City of Guadalupe

Wastewater Treatment Plant

2021 Annual Report

David R. Miklas

1/26/2022

David Miklas, Chief Plant Operator — Date

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INTRODUCTION

The City of Guadalupe Wastewater Treatment Plant (WWTP) serves a population of 7,519 citizens. The treatment plant also receives significant industrial flow from Curation (formerly APIO) of approximately 200,000 to 400,000 gallons per day and other industrial dischargers. The influent to the plant flows through a mechanical bar screen system to removes large solids, then through a grit removal system (currently not in operation). Flow is then split and flows either to a Biolac extended aeration activated sludge system or to an Advanced Integrated Pond System (AIPS). From there plant effluent flows are combined and flow to holding ponds which supply water to irrigated agricultural fields.

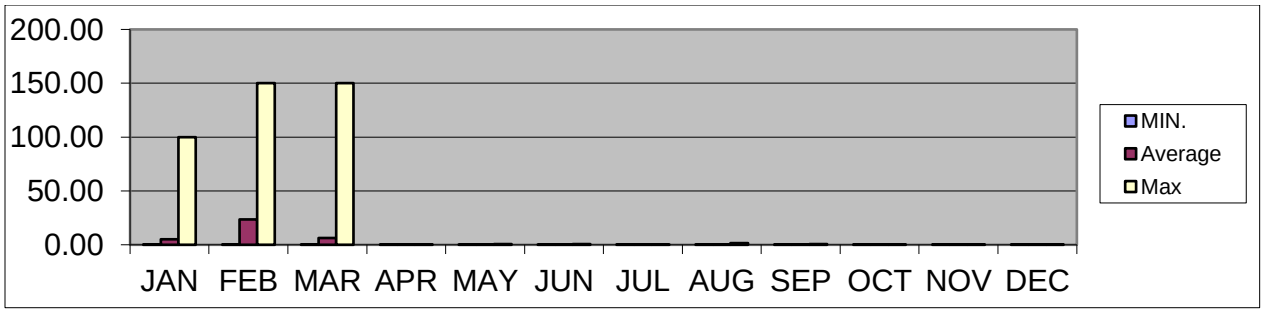
Sludge is removed from the secondary clarifier and dewatered at a screw press or routed to the sludge drying beds. Excess sludge is also pumped to the sludge lagoon/pond adjacent to the Biolac pond.

This WWTP is currently permitted to discharge .96 MGD (30-day monthly average). The average daily flow through the plant in 2021 was .764 MGD.

SECTION A: Data Tables and Graphs

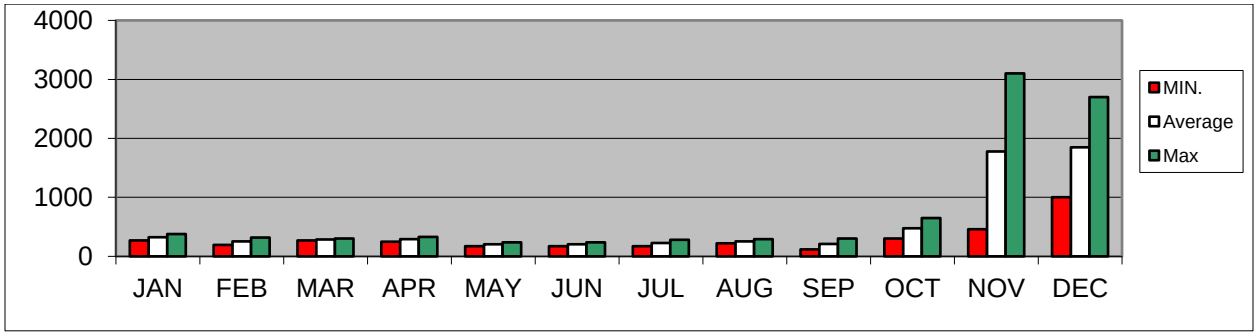
GUADALUPE WWTP ANNUAL REPORT DAILY SETTLEABLE SOLIDS (ml/L)

