2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

Prepared by:

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500 Davidson Street
Novato, CA 94945

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Overview

The continued priorities for 2019 were to meet the goals of zero lost time incidents, or Occupational Safety Health Act recordable incidents, and no treatment plant effluent violations. This is a year-in and year-out objective plainly stated and firmly established throughout Veolia North America (*Veolia*). A term we apply to this end is "Zero Harm". We are very happy and proud to report that both goals were met. 2019 represents our seventh consecutive year of zero effluent violations and ninth year of zero recordable incidents. We celebrate this success with the Novato Sanitary District on its vision and commitment to the protection of water quality and the environment.

Key areas of focus throughout the year included:

- Safety Training
- Regulatory Compliance
- Odor Monitoring
- Third Party Facility Reviews – Safety, Management Operations, and Maintenance Audits
- Reporting (internal and external)
- Records Keeping and Data Base Management
- No Safety Incidents (recordable, lost time, or medical)
- Participation in Company *Near Miss* Reporting Program (focused on prevention)
- Employee Education and Certification / Professional Advancement
- Community Outreach and Participation
- Effective Asset Management by using Oracle Work Asset Management System (OWAM) for Maintenance Tracking, Scheduling, Inventory, and Purchasing
- Operation, Management and Oversight of Laboratory and Pretreatment Program
- Facility Energy Management Program

Treatment Plant Design Criteria

Wastewater is collected throughout the Novato Sanitary District service area and conveyed by gravity as well as mechanical means (pump stations) to the Novato Treatment Plant (*NTP*). Listed below are the descriptions of each of the processes. Table 1.0 below provides the influent flow design criteria.

Table 1.0

DESIGN CRITERIA		
Condition	Value	Unit
Average Dry Weather Flow	7.0	MGD
Peak Wet Weather Flow (Max Day)	30.7	MGD
Max Peak Wet Weather (1-3 Hour)	47.0	MGD
Average BOD Loading	14,600	Lbs/D
Average TSS Loading	17,600	Lbs/D

Preliminary Treatment - Influent Pump Station and Headworks

When the wastewater arrives at the NTP, it is pumped from the influent pump station to the headworks. The headworks provides screening of coarse materials and removal of grit which consists of heavy matter such as sand, silt, and gravel.

Flow and Loading Measurement

Flow at the NTP is measured using a parshall flume and hydro ranger™ ultra-sonic flow meter in combination. Composite samples for biochemical oxygen demand (BOD) and total suspended solids (TSS) are collected downstream of screening and grit removal. Composite samples are proportioned throughout the sampling period (normally 24 hours).

Primary Treatment – Primary Clarifiers

An efficient primary clarifier typically removes approximately 60 – 70% of the solids from raw wastewater. Clarifiers are large tanks that slow the flow of water and allow the force of gravity to remove solids. Heavier solids referred to as "sludge" settles to the bottom. Lighter material such as fat, oil, grease and plastic, referred to as "scum" rises to the surface. Both sludge and scum are removed from the waste stream and pumped to a digester for additional treatment. The NTP primary clarifiers are covered to contain air/odor associated with raw sewage. Air/odor is removed and discharged to odor scrubbing biofilters.

Secondary Treatment – Aeration Basins & Secondary Clarifiers

After screening, grit removal, and primary solids removal, all wastewater receives full secondary treatment. Large rectangular tanks with baffle walls, mechanical mixers, air diffusers, and recirculation pumps make up the aeration basins. Four aeration basins, each with a capacity of more than 850,000 gallons, provides complete secondary treatment under all flow conditions. Each aeration basin has three anoxic (no dissolved oxygen) zones accounting for almost 25% of the tank volume. The anoxic zones convert nitrate and nitrite to nitrogen gas to reduce the level of total nitrogen in the effluent.

Ultra Violet (UV) Disinfection

Prior to discharge wastewater must be disinfected. Ultra violet light disrupts the DNA of pathogens and other life forms leaving them incapable of reproduction.

Effluent Disposal – Bay Discharge / Reclamation / Storage

Discharge to San Pablo Bay (Bay Discharge) is prohibited beginning June 1st through August 31st. Bay discharge is permitted (with stringent effluent limits) in the months of May, September and October. Throughout the non-discharge season effluent is stored for future use, specifically for pasture irrigation.

Effluent Reuse – Recycled Water

Recycled water was produced in 2019 for irrigation of parks, landscaping, and golf courses. Additionally, a portion of the recycled water is provided to a car wash facility. Recycled water receives added treatment in order to comply with stringent Title 22 regulations.

Treatment Plant Performance Tables

The tables that follow provide the summary for the plant performance, maintenance program, consumables and energy results for the period January 1, 2019 through December 31, 2019. The Annual Waste Characteristics & Loading Summaries are provided below in Tables 2.0 – 8.0 and in the attachment section of this report.

Table 2.0

2019 Influent Flows and Loading Summary			
Condition	Value	Unit	Notes
Average Dry Weather Flow	3.50	MGD	Aug /Sep/Oct
Peak Wet Weather Flow (Max Day)	12.82	MGD	
Max Peak Wet Weather (1-3 Hour)	30.30	MGD	2/13/19
Average Biochemical Oxygen Demand (BOD)	293	mg/L	
Average BOD Loading	14,170	Lbs/Day	
Average Total Suspended Solids (TSS)	305	mg/L	
Average TSS Loading	15,168	Lbs/Day	

Table 3.0

2019 Plant Performance		
Total Volume of Wastewater	2087.09	Million Gallons
Total Volume of Reclaimed Water (Reclamation, Recycled, California State Coastal Conservancy	294.74	Million Gallons
Recycled – Title 22 (Novato Sanitary District, North Marin Water District Deer Island))	145.37	Million Gallons
Recycled – Title 22 (included in Water Reclamation)	171.83	Million Gallons
Flow Discharged to San Pablo Bay	1798.77	Million Gallons
Average BOD	6	mg/L
Average BOD Discharged	313	Lbs/Day
Total Pounds of BOD Treated	5,172,050	Lbs
Average TSS	4	mg/L
Average TSS Discharged	239	Lbs/Day
Total Pounds of TSS Treated	5,536,411	Lbs
Total Pounds of Bio-solids Treated	2,947,578	Lbs
Total Cubic Feet of Biogas Produced	25,452,036	Cu Ft

Table 4.0

2019 Violations / Excursions	
Total Number	0
NPDES (Bay Discharge)	0
WDR (Reclamation)	0

Table 5.0

2019 Plant Effluent		
	Value	Unit
BOD Removal	98	%
TSS Removal	99	%

Table 6.0

2019 Consumables and Energy Summary	
Total Million Gallons	2087.09
*Electricity – kWh / Year	3,461,805
Electricity – kWh / MG	1,659
*Natural Gas – Therms / Year	47,499
Natural Gas – Therms / MG	23
Diesel Fuel – Gallons / Year	7267.96
Diesel Fuel – Gallons / MGD	3.48

