Bis (2-chloroethoxy) Methane	ND		0.49	2.0	2	02/08/2023 18:40
Bis (2-chloroethyl) Ether	ND		0.0039	0.0098	2	02/08/2023 18:40
Bis (2-chloroisopropyl) Ether	ND		0.029	0.098	2	02/08/2023 18:40
Bis (2-ethylhexyl) Adipate	ND		0.53	2.0	2	02/08/2023 18:40
Bis (2-ethylhexyl) Phthalate	0.25	JB	0.088	0.39	2	02/08/2023 18:40
4-Bromophenyl Phenyl Ether	ND		0.29	2.0	2	02/08/2023 18:40
Butylbenzyl Phthalate	ND		0.014	0.098	2	02/08/2023 18:40
4-Chloroaniline	ND		0.0027	0.0098	2	02/08/2023 18:40
4-Chloro-3-methylphenol	ND		0.72	2.0	2	02/08/2023 18:40
2-Chloronaphthalene	ND		0.43	2.0	2	02/08/2023 18:40
2-Chlorophenol	ND		0.025	0.098	2	02/08/2023 18:40
4-Chlorophenyl Phenyl Ether	ND		0.43	2.0	2	02/08/2023 18:40
Carbazole	ND		0.63	2.0	2	02/08/2023 18:40
Chrysene	ND		0.0039	0.0098	2	02/08/2023 18:40
Dibenzo (a,h) anthracene	ND		0.011	0.039	2	02/08/2023 18:40
n-Decane	ND		0.53	2.0	2	02/08/2023 18:40
Dibenzofuran	ND		0.0029	0.0098	2	02/08/2023 18:40
Di-n-butyl Phthalate	0.041	JB	0.035	0.098	2	02/08/2023 18:40
1,2-Dichlorobenzene	ND		0.33	2.0	2	02/08/2023 18:40
1,3-Dichlorobenzene	ND		0.55	2.0	2	02/08/2023 18:40
1,4-Dichlorobenzene	ND		0.55	2.0	2	02/08/2023 18:40
3,3-Dichlorobenzidine	ND		0.0047	0.0098	2	02/08/2023 18:40
2,4-Dichlorophenol	ND		0.0059	0.020	2	02/08/2023 18:40
Diethyl Phthalate	ND		0.031	0.098	2	02/08/2023 18:40
2,4-Dimethylphenol	ND		0.96	2.0	2	02/08/2023 18:40
Dimethyl Phthalate	ND		0.0094	0.020	2	02/08/2023 18:40
4,6-Dinitro-2-methylphenol	ND		3.7	9.8	2	02/08/2023 18:40

EFFLUENT SEMI-VOLATILE ORGANIC COMPOUND REPORT
WET SEASON 2023
Contract Lab: McCampbell Analytical, Inc. - EPA 625.1
(continued)

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M000213-01 EFF-001	2302485-005A	Water	02/06/2023 12:00	GC47 02082321.D	263226

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND		0.74	2.0	2	02/08/2023 18:40
2,4-Dinitrotoluene	ND		0.039	0.098	2	02/08/2023 18:40
2,6-Dinitrotoluene	ND		0.037	0.098	2	02/08/2023 18:40
Di-n-octyl Phthalate	ND		1.5	2.0	2	02/08/2023 18:40
1,2-Diphenylhydrazine	ND		0.39	2.0	2	02/08/2023 18:40
Fluoranthene	**0.0060**	J	0.0053	0.020	2	02/08/2023 18:40
Fluorene	ND		0.0057	0.020	2	02/08/2023 18:40
Hexachlorobenzene	ND		0.0031	0.0098	2	02/08/2023 18:40
Hexachlorobutadiene	ND		0.0039	0.0098	2	02/08/2023 18:40
Hexachlorocyclopentadiene	ND		4.5	9.8	2	02/08/2023 18:40
Hexachloroethane	ND		0.0057	0.020	2	02/08/2023 18:40
Indeno (1,2,3-cd) pyrene	ND		0.014	0.039	2	02/08/2023 18:40
Isophorone	ND		1.8	3.9	2	02/08/2023 18:40
2-Methylnaphthalene	ND		0.0029	0.0098	2	02/08/2023 18:40
2-Methylphenol (o-Cresol)	ND		0.65	2.0	2	02/08/2023 18:40
3 & 4-Methylphenol (m,p-Cresol)	ND		0.49	2.0	2	02/08/2023 18:40
Naphthalene	ND		0.023	0.098	2	02/08/2023 18:40
2-Nitroaniline	ND		2.5	9.8	2	02/08/2023 18:40
3-Nitroaniline	ND		3.5	9.8	2	02/08/2023 18:40
4-Nitroaniline	ND		3.7	9.8	2	02/08/2023 18:40
Nitrobenzene	ND		0.57	2.0	2	02/08/2023 18:40
2-Nitrophenol	ND		3.3	9.8	2	02/08/2023 18:40
4-Nitrophenol	ND		3.1	9.8	2	02/08/2023 18:40
N-Nitrosodimethylamine	ND		3.7	9.8	2	02/08/2023 18:40
N-Nitrosodiphenylamine	ND		0.45	2.0	2	02/08/2023 18:40
N-Nitrosodi-n-propylamine	ND		0.68	2.0	2	02/08/2023 18:40
n-Octadecane	ND		0.22	2.0	2	02/08/2023 18:40
Pentachlorophenol	ND		0.17	0.49	2	02/08/2023 18:40
Phenanthrene	**0.011**	B	0.0051	0.0098	2	02/08/2023 18:40
Phenol	ND		0.11	0.39	2	02/08/2023 18:40
Pyrene	ND		0.0037	0.0098	2	02/08/2023 18:40
Pyridine	ND		0.45	2.0	2	02/08/2023 18:40
1,2,4-Trichlorobenzene	ND		0.37	2.0	2	02/08/2023 18:40
2,4,5-Trichlorophenol	ND		0.0049	0.020	2	02/08/2023 18:40
2,4,6-Trichlorophenol	**0.028**		0.0074	0.020	2	02/08/2023 18:40

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorophenol	49	20-103	02/08/2023 18:40
Phenol-d5	34	20-120	02/08/2023 18:40
Nitrobenzene-d5	72	61-130	02/08/2023 18:40
2-Fluorobiphenyl	72	63-115	02/08/2023 18:40
2,4,6-Tribromophenol	104	48-149	02/08/2023 18:40
4-Terphenyl-d14	72	32-113	02/08/2023 18:40

BIOSOLIDS VOLATILE ORGANIC COMPOUND REPORT
ANNUAL REPORT 2023
Contract Lab: McCampbell Analytical, Inc. - SW 5030B/8260B

NOTES:
Units = mg/kg-dry
ND = compound was not detected at or above the Method Detection Limit (MDL)
J Qualifier = data not quantifiable (DNQ) result between MDL and the Reporting Limit (RL) and is an estimated value

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M000351-01 BIO-001	2303422-001A	Soil	03/06/2023 21:00	GC28 03092358.D	265094

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Acetone	14		1.7	2.8	4	03/11/2023 03:51
tert-Amyl methyl ether (TAME)	ND		0.017	0.071	4	03/11/2023 03:51
Benzene	ND		0.013	0.071	4	03/11/2023 03:51
Bromobenzene	ND		0.017	0.071	4	03/11/2023 03:51
Bromochloromethane	ND		0.016	0.071	4	03/11/2023 03:51
Bromodichloromethane	ND		0.0033	0.071	4	03/11/2023 03:51
Bromoform	ND		0.053	0.071	4	03/11/2023 03:51
Bromomethane	ND		0.025	0.071	4	03/11/2023 03:51
2-Butanone (MEK)	2.9		0.57	1.4	4	03/11/2023 03:51
t-Butyl alcohol (TBA)	ND		0.34	0.71	4	03/11/2023 03:51
n-Butyl benzene	ND		0.023	0.071	4	03/11/2023 03:51
sec-Butyl benzene	ND		0.025	0.071	4	03/11/2023 03:51
tert-Butyl benzene	ND		0.030	0.071	4	03/11/2023 03:51
Carbon Disulfide	ND		0.016	0.071	4	03/11/2023 03:51
Carbon Tetrachloride	ND		0.0024	0.071	4	03/11/2023 03:51
Chlorobenzene	ND		0.017	0.071	4	03/11/2023 03:51
Chloroethane	ND		0.024	0.071	4	03/11/2023 03:51
Chloroform	0.013	J	0.0046	0.071	4	03/11/2023 03:51
Chloromethane	ND		0.024	0.071	4	03/11/2023 03:51
2-Chlorotoluene	ND		0.023	0.071	4	03/11/2023 03:51
4-Chlorotoluene	ND		0.018	0.071	4	03/11/2023 03:51
Dibromochloromethane	ND		0.0057	0.071	4	03/11/2023 03:51
1,2-Dibromo-3-chloropropane	ND		0.0067	0.0071	4	03/11/2023 03:51
1,2-Dibromoethane (EDB)	ND		0.0018	0.0035	4	03/11/2023 03:51
Dibromomethane	ND		0.017	0.071	4	03/11/2023 03:51
1,2-Dichlorobenzene	ND		0.024	0.071	4	03/11/2023 03:51
1,3-Dichlorobenzene	ND		0.021	0.071	4	03/11/2023 03:51
1,4-Dichlorobenzene	ND		0.021	0.071	4	03/11/2023 03:51
Dichlorodifluoromethane	ND		0.0088	0.071	4	03/11/2023 03:51
1,1-Dichloroethane	ND		0.021	0.071	4	03/11/2023 03:51
1,2-Dichloroethane (1,2-DCA)	ND		0.00099	0.0014	4	03/11/2023 03:51
1,1-Dichloroethene	ND		0.0016	0.071	4	03/11/2023 03:51
cis-1,2-Dichloroethene	ND		0.017	0.071	4	03/11/2023 03:51
trans-1,2-Dichloroethene	ND		0.017	0.071	4	03/11/2023 03:51
1,2-Dichloropropane	ND		0.018	0.071	4	03/11/2023 03:51
1,3-Dichloropropane	ND		0.012	0.071	4	03/11/2023 03:51
2,2-Dichloropropane	ND		0.027	0.071	4	03/11/2023 03:51

BIOSOLIDS VOLATILE ORGANIC COMPOUND REPORT
ANNUAL REPORT 2023
Contract Lab: McCampbell Analytical, Inc. - SW 5030B/8260B
(continued)

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M000351-01 BIO-001	2303422-001A	Soil	03/06/2023 21:00	GC28 03092358.D	265094

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
1,1-Dichloropropene	ND		0.025	0.071	4	03/11/2023 03:51
cis-1,3-Dichloropropene	ND		0.014	0.071	4	03/11/2023 03:51
trans-1,3-Dichloropropene	ND		0.014	0.071	4	03/11/2023 03:51
Diisopropyl ether (DIPE)	ND		0.025	0.071	4	03/11/2023 03:51
Ethylbenzene	ND		0.016	0.071	4	03/11/2023 03:51
Ethyl tert-butyl ether (ETBE)	ND		0.020	0.071	4	03/11/2023 03:51
Freon 113	ND		0.016	0.071	4	03/11/2023 03:51
Hexachlorobutadiene	ND		0.017	0.071	4	03/11/2023 03:51
Hexachloroethane	ND		0.0092	0.071	4	03/11/2023 03:51
2-Hexanone	ND		0.039	0.071	4	03/11/2023 03:51
Isopropylbenzene	ND		0.025	0.071	4	03/11/2023 03:51
4-Isopropyl toluene	0.049	J	0.027	0.071	4	03/11/2023 03:51
Methyl-t-butyl ether (MTBE)	ND		0.021	0.071	4	03/11/2023 03:51
Methylene chloride	ND		0.17	0.28	4	03/11/2023 03:51
4-Methyl-2-pentanone (MIBK)	ND		0.024	0.071	4	03/11/2023 03:51
Naphthalene	ND		0.042	0.071	4	03/11/2023 03:51
n-Propyl benzene	ND		0.027	0.071	4	03/11/2023 03:51
Styrene	ND		0.020	0.071	4	03/11/2023 03:51
1,1,1,2-Tetrachloroethane	ND		0.018	0.071	4	03/11/2023 03:51
1,1,2,2-Tetrachloroethane	ND		0.0064	0.071	4	03/11/2023 03:51
Tetrachloroethene	ND		0.0042	0.071	4	03/11/2023 03:51
Toluene	ND		0.023	0.071	4	03/11/2023 03:51
1,2,3-Trichlorobenzene	ND		0.030	0.071	4	03/11/2023 03:51
1,2,4-Trichlorobenzene	ND		0.023	0.071	4	03/11/2023 03:51
1,1,1-Trichloroethane	ND		0.023	0.071	4	03/11/2023 03:51
1,1,2-Trichloroethane	ND		0.017	0.071	4	03/11/2023 03:51
Trichloroethene	ND		0.020	0.071	4	03/11/2023 03:51
Trichlorofluoromethane	ND		0.018	0.071	4	03/11/2023 03:51
1,2,3-Trichloropropane	ND		0.0024	0.0035	4	03/11/2023 03:51
1,2,4-Trimethylbenzene	ND		0.023	0.071	4	03/11/2023 03:51
1,3,5-Trimethylbenzene	ND		0.024	0.071	4	03/11/2023 03:51
Vinyl Chloride	ND		0.0017	0.0035	4	03/11/2023 03:51
m,p-Xylene	ND		0.035	0.071	4	03/11/2023 03:51
o-Xylene	ND		0.020	0.071	4	03/11/2023 03:51
Xylenes, Total	ND		NA	0.071	4	03/11/2023 03:51
1,3-Dichloropropene, Total	ND		NA	0.071	4	03/11/2023 03:51

Surrogates	REC (%)	Limits	
Dibromofluoromethane	107	70-140	03/11/2023 03:51
Toluene-d8	114	70-140	03/11/2023 03:51
4-BFB	108	70-140	03/11/2023 03:51
Benzene-d6	74	50-140	03/11/2023 03:51
Ethylbenzene-d10	76	50-140	03/11/2023 03:51
1,2-DCB-d4	84	40-140	03/11/2023 03:51

BIOSOLIDS SEMI-VOLATILE ORGANIC COMPOUND REPORT
ANNUAL REPORT 2023
Contract Lab: McCampbell Analytical, Inc. - SW 5030B/8270C

NOTES:
Units = mg/kg-dry
ND = compound was not detected at or above the Method Detection Limit (MDL)
J Qualifier = data not quantifiable (DNQ) result between MDL and the Reporting Limit (RL) and is an estimated value

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M000351-01 BIO-001	2303422-001A	Soil	03/06/2023 21:00	GC17 03092312.D	265228

Analytes	Result	MDL	RL	DF	Date Analyzed
Acenaphthene	ND	0.020	0.074	2	03/09/2023 18:13
Acenaphthylene	ND	0.016	0.074	2	03/09/2023 18:13
Acetochlor	ND	2.5	14	2	03/09/2023 18:13
Anthracene	ND	0.032	0.074	2	03/09/2023 18:13
Benzidine	ND	20	71	2	03/09/2023 18:13
Benzo (a) anthracene	ND	0.20	0.74	2	03/09/2023 18:13
Benzo (a) pyrene	ND	0.039	0.14	2	03/09/2023 18:13
Benzo (b) fluoranthene	ND	0.074	0.14	2	03/09/2023 18:13
Benzo (g,h,i) perylene	ND	0.049	0.14	2	03/09/2023 18:13
Benzo (k) fluoranthene	ND	0.057	0.14	2	03/09/2023 18:13
Benzyl Alcohol	ND	31	71	2	03/09/2023 18:13
1,1-Biphenyl	ND	0.16	0.74	2	03/09/2023 18:13
Bis (2-chloroethoxy) Methane	ND	1.7	14	2	03/09/2023 18:13
Bis (2-chloroethyl) Ether	ND	0.020	0.074	2	03/09/2023 18:13
Bis (2-chloroisopropyl) Ether	ND	0.071	0.14	2	03/09/2023 18:13
Bis (2-ethylhexyl) Adipate	ND	4.9	14	2	03/09/2023 18:13
Bis (2-ethylhexyl) Phthalate	**3.4**	0.27	0.74	2	03/09/2023 18:13
4-Bromophenyl Phenyl Ether	ND	2.3	14	2	03/09/2023 18:13
Butylbenzyl Phthalate	**0.78**	0.20	0.74	2	03/09/2023 18:13
4-Chloroaniline	ND	0.053	0.074	2	03/09/2023 18:13
4-Chloro-3-methylphenol	ND	3.5	14	2	03/09/2023 18:13
2-Chloronaphthalene	ND	2.3	14	2	03/09/2023 18:13
2-Chlorophenol	ND	0.13	0.74	2	03/09/2023 18:13
4-Chlorophenyl Phenyl Ether	ND	3.9	14	2	03/09/2023 18:13
Chrysene	ND	0.039	0.14	2	03/09/2023 18:13
Dibenzo (a,h) anthracene	ND	0.064	0.14	2	03/09/2023 18:13
Dibenzofuran	ND	0.0053	0.074	2	03/09/2023 18:13
Di-n-butyl Phthalate	**2.6**	0.25	0.74	2	03/09/2023 18:13
1,2-Dichlorobenzene	ND	3.0	14	2	03/09/2023 18:13
1,3-Dichlorobenzene	ND	2.4	14	2	03/09/2023 18:13
1,4-Dichlorobenzene	ND	2.8	14	2	03/09/2023 18:13
3,3-Dichlorobenzidine	ND	0.15	0.74	2	03/09/2023 18:13
2,4-Dichlorophenol	ND	0.071	0.14	2	03/09/2023 18:13
Diethyl Phthalate	ND	0.23	0.74	2	03/09/2023 18:13
2,4-Dimethylphenol	ND	2.5	14	2	03/09/2023 18:13
Dimethyl Phthalate	ND	0.11	0.14	2	03/09/2023 18:13
4,6-Dinitro-2-methylphenol	ND	23	71	2	03/09/2023 18:13

BIOSOLIDS SEMI-VOLATILE ORGANIC COMPOUND REPORT
ANNUAL REPORT 2023
Contract Lab: McCampbell Analytical, Inc. - SW 5030B/8270C
(continued)

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
M000351-01 BIO-001	2303422-001A	Soil	03/06/2023 21:00	GC17 03092312.D	265228

Analytes	Result	MDL	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	6.4	14	2	03/09/2023 18:13
2,4-Dinitrotoluene	ND	0.20	0.74	2	03/09/2023 18:13
2,6-Dinitrotoluene	ND	3.5	7.1	2	03/09/2023 18:13
Di-n-octyl Phthalate	ND	11	28	2	03/09/2023 18:13
1,2-Diphenylhydrazine	ND	2.2	14	2	03/09/2023 18:13
Fluoranthene	ND	0.046	0.14	2	03/09/2023 18:13
Fluorene	ND	0.057	0.14	2	03/09/2023 18:13
Hexachlorobenzene	ND	0.067	0.14	2	03/09/2023 18:13
Hexachlorobutadiene	ND	0.011	0.074	2	03/09/2023 18:13
Hexachlorocyclopentadiene	ND	29	71	2	03/09/2023 18:13
Hexachloroethane	ND	0.15	0.74	2	03/09/2023 18:13
Indeno (1,2,3-cd) pyrene	ND	0.20	0.74	2	03/09/2023 18:13
Isophorone	ND	3.9	14	2	03/09/2023 18:13
1-Methylnaphthalene	ND	0.019	0.074	2	03/09/2023 18:13
2-Methylnaphthalene	ND	0.027	0.074	2	03/09/2023 18:13
2-Methylphenol (o-Cresol)	ND	3.4	14	2	03/09/2023 18:13
3 & 4-Methylphenol (m,p-Cresol)	ND	2.6	14	2	03/09/2023 18:13
Naphthalene	ND	0.18	0.35	2	03/09/2023 18:13
2-Nitroaniline	ND	18	71	2	03/09/2023 18:13
3-Nitroaniline	ND	13	71	2	03/09/2023 18:13
4-Nitroaniline	ND	16	71	2	03/09/2023 18:13
Nitrobenzene	ND	3.1	14	2	03/09/2023 18:13
2-Nitrophenol	ND	18	71	2	03/09/2023 18:13
4-Nitrophenol	ND	20	71	2	03/09/2023 18:13
N-Nitrosodimethylamine	ND	12	71	2	03/09/2023 18:13
N-Nitrosodiphenylamine	ND	1.6	14	2	03/09/2023 18:13
N-Nitrosodi-n-propylamine	ND	4.6	14	2	03/09/2023 18:13
Pentachlorophenol	ND	1.6	3.5	2	03/09/2023 18:13
Phenanthrene	ND	0.039	0.074	2	03/09/2023 18:13
Phenol	ND	0.10	0.28	2	03/09/2023 18:13
Pyrene	ND	0.035	0.14	2	03/09/2023 18:13
Pyridine	ND	2.6	14	2	03/09/2023 18:13
2,3,4,6-Tetrachlorophenol	ND	4.6	14	2	03/09/2023 18:13
1,2,4-Trichlorobenzene	ND	2.6	14	2	03/09/2023 18:13
2,4,5-Trichlorophenol	ND	0.033	0.14	2	03/09/2023 18:13
2,4,6-Trichlorophenol	ND	0.032	0.14	2	03/09/2023 18:13