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MIN.	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Average	5.10	23.45	6.25	0.11	0.13	0.14	0.10	0.16	0.11	0.10	0.10	0.10
Max	100.0	150.0	150.0	0.20	0.50	0.50	0.10	1.50	0.50	0.10	0.20	0.10



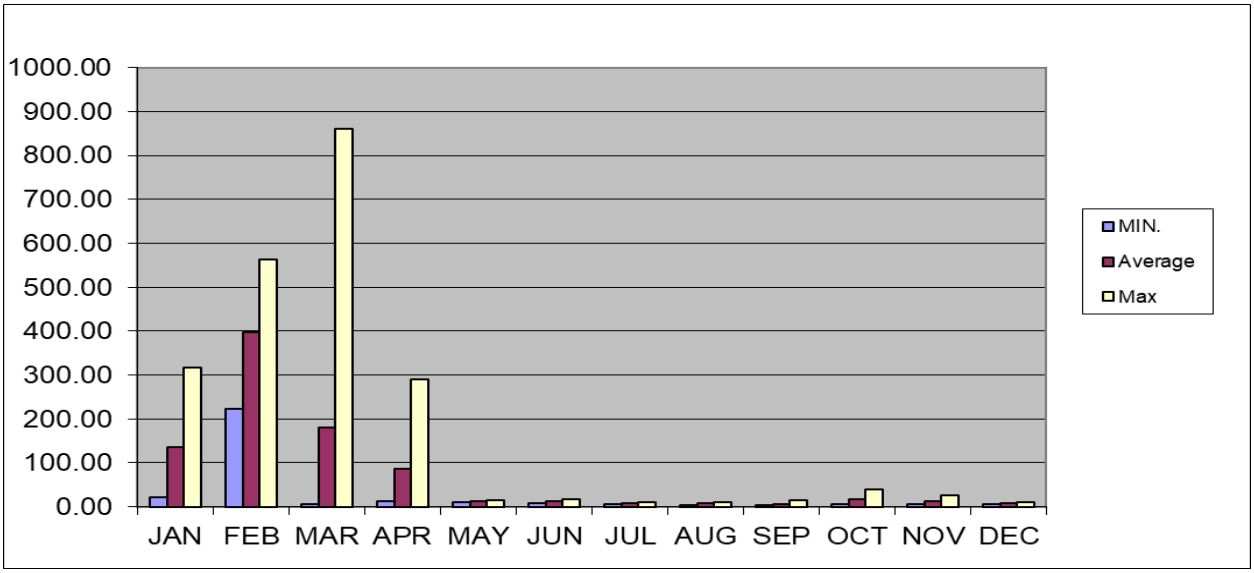
GUADALUPE WWTP ANNUAL REPORT INFLUENT TSS (mg/L)

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MIN.	271	193	270	250	170	170	170	220	120	300	460	1000
Average	326	256	285	290	205	205	225	255	210	475	1780	1850
Max	380	319	300	330	240	240	280	290	300	650	3100	2700



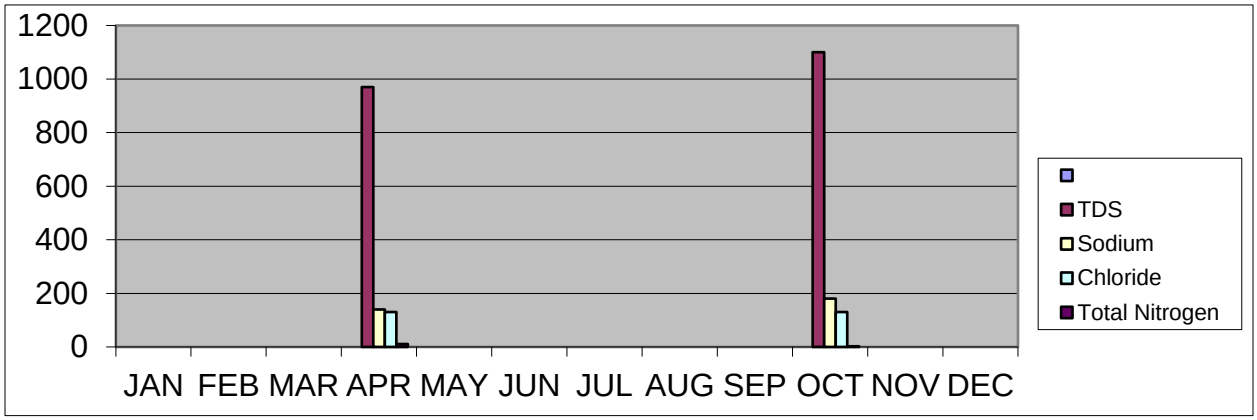
GUADALUPE WWTP ANNUAL REPORT EFFLUENT TSS (mg/L)