*Excludes Administration Building and Recycled Water Plant

Table 7.0

2019 Waste Discharge Limits / Reclamation – 1,288				
Parameter	Limit	Units	# Analysis	Violations
BOD Monthly Average	40	mg/L	2	0
Total Coliform – 5 Sample Median	240	mpn/100 ml	20	0
Total Coliform - Maximum	10,000	mpn/100 ml	24	0
pH – High	9.0	s.u.	34	0
pH – Low	6.0	s.u.	34	0

Table 8.0

2019 NPDES Wet Season Limits - November – April				
Parameter	Limit	Units	# Analysis	Violations
BOD Weekly	45	mg/L	25	0
BOD Monthly	30	mg/L	6	0
TSS Weekly	45	mg/L	25	0
TSS Monthly	30	mg/L	6	0
BOD Removal (minimum)	85	%	6	0
TSS Removal (minimum)	85	%	6	0

Enterococcus - 30 Day Geo Mean	35	Col/100 ml	6	0
Fecal Coliform - Median	140	mpn/100 ml	1	0
Fecal Coliform - 90th Percentile	430	mpn/100 ml	1	0
Ammonia – Daily Maximum	21	mg/L	8	0
Ammonia - Monthly Average	6	mg/L	6	0
pH – High	8.5	s.u.	129	0
pH – Low	6.5	s.u.	129	0
Oil & Grease - Daily Maximum	15	mg/L	6	0
Oil & Grease - Monthly Average	5	mg/L	6	0

Table 9.0

2019 NPDES Dry Season Limits - May, September, & October				
Parameter	Limit	Units	# Analysis	Violations
BOD Weekly	30	mg/L	16	0
BOD Monthly	15	mg/L	5	0
TSS Weekly	20	mg/L	16	0
TSS Monthly	10	mg/L	5	0
BOD Removal (minimum)	85	%	5	0
TSS Removal (minimum)	85	%	5	0
Enterococcus - 30 Day Geo Mean	35	Col/100 ml	5	0
Fecal Coliform - Median	140	mpn/100 ml	2	0
Fecal Coliform - 90th Percentile	430	mpn/100 ml	2	0
Ammonia – Daily Maximum	21	mg/L	7	0
Ammonia - Monthly Average	5.9	mg/L	5	0
pH – High	8.5	s.u.	98	0
pH – Low	6.5	s.u.	98	0
Oil & Grease - Daily Maximum	15	mg/L	5	0
Oil & Grease - Monthly Average	5	mg/L	5	0

Operational Program

Throughout 2019, the majority of the treatment plant equipment operated full time with the exception of the equipment listed below:

Novato Treatment Plant - Equipment Out of Service – Due to Planned Servicing, Maintenance, or Replacement

- Aeration Basin #1 & #3 (standby)
- Primary Clarifier #2 (standby)
- Secondary Clarifier #2 (standby)

Environmental Services Program

Regulatory Inspections

On January 28-29, 2019, PG Environmental inspectors (contracted by the U.S. EPA and California Regional Water Quality Control Board) conducted two regulatory inspections. The first inspection focused on the industrial pretreatment program and included two industrial user facility site visits. The second was for the management, operation and maintenance of the wastewater treatment plant.

Bay Area Clean Water Agencies (BACWA)

Liz Falejczk, Veolia Water Environmental Services Supervisor, and Erik Brown, Novato Sanitary District Deputy General Manager attended the annual BACWA meeting. Liz also attended the Nutrient Watershed Permit workshop to provide comments and suggested edits to the administrative draft regulations. She also attended most of the regularly scheduled meetings of the Permits, Laboratory and Pretreatment committees.

Pretreatment Program Billing

Liz Falejczk worked with Laura Creamer, Novato Sanitary District Finance Officer throughout 2019 to complete invoicing/billing for: quarterly and annual surcharge for one significant industrial user, and permit issuance, renewal, and sampling.

Monitoring Wells

Sampling of the groundwater monitoring wells was conducted in May and November 2019. This biannual monitoring is to assure the protection of groundwater around the Designated Land Disposal (DLD) site and the old sludge disposal site at the Ignacio Treatment Plant as part of the EPA Part 503 Biosolids requirements. Sampling and data collection was performed by Kurt Hawkyard, Veolia Water Laboratory Technician.

National Pollution Discharge Elimination System (NPDES) Permit Renewal

Liz attended the kick off meeting with the Novato Sanitary District and Woodward and Curran engineers to discuss the upcoming NPDES permit renewal and provided support information.

Environmental Laboratory Accreditation Program (ELAP)

The biannual renewal application was forwarded to ELAP as required. The electronic confirmation of the successful renewal of the certification of the laboratory was received on January 22, 2020. The certification now expires January 31, 2021.

Public Education

Throughout 2019, Liz Falejczyk, Environmental Services Supervisor, Kurt Hawkyard, Veolia Water Laboratory Technician, Julie Hoover, Novato Sanitary District Administrative Secretary, and Lynda Farmery, Veolia Administrative Assistant participated in one or all of the activities listed below.

- Novato Senior Health Day at the Margaret Todd Center on February 20, 2019.

- On March 19, 2019, provided a tour for the San Marin High School Applied Chemistry and Biotechnology classes of approximately 40 students.
- Distributed public outreach materials on the safe disposal of fats, oils and greases, flushable wipes and unwanted medications to 220 residents of the Los Robles Mobile Home Park.
- Marin County Wastewater Treatment Agencies of Marin County Public Education Program meetings and activities.
- Vintage Oaks Shopping Center businesses and Novato High School; purchase of awareness signage for posting in public restrooms to educate the public to reduce trash being flushed down the toilets.

Training

Liz Falejczyk, Veolia Water Environmental Services Supervisor, attended several training events.

- Redwood Empire Section Laboratory Committee training on Chronic Toxicity Reporting and Ethics and Integrity held at the City of Vacaville Easterly Wastewater Treatment Plant.
- State Water Resources Control Board workshop regarding the proposed changes to the First Revised Toxicity Provisions and Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.
- "The First Steps to Implementing the TNI 2016 Standards, Rev 2.1" last of 6 trainings.
- California State Water Resources Control Board workshop regarding the proposed changes to the Laboratory accreditation regulations.

Kurt Hawkyard, Veolia Water Laboratory Technician attended the 4th, 5th and 6th trainings sessions "The First Steps to Implementing the TNI 2016 Standards, Rev 2.1".

Both Kurt and Liz attended the California Water Environment Association Redwood Empire Section meeting at Caltest Analytical Laboratories. The meeting focused on the latest findings from NV5 Environmental Laboratory Services inspections of drinking water laboratories.

Whole Effluent Toxicity Testing

Quarterly Acute (96 hours) and Chronic (7 days) Toxicity testing is required during Bay Discharge season. Testing was performed in February, June, and October in 2019. All tests were performed by Aqua Science (Davis, CA), and results reported in compliance with the NPDES permit. The Acute Toxicity testing results yielded 100% survival. The Chronic Toxicity test results for survival and growth were reported as <1.0 TUc. Table 5.0 below provides the 2017-2019 results.