Surrogates	REC (%)	Limits	
2-Fluorophenol	103	60-130	03/09/2023 18:13
Phenol-d5	92	50-130	03/09/2023 18:13
Nitrobenzene-d5	85	60-130	03/09/2023 18:13
2-Fluorobiphenyl	82	60-130	03/09/2023 18:13
2,4,6-Tribromophenol	90	50-130	03/09/2023 18:13
4-Terphenyl-d14	94	50-130	03/09/2023 18:13

SLUDGE CAKE METALS AND CYANIDE FOR BIO-001
ANNUAL REPORT 2023

Sample Source:	Cake from Sludge cake belt press discharge chute
Sample type:	4 Grabs composited over 5 days
Testing Laboratory:	McCampbell Analytical, Inc.
Testing Parameters:	a. Total Solids - % b. Metals - mg/Kg, dry weight
Testing Methods:	1. As, Be, Cd, Cr, Cu, Mo, Ni, Pb, Hg, Se, Zn, Ag-SW846 3050B/6020
	2. Hg- SW846 7471 B
	3. Total % Solids - SM-2540 G/B
	4. SW846 9012B - CN
Testing Instrument:	ICP-MS

ANNUAL SLUDGE CAKE METALS.TTLC (mg/Kg) Dry weight

	ANALYTE											
Sample Date	**As**	**Be**	**Cd**	**Cr**	**Cu**	**Pb**	**Mo**	**Ni**	**Se**	**Hg**	**Zn**	**% Solids**
01/06-10/2023 ID# M000042-01	2.50	<0.32	DNQ 0.57	31.0	280	18.0	7.30	29.0	6.30	0.250	570	32.0
MDL/RL	0.35/1.6	0.32/1.6	0.29/1.6	0.41/1.6	0.41/1.6	0.21/1.6	0.29/1.6	0.25/1.6	0.67/1.6	0.029/0.054	7.9/16	0.0144/0.0144
03/02-06/2023 ID# M000351-01	DNQ 1.1	<0.35	DNQ 0.67	13.0	260	5.70	5.70	13.0	7.10	0.170	460	27.5
MDL/RL	0.39/1.8	0.35/1.8	0.33/1.8	0.46/1.8	0.46/1.8	0.23/1.8	0.33/1.8	0.28/1.8	0.74/1.8	0.032/0.060	8.8/18	0.0178/0.0178
05/12-16/2023 ID#M000755-01	DNQ 1.2	<0.34	DNQ 0.41	12.0	240	6.50	5.80	11.0	6.20	0.290	510	31.8
MDL/RL	0.38/1.7	0.34/1.7	0.32/1.7	0.45/1.7	0.45/1.7	0.22/1.7	0.32/1.7	0.27/1.7	0.72/1.7	0.027/0.058	8.6/17	0.0104/0.0104
07/13-17/2023 ID# M001069-01	DNQ 1.5	<0.36	DNQ 0.71	14.0	310	8.90	6.40	14.0	7.10	0.430	680	29.9
MDL/RL	0.39/1.8	0.36/1.8	0.33/1.8	0.46/1.8	0.46/1.8	0.23/1.8	0.33/1.8	0.29/1.8	0.75/1.8	0.028/0.061	8.9/18	0.0123/0.0123
09/08-12/2023 ID# M001382-01	DNQ 1.2	<0.35	DNQ 0.49	12.0	260	14.0	5.30	11.0	4.60	0.200	600	29.1
MDL/RL	0.39/1.8	0.35/1.8	0.32/1.8	0.46/1.8	0.46/1.8	0.23/1.8	0.32/1.8	0.28/1.8	0.74/1.8	0.027/0.060	8.8/18	0.0148/0.0148
11/03-08/2023 ID# M001672-01	1.90	<0.29	DNQ 0.55	13.0	310	8.90	6.10	13.0	5.50	0.160	580	29.2
MDL/RL	0.29/1.7	0.29/1.7	0.27/1.7	0.58/1.7	0.65/1.7	0.30/1.7	0.32/1.7	0.96/1.7	0.72/1.7	0.027/0.058	6.1/17	0.0110/0.0110
ANNUAL AVE (mg/Kg)	**DNQ 1.57**	**<0.34**	**DNQ 0.57**	**15.8**	**277**	**10.33**	**6.10**	**15.2**	**6.13**	**0.250**	**567**	**29.9**

CONT. **TTLC** METALS (mg/Kg) Dry weight

Analyte	**Ag**	**CN**
03/02-06/2023 ID# M000351-01	DNQ 1.3	4.9
RL/MDL	0.20/1.8	0.060/0.35
ANNUAL AVE (mg/Kg)	DNQ 1.3	4.9

DNQ	= Estimated result, value detected above MDL and below RL.
<	= Result below MDL(non-detect) for purposes of calculating AVE the MDL was used.
NR	= Not Required this period.

Note: Sampling for November ended at 3am on the 6th day instead of 9pm on the 5th day as the 3am sample was missed

E.3 INVESTIGATIVE FINDINGS INTO CONTRIBUTING SOURCES OF COMPOUNDS THAT EXCEED THE PLANT'S NPDES LIMITS

In 2023, no compounds required to be monitored were detected in sufficient concentration to upset, interfere, or pass through the treatment plant. During 2023, there were no organic priority pollutants requiring monitoring that exceeded the Plant's NPDES effluent limitations.

E.4 INFLUENT AND EFFLUENT METALS & CYANIDE MONITORING DATA - DISCUSION OF TRENDS

E.4.1 INFLUENT MASS

In 2023, the Plant's influent mass loading for total metals decreased by 7%, to 11,627 lbs/yr, when compared to the previous year. This annual decrease is due to decreases in the mass loading of copper (17%), lead (5%), silver (37%), and zinc (5%). In contrast, arsenic (21%), cadmium (37%), chromium (19%), mercury (6%), nickel (26%), and selenium (74%) influent mass loading increased when compared to the previous year.

In 2023, the Plant's influent mass loading for total metals was comparable to the five-year average (2019 – 2023) and showed a less than one percent change. Data show decreases in cadmium (2%), lead (17%), silver (25%), and zinc (3%) that were offset by increases in arsenic (14%), chromium (16%), copper (3%), mercury (3%), nickel (16%), and selenium (42%) in 2023 influent mass loads when compared to the five-year average. The significant increase in influent selenium mass load suggests a possible increase in groundwater infiltration into the collection system. This may be a result of increased precipitation in 2023 raising water tables above the levels from the previous drought years. Future investigations will evaluate this further.

Cyanide influent mass loading increased by more than 94% between 2022 and 2023 from 167 lbs to 325 lbs. Refer to the section below for a detailed description about this increase.

E.4.2 INFLUENT CONCENTRATION

In 2023, the Plant's influent concentrations of arsenic, cadmium, mercury, and nickel were comparable to concentrations measured in 2022. In contrast, 2023 data showed decreased concentrations of chromium, copper, lead, silver, and zinc as well as increased concentrations of selenium. This data suggests that the influent mass loading increases of arsenic, cadmium, chromium, mercury, and nickel are primarily due to an increase in 2023 flows as compared to 2022. In contrast, this data also suggests a significant decrease occurred in copper, silver and zinc discharges along with an increase in selenium discharges in 2023.

Cyanide annual average influent concentrations increased by 66 percent as compared to 2022. Elevated cyanide concentrations in 2023 triggered an evaluation under the Plant's Emergency Monitoring and Response Plan of the Cyanide Action Plan. As such, trunkline sewershed, surveillance sampling, and Plant influent data were analyzed. Trunkline sewershed data along with split influent samples suggest a possible positive interference in the analytical method used by the contracted commercial lab (McCampbell Analytical). This would explain the elevated cyanide concentrations measured since switching to the commercial lab in mid-2022. Quality assurance and quality control (QA/QC) samples provided no reason to invalidate this data, although matrix spikes were not conducted on Plant samples. Future cyanide samples will be analyzed by the Plant's lab with QA/QC samples using Plant influent. Despite the elevated cyanide concentrations, data indicated that no significant cyanide discharge occurred in 2023 as defined by NPDES Order NO. R2-2019-0015.

E.4.3 EFFLUENT MASS

In 2023, the RWQCP removed 75% of the influent metal mass loading, equivalent to 8,696 lbs, including 2,924 lbs of copper and 5,362 lbs of zinc. The majority of the effluent metals mass loading continues to be zinc despite the large aforementioned removal that occurs through the Plant. In 2023, the Plant's effluent metals mass loading was comparable to that of the previous year and showed a less than one percent change. Data show decreases in copper (7%), silver (6%), and zinc (4%) that were offset by increases in arsenic (28%), cadmium (168%), chromium (23%), lead (17%), mercury (9%), nickel (36%), and selenium (123%) in 2023 effluent mass loads when compared to the previous year.

In 2023, the effluent metals mass loading decreased by nine percent from the five-year average (2019 – 2023). This decrease was due to the decreases in effluent mass loadings for copper (6%), lead (33%), and zinc (13%). In contrast, arsenic (11%), cadmium (48%), chromium (7%), mercury (19%), nickel (13%), silver (36%), and selenium (44%) effluent mass loading increased when compared to the five-year average.

Cyanide effluent mass loading decreased by 22 percent in 2023, from 152 lbs in 2022 to 120 lbs in 2023. Historic cyanide influent/effluent mass loading indicated a limited removal of cyanide at the Plant. However, 2023 data suggests that 63 percent of cyanide mass was removed through the Plant. This data is suspect as it gives further supporting evidence of a positive interference occurring in the influent samples. Refer to section E.4.2 for a narrative regarding cyanide influent concentrations.

E.4.4 EFFLUENT CONCENTRATION

In 2023, the Plant's effluent concentrations of arsenic, chromium, lead, mercury, nickel, and silver were comparable to concentrations measured in 2022. In contrast, 2023 data showed decreased concentrations of copper and zinc as well as increased concentrations of cadmium and selenium. This data suggests that the effluent mass loading increases of arsenic, chromium, lead, mercury, and nickel are primarily due to an increase in 2023 flows as compared to 2022. In contrast, this data also suggests a significant decrease occurred in copper and zinc discharges along with an increase in selenium discharges in 2023. Cyanide annual average effluent concentrations decreased by 36 percent as compared to 2022.

TABLE E.4-1
Summary of Influent Metals and Cyanide 2003 – 2023

Year	Flow (MGD)	Influent Metals Concentrations (ppb)										
		As	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Se	Zn	CN
2003	24.90	1.00	0.30	3.90	51.00	3.30	0.27	5.80	2.30	0.80	135.00	2.90
2004	24.05	1.10	0.30	4.20	56.00	4.40	0.36	6.00	2.20	0.70	146.80	5.30
2005	25.90	1.10	0.30	4.50	66.00	5.10	0.23	7.20	1.80	0.80	137.80	4.20
2006	26.90	1.10	0.30	3.80	61.00	3.80	0.20	6.00	1.70	0.80	131.00	4.50
2007	23.11	1.10	0.34	4.76	58.10	3.53	0.20	6.44	1.25	0.85	142.81	1.70
2008	22.26	1.01	0.27	4.24	70.61	2.98	0.20	5.91	0.97	1.37	153.11	1.73
2009	21.80	1.26	0.33	2.70	61.16	2.76	0.17	5.64	0.76	1.92	140.97	1.80
2010	22.30	1.25	0.32	2.50	69.71	3.08	0.22	6.76	0.72	1.94	128.84	1.74
2011	22.33	1.17	0.27	2.07	67.17	2.75	0.17	7.14	0.59	1.63	132.76	1.19
2012	21.74	1.30	0.30	2.06	64.60	3.20	0.16	7.58	0.63	1.60	137.00	0.98
2013	21.00	1.30	0.28	1.89	60.73	2.63	0.15	6.70	0.59	1.73	139.25	1.47
2014	19.22	1.45	0.28	2.10	72.71	2.79	0.15	7.01	0.62	1.62	154.47	1.30
2015	18.93	1.49	0.51	2.14	73.12	3.01	0.21	8.58	0.75	1.66	174.76	1.80
2016	19.39	1.21	0.31	2.01	69.85	2.92	0.21	7.26	0.59	1.97	177.38	2.46
2017	21.35	1.08	0.21	2.13	69.20	2.14	0.08	6.93	0.59	1.57	140.00	1.60
2018	18.00	1.01	0.18	1.96	60.90	2.10	0.08	6.04	0.39	1.47	148.00	1.70
2019	20.13	1.06	0.14	1.82	49.50	1.60	0.08	5.87	0.36	1.58	130.50	1.60
2020	17.59	1.05	0.17	2.08	64.00	3.13	0.06	6.41	0.37	1.43	160.00	1.30
2021	16.94	0.92	0.13	1.65	54.30	1.91	0.11	5.44	0.34	1.32	139.00	1.30
2022	16.85	1.05	0.11	2.00	78.50	1.80	0.13	5.95	0.44	1.36	154.00	3.26
2023	19.97	1.01	0.12	1.85	54.52	1.39	0.17	5.94	0.24	1.87	121.76	5.42

Year	Flow (MGD)	Influent Metals Load (lb/year)										
		As	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Se	Zn	CN
2003	24.90	75.90	25.30	297.70	3,990.50	247.60	20.12	440.90	169.40	60.50	10,241.70	219.70
2004	24.05	80.70	22.90	315.30	4,300.10	319.40	26.41	447.60	164.40	54.40	10,787.50	389.20
2005	25.90	83.50	26.40	353.10	5,214.10	399.40	17.96	563.50	139.40	65.80	10,835.40	326.40
2006	26.90	90.30	27.90	307.30	4,857.10	315.70	16.14	495.80	137.40	70.60	10,567.90	361.40
2007	23.11	77.45	24.17	338.14	4,125.19	250.88	14.23	456.90	88.97	59.77	10,110.66	119.54
2008	22.26	69.01	18.55	287.68	4,782.28	201.65	13.79	401.67	66.19	92.99	10,353.63	117.64
2009	21.80	83.05	21.95	181.02	4,052.09	183.32	11.53	375.98	50.52	128.52	9,372.25	100.21
2010	22.30	85.99	21.53	171.75	4,750.12	209.17	14.50	465.63	48.72	138.01	8,782.28	118.48
2011	22.33	80.78	18.61	141.75	4,613.10	187.94	11.26	491.57	40.39	113.64	9,081.08	80.28
2012	21.74	85.17	19.37	136.03	4,262.11	210.10	10.81	503.24	41.26	106.46	9,012.68	150.64
2013	21.00	82.17	17.42	119.64	3,849.28	166.10	9.35	435.27	37.58	109.54	8,823.61	92.67
2014	19.22	86.05	16.59	125.21	4,246.65	164.20	8.89	415.97	36.98	97.84	9,068.17	75.90
2015	18.93	87.16	29.02	126.02	4,269.15	176.43	11.72	502.12	43.33	97.81	10,125.83	102.45
2016	19.39	71.90	18.43	119.21	4,134.72	172.91	12.69	429.70	34.78	116.72	10,500.20	145.38
2017	21.35	71.80	14.29	142.81	4,344.10	139.39	11.46	462.12	37.96	131.24	8,967.00	211.80
2018	18.00	58.10	10.43	106.93	3,331.30	114.56	4.12	330.67	21.03	80.69	8,075.00	117.60
2019	20.13	65.20	10.20	112.62	3,026.80	97.64	7.40	364.16	22.46	98.69	7,910.00	111.20
2020	17.59	52.40	8.54	102.54	3,150.30	155.37	6.24	316.26	18.68	71.15	7,900.00	80.40
2021	16.94	47.90	6.85	86.01	2,794.50	98.22	6.81	281.12	17.35	68.26	7,117.00	65.10
2022	16.85	53.60	5.57	102.17	4,028.80	91.99	6.67	305.02	22.51	70.50	7,840.00	167.25
2023	19.97	64.60	7.63	121.97	3,352.60	87.61	7.05	383.29	14.22	122.40	7,426.90	324.90

TOTAL METALS (As, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Se, Zn):

Year	lb/Year	% CHANGE	Year	lb/Year	% CHANGE
2003	15,569.62	-2.52	2013	13,649.95	-5.12
2004	16,518.71	6.10	2014	14,266.55	4.52
2005	17,698.56	7.14	2015	15,468.60	8.43
2006	16,886.14	-4.59	2016	15,611.26	0.92
2007	15,546.35	-7.93	2017	14,322.17	-8.26
2008	16,287.43	4.77	2018	12,132.83	-15.29
2009	14,460.23	-11.22	2019	11,715.17	-3.44
2010	14,687.70	1.57	2020	11,781.48	0.57
2011	14,780.12	0.63	2021	10,524.02	-10.67
2012	14,387.23	-2.66	2022	12,526.83	19.03
			2023	11,588.27	-7.49

1. Orange cells denote DNQ
2. Blue cells denote ND

TABLE E.4-2
Summary of Effluent Metals and Cyanide 2003 – 2023

Year	Flow	Effluent Metals Concentrations (ppb)										
		As	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Se	Zn	CN
2003	24.88	0.90	0.20	0.80	7.10	0.40	0.01	3.30	0.20	0.70	45.90	3.50
2004	23.80	0.80	0.20	0.60	8.80	0.50	0.01	3.10	0.20	0.60	50.30	2.80
2005	25.90	0.80	0.20	0.60	8.10	0.40	0.00	3.30	0.20	0.60	43.90	3.50
2006	26.90	0.90	0.20	0.60	8.10	0.40	0.00	3.30	0.20	0.70	44.90	3.10
2007	22.82	0.89	0.20	0.60	9.25	0.40	0.00	3.42	0.20	1.10	52.00	2.00
2008	21.91	0.80	0.20	0.60	8.82	0.40	0.00	3.17	0.20	1.32	54.60	1.66
2009	21.53	1.02	0.20	0.53	8.11	0.40	0.00	3.29	0.20	1.49	49.88	1.69
2010	21.40	1.12	0.20	0.50	6.29	0.40	0.00	4.30	0.20	1.63	41.79	1.60
2011	20.17	1.12	0.10	0.34	7.73	0.25	0.00	4.93	0.06	1.43	38.69	1.80
2012	22.95	1.10	0.12	0.29	8.47	0.20	0.00	5.03	0.01	1.60	50.00	1.52
2013	20.35	1.12	0.14	0.29	11.29	0.22	0.00	4.78	0.02	1.47	53.18	1.54
2014	19.21	1.26	0.14	0.35	10.81	0.20	0.00	4.75	0.05	1.37	59.38	1.60
2015	19.01	1.22	0.36	0.35	9.03	0.24	0.00	4.16	0.04	1.31	63.11	1.63
2016	22.40	1.04	0.12	0.32	9.06	0.14	0.00	3.94	0.02	1.30	59.49	1.93
2017	21.92	0.93	0.10	0.31	9.04	0.13	0.00	4.52	0.02	1.56	46.70	1.60
2018	20.37	0.92	0.09	0.34	9.29	0.18	0.00	4.18	0.02	1.38	57.70	1.80
2019	21.56	0.83	0.05	0.33	7.35	0.09	0.00	4.19	0.02	0.66	44.50	1.60
2020	18.44	0.70	0.05	0.31	8.72	0.08	0.00	4.09	0.02	0.58	47.10	1.90
2021	17.80	0.65	0.05	0.30	8.94	0.05	0.00	3.81	0.02	0.58	44.60	1.40
2022	16.80	0.72	0.02	0.32	9.13	0.05	0.00	3.78	0.04	0.55	42.10	2.98
2023	21.04	0.70	0.06	0.32	7.04	0.05	0.00	3.97	0.04	0.88	34.49	1.92