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MIN.	22.00	222.00	6.80	13.00	11.00	7.46	4.80	3.50	3.00	6.40	6.50	5.00
Average	136.75	396.75	179.74	86.50	12.75	12.44	7.58	7.98	6.20	16.05	12.92	6.78
Max	318.00	564.00	860.0	290.0	14.0	18.00	9.60	11.00	14.00	40.00	26.00	9.40



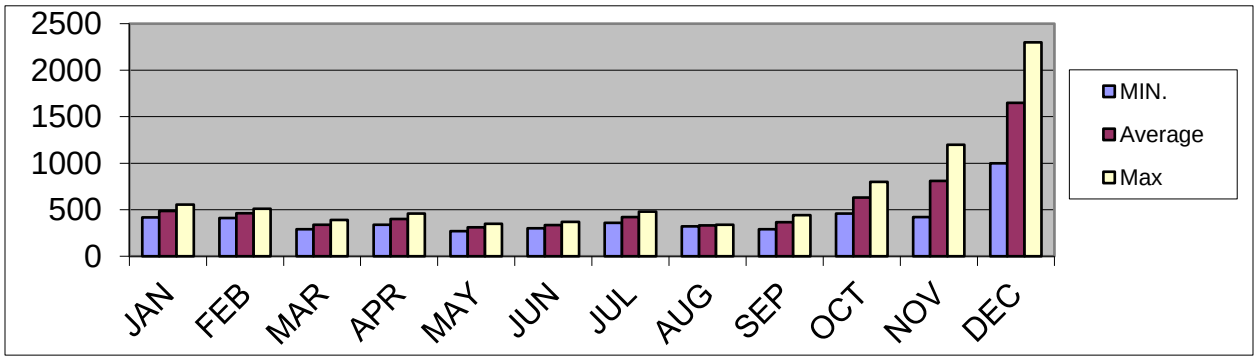
GUADALUPE WWTP ANNUAL REPORT SEMI-ANNUAL EFFLUENT MONITORING

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TDS				970						1100		
Sodium				140						180		
Chloride				130						130		
Total Nitrogen				11						3		



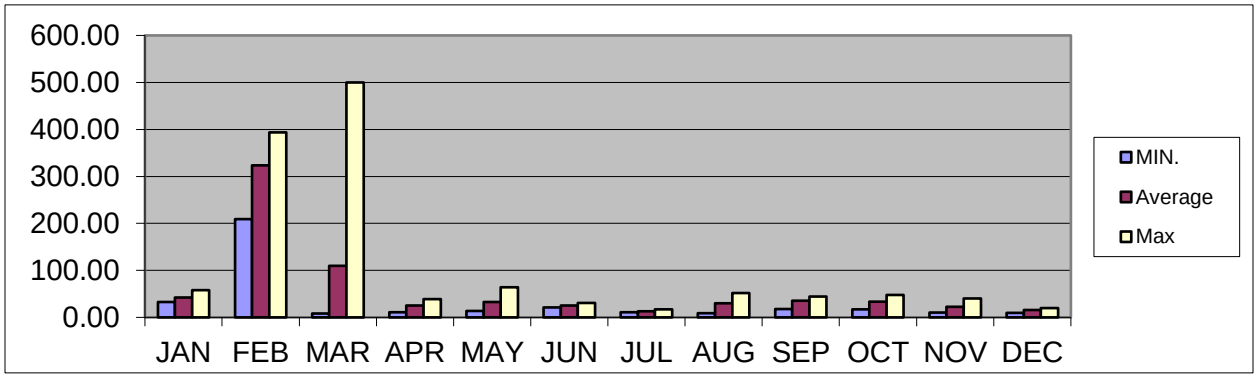
GUADALUPE WWTP ANNUAL REPORT INFLUENT BOD (mg/L)