Table 4.0 Historical Toxicity Testing 2017-2019

Test Date	1/17	4/17	6/17	10/17	1/18	4/18	9/18	12/18	2/19	6/19	10/19
EC_{25} (%)	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
NOEC (%)	100	100	100	65	100	100	100	100	100	100	100
TUc(100/EC_{25})	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Abbreviations	
EC^{25} (%)	Effect Concentration 25 Percent
NOEC (%)	No Observed Effect Concentration
TUc (100/EC^{25})	Toxic Unit-Chronic (100/Effect Concentration 25 Percent

Proficiency Testing

U.S. EPA DMR-QA 39 Proficiency Testing Studies were conducted in 2019 and 100% acceptable results were achieved. This was a collaborative effort between Veolia employees Kurt Hawkyard and Liz Falejczyk, and Jessica Bena-Nommsen, North Marin Water District Chemist I for the NSD Laboratory. The Certificates of Excellence are provided below. In addition the DMR-QA studies performed by all contract laboratories that routinely perform or support self-monitoring analyses required by National Pollution Discharge Elimination System permit were evaluated for proficiency and submitted to the State Water Board Quality Assurance Officer/State DMR-QA Coordinator.

CERTIFICATE OF EXCELLENCE

In recognition of the quality of your laboratory in proficiency testing for

WP-290

Novato Sanitary District Laboratory

is issued this certificate of achievement by ERA. This laboratory has been recognized as a Laboratory of Excellence for achieving 100% acceptable data in this study which included 981 participating laboratories. This achievement is a demonstration of the superior quality of the laboratory in evaluation of the standards listed below.

Enterococci
Hardness
Minerals
pH
Total Residual Chlorine

Matthew Seebeck
Quality Officer

CERTIFICATE OF EXCELLENCE

In recognition of the quality of your laboratory in proficiency testing for

WP-294

Novato Sanitary District Laboratory

is issued this certificate of achievement by ERA. This laboratory has been recognized as a Laboratory of Excellence for achieving 100% acceptable data in this study which included 932 participating laboratories. This achievement is a demonstration of the superior quality of the laboratory in evaluation of the standards listed below.

Demand
Simple Nutrients
Volatile Solids
WasteWatR™ Coliform MicrobE™ - SM 9221
Dissolved Oxygen
Turbidity
WasteWatR™ Coliform MicrobE™

Matthew Seebeck
Quality Officer

CERTIFICATE OF EXCELLENCE

In recognition of the quality of your laboratory in proficiency testing for

WS-276

Novato Sanitary District Laboratory

is issued this certificate of achievement by ERA. This laboratory has been recognized as a Laboratory of Excellence for achieving 100% acceptable data in this study which included 744 participating laboratories. This achievement is a demonstration of the superior quality of the laboratory in evaluation of the standards listed below.

Heterotrophic Plate Count
WS SourceWatR™
MicrobE™

Matthew Seebeck
Quality Officer

CERTIFICATE OF EXCELLENCE

In recognition of the quality of your laboratory in proficiency testing for

WP-297

Novato Sanitary District Laboratory

is issued this certificate of achievement by ERA. This laboratory has been recognized as a Laboratory of Excellence for achieving 100% acceptable data in this study which included 696 participating laboratories. This achievement is a demonstration of the superior quality of the laboratory in evaluation of the standards listed below.

Dissolved Oxygen

Matthew Seebeck
Quality Officer

Community Outreach Activities 2019

Veolia is proud to be a member of the Novato community and we are committed to supporting local activities. The following are events and organizations supported by Veolia in 2019.

- School Fuel – Tour of Novato – donated bottled water for participants & booth member
- Rotary Club Novato Sunrise (RCNS)
- Member – Novato Chamber of Commerce
- Margaret Todd Senior Center Monthly Birthday Celebrations
- Senior Health Fair Booth

Asset Management Program

Computerized Maintenance Management System (CMMS)

Key components of an Oracle Work Asset Management (OWAM or WAM) software program include:

- OWAM is a robust multi-layered asset management system which provides modules for purchasing, inventory control, asset life cycle cost, as well as the typical scheduling and maintenance tracking tools.
- Preventive maintenance (PM) is a scheduled maintenance activity generally tied to equipment runtime or time periods (weekly / quarterly).
- Equipment inventory is crucial to all phases of Asset Management. Equipment at the NTP has been entered into the OWAM data base.
- Criticality Assessment is typically performed every 5 years.

The Criticality Assessment was performed on September 16, 2019. The assessment evaluated the processes equipment and developed a rating (1-5) for the relative importance. The results of the assessment are used in developing the priorities for equipment replacement and preventive maintenance. The items with a 4 and 5 rated were evaluated by Veolia mechanics.

2019 MAINTENANCE ACTIVITIES OVER $10,000.00 – DISTRICT FUNDED

March 2019	Equipment	Activity
	Ultraviolet (UV) control system	Prosoft® card replacement

June 2019	Equipment	Activity
	Ignacio conveyance pump #1	Rebuild

July 2019	Equipment	Activity
	Primary clarifier #1	Conduit replacement and rewire

December 2019	Equipment	Activity
	Ignacio conveyance pump #2	Rebuild

2019 MAINTENANCE ACTIVITIES OVER $10,000.00 – VEOLIA FUNDED

January 2019	Equipment	Activity
	Blowers #1, #2 & #3	Performed class II service on blowers #1 & #2, inspection on blower #3

August 2019	Equipment	Activity
	UV standby generator	Replaced engine control unit

2019 MAINTENANCE ACTIVITIES UNDER $10,000.00

January 2019	Equipment	Activity
	Sludge scum pump #4	Replaced mechanical seal
	Aeration basin mixer 3B	Rebuilt pump
	Odor bed #1 – fan #1	Replaced motor
	Odor bed #3 – fan #2	Replaced motor
	Dry weather pump #5	Replaced therma sentry controller
	Ignacio emergency generator	Flushed radiator and installed crankcase ventilation
	Sludge scum pump #4	Replaced mechanical seal

February 2019	Equipment	Activity
	Hypochlorite pump #1	Replaced motor

March 2019	Equipment	Activity
	Odor bed #1 – fan #2	Replaced motor
	Digester #2 – sludge recirculation Pump #3	Rebuilt cutter assembly and all internal cutting parts
	Digester #2 – sludge recirculation pump #2	Replaced all internal cutting parts
	Blower #2	Replaced current transformer
	Ferric pump #2	Replaced leak detector
	Waste activated sludge pump #1	Replaced with spare and rebuilt
	Gravity belt thickener (GBT) filtrate pump #1	Replaced
	Ignacio – conveyance pump #1	Replaced check valve dampener
	Ignacio – conveyance pump #1 – variable frequency drive	Replaced contactor

April 2019	Equipment	Activity
	Main electrical building Heating Ventilation and Air Conditioning (HVAC)	Repaired condensate leak
	Digester #1 sediment trap	Replaced sight glass tube
	Blower room HVAC	Replaced relays in air conditioning unit
	Return activated sludge #1 flow meter	Replaced sensor prom
	Ignacio – motor control center (MCC)	Replaced ICECUBE unit in MCC panel

May 2019	Equipment	Activity
	Ferric pump #2	Replaced pump head
	Influent wet well #1	Replaced Hydro Ranger® flow meter
	UV transmittance meter	Replaced flow cell
	Fire extinguishers – Novato & Ignacio	Annual service and inspection