Year	Flow	Effluent Metals Load (lb/year)										
		As	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Se	Zn	CN
2003	24.88	64.90	15.10	57.70	529.30	32.60	0.38	250.80	15.10	54.80	3,468.90	267.90
2004	23.80	55.00	13.40	42.80	628.80	30.30	0.41	207.10	13.40	37.30	3,358.90	195.50
2005	25.90	63.30	16.00	50.10	638.80	31.80	0.31	259.30	15.60	44.70	3,414.70	272.20
2006	26.90	72.70	16.20	49.20	647.10	32.40	0.29	266.70	16.20	56.50	3,581.30	245.80
2007	22.82	60.48	13.89	41.67	639.39	27.78	0.22	232.56	13.89	75.76	3,598.27	139.00
2008	21.91	53.20	13.38	40.13	588.98	26.75	0.20	213.10	13.38	88.95	3,649.08	110.77
2009	21.53	66.01	13.09	35.03	529.78	26.19	0.17	215.33	13.09	97.56	3,262.89	92.47
2010	21.40	72.18	13.04	32.60	399.34	26.13	0.14	279.50	13.04	108.89	2,687.12	104.32
2011	20.17	87.76	6.03	20.48	407.55	15.58	0.16	303.71	3.63	87.76	2,367.15	110.64
2012	22.95	79.43	8.88	22.47	579.91	16.46	0.23	353.02	1.77	109.26	3,429.05	105.19
2013	20.35	69.23	8.55	17.57	703.04	13.51	0.12	296.21	1.24	90.69	3,299.72	97.01
2014	19.21	74.69	8.31	20.62	634.58	11.63	0.08	279.28	2.96	80.95	3,478.30	92.38
2015	19.01	71.60	8.31	20.01	526.43	13.82	0.07	241.51	2.15	75.72	3,703.80	94.68
2016	22.40	71.00	7.92	21.82	619.35	9.57	0.10	269.11	1.54	88.72	4,067.68	131.62
2017	21.92	66.00	6.90	22.74	587.93	10.24	0.10	308.98	1.68	109.96	3,022.00	120.40
2018	20.37	60.00	5.74	22.20	576.61	18.71	0.07	259.09	1.24	85.37	3,567.30	108.80
2019	21.56	55.00	3.52	21.65	471.20	7.45	0.07	280.67	1.79	63.04	2,848.40	119.50
2020	18.44	36.00	2.62	17.88	444.14	7.58	0.05	213.05	1.03	31.28	2,452.50	56.40
2021	17.80	34.00	1.50	17.51	485.45	3.56	0.06	205.96	1.32	30.66	2,406.80	39.90
2022	16.80	36.00	1.43	16.25	463.32	2.82	0.07	191.80	2.71	27.54	2,145.40	152.44
2023	21.04	46.18	3.83	19.96	429.10	3.29	0.08	260.25	2.55	61.47	2,065.20	119.60

TOTAL METALS (As, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Se, Zn):

Year	lb/Year	% CHANGE	Year	lb/Year	% CHANGE
2003	4,489.58	1.55	2013	4,499.90	-2.19
2004	4,387.41	-2.28	2014	4,591.40	2.03
2005	4,534.61	3.36	2015	4,663.42	1.57
2006	4,738.59	4.50	2016	5,156.80	10.58
2007	4,703.92	-0.73	2017	4,136.53	-19.78
2008	4,687.14	-0.36	2018	4,596.33	11.12
2009	4,259.15	-9.13	2019	3,752.79	-18.35
2010	3,631.98	-14.73	2020	3,206.13	-14.57
2011	3,299.81	-9.15	2021	3,186.82	-0.60
2012	4,600.48	39.42	2022	2,887.34	-9.40
			2023	2,891.91	0.16

1. Orange cells denote DNQ
2. Blue cells denote ND

TABLE E.4-3: INFLUENT METAL LOADING

Pollutant	Loading (lb/yr)				% Change 2023 vs. 2022	% Change 2023 vs. 5 yr. Avg.
	2019	2022	2023	5 yr. Avg.[1]		
Arsenic	65.20	53.60	64.60	56.74	20.52	13.85
Cadmium	10.20	5.57	7.63	7.76	36.98	-1.65
Chromium	112.62	102.17	121.97	105.06	19.38	16.09
Copper	3,026.80	4,028.80	3,352.60	3,270.60	-16.78	2.51
Lead	97.64	91.99	87.61	106.17	-4.76	-17.48
Mercury	7.40	6.67	7.05	6.83	5.70	3.16
Nickel	364.16	305.02	383.29	329.97	25.66	16.16
Silver	22.46	22.51	14.22	19.04	-36.83	-25.33
Selenium	98.69	70.50	122.40	86.20	73.62	42.00
Zinc	7,910.00	7,840.00	7,426.90	7,638.78	-5.27	-2.77
Total Metals	11,715.17	12,526.83	11,588.27	11,627.15	-7.49	-0.33
Flow (MGD)[2]	20.13	16.85	19.97	18.30	18.52	9.15

1. 2019 – 2023
2. Annual average sample day flow (08:00 a.m. – 07:59 a.m.)

TABLE E.4-4: EFFLUENT METAL LOADING

Pollutant	Loading (lb/yr)				% Change 2023 vs. 2022	% Change 2023 vs. 5 yr. Avg.
	2019	2022	2023	5 yr. Avg.[1]		
Arsenic	55.00	36.00	46.18	41.44	28.28	11.45
Cadmium	3.52	1.43	3.83	2.58	167.83	48.45
Chromium	21.65	16.25	19.96	18.65	22.83	7.02
Copper	471.20	463.32	429.10	458.64	-7.39	-6.44
Lead	7.45	2.82	3.29	4.94	16.67	-33.40
Mercury	0.07	0.07	0.08	0.06	9.06	18.78
Nickel	280.67	191.80	260.25	230.35	35.69	12.98
Silver	1.79	2.71	2.55	1.88	-5.90	35.64
Selenium	63.04	27.54	61.47	42.80	123.20	43.63
Zinc	2,848.40	2,145.40	2,065.20	2,383.66	-3.74	-13.36
Total Metals	3,752.79	2,887.34	2,891.91	3,185.00	0.16	-9.20
Flow (MGD)[2]	21.56	16.80	21.04	19.13	25.24	10.00

1. 2019-2023
2. Annual average effluent flow (12:00 a.m. – 11:59 a.m.)

E.4 INFLUENT AND EFFLUENT GRAPHICAL REPRESENTATION OF MONITORING DATA

In 2023, influent metal loading decreased 7% to 11,588 lbs. The RWQCP removed 75% of the estimated influent metal mass loading, equivalent to 8,696 lbs, including 2,924 lbs of copper and 5,362 lbs of zinc.