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MIN.	419	410	290	340	270	300	360	320	290	460	420	8
Average	487	461	340	400	310	335	420	330	365	630	810	1650
Max	555	512	390	460	350	370	480	340	440	800	1200	2300



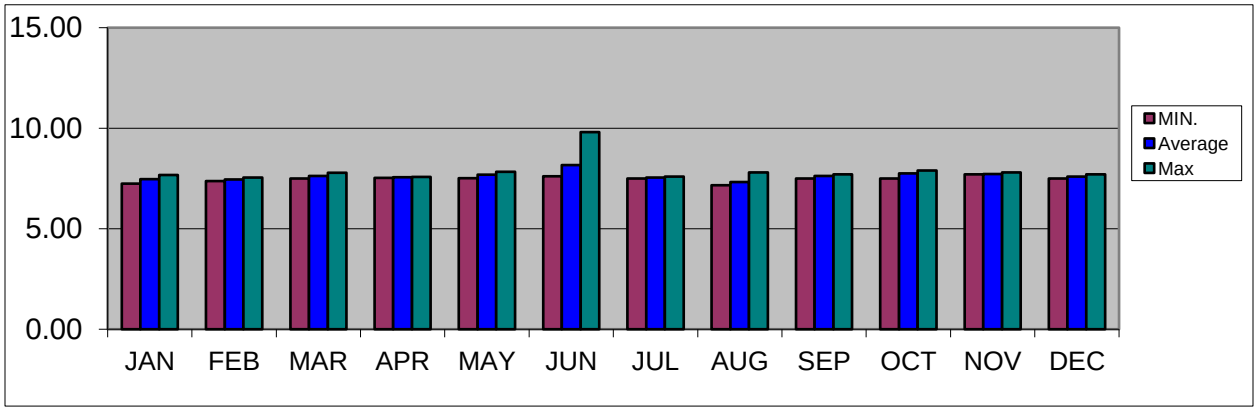
GUADALUPE WWTP ANNUAL REPORT EFFLUENT BOD (mg/L)

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MIN.	33.00	209.00	8.40	11.00	14.00	21.00	11.00	9.00	18.00	17.00	10.00	9.50
Average	42.50	323.50	109.52	25.50	32.75	25.25	12.75	30.20	35.75	33.50	22.40	14.05
Max	58.00	394.00	500.00	39.00	64.00	31.00	17.00	52.00	44.00	48.00	40.00	20.00



GUADALUPE WWTP ANNUAL REPORT EFF. pH (mg/l)

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MIN.	7.25	7.37	7.49	7.53	7.51	7.61	7.50	7.16	7.50	7.50	7.70	7.50
Average	7.46	7.45	7.62	7.56	7.68	8.17	7.54	7.33	7.63	7.75	7.72	7.60
Max	7.68	7.54	7.78	7.58	7.83	9.80	7.60	7.80	7.70	7.90	7.80	7.70