June 2019	Equipment	Activity
	Primary clarifier #1	Replaced flow tube
	UV system	Initial testing/evaluation of entire system
	Boiler	Replaced firing rate controller, gas pressure switch and thermal wells
	Flow meters – Novato & Ignacio	Annual calibration

	Jerome meter	Annual service & repair
	Boiler	Annual inspection and combustion testing
	HVAC/rooftop fans – Novato & Ignacio	Semi-annual service
	Forklift	Annual service

July 2019	Equipment	Activity
	Aeration basin #3	Repaired waterline leak
	Primary clarifier #1 sludge scum pump #2	Replaced soft start
	Forklift	Replaced starter
	GBT #2 – WAS valve actuator	Replaced main PCB board
	Effluent sampler	Replaced pump
	Cranes/hoists	Annual certification
	Flare	Replaced thermocoupler
	Flygt® pumps – Novato	Annual pump inspection
	Blower room – HVAC	Repaired condensate leak on MCC side of building

August 2019	Equipment	Activity
	Ferric pump #1	Replaced leak detector
	GBT #1	Replaced drive end bearing
	Primary clarifier #2	Replaced #3 water piping to scum trough
	Blower #3	Replaced Uninterruptible Power Supply for Programmable Logic Controller
	Secondary clarifier #1	Replaced air compressor for bubbler system
	Ignacio – MCC building exhaust fan	Replaced motor, shieve and contactor
	UV standby generator	Replaced batteries
	Standby generators – Novato	Annual inspection/service
	Wet weather pumps	Annual inspection/service
	Ignacio – standby generator	Annual inspection/service

September 2019	Equipment	Activity
	#3 Water – UV area	Fabricated and installed new piping section to repair leak
	Secondary clarifier #2	Replaced bubbler pump #2
	Novato & Ignacio	Annual electrical inspection of all equipment
	Novato & Ignacio	Annual thermography testing
	Administration standby generator	Replaced batteries

October 2019	Equipment	Activity
	Primary clarifier #1 & #2 samplers	Hardwired samplers
	Ignacio standby generator	Replaced voltage regulator

November 2019	Equipment	Activity
	Novato HVAC/rooftop fans	Semi-annual service
	UV standby generator	Replace direct current amp gauge on battery charger
	Ignacio – Flygt pumps	Annual service/inspection
	Ignacio – conveyance pump #3 variable frequency drive	Replaced contactor

December 2019	Equipment	Activity
	Relief valve by septage receiving station	Replaced scum line relief valve
	Boiler	Reattached linage for digester gas
	Primary clarifier #2 scum trough	Replaced limit switch

Safety and Training 2019

GOAL ZERO
Leading Safety Together

The Environmental, Health, Safety & Transportation (EHS&T) department's team of professionals is dedicated to creating a safe, secure and compliant workplace through ongoing education, awareness and risk-control programs. We provide support to Veolia operations, as well as due diligence activities for future business opportunities, with our Corporate, Industrial, and Municipal & Commercial presence. We also seek to influence employee safety and well-being beyond the workplace through reinforcement of positive lifestyle choices and behaviors.
We focus our continual improvement efforts in alignment with Veolia's five (5) pillars:

- Management Involvement
- Employee Involvement and Development
- Communication and Dialogue
- H&S Risk Management
- H&S Performance Monitoring & Control

Veolia Water recognizes the importance of an effective health and safety program to the well-being of each employee, the general public, clients/facility owners, and to the overall success of our company. Veolia Water is committed to providing its employees a healthful and safe place of employment. To that end, Veolia Water provides the proper training, materials, and equipment so that work can be performed safely and in compliance with the Occupational Safety and Health Administration (OSHA) Regulations and other applicable standards.
Veolia Water has had no incidents from June 1, 2010 to present at the NTP. 2019 was an incident free year. In recognition of this achievement - each employee received a cash incentive reward from Veolia Water for 8 years no loss time.

Management, Operation and Maintenance Technician Training

The California Water Environmental Association and Rural Community Assistance Corporation provide technical training to support the re-certification of professional licenses which Veolia Water staff attended throughout 2019.

2019 Safety Training

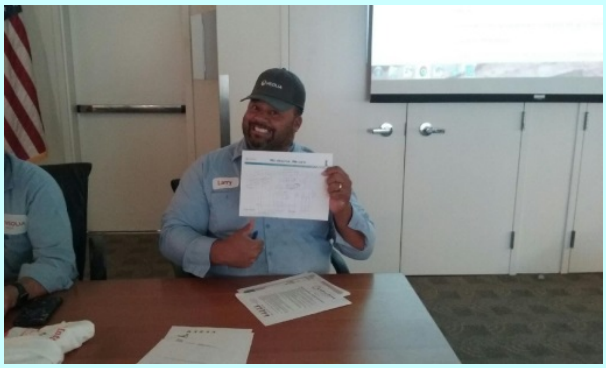
VEOLIA

2019 Veolia M&C EHS Training Calendar

Month	Primary Safety Topic	Notes and Additional EHS Topics *for Affected Employees*
1st Quarter		
January Online - JJK	HazCom: What You Need to Know OSHA Annual	Brief employees on site SDS locations and types of HazMat labeling systems used onsite Laboratory Chemical Hygiene Plan, where applicable -annual review, certification, and training
February Online - JJK	2 Online Courses: Fire Prevention & Response Fire Extinguisher Use OSHA Annual	All employees must take 'Fire Prevention and Response' Employees designated to use Fire Extinguishers (e.g., Hot Work Fire Watch) must also take 'Fire Extinguisher Use.' Optional to have training provided by outside vendor for hands-on training in lieu of Fire Extinguisher Use
March Classroom	Lockout/Tagout	Review Site LOTO Program Changes - e.g., new equipment or equipment changes that require updates to site Energy Control Procedures NOTE: Review the Veolia Global High Risk Management Standard (HRMS) PDF with employees during the training.
2nd Quarter		
April Classroom	Confined Spaces & Permit Spaces OSHA Annual	Review Site PRCS Program Changes, if any - e.g., new spaces, procedures, etc. NOTE: Review the Veolia Global High Risk Management Standard (HRMS) PDF with employees during the training.
May Online - JJK	Ergonomics Industrial	EMS Awareness - Classroom For ISO 14001 Sites Only
June Classroom	Hearing Conservation and Safety OSHA Annual	For employees who are included in the facility's Hearing Conservation Program
3rd Quarter		
July Online - JJK	Crane Safety for General Industry	NOTE: Review/provide the Veolia Global High Risk Management Standard (HRMS) PDF with/to employees. NOTE 2: This training does not qualify employees to operate cranes at Veolia facilities. Additional hands-on training by qualified instructor is required.
August Classroom	Fall Protection	NOTE: Review the Veolia Global High Risk Management Standard (HRMS) PDF with employees during the training.
Sept. Classroom	Respiratory Protection OSHA Annual	For affected workers who must don respirators as part of their work requirements.
4th Quarter		
October Online - JJK	Slips and Trips - Workplace Safety	
November Classroom	Cold Stress and Winter Safety	
December Online - JJK	Bloodborne Pathogens: Safety in the Workplace OSHA Annual	For all employees who are eligible for the safety bonus or otherwise designated to provide first aid as part of their work requirements - Not required if employees receive BBP training as part of first aid training