FIGURE E.4-1

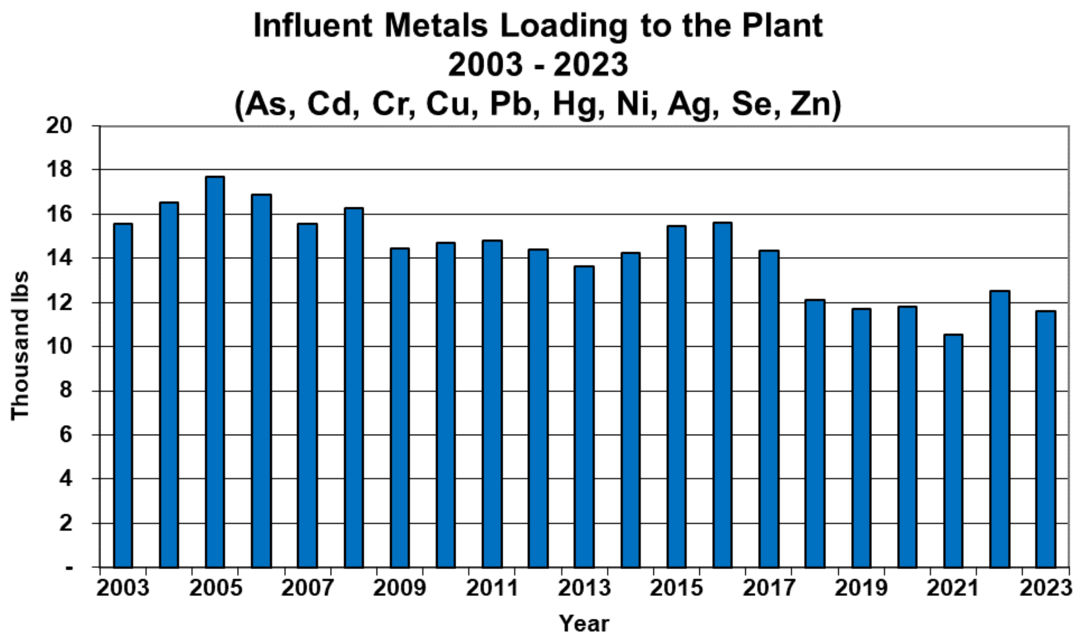


FIGURE E.4-2

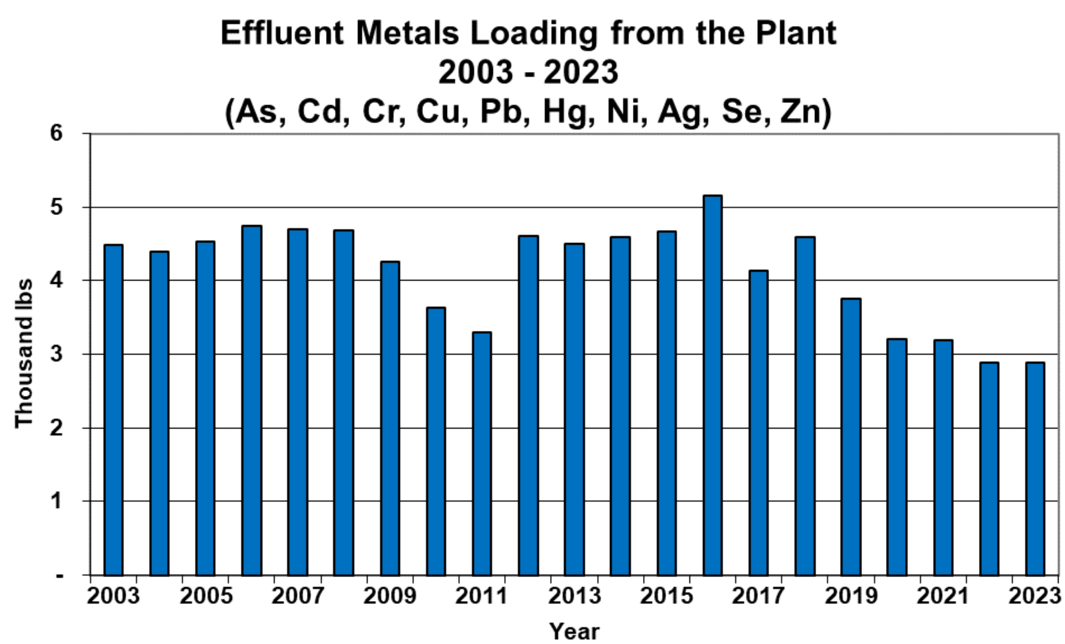


FIGURE E.4-3

As Annual Average Concentration
2003 - 2023

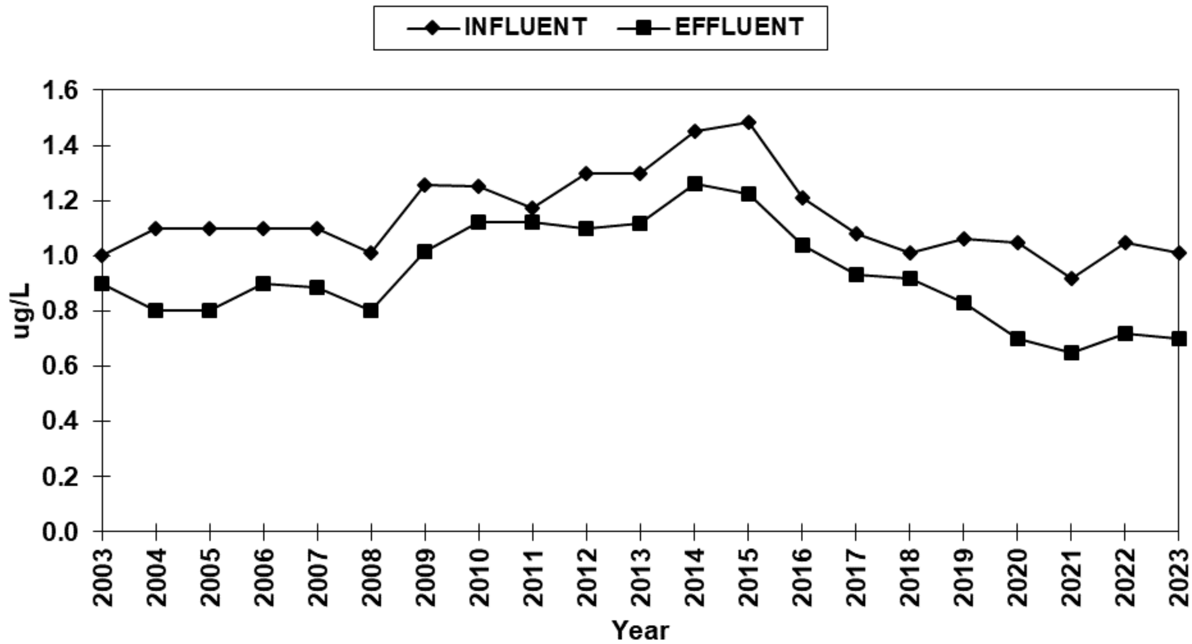


FIGURE E.4-4

As Annual Average Load
2003 - 2023

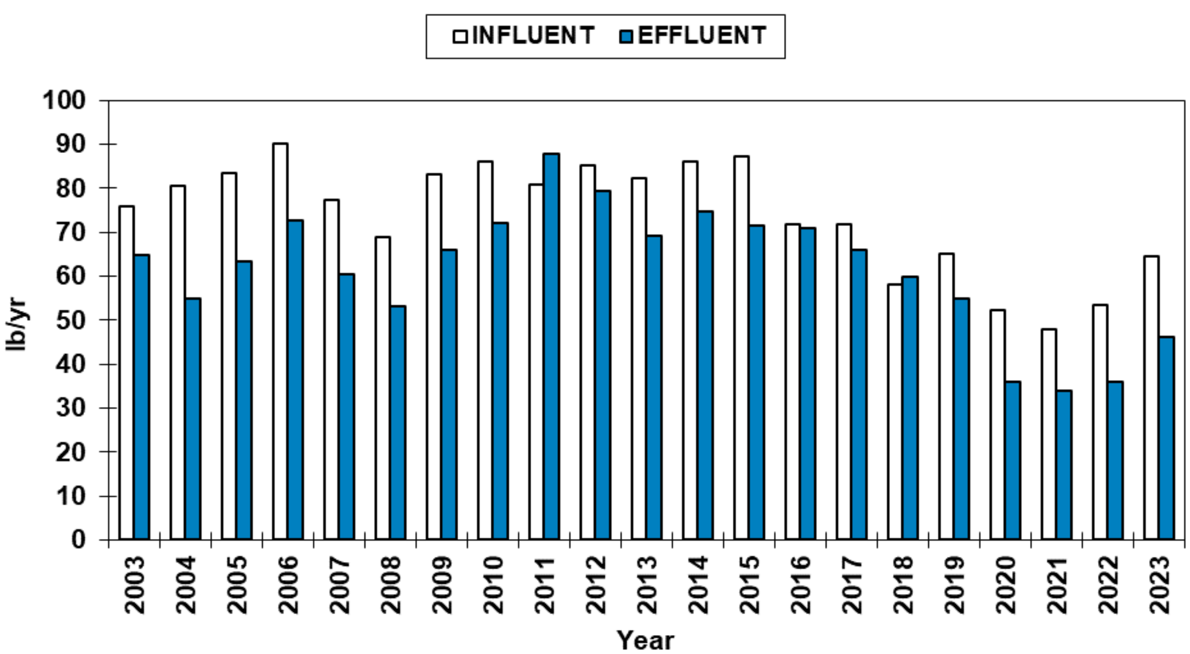


FIGURE E.4-5

Cd Annual Average Concentration 2003 - 2023

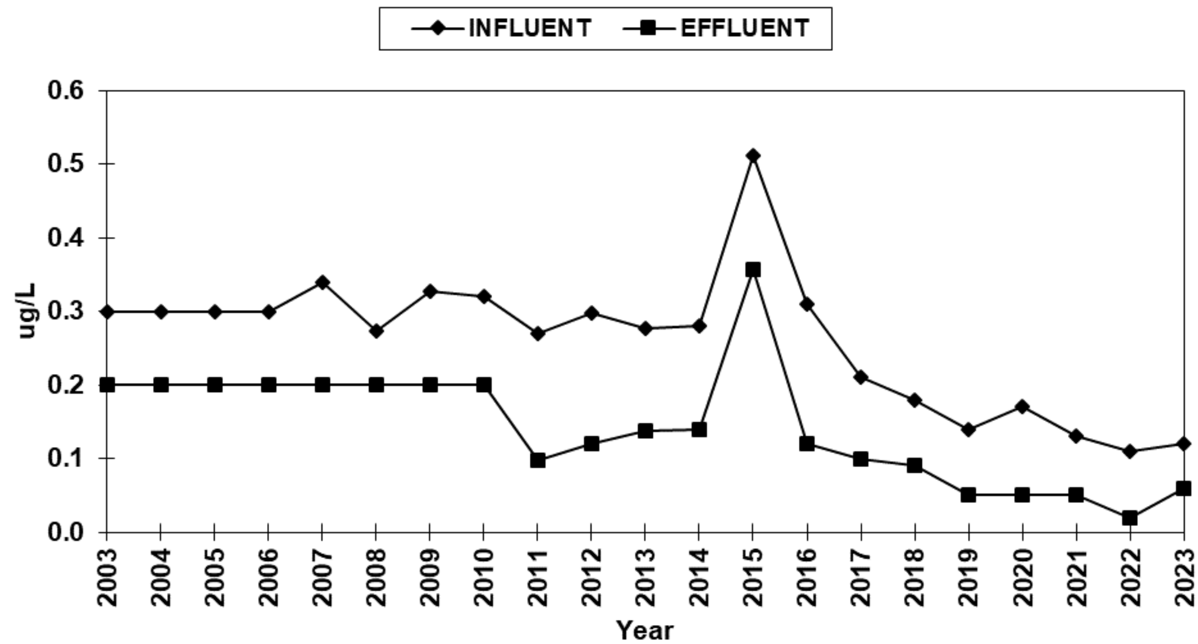


FIGURE E.4-6

Cd Annual Average Load 2003 - 2023

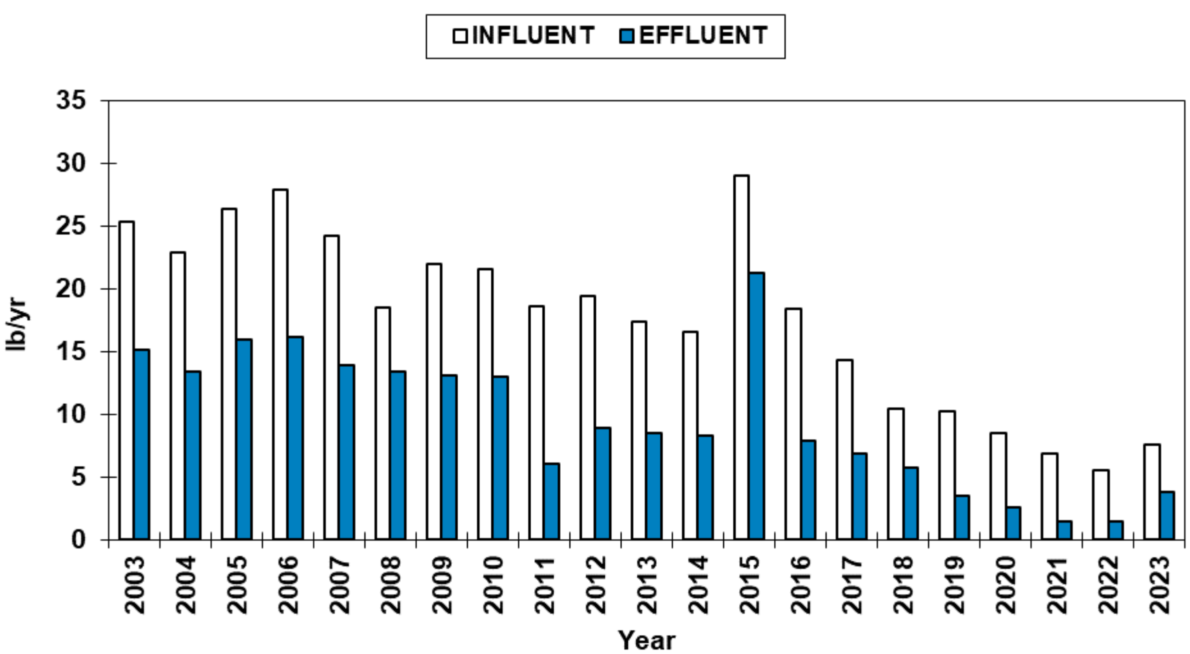


FIGURE E.4-7

Cr Annual Average Concentration
2003 - 2023

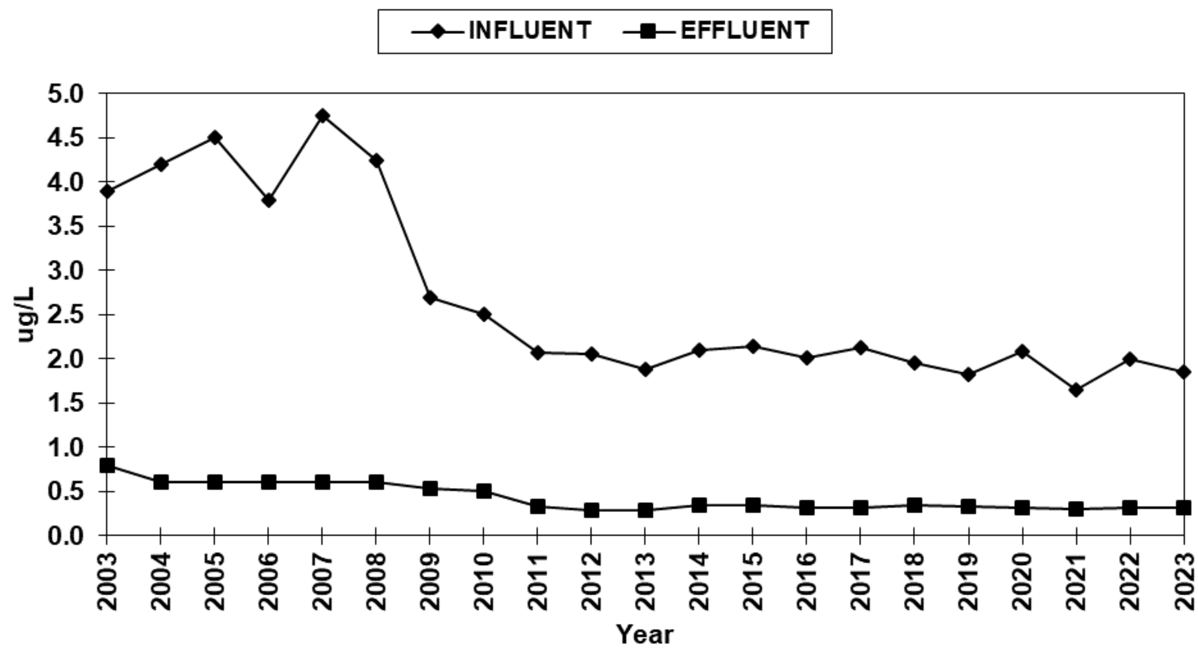


FIGURE E.4-8

Cr Annual Average Load
2003 - 2023

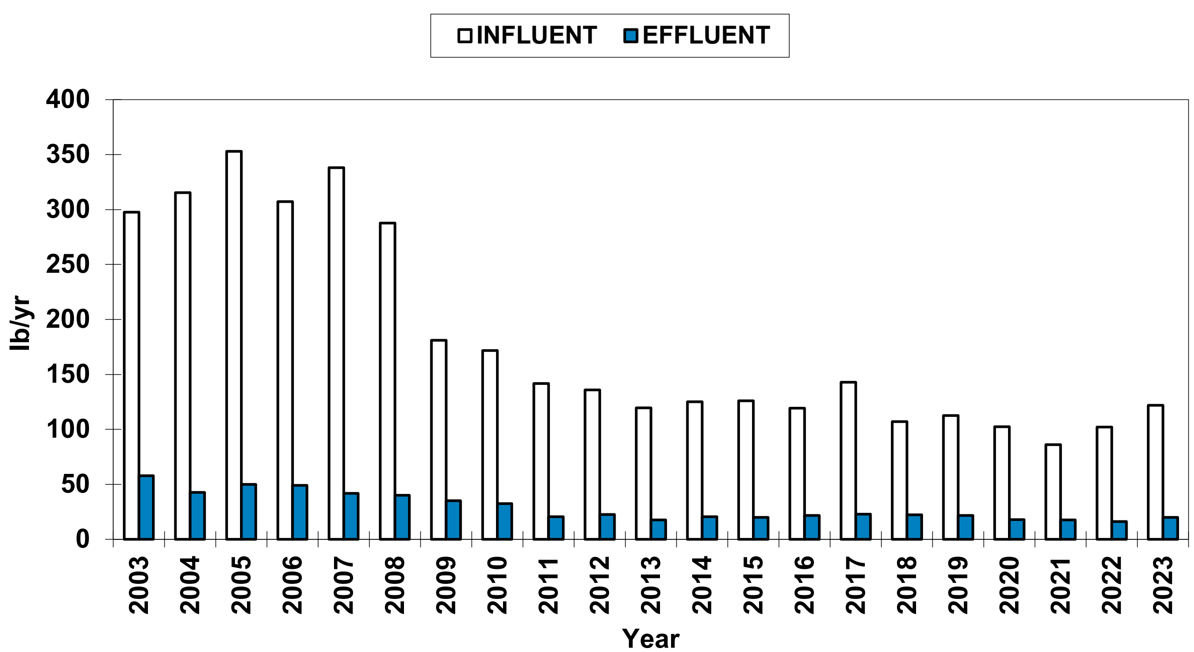


FIGURE E.4-9

Cu Annual Average Concentration 2003 - 2023

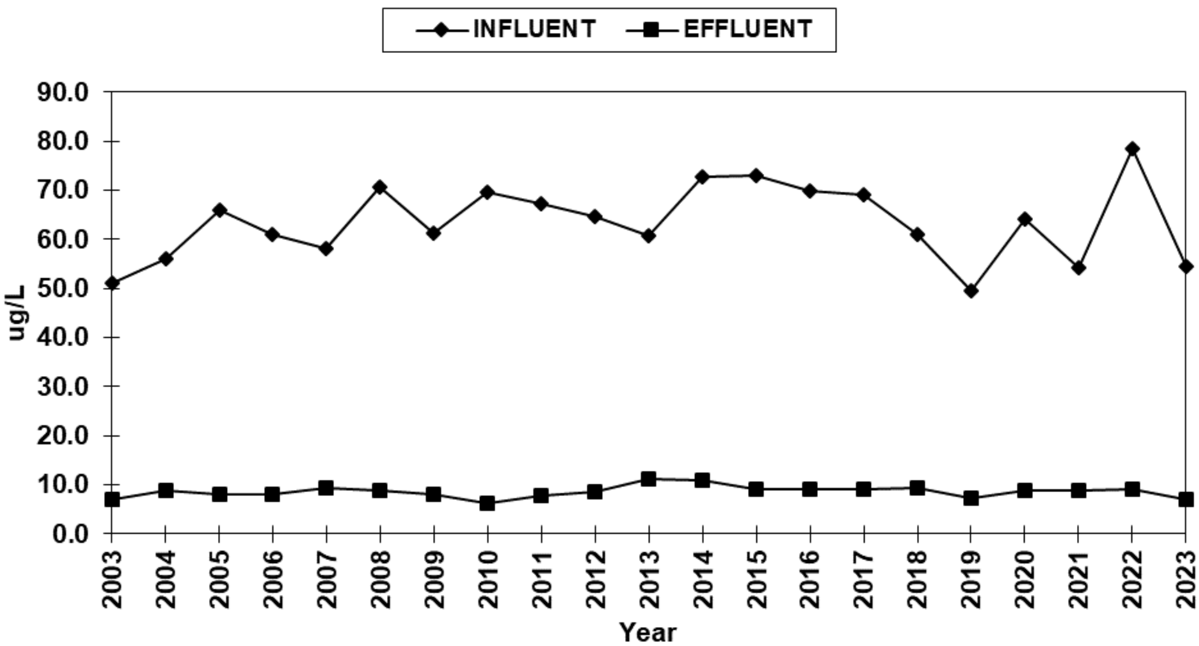


FIGURE E.4-10

Cu Annual Average Load 2003 - 2023

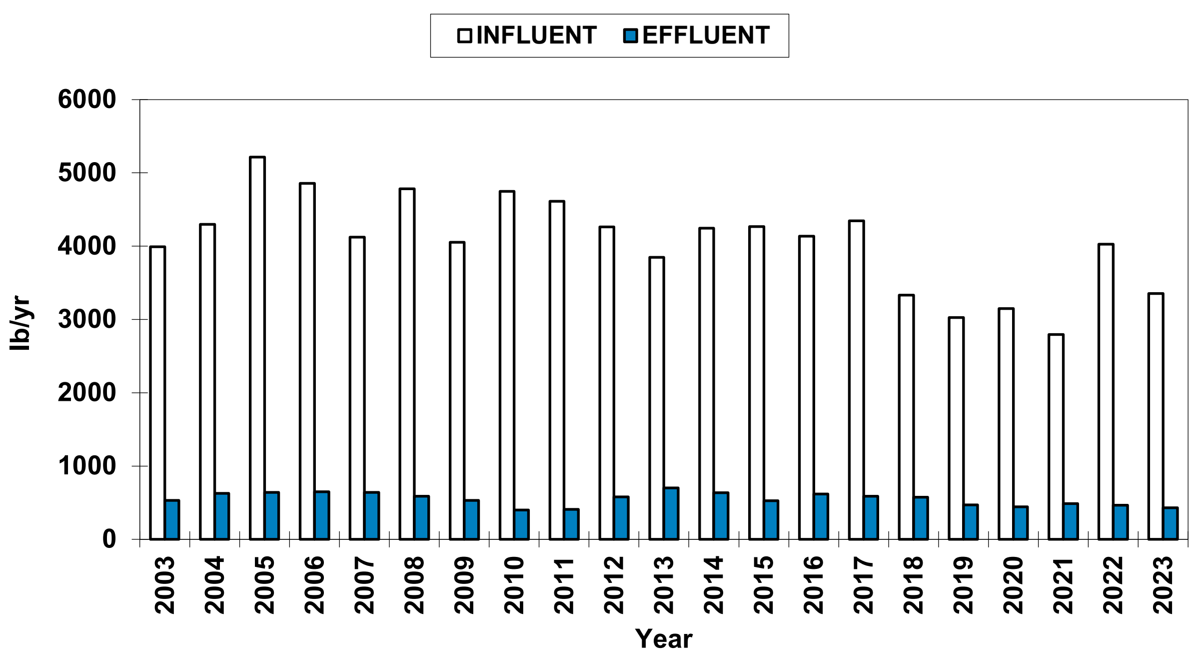


FIGURE E.4-11

Pb Annual Average Concentration
2003 - 2023

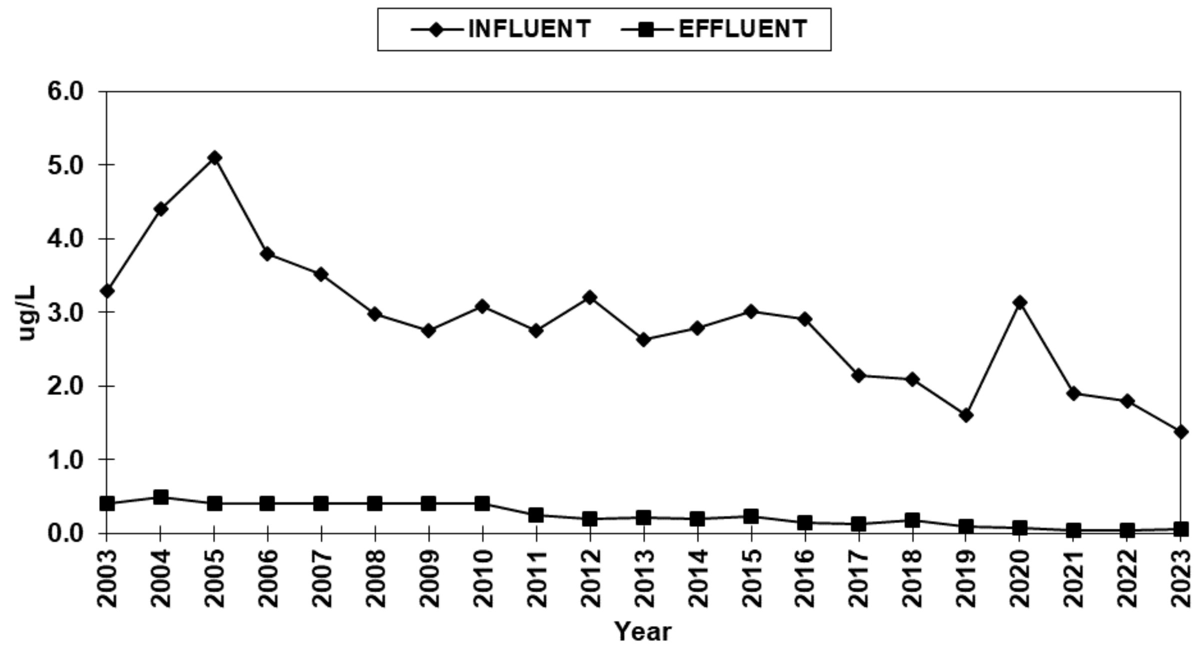


FIGURE E.4-12

Pb Annual Average Load
2003 - 2023

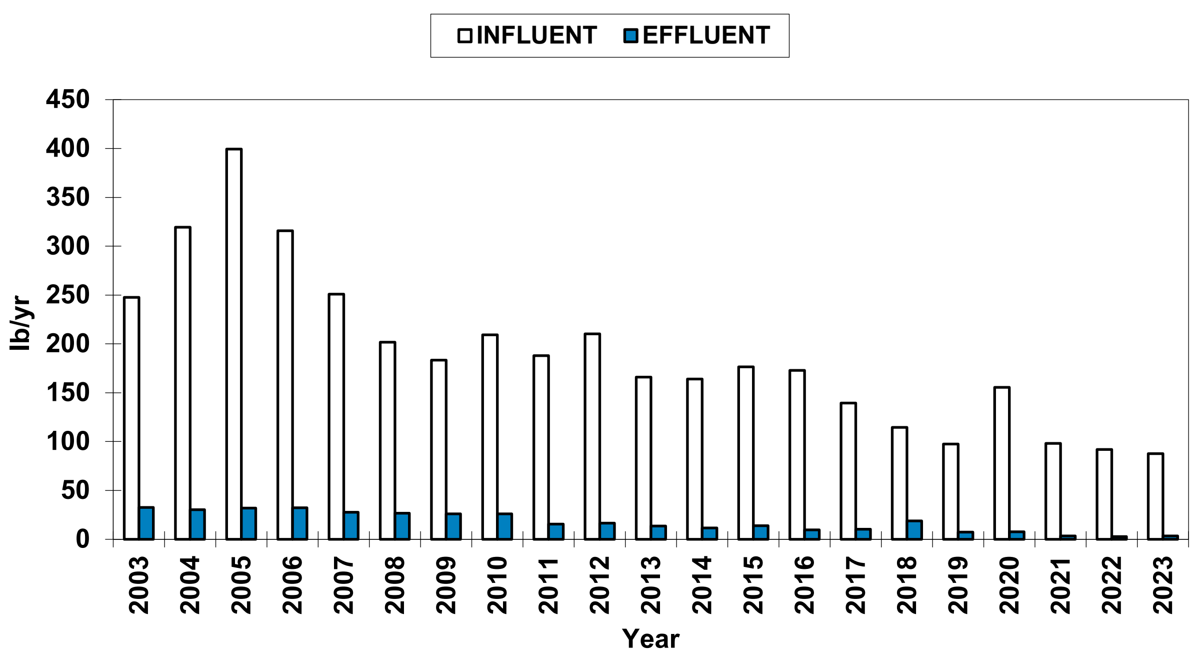


FIGURE E.4-13

Hg Annual Average Concentration
2003 - 2023

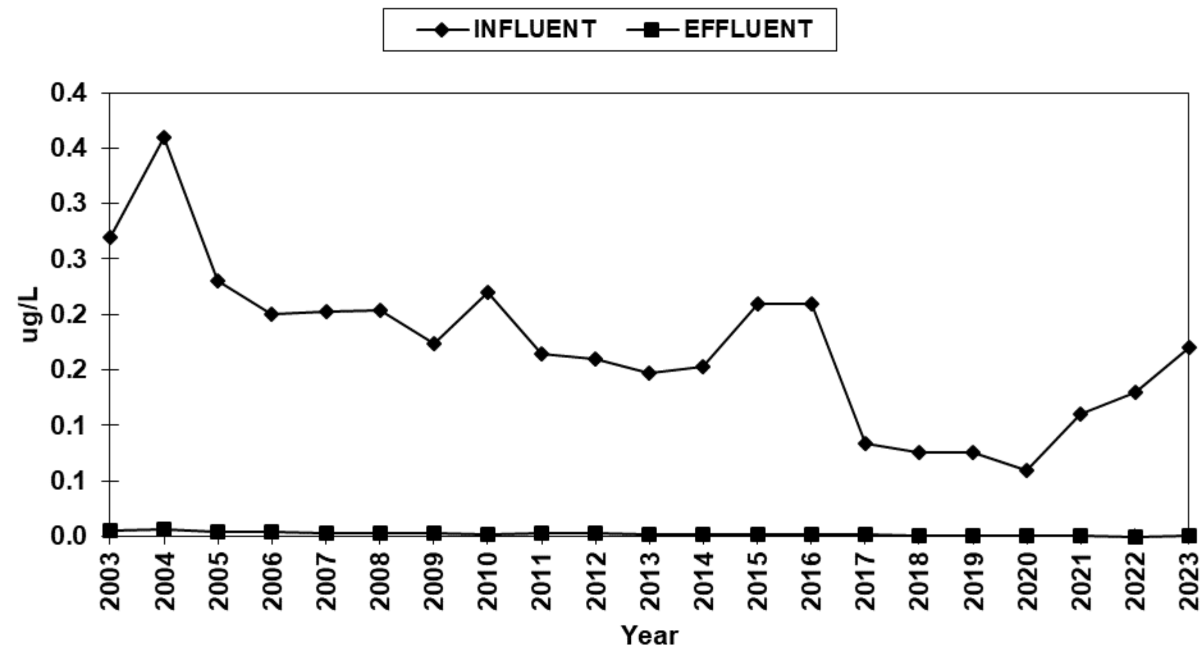


FIGURE E.4-14

Hg Annual Average Load
2003 - 2023

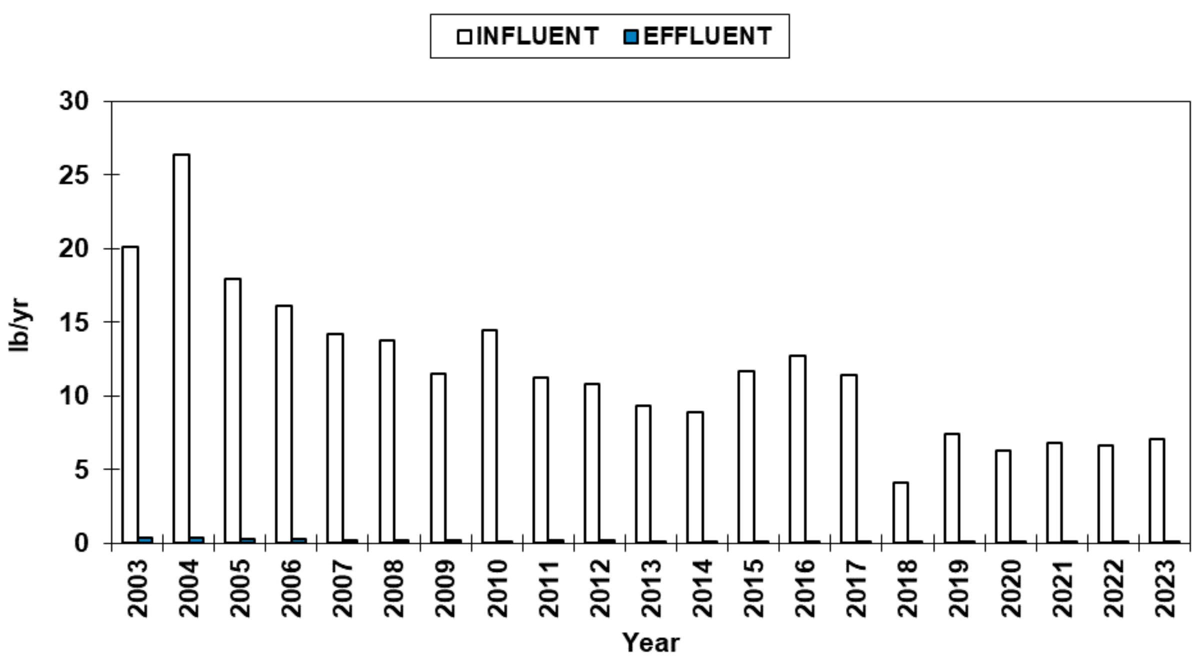


FIGURE E.4-15

Ni Annual Average Concentration
2003 - 2023

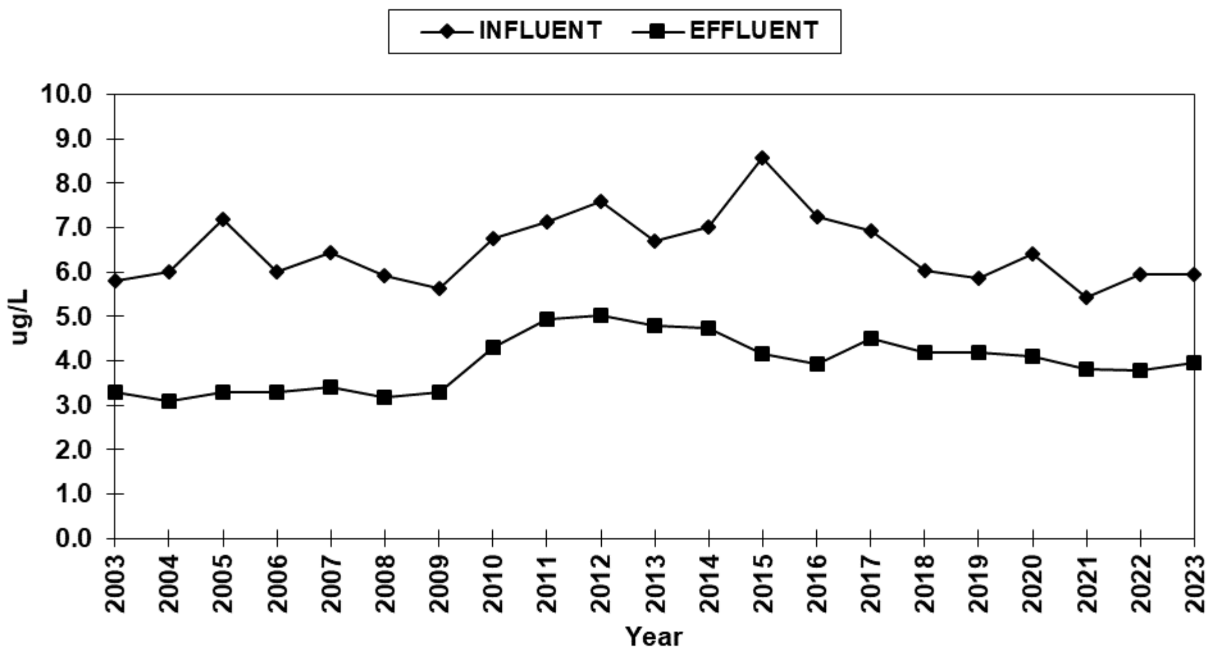


FIGURE E.4-16

Ni Annual Average Load
2003 - 2023

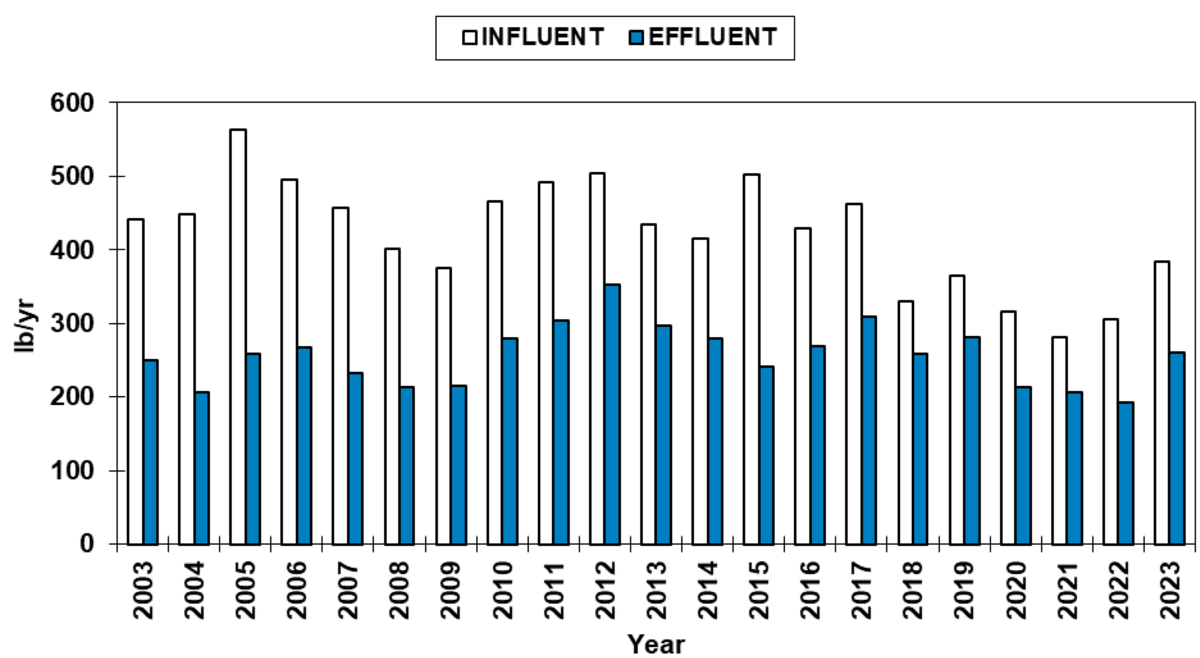


FIGURE E.4-17

**Ag Annual Average Concentration
2003 - 2023**

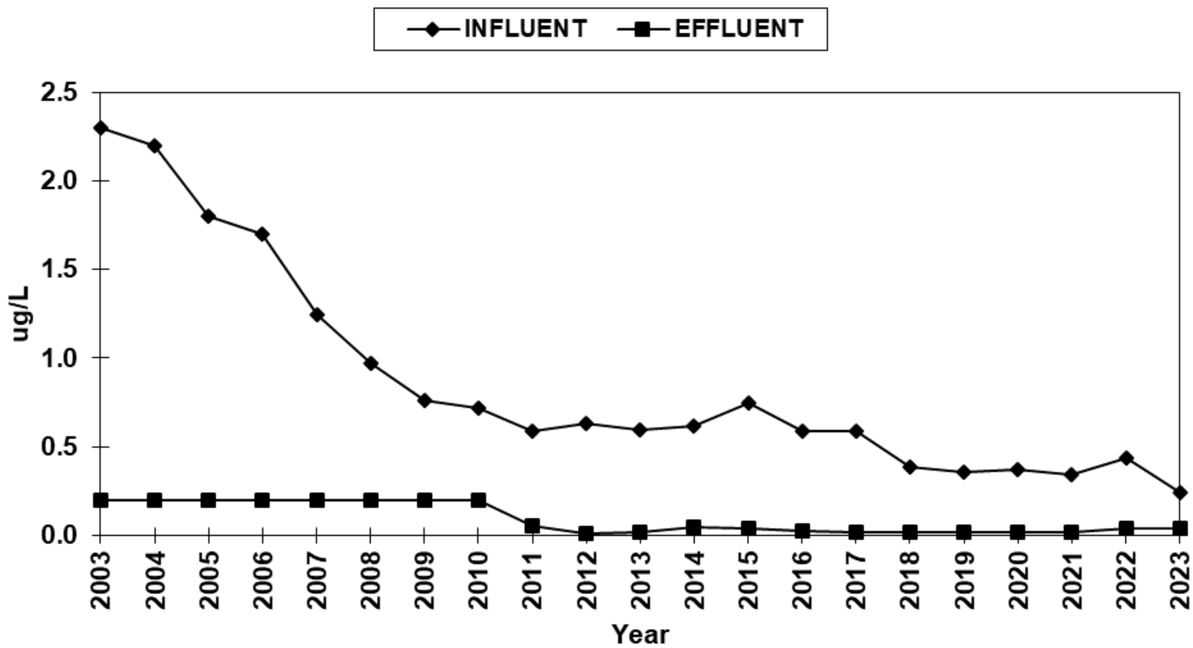


FIGURE E.4-18

**Ag Annual Average Load
2003 - 2023**

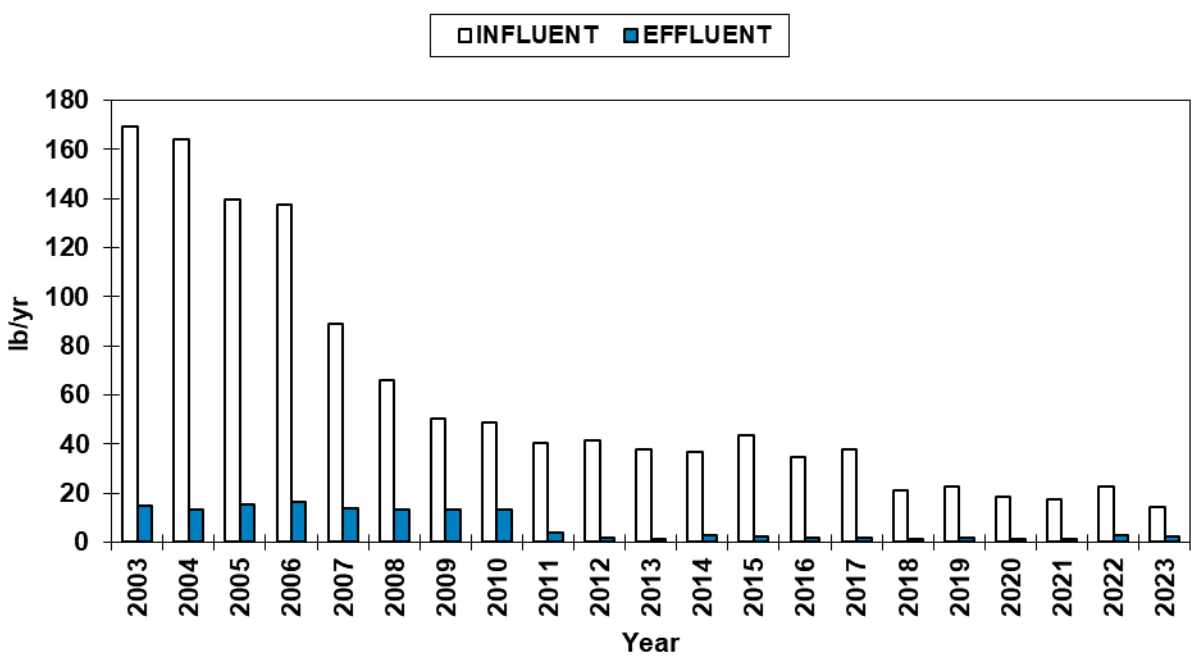


FIGURE E.4-19

Se Annual Average Concentration
2003 - 2023

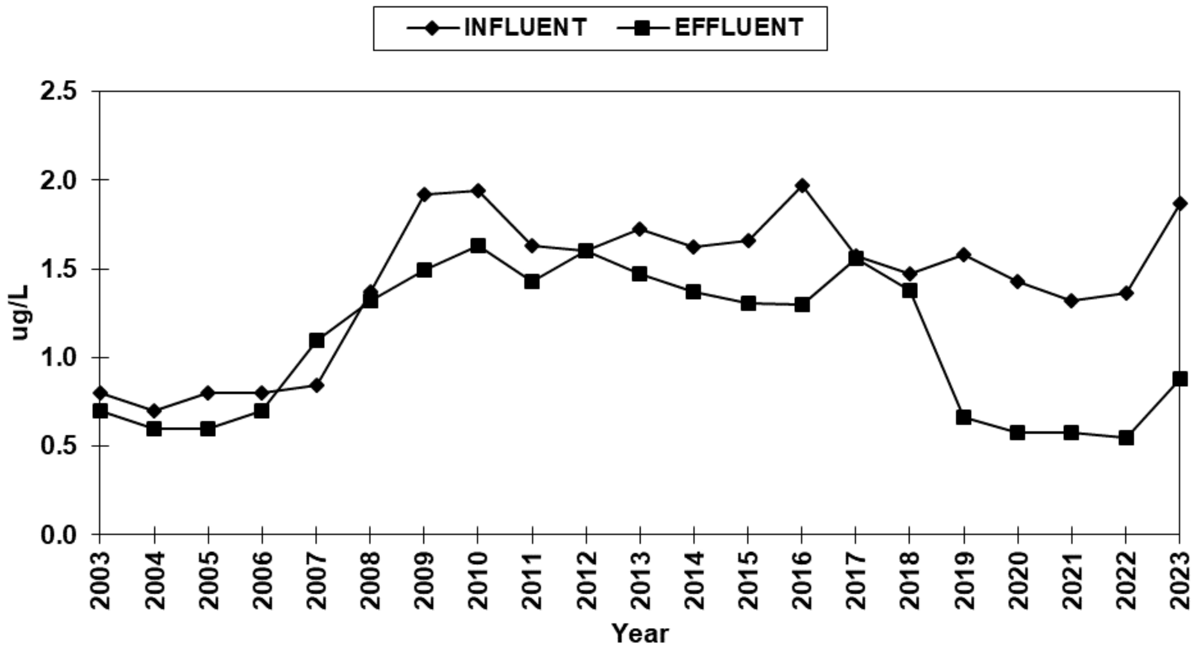


FIGURE E.4-20

Se Annual Average Load
2003 - 2023

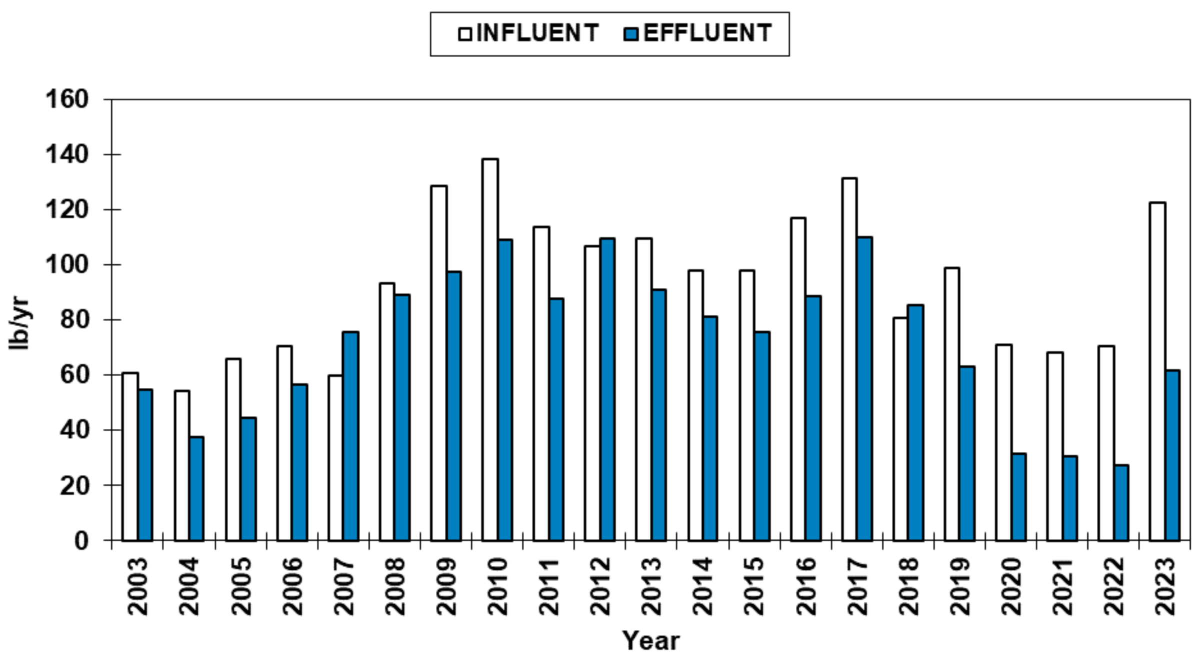


FIGURE E.4-21

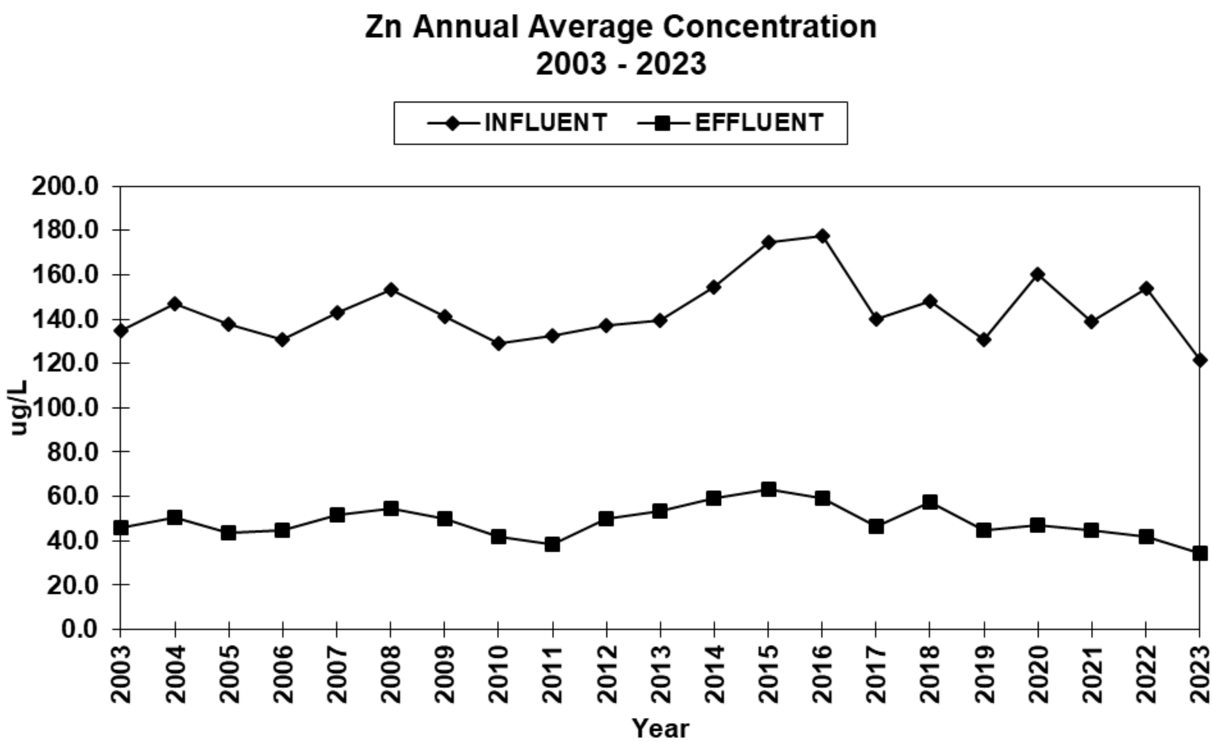


FIGURE E.4-22

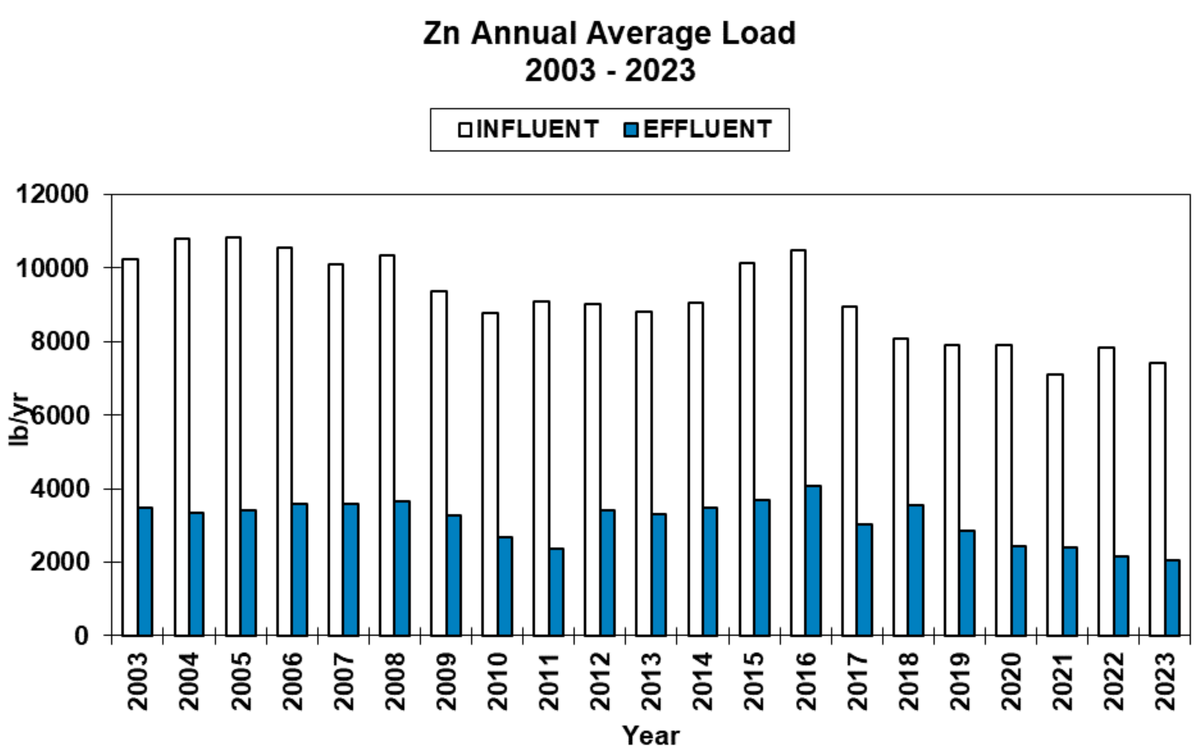


FIGURE E.4-23

CN- Annual Average Concentration
2003 - 2023

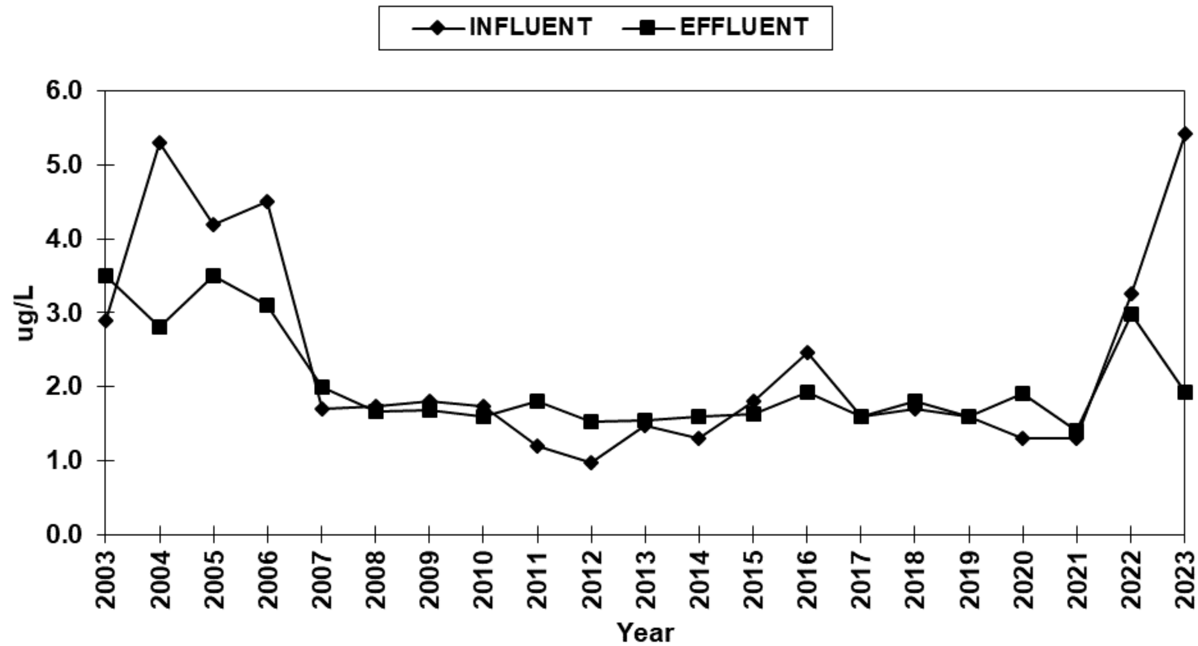
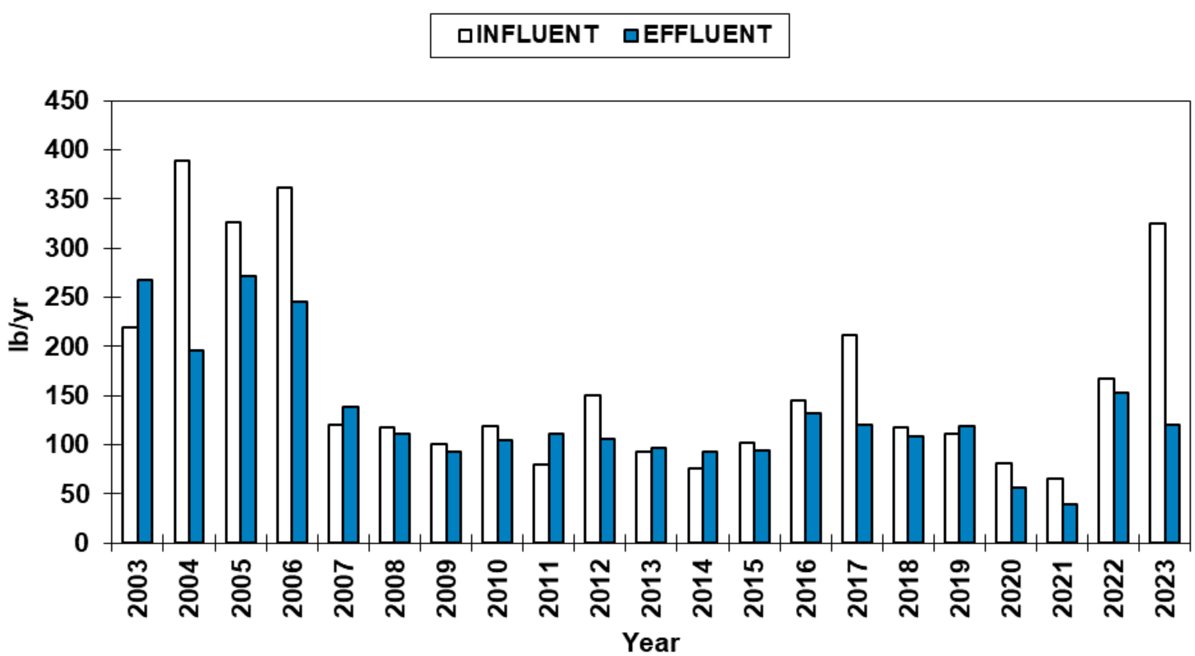


FIGURE E.4-24

CN- Annual Average Load
2003 - 2023



F. INSPECTION, SAMPLING, AND ENFORCEMENT PROGRAMS

F.1 INSPECTION PROGRAM

Inspection frequencies are set and may be modified based on the type of facility, discharge volume, facility size, and compliance history. Minimum inspection frequencies are summarized in Table F.1-1. Program staff conducts the following types of inspections:

- **Pre-Permit Inspection**

  Pre-Permit inspections are scheduled with the industrial user (IU) to gather and verify information on manufacturing and treatment processes, regulated and unregulated processes, chemical storage and handling, waste disposal practices, proper secondary containment, flow rates, plumbing and piping layouts and other pertinent information needed to confirm information provided by the IU and to determine the appropriate permit type and permit provisions for the facility.

- **Violation Inspections**

  Any inspection and/or monitoring performed to investigate the source(s) of noncompliance and/or to determine the status of previously found problems or noncompliance.

- **Routine Compliance Inspections**

  Annual or semiannual facility inspections typically scheduled with the IU to verify information contained in Periodic Reports of Continued Compliance, verify compliance with permit provisions, and to determine if any changes to the facility or operations have occurred that have not been previously reported to the RWQCP.

- **Special Investigation Inspections**

  Site inspections conducted at the request of IUs or performed as a result of process or treatment changes, spills, bypasses or upsets, or other unanticipated events.

- **Sampling Inspections**

  Unannounced inspections conducted during RWQCP staff visits to sites for sample collection. Sampling inspections include the following elements as applicable:

  1. Checking samples for pH and recording the results;
  2. Comparing field pH results with IU pH monitoring equipment results;

3. Recording IU flow meter totalizer readings;
4. Observing IU sample point(s) and sampling equipment; and
5. Recording and addressing abnormalities observed in effluent conditions and/or pretreatment systems.

TABLE F.1-1

MINIMUM INSPECTION FREQUENCIES

Facility Type	Permit Type	Minimum Inspection Frequency
Categorical/SIU	Full	Annual
Categorical (Zero Discharge)	Full	Annual
Non-Categorical (SIU)	Full	Annual
Non-Categorical (non-SIU)	Basic	Annual
Best Management Practices (BMP)	BMP	Annual