SECTION B: Compliance

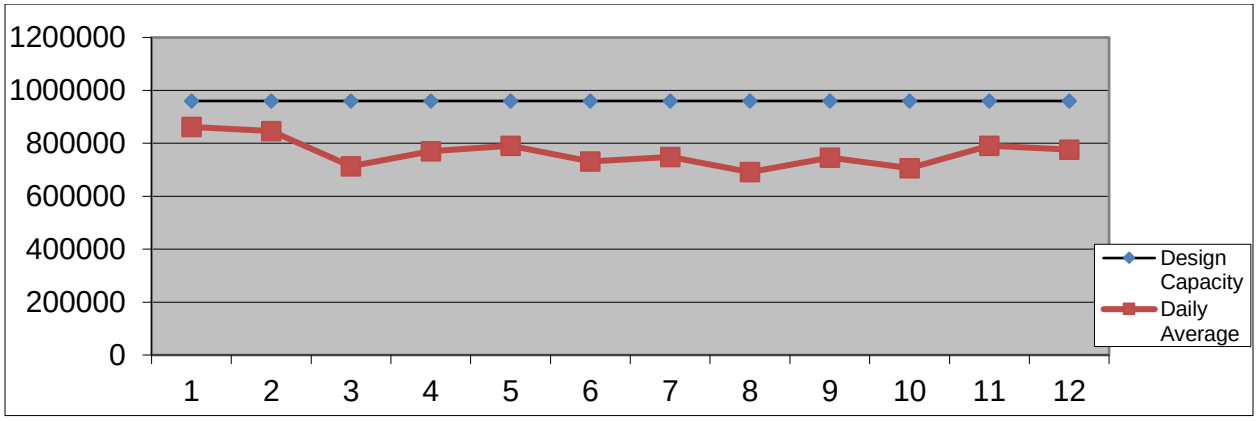
1. Effluent
    a. Settleable Solids over daily limit of .5mL/L
        i. January 6th, 20th,21st,22nd,26th, and 28th – Caused by young sludge with poor settling combined with high flows. We started having these issues in late 2020 and they continued to get worse. In an effort to lower our TSS in our return activated sludge (RAS) as well as our mixed liquor suspended solids (MLSS), we wasted too much and ended up with very young sludge with very poor settling qualities. This resulted in the sludge blanket in the clarifiers to rise to the level of the effluent weirs and spill over. With the blankets going over the weirs our sludge was "auto-wasting" and not able to age.
        ii. February – Continued blanket loss over the effluent weir in the clarifiers.
        iii. March 2nd, 3rd, 4th, and 5th – Continued blanket loss over the effluent weir in the clarifiers. On the 5th we diverted a portion of our influent flow to our old pond system.
        iv. August 3rd - High flows caused the blanket in the clarifiers to rise and go over the weirs. More flow was diverted to the ponds and the issue resolved.
    b. BOD (daily maximum 100 mg/L) – These violations coincide with the issues above.
    c. TSS
        i. January, February and March – These violations coincide with the issues above.
        ii. April 13th - The lab result of our TSS on April 13th does not seem consistent with the BOD result or our settleable solids result. I also do not remember sending in a sample that was questionable in the month of April. We have started calculating the TSS on a sample from the same composite bottle we send the lab sample from. This way we can ask the lab to retest if there are any discrepancies.
    d. Spills
        i. January 18- Obispo St. / Manzanita, 700 gal -Pump station failure (not owned by city).
        ii. January 28- 8th St. / Hwy 1, 6200 gal- Storm water over sewer capacity.
        iii. January 30- 3rd St. / Tognazzini, 50 gal- Debris in sewer.
        iv. March 26- 259 Guadalupe St., 5 gal- Foam from manhole.
        v. October 8- Obispo St. / 11th St., 30 gal- FOG
        vi. November 5- Pipe burst launch pit at Snowy Plover Ln., 1003 gal- leak from temporary pipe during sewer replacement project.

SECTION C: Flow Evaluation

In 6 of the 12 months of calendar year 2020, the monthly average daily flow volumes ranged exceeded 80% of the maximum daily discharge volume permitted for this facility (.96 million gallons). It appears that actual wastewater flow volumes into the WWTP will exceed its current permitted flow capacity in the near future.

Given the fact that there are new homes and apartments currently planned, and currently in construction within the City of Guadalupe it is reasonable to expect flow volumes to the wastewater plant to increase over the next few years. That being noted, the City of Guadalupe will be requesting additional permitted capacity for its existing wastewater facility. We have added capacity by bringing a portion of our previous pond system back online. This should give us up to 600,000 more gallons per day of treatment capacity.