VEOLIA

Veolia International Safety Week Activities September 16-20, 2019



Above and Center Right: John Bailey, Veolia Water Assistant Project Manager, John O'Hare, Veolia Water Project Manager, Paul Bailey, Veolia Water Operator, Lynda Farmery, Admin./Scheduler Planner/Safety Coordinator, Veolia Water Kurt Hawkyard, Veolia Water Laboratory Technician, Alejo Cuntapay, Veolia Water Mechanic
Below Left: Larry Milliken, Veolia Water Operator

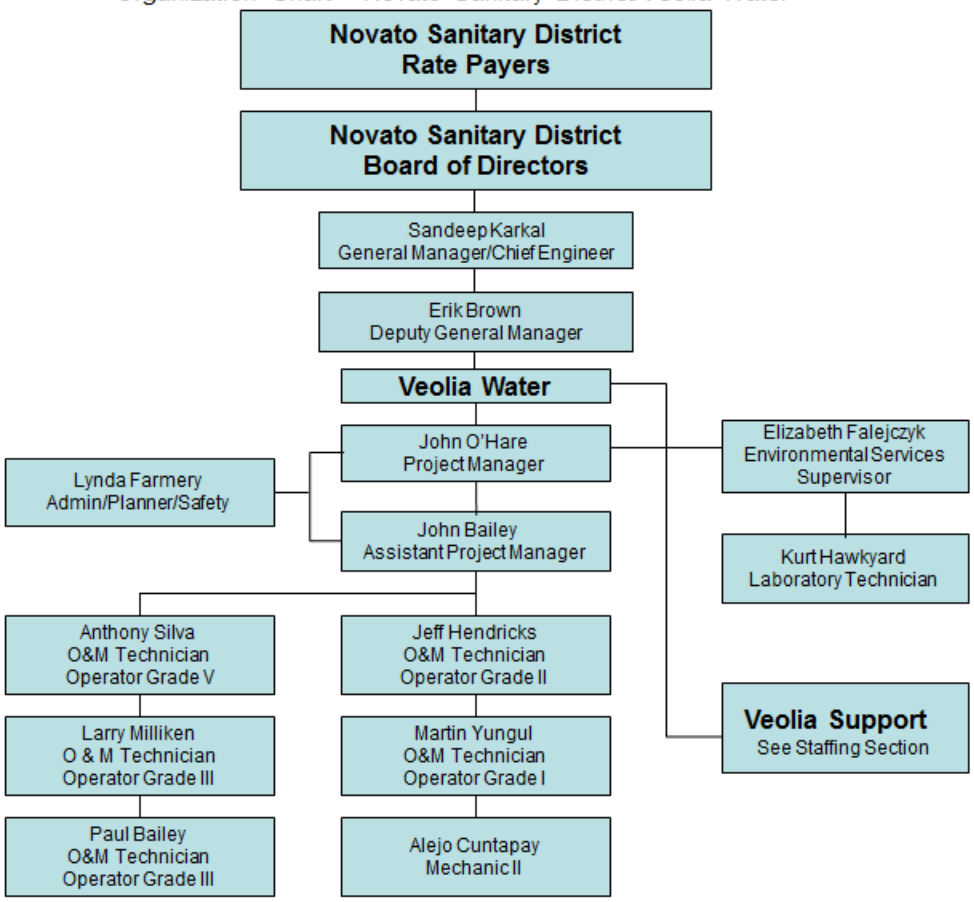
Additional Safety Training conducted in 2019

- 1st Aid/CPR/AED Certification Training
- Ladder Safety
- Interactions With Regulators
- Emergency Action Plan

- Great Shakeout – Earthquake Drill

Staffing and Organization

Organization Chart – Novato Sanitary District/Veolia Water



Staffing and Certification Status (Current)

John P. O'Hare – Project Manger
Grade V California Wastewater Treatment Plant Operator #10669, June 30, 2021
Grade IV, Wastewater Treatment Plant Operator, Association of Boards of Certification # S40011R, November 21, 2020
Grade VII, Wastewater Treatment Plant Operator, Massachusetts #977, December 31, 2021
Grade IV, Collection Systems, Massachusetts #882-C (1986)
Grade I, Environmental Compliance Inspection, CWEA #04074112, July 31, 2020
Grade I, Laboratory Analyst, California, CWEA #05013114, March 31, 2020
Grade I, Plant Maintenance Technologist, CWEA #050751016, July 31, 2020
Grade I, Water Distribution Operator, California Department of Public Health #34234 April 1, 2020

John Bailey – Assistant Project Manager
Grade V California Wastewater Treatment Plant Operator #4123, December 31, 2021

Anthony M. Silva – Operator III
Grade V California Wastewater Treatment Plant Operator #10973, December 31, 2020
Grade II Collection System Maintenance Technician, CWEA #354, January 31, 2020

Larry Milliken – Operator III
Grade IV California Wastewater Treatment Plant Operator #41483, August 12, 2020

Paul Bailey – Operator II
Grade II California Wastewater Treatment Plant Operator #28322, December 31, 2020

Martin Yungul – Operator I
Grade II California Wastewater Treatment Plant Operator #43219, July 17, 2022

Jeffrey D. Hendricks – Operator II
Grade II California Wastewater Treatment Plant Operator #28377, December 31, 2020
Grade I Plant Maintenance Technologist #070750011, July 31, 2020
Grade I Collection System Maintenance #801210049, January 31, 2020

Alejo Cuntapay – Maintenance Technician II

Elizabeth G. Falejczyk – Environmental Services Supervisor
Operator III California Wastewater Treatment Plant Operator #6334, August 17, 2021

Kurt Hawkyard – Laboratory Technician/Pretreatment Programs Inspector
Laboratory Analyst Grade I #130931002, June 30, 2020
Industrial Waste Grade II #1308211129, June 30, 2020
Environmental Compliance Inspector, Grade II #130821437, March 31, 2020

Lynda Farmery – Administrative Assistant/Planner/Scheduler/Safety Coordinator

Additional Veolia Support

- Paul Savage – Vice President of Operations
- Melissa Sandvold – Vice President of Operations
- Aaron Winer, Northern California District Manager
- Matt Nausin – Maintenance Supervisor, Richmond Project
- Dennis Flosi – Instrumentation and Controls Specialist, Richmond Project
- Joe Hart – Regional Asset Manager
- Dave Coffman – Asset Manager, West Region
- Ed Dix – Technical Director / Technical Support, West Region
- Jeremiah Danielson – Director of Health and Safety, Veolia Municipal and Commercial
- Matt Belltran – Regional Health and Safety Manager
- Art Fagerström, PE, BCEE, Technical Manager, Corporate Technical Support

Contract Adjustments

The Amended and Restated Novato Operations and Maintenance Service Agreement adopted February 18, 2014 is a fixed price contract. Included in the base contract fee are operation, maintenance, and management. Exceptions to the fixed price include:

Schedule 13 – Pass through Costs

Section 5.6 – Performance Bond

Schedule 8 – Cost Adjustment and Escalation Indices

Schedule 8 – Flow and Loading Adjustments

Schedule 11 – Usage Caps

- Electrical
- Natural Gas
- Diesel Fuel

Schedule 5 – Operation of Recycled Water Facility

Equipment Repair in excess of $10,000

Fiscal Year 2018/19 service fee adjustment was 2.725%.