Permitted Vehicle Service Facility	Vehicle Service Facility	Annual
Non-Permitted Vehicle Service Facility	N/A	Annual
Groundwater	Groundwater	Once during permit cycle
Food Service Establishments	N/A	Typically once every three-years
Dental offices that remove or replace amalgam	N/A	Typically 20% each year

F.2 SAMPLING PROGRAM

I. IU SELF-MONITORING REQUIREMENTS

The RWQCP's industrial sampling program involves self-monitoring compliance sampling by IUs regulated under Basic or Full discharge permits and unannounced sampling by the RWQCP. Industrial user self-monitoring requirements are included in discharge permits. The criteria used for determining the self-monitoring sampling frequency are based on the nature of the discharge; types of operations performed; volume of discharge; the pollutants stored, used or generated on site; IU classifications; and the IUs potential to violate discharge regulations.

II. POTW MONITORING OF IUs

At a minimum, the following monitoring is performed by the RWQCP (i.e., the publicly owned treatment work or POTW) at IUs regulated under Basic or Full discharge permits

1. Twice per year
   - Metals: Ag, As, Cd, Cr, Cu, Hg, Ni, Pb, Se and Zn
   - pH
   - STO/TTO

2. Annually
   - CN

In addition, all CIUs with process wastewater discharges are monitored by the RWQCP at a minimum twice per year for all federally-regulated pollutants.

Additional pollutants may be monitored if present in IU operations. Violation follow-up sampling is typically limited to the pollutant or pollutant properties that were in violation.

III. SAMPLE TYPES

1. ROUTINE SAMPLING

Routine sampling consists of unannounced sampling performed at IUs by RWQCP staff.

2. FOLLOW-UP SAMPLING

Violations of discharge standards are resampled in accordance with the requirements contained in 40 CFR 403.12(g)(2). The initial resample is typically performed by the IU. Once the facility has returned to compliance as demonstrated by self-monitoring follow-up sampling, the RWQCP typically performs violation follow-up monitoring to confirm compliance independent of information supplied by the IU.

3. COMPLIANCE SCHEDULE SAMPLING

Industrial users found to be in significant non-compliance for three successive quarters are generally put on an intensive monitoring schedule or a compliance schedule. Such monitoring is conducted at the IUs expense by an outside contractor hired by the RWQCP or the contributing jurisdiction in which the IU is located.

4. INVESTIGATIVE AND PERMIT SAMPLING

The RWQCP staff during the course of an inspection or other situation may take investigative samples at any time the inspector needs information on the composition of a waste stream or observes indications of potential non-compliance. The RWQCP staff may take samples during the permitting process to confirm information submitted by the IU and assist in generation of discharge permits.

5. REVENUE & SURVEILLANCE SAMPLING

The RWQCP staff is responsible for collecting samples used to determine the strength of contributing waste streams for recovery of RWQCP operation and maintenance costs from the Partner Agencies. To determine the annual charges for each Partner Agency, main trunklines for each contributing jurisdiction are monitored 12 days each year. Samples are taken once each month from nine main trunk lines. The days of revenue sampling are staggered so that at the end of the year, one or more samples have been collected on each day of the week. Chemical oxygen demand, suspended solids, and ammonia samples are used to determine the strength of contributing waste streams. In addition, the following pollutants or pollutant properties are typically monitored for surveillance: Ag, As, Ca, Cd, Cl-, Cr, CN, Cu, Hg, Mg, Na, Ni, Pb, pH, specific conductance, Se, TDS, and Zn.

IV. CHAIN OF CUSTODY PROCEDURES

All monitoring results, including those collected by the RWQCP and IUs, must be accompanied by a completed chain of custody sheet. Chain of custody sheets accurately document or reflect the details of each sampling event and at a minimum contain the following information for each sample taken:

i. The date, time, exact location, and method of sampling
   a. If composite samples are taken with an automatic sampler, the sample date/time must specify the start date/time, the end date/time, and the sample collection date/time
   b. The date/time of each grab sample for multiple grab composites

ii. The sample bottle/container type

iii. The preservative used in each bottle/container

iv. The date/time of sample preservation and pH analysis

v. The pollutant or pollutant properties to be analyzed