	Jan.	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	Dec.
Daily Average	861710	846893	713806	769900	791161	731233	748603	691097	746067	706677	791067	775710
Design capacity	960000	960000	960000	960000	960000	960000	960000	960000	960000	960000	960000	960000



SECTION D: Operator Certification

Staff Member	Certification Level	Certification No.
Shannon Sweeney Public Works Director	Grade V	28675
David Miklas Chief Plant Operator	Grade III	43382
Devin Valdivia Plant Operator	Grade II	43380
Estanislao Gutierrez Plant Operator (January thru June 2021)	Grade II	43200

SECTION E: Operation and Maintenance

The Operation and Maintenance Manual was originally received in 2012. It was last reviewed in January 2021 by Devin Valdivia (Operator). The Biolac system received a full inspection and equipment update/repair in 2019.

SECTION F: Laboratory Information

Clinical Lab of San Bernadino, Inc.

21881 Barton Road, Grand Terrace, CA 92313

ELAP Certification No.: 1088

516-A N 8th St., Lomoc, CA 93436

ELAP Certification No.: 1678

SECTION G: Sludge Management

Sludge is dewatered in a screw press or in the sludge drying bed. Dried sludge is removed from the facility by Engel & Gray and taken to their composting facility in Santa Maria. This facility produced 754.92 wet tons of sludge in 2021.

SECTION H: Pretreatment

Not applicable at this time.

SECTION I: Salt and Nutrient Management Plan

The impacts of the City of Guadalupe's water treatment plant to salt and nutrients within the Santa Maria Valley are discussed in the Santa Maria Valley Groundwater Assessment, dated October 9, 2013 and located at the following link:

https://www.countyofsb.org/uploadedFiles/pwd/Content/Water/IRWMP/SM_GW_Assessment_SN_Report%2010_10_2013%20Final.pdf

This document evaluated the source, transport, and fate of salts and nutrients in surface water and groundwater within the Santa Maria Valley. The plan indicates that salts are relatively balanced, but that nutrients continue to increase. While the City does not yet have a documented salts and nutrient plan, when its extended aeration Biolac is running well, lab results indicate significant reduction in nitrogen species.

SECTION J: Collections System Management

We have added sewer monitors to two of our lift stations and three manholes. Clay's Septic and Jetting has been contracted to clean 100,000 feet of our sewer line per year as of September 2020.