Title 22 – Recycled Water Production Report for 2019

All water produced by the Novato Sanitary District (NSD) Recycled Water Facility was distributed by the North Marin Water District (NMWD).

In 2019, compliance testing for coliform was performed at the NMWD laboratory, NMWD is a State of California Environmental Laboratory Accreditation Program certified facility.

Recycled Water Table 6.0 below provides a summary of the quantity and quality of recycled water produced by NSD.

Table 6.0 Recycled Water Plant

Novato Sanitary District 2019 Recycled Water Production Data							
Month	Water Delivered (Million Gal)	Effluent Turbidity (NTU)		Effluent CT Value (mg min/L)		Effluent Coliform (mpn/100 ml)	
Criteria	1.7 mgd	<2		>450		<2.2	
		Max	Ave	Min	Ave	Max	7Med
January	0.627	0	0	>450	>450	<1	<1
February	0.324	0	0	>450	>450	<1	<1
March	0.308	0	0	>450	>450	<1	<1
April	8.938	3	0	>450	>450	<1	<1
May	14.334	2	0	>450	>450	<1	<1
June	24.399	4.9	2.1	>450	>450	10	<1
July	27.042	31	2	>450	>450	45	<1
August	20.838	14	1	>450	>450	<1	<1
September	21.299	1	0	>450	>450	4	<1
October	19.821	56	4	>450	>450	<1	<1
November	7.445	20	1	>450	>450	<1	<1
December	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL	145.375						

Attachments

Annual Waste Characteristics & Loading Summary

NOVATO SANITARY DISTRICT - VEOLIA

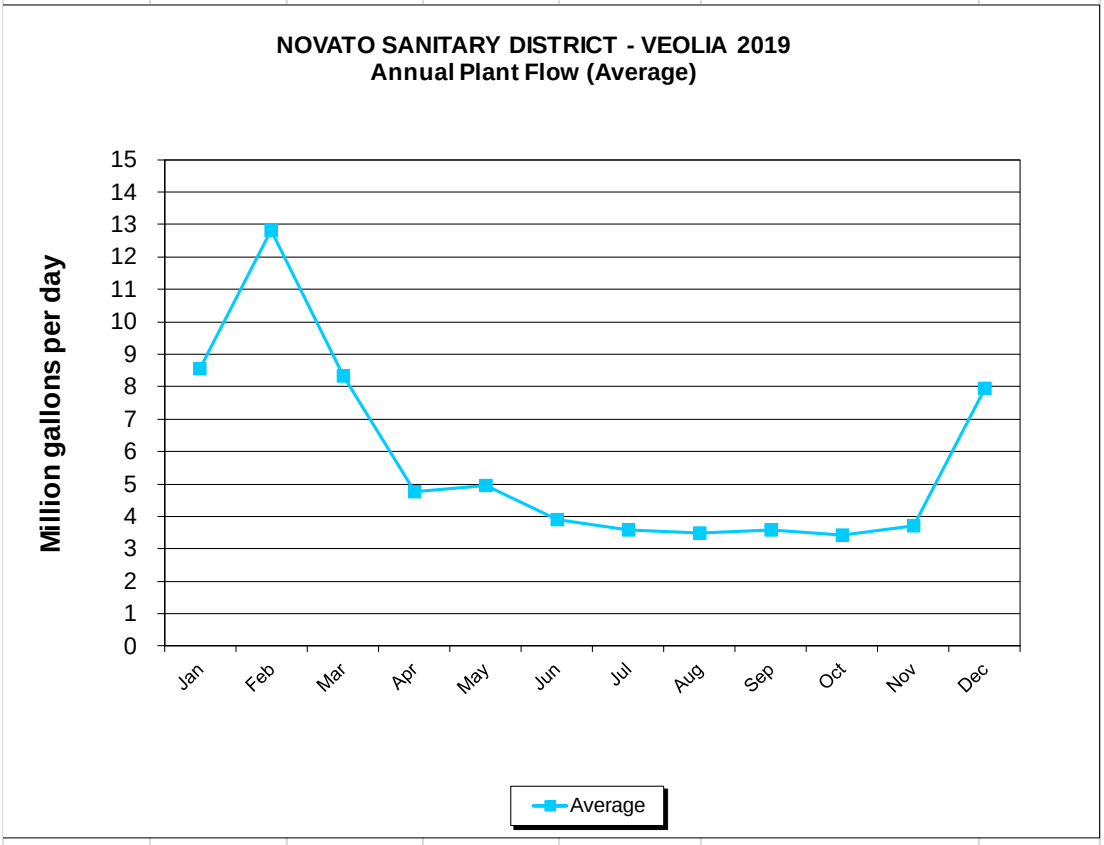
PLANT FLOW

Annual Waste Characteristics & Loading Summary

(IN GALLONS TIMES 1,000,000)

YEAR: 2019 PRINT DATE: 29-Jan-2020

	Total Flow	High	Low	Average		
January	265.45	24.95	3.92	8.56		
February	359.02	30.32	6.07	12.82		
March	258.23	14.11	5.52	8.33		
April	142.91	6.41	3.79	4.76	Peak Wet Weather Flow (MAX Day)	12.82
May	153.97	8.98	3.89	4.97	Max Peak Wet Weather (1-3 Hour)	30.32
June	117.14	4.56	3.03	3.90		
July	110.73	4.29	3.31	3.57		
August	108.06	4.03	3.04	3.49	Three month dry weather averages:	3.49
September	107.47	4.45	3.23	3.58		3.58
October	105.99	3.85	2.93	3.42		3.42
November	111.31	7.73	3.24	3.71		
December	246.81	18.54	4.77	7.96		
ANNUAL TOTAL	2087.09					
ANNUAL MAX.	359.02	30.32			Max.	30.32
ANNUAL MIN.	105.99		2.93		Min.	3.42
ANNUAL AVG.	173.92			5.76	**Avg. Dry Weather Flow**	**3.50**