vi. For cyanide samples an indication that oxidants were tested for and if present neutralized prior to sample preservation

vii. For TTO samples taken, an indication that an approved neutralizing agent such as sodium thiosulfate was added to the sample if oxidants were present;

viii. Names and signatures of the person or persons taking the samples

ix. Indication if sampling container(s) were sealed with custody seals

In addition, the following information is submitted to the RWQCP for IU self-monitoring for each sample taken:

a. Certified laboratory sampling analysis results
b. The analytical techniques/methods used for sample analysis
c. The dates the laboratory analyses were performed
d. Who performed the laboratory analysis

F.3 ENFORCEMENT RESPONSE PLAN IMPLEMENTATION

The City of Palo Alto (i.e., RWQCP) and the City of Mountain View both have their own Enforcement Response Plans (ERP). These plans describe how noncompliance with IU discharge permits, local Sewer Use Ordinances, and/or the National Pretreatment Standards is addressed. The RWQCP ERP was first approved in 1991 with subsequent revisions in 1996, 2002, 2010, 2013, 2017, and the latest on December 13, 2023. The Mountain View Enforcement Response Plan was first approved in 2003 with subsequent revisions in 2008 and 2010, and the latest on March 12, 2018.

G. UPDATED LIST OF REGULATED SIUs

G.1 CATEGORICAL INDUSTRIAL USERS

FACILITY NAME & ADDRESS	QTR	INSPECTION	SAMPLING EVENTS		COMPLIANCE STATUS*	ENFORCEMENT ACTIONS**								APPLICABLE FEDERAL LIMITS	OPERATING UNDER TOTAL TOXIC ORGANIC MANAGEMENT PLAN?
			POTW	IU		WL	NON	AO	CIV	CR	FINE	SUS	DIS		
Applied Nanostructures, Inc. 415 Clyde Avenue, Unit 102-104 Mountain View, CA 94043 Metal Finishing Point Source Category 40 CFR 433.17 (PSNS)	1		1		CC									Table G.6-2	Yes
	2			1	CC										
	3				CC										
	4	1	1	1	CC										
Cal Spray, Inc. 1905 Bay Road East Palo Alto, CA 94303 Metal Finishing Point Source Category 40 CFR 433.15 (PSES)	1		1		CC									Table G.6-1	Yes
	2	1		1	CC										
	3	1	1		CC										
	4	1			IC		1								
Communications & Power Industries, LLC 811 Hansen Way Palo Alto, CA 94304 Metal Finishing Point Source Category 40 CFR 433.17 (PSNS)	1	1	1	6	CC									Table G.6-2 Table G.6-3	Yes
	2			6	CC										
	3	1		6	CC										
	4		1	6	CC										
Google, LLC 2071 Stierlin Ct. Mountain View, CA 94043 Metal Finishing Point Source Category 40 CFR 433.17 (PSNS)	1		1	1	CC									Table G.6-2	Yes
	2				CC										
	3			1	CC										
	4	1	1	1	IC		1								

*CC = consistent compliance, IC = inconsistent compliance, SN = significant noncompliance, CS = on a compliance schedule, NCNS = not in compliance and not on a compliance schedule, SU = compliance status unknown

**Blank space indicates no enforcement actions taken. Refer to Section H-2 for further details on the Enforcement Actions indicated in this table.
WL = warning letter/inspection follow-up letter, NON = notice of noncompliance/violation, AO = administrative order/compliance order, CIV = civil action, CR = criminal action, FINE = monetary penalty/administrative citation, SUS = order to restrict/suspend discharge, DIS = order to disconnect discharge

G.1 CATEGORICAL INDUSTRIAL USERS (CONTINUED)

FACILITY NAME & ADDRESS	QTR	INSPECTION	SAMPLING EVENTS		COMPLIANCE STATUS*	ENFORCEMENT ACTIONS**								APPLICABLE FEDERAL LIMITS	OPERATING UNDER TOTAL TOXIC ORGANIC MANAGEMENT PLAN?
			POTW	IU		WL	NON	AO	CIV	CR	FINE	SUS	DIS		
Hammon Plating Corporation 890 Commercial Street Palo Alto, CA 94303 Metal Finishing Point Source Category, 40 CFR 433.17 (PSNS)	1		1	8	CC									Table G.6-2 Table G.6-4	Yes
	2	1		5	CC										
	3	1		6	CC										
	4		1	6	CC										

*CC = consistent compliance, IC = inconsistent compliance, SN = significant noncompliance, CS = on a compliance schedule, NCNS = not in compliance and not on a compliance schedule, SU = compliance status unknown

**Blank space indicates no enforcement actions taken. Refer to Section H-2 for further details on the Enforcement Actions indicated in this table.
WL = warning letter/inspection follow-up letter, NON = notice of noncompliance/violation, AO = administrative order/compliance order, CIV = civil action, CR = criminal action, FINE = monetary penalty/administrative citation, SUS = order to restrict/suspend discharge, DIS = order to disconnect discharge

G.2 CATEGORICAL INDUSTRIAL USER ADDITIONS/REMOVALS 2022

In 2023, Maxar Space, LLC/Space System Loral was removed from the list of SIUs as it closed in 2022. Cal Spray, Inc. closed in 2023, but will not be removed from this list until the 2024 Pretreatment Annual Report.