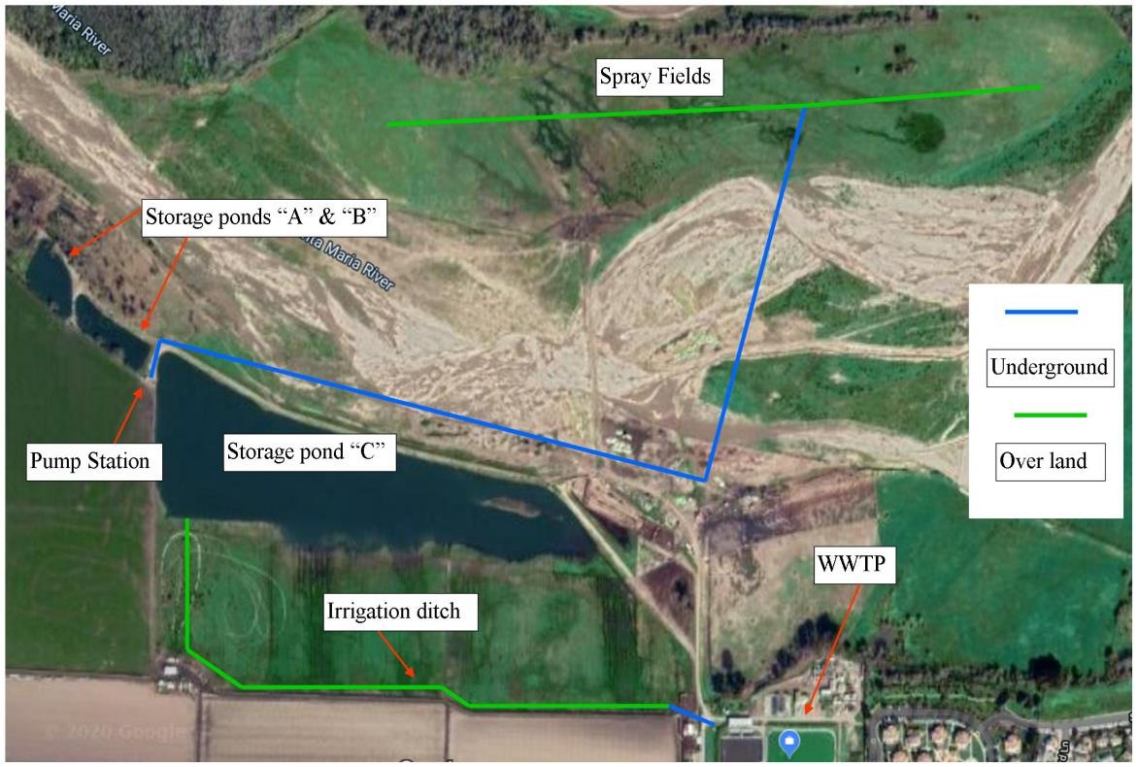
SECTION K: Mercury Seals

Not applicable.

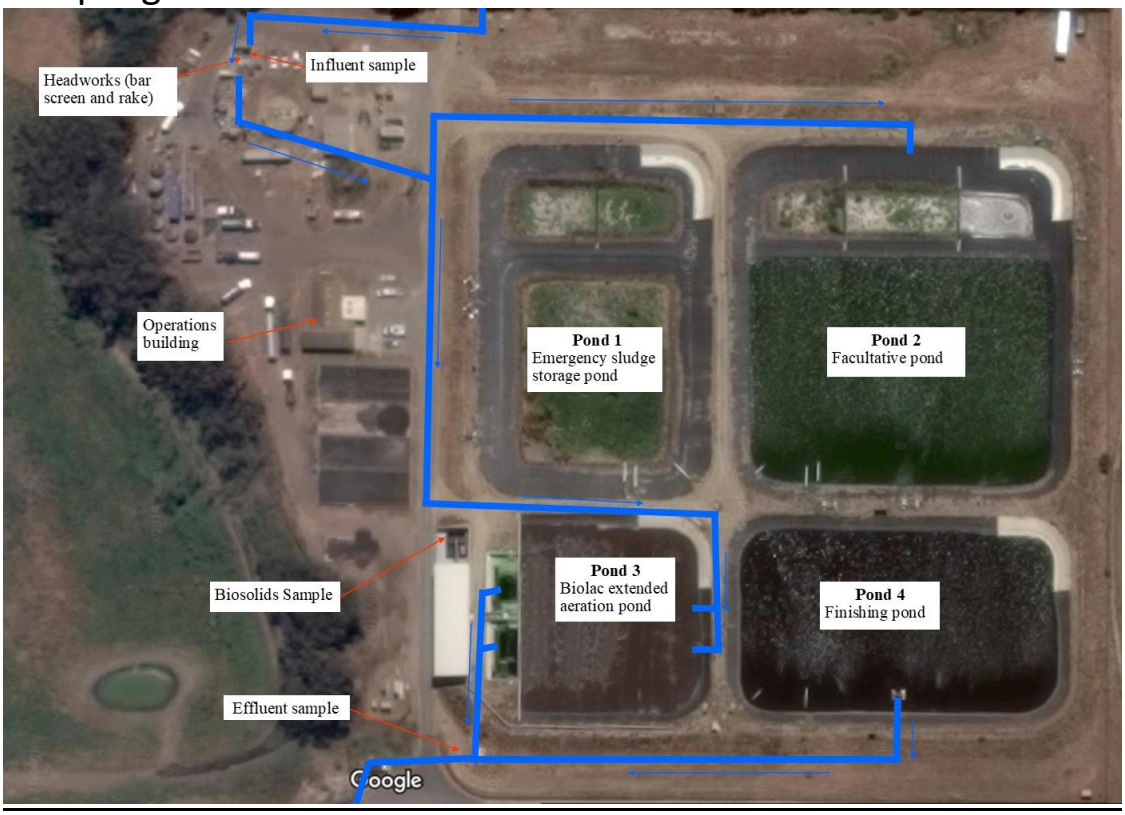
SECTION L: Figures

Process Diagram:

Spray Field flows:



Sampling Sites:



Monitoring Well Locations:

Lab Reports