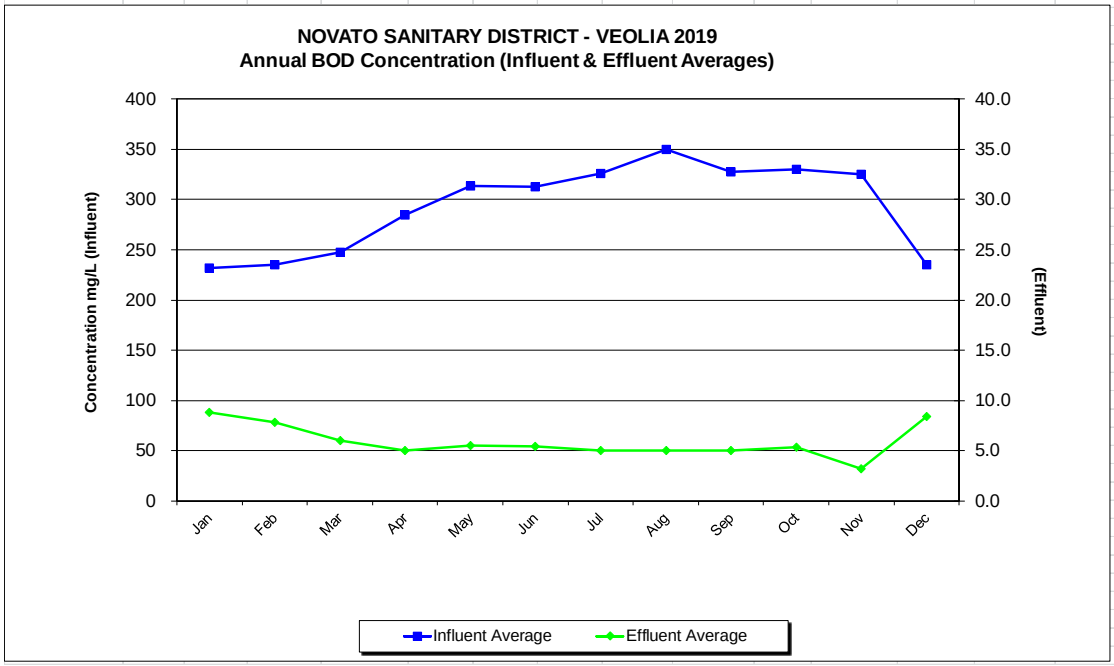
NOVATO SANITARY DISTRICT - VEOLIA

BOD (Influent & Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2019 PRINT DATE: 15-Jan-2020

	INFLUENT							EFFLUENT						
	Concentration (mg/L)			No. of Samples	Loading (lb/day)			Concentration (mg/L)			No. of Samples	Loading (lb/day)		
	High	Low	Average		High	Low	Average	High	Low	Average		High	Low	Average
January	400	170	232	5	35374	9302	16835	19.0	5.0	8.8	6	1665	211	777
February	250	220	235	4	61111	15152	36892	15.0	5.0	7.8	5	1877	209	636
March	330	170	248	4	25583	10180	16213	10.0	5.0	6.0	5	1023	236	486
April	320	285	285	4	12185	10392	11302	5.0	5.0	5.0	5	245	170	201
May	380	190	314	5	21804	10515	13507	6.0	5.0	5.5	6	344	180	244
June	360	260	313	4	11030	8393	9772	7.0	4.0	5.4	5	220	130	175
July	410	280	326	5	12260	7730	9841	5.0	5.0	5.0	5	175	138	150
August	410	260	350	4	11729	7503	10008	5.0	5.0	5.0	14	168	136	148
September	400	300	328	4	11409	8081	9376	5.0	5.0	5.0	10	186	135	147
October	350	310	330	5	10917	8765	9543	7.0	5.0	5.3	6	200	135	154
November	360	300	325	4	13211	8532	9926	4.0	3.0	3.2	5	113	84	97
December	320	180	235	4	32079	10408	16824	14.0	5.0	8.4	5	908	260	540
ANNUAL HIGH	410	310	350	5	61111	15152	36892	19.0	5.0	8.8	14	1877	260	777
ANNUAL LOW	250	170	232	4	10917	7503	9376	4.0	3.0	3.2	5	113	84	97
ANNUAL AVG.	358	244	293	4	21558	9579	14170	8.5	4.8	5.9	6	594	169	313



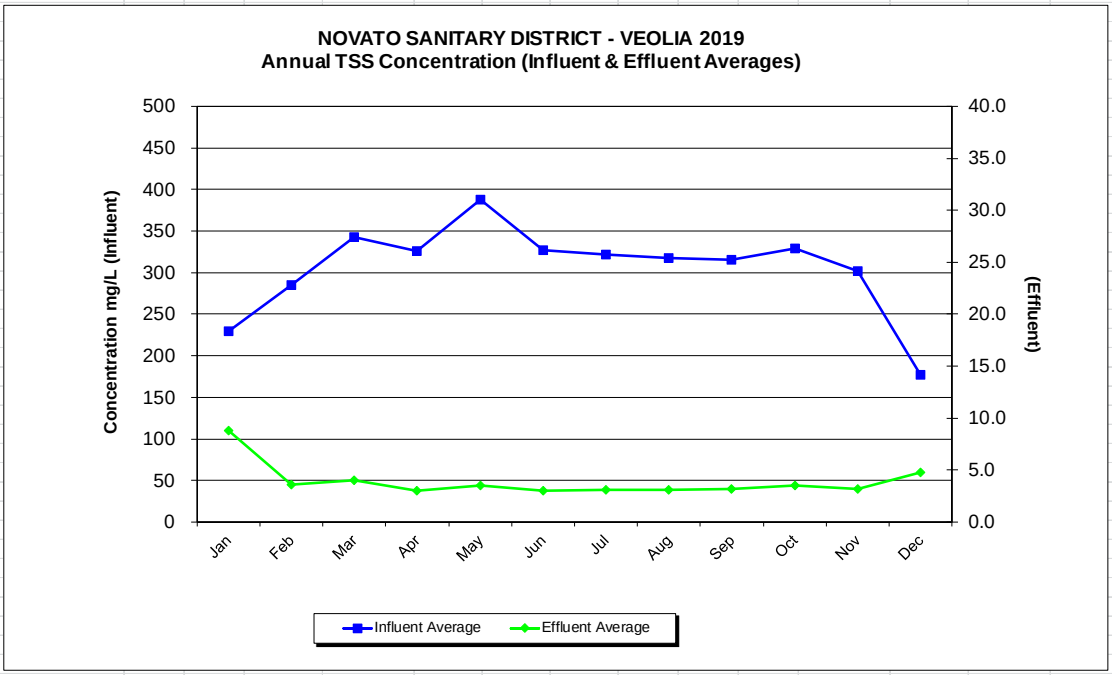
NOVATO SANITARY DISTRICT - VEOLIA

SUSPENDED SOLIDS (Influent & Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2019 PRINT DATE: 15-Jan-2020