G.3 APPLICABLE COMBINED WASTE STREAM FORMULA CALCULATIONS

No CIUs in the RWQCP service area are regulated using the combined waste stream formula to determine alternative discharge limits.

G.4 NON-CATEGORICAL SIGNIFICANT INDUSTRIAL USERS

FACILITY NAME & ADDRESS	QTR	INSPECTION	SAMPLING EVENTS		COMPLIANCE STATUS*	ENFORCEMENT ACTIONS**								APPLICABLE LIMITS
			POTW	IU		WL	NON	AO	CIV	CR	FINE	SUS	DIS	
City of Mountain View Landfill 3070 North Shoreline Boulevard Mountain View, CA 94043 SIC 4953 Closed Landfill	1		1	1	CC									Table G.7-1
	2				CC									
	3	1		1	CC									
	4		1		CC									
NASA Ames Research Center Mail Stop 204-15 Moffett Field, CA 94035 SIC 9661 Space Research & Technology	1		1	1	CC									Table G.7-1
	2			1	CC									
	3	1	1	1	IC		1							
	4			1	CC									

*CC = consistent compliance, IC = inconsistent compliance, SN = significant noncompliance, CS = on a compliance schedule, NCNS = not in compliance and not on a compliance schedule, SU = compliance status unknown

**Blank space indicates no enforcement actions taken. Refer to Section H-2 for further details on the Enforcement Actions indicated in this table.
WL = warning letter/inspection follow-up letter, NON = notice of noncompliance/violation, AO = administrative order/compliance order, CIV = civil action, CR = criminal action, FINE = monetary penalty/administrative citation, SUS = order to restrict/suspend discharge, DIS = order to disconnect discharge

G.5 NON-CATEGORICAL SIU ADDITIONS/REMOVALS

In 2023, no non-categorical significant industrial users were added or removed from the list of non-categorical significant industrial users submitted in the previous annual report.

G.6 FEDERAL CATEGORICAL STANDARDS

TABLE G.6-1

Metal Finishing Point Source Category **40 CFR 433.15 (PSES)**		**Applicable CIUs:** Cal Spray, Inc.
Parameter	**Maximum for any 1 day (mg/L)**	**Monthly average shall not exceed (mg/L)**
Cadmium (T)	0.69	0.26
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO	2.13	N/A

TABLE G.6-2

Metal Finishing Point Source Category **40 CFR 433.17 (PSNS)**		**Applicable CIUs:** Google, LLC Applied Nanostructures, Inc. Communications & Power Industries, LLC Hammon Plating Corporation
Parameter	**Maximum for any 1 day (mg/L)**	**Monthly average shall not exceed (mg/L)**
Cadmium (T)	0.11	0.07
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO	2.13	N/A

TABLE G.6-3

Local Copper Limits for Metal Finishing & Electroplating Facilities Palo Alto Municipal Code 16.09.045		**Applicable CIUs:** Communications & Power Industries, LLC
Parameter	**Annual Average Limit (mg/L)**	**Annual Average Mass Limit (lb/yr)**
Cu	N/A	10.18

TABLE G.6-4

Local Copper Limits for Metal Finishing & Electroplating Facilities Palo Alto Municipal Code 16.09.045		**Applicable CIUs:** Hammon Plating Corporation
Parameter	**Annual Average Limit (mg/L)**	**Annual Average Mass Limit (lb/yr)**
Cu	0.40	N/A

G.7 LOCAL LIMITS

TABLE G.7-1

LOCAL DISCHARGE LIMITS AND ANALYTICAL DETECTION LEVELS

Pollutants	Local Maximum Limits[1] (mg/l)	Maximum Allowable Analytical Detection Levels (mg/l)
Arsenic	0.1	0.01
Barium	5.0	0.5
Beryllium	0.75	0.075
Boron	1.0	0.1
Cadmium	0.1	0.01
Chromium, Hexavalent	1.0	0.1
Chromium, total	2.0	0.2
Cobalt	1.0	0.1
Copper	0.25[2]	0.025
Cyanide	0.5	0.05
Dissolved Sulfides	0.1	0.01
Fluoride	65	6.5
Formaldehyde	5.0	0.5
Lead	0.5	0.05
Manganese	1.0	0.1
Mercaptans	0.1	0.01
Mercury	0.01	0.001
Methyl Tertiary Butyl Ether (MTBE)	0.75	0.075
Nickel	0.5	0.05
Phenols	1.0	0.1
Selenium	1.0	0.1
Silver	0.25	0.025
Single Toxic Organic	0.75	0.075
Total Toxic Organics	1.0	0.1
Zinc	2.0[3]	0.2
Conventional Pollutants	**Local Maximum Limit**	**Maximum Allowable Analytical Detection Levels (mg/l)**
Oil and Grease[4]	20 mg/l	2
Oil and Grease (total)	200 mg/l	20
Suspended Solids	3,000[5] mg/l	300
Total Dissolved Solids	5,000[6] mg/l	500
Conventional Pollutant	**Local Minimum Limit**	**Local Maximum Limit**
pH	5.0	11.0

[1]For discharges with annual average flows greater than fifty thousand gallons per day through any single sampling location, the maximum allowable limits shall be one-half the values listed in the table, with the exception of copper, mercury, MTBE, nickel, and silver, for which the limits shall remain 0.25 mg/L, 0.010 mg/L, 0.75 mg/L, 0.50 mg/L, and 0.25 mg/L, respectively, regardless of flow.

[2]The local maximum copper limit for cooling system discharges less than 2,000 gpd, Vehicle Services, Photoprocessing, Machine Shops shall be 2.0 mg/L. See Section 16.09.045 of the Sewer Use Ordinance for details and for metal finisher requirements.

[3]The local maximum zinc limit for vehicle service facilities shall be 4.0 mg/L.

[4]Gravity separation at a temperature of 20°C and a pH of 4.5.

[5]Applies to composite samples only. The local maximum limit for instantaneous samples shall be 6,000 mg/L.

[6]Applies to composite samples only. The local maximum limit for instantaneous samples shall be 10,000 mg/L.

H. SIU COMPLIANCE ACTIVITIES

H.1 INSPECTION AND SAMPLING SUMMARY

See Tables G.1 and G.4 for a summary of all the SIU inspections and sampling activities conducted by RWQCP and sampling activites conducted by each SIU in 2023.

H.2 ENFORCEMENT SUMMARY

See Tables G.1 and G.4 for a summary of SIU compliance and enforcement activities during 2023. Details regarding specific SIU noncompliance and enforcement actions can be found in Tables H.2-1 – H.2-3 below.

H.3 JULY-DECEMBER SEMIANNUAL DATA

Details regarding specific SIU noncompliance and enforcement actions that occurred during the semiannual reporting period (July 1 – December 31) can be found in Tables H.2-1 and H.2-3 below.

TABLE H.2-1

ENFORCEMENT DETAILS*

Permit #	Category Name				CAL SPRAY, INC. 1905 Bay Road, East Palo Alto, CA 94303							
125	433.15											
SAMPLING LOCATION	QUARTERLY STATUS**				DATE	SAMPLED BY	PARAMETER	RESULT (mg/L)	LIMITS (mg/L)		ENFORCEMENT***	
	1	2	3	4					Local	Federal	Date	Action
1				ICP	12/31/23	IU	Failure to sample	NA	NA	NA	1/2/24	NON

COMMENTS

October – December 2023	July – September 2023**	April – June 2023**	January – March 2023**
IU failed to sample for all self-monitoring parameters in fourth quarter 2023. NON issued but IU has stopped all process discharge and is in the process of closing. POTW sampling results within this reporting period indicate discharge within limits.			

*IU = industrial user, POTW = publicly owned treatment work (wastewater treatment plant), NA = not applicable

**Blank space = consistent compliance, ICL = inconsistent compliance with local limits, ICF = inconsistent compliance with federal limits, ICP = inconsistent compliance with discharge permit provisions, SNF = significant noncompliance with federal limits, SNL = significant noncompliance with local limits, CS = on a compliance schedule, NCNS = not in compliance and not on a compliance schedule, SU = compliance status unknown

***WL = warning letter/inspection follow-up letter, NON = notice of noncompliance/violation, AO = administrative order/compliance order, CIV = civil action, CR = criminal action, FINE = monetary penalty/administrative citation, SUS = order to restrict/suspend discharge, DIS = order to disconnect discharge

TABLE H.2-2

ENFORCEMENT DETAILS*

Permit #	Category Name	NASA AMES RESEARCH CENTER Mail Stop 204-15, Moffett Field, CA 94035
101	NA	

SAMPLING LOCATION	QUARTERLY STATUS**				DATE	SAMPLED BY	PARAMETER	RESULT (mg/L)	LIMITS (mg/L)		ENFORCEMENT***	
	1	2	3	4					Local	Federal	Date	Action
55			ICL		7/19/23	POTW	Zinc	7.76	2.00	NA	8/1/23	NON

COMMENTS

October – December 2023**	July – September 2023	April – June 2023**	January – March 2023**
	POTW monitoring indicated elevated levels of zinc in discharge from SL55 (cooling towers). IU evaluated potential causes and determined that it could either be from a clogged filter upstream or treatment chemical trapped in the sample port. Resampling on 8/1/23, 8/8/23, and 8/15/23 indicated IU back in compliance.		

*IU = industrial user, POTW = publicly owned treatment work (wastewater treatment plant), NA = not applicable

**Blank space = consistent compliance, ICL = inconsistent compliance with local limits, ICF = inconsistent compliance with federal limits, ICP = inconsistent compliance with discharge permit provisions, SNF = significant noncompliance with federal limits, SNL = significant noncompliance with local limits, CS = on a compliance schedule, NCNS = not in compliance and not on a compliance schedule, SU = compliance status unknown

***WL = warning letter/inspection follow-up letter, NON = notice of noncompliance/violation, AO = administrative order/compliance order, CIV = civil action, CR = criminal action, FINE = monetary penalty/administrative citation, SUS = order to restrict/suspend discharge, DIS = order to disconnect discharge

TABLE H.2-3

ENFORCEMENT DETAILS*

Permit #	Category Name				GOOGLE, LLC						
606	433.17				2071 Stierlin Court, Mountain View, CA, 94043						
SAMPLING LOCATION	QUARTERLY STATUS**				DATE	SAMPLED BY	PARAMETER	RESULT (mg/L)	LIMITS (mg/L)		ENFORCEMENT***	
	1	2	3	4					Local	Federal	Date	Action
A1				ICL	10/25/23	POTW	Copper	0.32	0.25	3.38	11/20/23	NON

COMMENTS

October – December 2023	July – September 2023**	April – June 2023**	January – March 2023**
POTW monitoring indicated elevated levels of copper in discharge from A1 sample location. IU evaluated potential causes and changed out the pretreatment filters. Resampling on 11/30/23 indicated IU back in compliance. Pretreatment filters will now be changed more frequently by the IU to prevent future copper violations.			

*IU = industrial user, POTW = publicly owned treatment work (wastewater treatment plant), NA = not applicable

**Blank space = consistent compliance, ICL = inconsistent compliance with local limits, ICF = inconsistent compliance with federal limits, ICP = inconsistent compliance with discharge permit provisions, SNF = significant noncompliance with federal limits, SNL = significant noncompliance with local limits, CS = on a compliance schedule, NCNS = not in compliance and not on a compliance schedule, SU = compliance status unknown

***WL = warning letter/inspection follow-up letter, NON = notice of noncompliance/violation, AO = administrative order/compliance order, CIV = civil action, CR = criminal action, FINE = monetary penalty/administrative citation, SUS = order to restrict/suspend discharge, DIS = order to disconnect discharge

I. BASELINE MONITORING REPORT UPDATE

No new baseline monitoring reports were required or submitted in 2023

J. PRETREATMENT PROGRAM CHANGES

Legal Authority
No changes were made to the Pretreatment Program's legal authority during the past year.

Local Limits
No changes were made to the Pretreatment Program's local limits during the past year. An evaluation of the Pretreatment Program local limits was conducted in 2022 and determined that the current limits continue to provide adequate protection to the Plant and no changes were needed. However, it did recommend evaluating several parameters for potential removal of the associated local limits which the Pretreatment Program plans to pursue in the near future.

Monitoring/Inspection Program and Frequency
Despite continued struggles with understaffing, the RWQCP Pretreatment Program was still able to meet the minimum inspection frequency for the Program as stated in Section F.1 above and the minimum monitoring frequencies as stated above in Section F.2. The RWQCP also continued to implement the Monitoring Program QA/QC Plan that helps to organize and institute systems to catch and correct monitoring issues quickly. The RWQCP Pretreatment Program continues to capture methods and procedures in Standard Operating Procedures for reference and training.

Enforcement Protocol
The Enforcement Response Plan was updated in 2023 with the following non-substantial modifications:

1. clarifying edits to Section E. Roles and Responsibilities to account for additional staff titles conducting work for the Pretreatment Program,
2. new information on the screening process of compliance data added to Section F. Recordkeeping & Compliance Monitoring Data to address recommendations in recent Pretreatment Compliance Audit, and
3. new information regarding enforcement response time added to Section H. Enforcement Escalation Process & Response Time to address finding in recent Pretreatment Compliance Audit.

Program's Administrative Structure
No changes were made to the Pretreatment Program's Administrative Structure nor its software/database.

Staffing Level
The RWQCP continued to experience significant staffing loss during 2023. One Industrial Waste Inspector was hired and on-boarded by the RWQCP Pretreatment Program in 2023. However, as of this writing the RWQCP's Pretreatment Program has three of seven positions vacant (Industrial Waste Inspector, Senior Industrial Waste Investigator, and Associate Engineer). The City of Mountain View Fire Department has

also experienced challenges in 2023 with one inspector position filled in September 2023 and one inspector position remaining vacant. Both programs continue to be understaffed entering 2024. Hiring for these positions has been delayed due to staffing shortages in Human Resources Departments and multiple unsuccessful recruitments.

Resource Requirements
No changes were made to the Pretreatment Program's resource requirements during the past year.

Funding Mechanism
No changes were made to the Pretreatment Program's funding mechanism during the past year.

Organizational Chart
An organizational chart for the entire RWQCP Watershed Protection Group is shown below in Figure J.1 with a red box identifying the Regulatory Compliance/Pretreatment Program team and its current vacancies. An organizational chart for the entire City of Mountain View Fire Department is shown below in Figure J.2 with a red box identifying the Pretreatment Program team and its current vacancies.

Program Modifications
In 2023, the RWQCP made non-substantial modifications to its Enforcement Response Plan and reported that to the San Francisco Bay Regional Water Quality Control Board in a letter dated December 13, 2023. Refer to previous sections for more details on the changes to the Enforcement Response Plan.

The RWQCP also revamped its Dental Amalgam Program in 2023 to better align with the federal requirements and better capture new facilities.

The RWQCP is currently in the process of revising its Sewer Use Ordinance and Enforcement Response Plan. The proposed Sewer Use Ordinance amendment removes stormwater, waste hauler, and FOG requirements from the Sewer Use Ordinance and relocates them into their own chapters of Palo Alto Municipal Code, incorporates two optional EPA Streamlining Rule provisions, modifies existing Pretreatment Program definitions, clarifies permitting procedures and reporting requirements for industrial users, and makes other technical and conforming changes to better align the Sewer Use Ordinance with the EPA Model Pretreatment Ordinance. The proposed amendment also includes updated language to conform to the requirements of the recently promulgated Dental Office Point Source Category. The RWQCP plans to update its Enforcement Response Plan to incorporate any changes made to the Sewer Use Ordinance.

FIGURE J.1: RWQCP Pretreatment Program Organization Chart

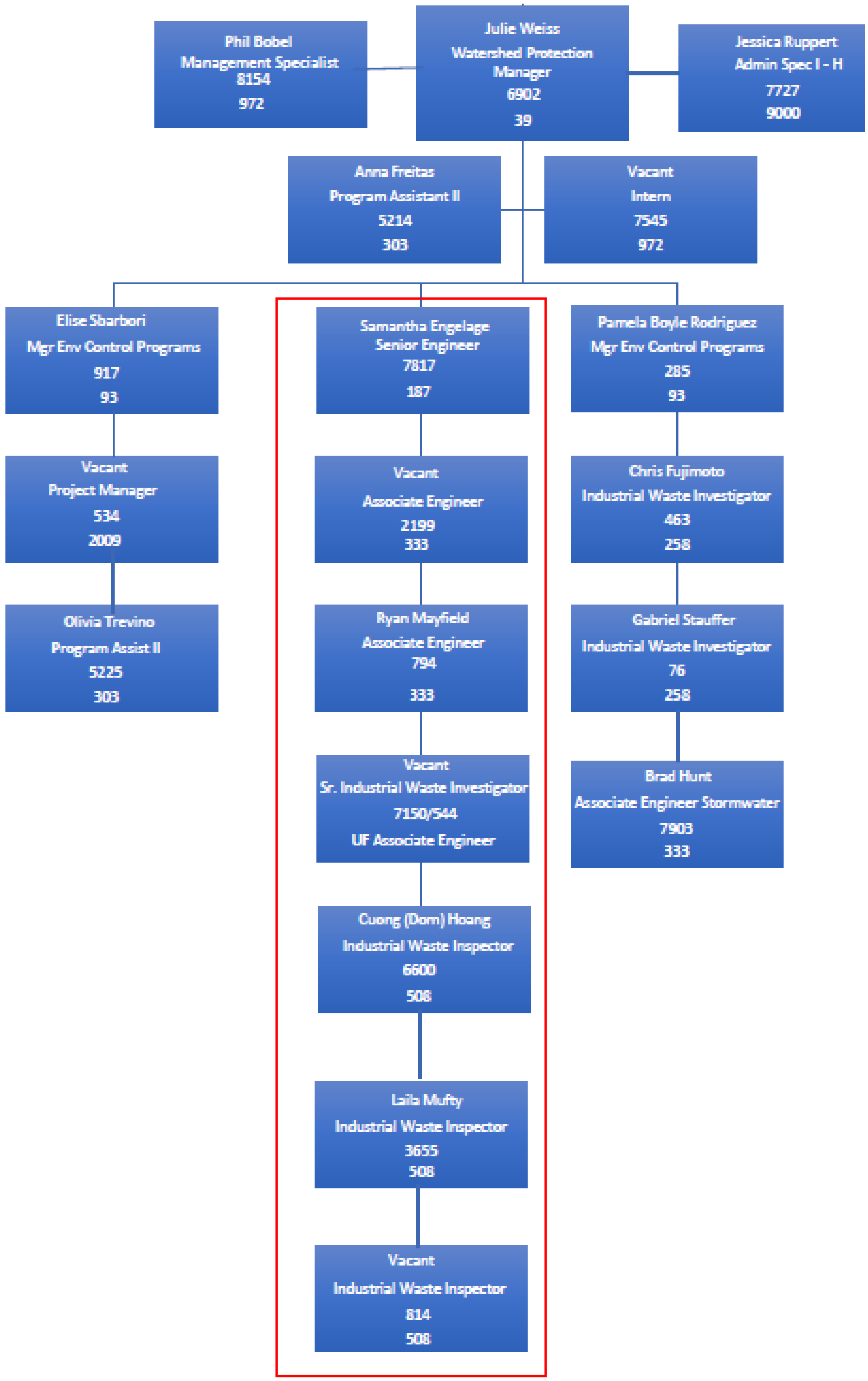
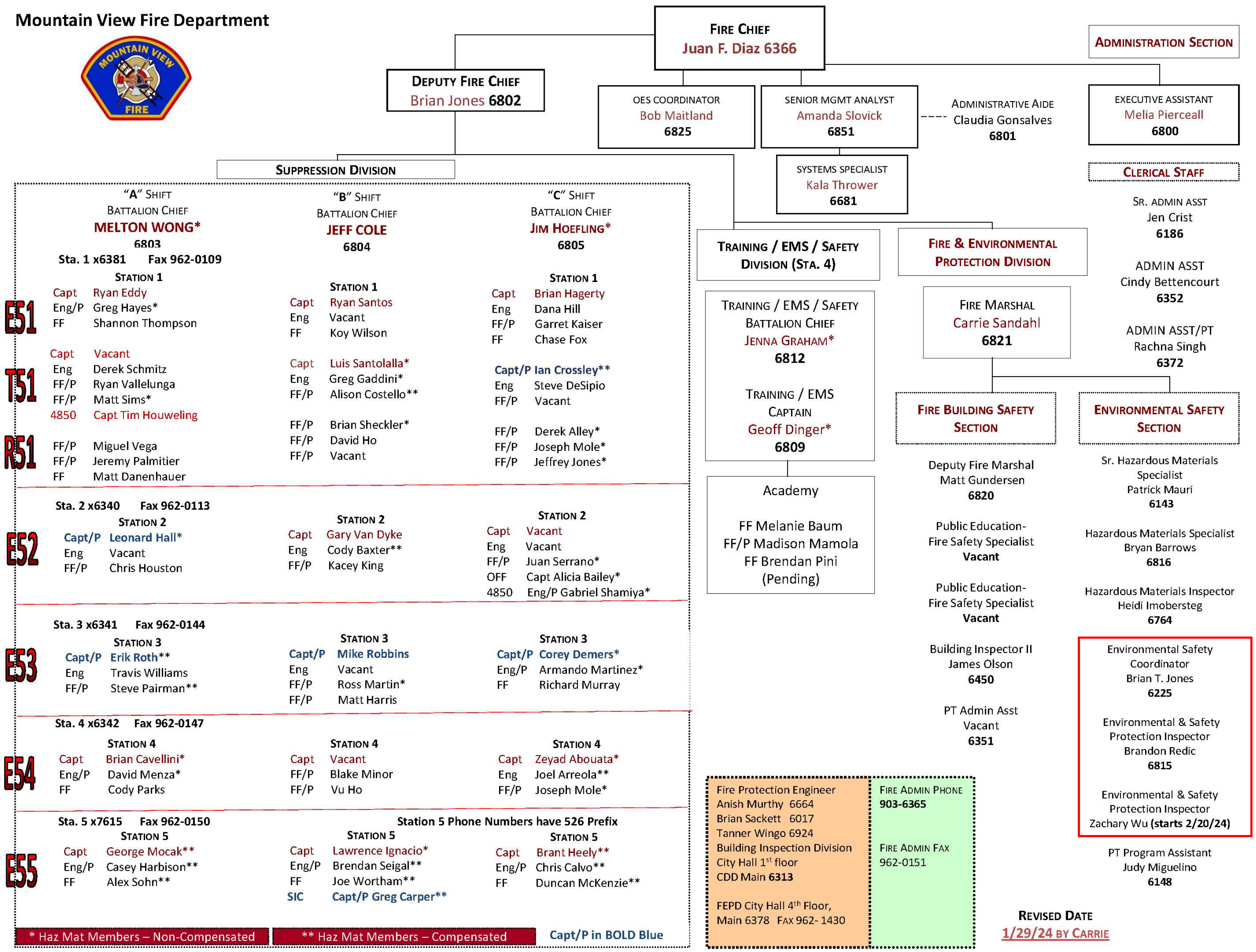


FIGURE J.2: City of Mountain View Pretreatment Organization Chart



K. PRETREATMENT PROGRAM BUDGET

While the Pretreatment Program is a multi-jurisdictional program, most industrial and commercial dischargers are located within the cities of Palo Alto and Mountain View. RWQCP regulates one CIU in the East Palo Alto Sanitary District. Palo Alto Pretreatment Program staff conducts sampling and inspections at this facility, creates discharge permits, and issues enforcement actions. EPASD finalizes and issues industrial waste discharge permits. Palo Alto Pretreatment Program staff includes one Program Manager, one Associate Engineer, one Senior Industrial Waste Investigator, and three Industrial Waste Inspectors.

Mountain View operates a portion of the RWQCP Pretreatment Program. Mountain View's Environmental Protection Division staff includes one Supervisor and two Environmental and Safety Protection Inspectors.

During Fiscal Year 2023 (July 1, 2022 – June 30, 2023), the total budget for the RWQCP Pretreatment Program was $1,900,522. Funding for the Pretreatment Program is provided by the RWQCP Partner Agencies, with costs apportioned among the Partner Agencies based upon total industrial discharge volume or plant capacity allocation. In addition, funding is provided by permit fees collected in Palo Alto. The Industrial Waste Discharge Fees were established to recover costs associated with operating the Program. The City of Mountain View and EPASD do not require IUs to pay an application or permit fee. The City of Palo Alto Fiscal Year 2024 Adopted Municipal Fee Schedule has established the following application fees:

- Industrial Waste Discharge – Automotive: $666.00 (annually)
- Industrial Waste Discharge – Basic: $3,924.00 (annually)
- Industrial Waste Discharge – Best Management Practices (BMP): $1,468.00 (annually)
- Industrial Waste Discharge – Exceptional Waste (high volume): $6,984.00 (per permit)
- Industrial Waste Discharge – Exceptional Waste (low volume): $3,959.00 (per permit)
- Industrial Waste Discharge – Full (Categorical): $8,932.00 (annually)
- Industrial Waste Discharge – Full (Non-categorical): $5,704.00 (annually)
- Industrial Waste Discharge – Groundwater: $1,501.00 (annually)

Additional details regarding Pretreatment Program expenses are available upon request.

L. PUBLIC PARTICIPATION SUMMARY

The RWQCP had no Industrial Users in Significant Noncompliance in 2023.

M. BIOSOLIDS STORAGE AND DISPOSAL PRACTICES

Sewage sludge from primary and secondary treatment is gravity thickened and then dewatered by belt filter presses. Filtrate from dewatering is returned to the Plant's headworks. Dewatered sludge is hauled for offsite treatment into Class A biosolids with composting and thermal-alkali hydrolysis. In 2023, approximately 20,044.17 total wet tons of dewatered sludge were sent to two facilities for offsite treatment. Approximately 11,945.39 wet tons were treated at the Synagro facility into finished compost and 8,098.78 wet tons were treated by the Lystek facility by a thermal-alkali process to make fertilizer and/or sludge feed for the Fairfield Suisun Sewer District's anaerobic digesters.

N. OTHER POLLUTANT REDUCTION ACTIVITIES

Pollution prevention activities are documented in the RWQCP's 2024 Clean Bay Plan. In addition, the RWQCP implements the following pollution prevention programs.

N.1 INDUSTRIAL WASTE DISCHARGE PERMITS FOR NON-SIU

The RWQCP issues Discharge Permits to Non-SIU industrial and commercial facilities located in the City of Palo Alto, the Town of Los Altos Hills, and the Stanford University campus. These facilities include vehicle service facilities that discharge non-domestic wastewater to the sanitary sewer. The City of Mountain View issues similar permits to Non-SIU industrial and commercial facilities within its City boundary.

N.2 CONTAMINATED GROUNDWATER PERMITTING

The RWQCP issues discharge permits to sites treating contaminated groundwater. Prior to issuance of each Groundwater Discharge Permit, the applicant must submit a Water Reuse Study to the RWQCP. Groundwater Discharge Permits may include monitoring requirements for metals, total toxic organics, and total extractable and purgeable petroleum hydrocarbons. Monitoring may also be required for total dissolved solids and chloride, due to their impact on the RWQCP's wastewater reclamation program. Groundwater dischargers, except for construction dewatering, submit a Periodic Report of Continued Compliance (PRCC) on January 15 and July 15 of each calendar year. The PRCC includes the discharger's compliance status during the reporting period, an enumeration of any violations which took place during the reporting period, the total volume of groundwater discharged during the reporting period, and other information such as the treatment method, average and maximum flow rates, and percentage of groundwater reused.

The RWQCP encourages the reuse of groundwater and recognizes the impact of groundwater discharges on the Plant. However, permits will continue to be issued to those dischargers who demonstrate a lack of reuse alternatives if Plant capacity is available.

O. OTHER SUBJECTS

No additional information related to the Pretreatment Program is reported for 2023.

P. PERMIT COMPLIANCE SYSTEM (PCS) DATA ENTRY FORM

PPS1

POTW Name: Palo Alto Regional Water Quality Control Plant

NPDES Permit #: CA0037834

Period Covered By This Report: 1/1/2023 (PSSD) 12/31/2023 (PSED)

Number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule:	0 (SSNC)
Number of notices of violation and administrative Orders issued against SIUs:	3 (FENF)
Number of civil and criminal judicial actions against SIUs:	0 (JUDI)
Number of SIUs that have been published as a result of being in SNC:	0 (SVPU)
Number of SIUs from which penalties have been collected:	0 (IUPN)

APPENDIX 1. 2022 PCA RESPONSE

REGIONAL WATER QUALITY CONTROL PLANT

2501 EMBARCADERO WAY · PALO ALTO · CA 94303
TEL: 650.329.2122 FAX: 650.494.3531
WWW.CLEANBAY.ORG

August 17, 2023

Arnold Wong, Water Resource Control Engineer
Pretreatment and CECs Unit
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814
Sent electronically to: Arnold.Wong@waterboards.ca.gov

RE: Palo Alto Regional Water Quality Control Plant (NPDES NO. CA0037834) Response to 2022 Pretreatment Compliance Audit Report

Dear Mr. Wong:

This letter comprises the response to the 2022 Pretreatment Compliance Audit (PCA) Summary Report for the City of Palo Alto (NPDES No. CA00377834) that was transmitted on June 21, 2023. On October 12, 2022 the State Water Resources Control Board conducted an audit of the Palo Alto Regional Water Quality Control Plant's Pretreatment Program and found nine required and five recommended actions. Below is a summary of each finding and the associated response:

REQUIREMENTS

Finding C.4.a – Applied Nanostructure's permit duration is over 5 years. Applied Nanostructure's permit was issued on 5/1/2018 and expires 5/1/2023. The duration of this permit would be over 5 years. It is required for the City to modify Applied Nanostructure's permit expiration date to be no later than 4/30/2023.

> **Response –** On April 13, 2023, the City of Mountain View reissued this permit with an issuance date of April 13, 2023, and effective date of May 1, 2023, and expiration date of May 1, 2026.

Finding D.1.a – The City of Mountain View's Sewer Use Ordinance (SUO) is missing or have incomplete definitions. The City of Mountain View's SUO (35.29) is missing several required pretreatment definitions (Clean Water Act, Authorized or Duly Authorized Representative of the User, Categorical Pretreatment Standard or Categorical Standard, Indirect Discharge or Discharge, Pretreatment Requirement, and Publicly Owned Treatment Works) and several definitions require modification (New Source, Significant Industrial User, and Significant Noncompliance).

> **Response –** The City of Mountain View will add and correct the aforementioned definitions in an upcoming update to the SUO scheduled to occur before December 31, 2024.

Finding D.1.b – The City of Mountain View's SUO is not as stringent as the City of Palo Alto's SUO. The City of Mountain View's SUO (35.33.13(c)) requires written notification within 15 days of a discharge that creates an environment that exceeds 10% of a lower explosive level whereas the City of Palo Alto's SUO (16.09.040(k)) requires written notification within 5 days. The City of Mountain View is required to modify its SUO such that the requirements regarding flammable and explosive discharges are as stringent as the requirements listed in the City of Palo Alto's SUO.

> **Response –** The City of Mountain View will modify this section accordingly in an upcoming update to the SUO scheduled to occur before December 31, 2024.

Finding D.1.c – The Cities of Palo Alto and Mountain View's SUO do not prohibit discharges below pH of 5. The City of Palo Alto (16.09.035B) and the City of Mountain View's SUO (35.33.12(3)) only prohibit discharges that cause corrosion and does not include discharges below pH of 5. The Cities of Palo Alto and Mountain View are required to modify their SUO to include specific prohibition against discharges with pH lower than 5.0.

> **Response –** The City of Palo Alto has this prohibition stated in section 16.09.040(e). The City of Mountain View has this prohibition stated in section 35.33.13.3(A) and 35.33.13.3. (B)(2)..

Finding D.1.d – The City of Mountain View's SUO does not prohibit viscous discharges. The City of Mountain View's SUO (35.33.13.3(I)) prohibits solid discharges but does not include viscous discharges. The City of Mountain View is required to modify its SUO to include specific prohibition against viscous discharges.

> **Response –** The City of Mountain View will modify this section accordingly in an upcoming update to the SUO scheduled to occur before December 31, 2024.

Finding D.1.e – The City of Palo Alto's SUO is missing elements required to be in IU permits. The City of Palo Alto's SUO (16.09.080) does not include statement of applicable civil and criminal penalties, and slug discharge requirements as part of the required elements to be included in IU permits. The City of Palo Alto is required to modify its SUO to include all elements required as per 40 CFR403.8(f)(1)(B) as part of the elements required in IU permits.

> **Response –** The City of Palo Alto will modify this section accordingly in an upcoming update to the SUO scheduled to occur before December 31, 2024.

Finding D.1.f – The Cities of Palo Alto and Mountain View's SUOs are missing elements required for recordkeeping. The City of Palo Alto's SUO (16.09.160) and the City of Mountain View's SUO (35.33.7.1) are missing record keeping requirements. The Cities of Palo Alto and Mountain View are required to modify their SUOs to include all elements required as per 40CFR403.12(o)(1)(i-v) as part of the elements required in records retention.

> **Response –** The Cities of Palo Alto and Mountain View will modify these sections accordingly in an upcoming update to the SUO scheduled to occur before December 31, 2024.

Finding G.1.a – The City of Mountain View did not pursue enforcement action against Applied Nanostructure, Inc. for failing to notify the City within 24 hours of an exceedance for copper. Applied Nanostructure, Inc. received sampling results on 2/7/2022 that indicated copper exceedances and did not notify the City of Mountain View until 2/11/2022. The City is required to pursue proper enforcement on industrial users that do not notify within 24 hours of becoming aware of any violations moving forward. It is recommended for the City to remind its industrial users that it is required per their industrial user permit to notify any discharge exceedances within 24 hours of becoming aware of the violation.

> **Response –** The City of Mountain View will pursue proper enforcement on industrial users effective immediately and has issued a reminder as recommended above on February 25, 2022.

Finding G.2.a – The City of Palo Alto's Enforcement Response Plan (ERP) does not include periods within which enforcement responses will take place. The City is required to modify its ERP to include appropriate time periods in which enforcement responses to all violation and escalating violations will occur.

> **Response –** The City of Palo Alto will modify its ERP accordingly by December 31, 2023.

RECOMMENDATIONS

Finding C.4.b – The City's fact sheets lack pertinent information. The City's fact sheet currently does not contain information typically found in fact sheets such as industrial user information, sample point description, flow information, or pollutants federally regulated. It is strongly recommended for the City to continuously develop and maintain their IU fact sheets. Please refer to USEPA's 2012 Industrial User Permitting Guidance Manual, 833-R-12-001A for guidance on key components to incorporate in fact sheets.

> **Response –** The Cities of Mountain View and Palo Alto will take this under advisement and work towards creating consolidated fact sheets per this recommendation. Currently this information can be found in industrial user permits, applications, and files and will require significant staff time to consolidate into fact sheets. Due to this and current low staffing, the Cities anticipate completing this before the next program audit anticipated to occur in 2027.

Finding F.2.a – The City of Mountain View's inspection reports for Applied Nanostructure, Inc. does not include sufficient detail to be enforceable and used as evidence in court. The City's inspection report of Applied Nanostructure, Inc. only indicated violations that were observed during the inspection. Inspection reports should document sufficient evidence that may be used in courts as admissible evidence. Inspection reports should include any inspection activities including records of any conditions, practices, observations, digital images, unusual conditions, and problems. The City of Mountain View is strongly recommended to modify its inspection documentation procedures and information included in inspection reports. It is recommended to consult USEPA 1996 Pretreatment Compliance Monitoring and Enforcement Guidance Appendix B for items necessary to be included in inspection reports.

> **Response –** The City of Mountain View will take this under advisement and work towards revising inspection report templates by December 31, 2024.

Finding G.2.b – The City of Palo Alto's Enforcement Response Plan (ERP) does not include all recommended sections as noted in USEPA's 1989 Guidance for developing control authority enforcement response plans. The ERP should include procedures for keeping the industrial user inventory up to date as well as identify responsible staff. Similarly, the ERP should also include procedures for screening all compliance data as well as identify responsible staff.

> **Response –** The City of Palo Alto will modify its ERP accordingly by December 31, 2023.

Finding from Site Inspection of Hammon Plating – Nitric acid container outside should be under a covering and should have secondary containment.

> **Response –** During the November 10, 2022 inspection, City of Palo Alto staff issued a verbal warning to Hammon Plating for this issue and noted that it was corrected during a May 4, 2023 inspection of the facility.

Finding from Site Inspection of Applied Nanostructure, Inc. – Sinks in hoods/benches in the wet etching room do not have signage indicating no chemicals down the drain.

> **Response –** City of Mountain View staff received photo documentation on November 29, 2022 that all hoods/benches in the wet-etching room have "DO NOT DUMP WASTEWATER HERE" signage posted as well as physical barriers blocking each sink.

Please contact Samantha Engelage on my behalf at 650-329-2123 or Samantha.Engelage@CityofPaloAlto.org if you should have any questions.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

James Allen

James Allen
Plant Manager, Palo Alto Regional Water Quality Control Plant

ecc: Amelia Whitson, USEPA Region 9
Jim Polek – USEPA Region 9
Erica Kalve – State Water Resources Control Board
Olivia Magana – State Water Resources Control Board
Mike Chee – San Francisco Bay Regional Water Quality Control Board
Brad Eggleston – City of Palo Alto
Karin North – City of Palo Alto
Julie Weiss – City of Palo Alto
Aida Fairman – City of Los Altos
Carrie Sandahl – City of Mountain View
Akin Okupe – East Palo Alto Sanitary District