	INFLUENT							EFFLUENT						
	Concentration (mg/L)			No. of Samples	Loading (lb/day)			Concentration (mg/L)			No. of Samples	Loading (lb/day)		
	High	Low	Average		High	Low	Average	High	Low	Average		High	Low	Average
January	295	117	229	5	47443	9989	18506	19.0	5.0	8.8	5	1665	211	777
February	394	166	285	4	84823	15808	41870	4.0	3.0	3.6	4	978	189	596
March	449	236	343	4	24150	18296	21315	8.0	3.0	4.0	4	819	142	332
April	420	266	326	4	17059	9872	12996	3.0	3.0	3.0	4	147	102	125
May	555	316	388	5	31845	10581	17862	4.0	3.0	3.5	5	231	97	151
June	377	279	327	4	11906	8074	10251	3.0	3.0	3.0	4	110	87	97
July	418	250	322	6	13526	7256	9846	4.0	3.0	3.1	6	115	83	95
August	361	266	318	4	10327	7676	9098	4.0	3.0	3.1	4	114	82	91
September	344	283	316	4	10300	8237	9039	4.0	3.0	3.2	4	120	81	94
October	405	280	329	5	11552	8119	9481	6.0	3.0	3.5	5	171	81	101
November	344	258	302	4	12623	7337	9224	4.0	3.0	3.2	4	113	84	97
December	239	99	177	4	23959	6424	12529	11.0	3.0	4.8	4	714	156	313
ANNUAL HIGH	555	316	388	6	84823	18296	41870	19.0	5.0	8.8	6	1665	211	777
ANNUAL LOW	239	99	177	4	10300	6424	9039	3.0	3.0	3.0	4	110	81	91
ANNUAL AVG.	383	235	305	4	24959	9806	15168	6.2	3.2	3.9	4	441	116	239



NOVATO SANITARY DISTRICT - VEOLIA

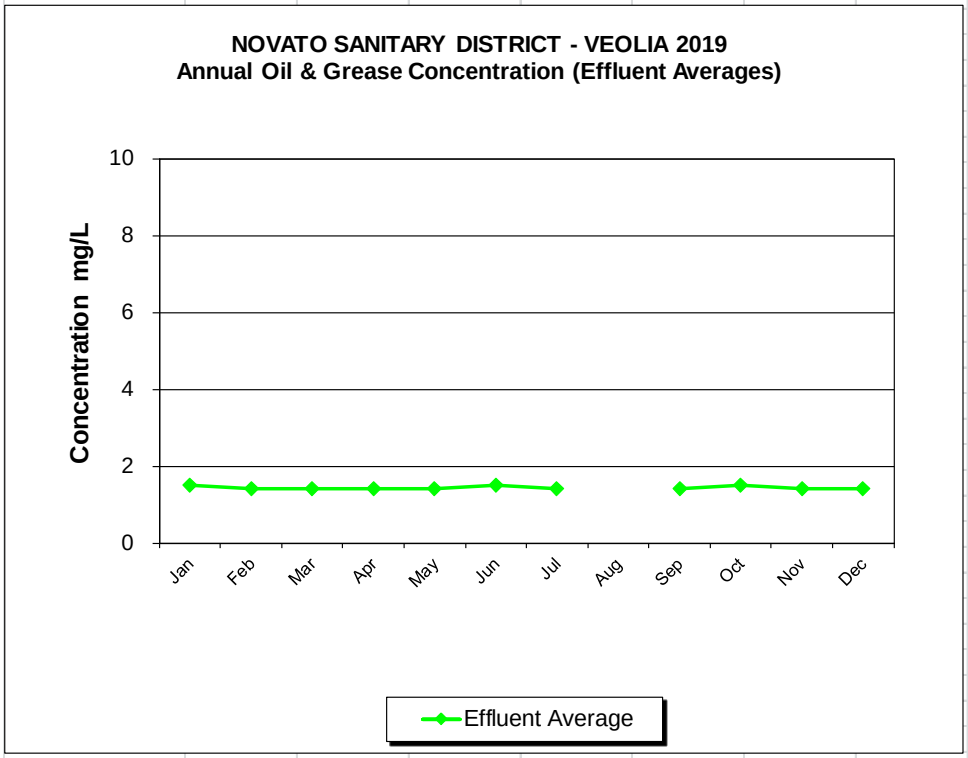
OIL & GREASE (Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2019 PRINT DATE: 30-Jan-2020

	EFFLUENT						
	Concentration (mg/L) *			No. of Samples	Loading (lb/day)		
	High	Low	Average		High	Low	Average
January	1.5	1.5	1.5	1	131	131	131
February	1.4	1.4	1.4	1	274	274	274
March	1.4	1.4	1.4	1	165	165	165
April	1.4	1.4	1.4	1	66	66	66
May	1.4	1.4	1.4	1	45	45	45
June	1.5	1.5	1.5	1	57	57	57
July*	1.4	1.4	1.4	1	40	40	40
August*							
September	1.4	1.4	1.4	1	41	41	41
October	1.5	1.5	1.5	1	43	43	43
November	1.4	1.4	1.4	1	43	43	43
December	1.4	1.4	1.4	1	81	81	81
ANNUAL HIGH	1.5	1.5	1.5		274	274	274
ANNUAL LOW	1.4	1.4	1.4		40	40	40
ANNUAL AVG.	1.4	1.4	1.4		90	90	90

* monthly values reported without the < sign



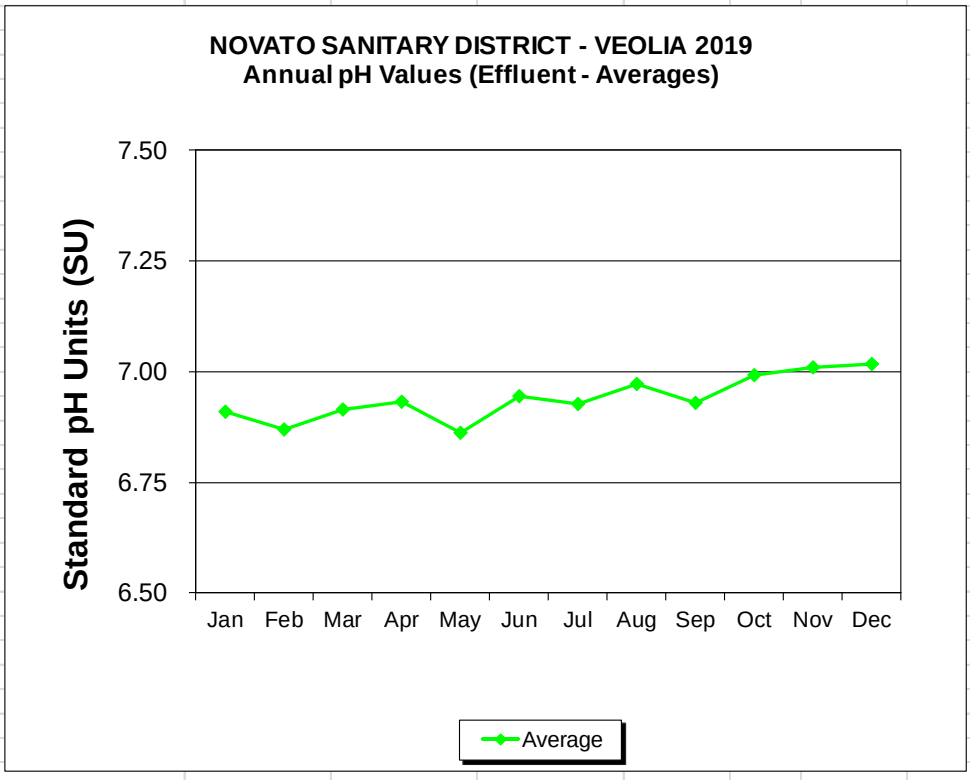
NOVATO SANITARY DISTRICT - VEOLIA

pH (Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2019 PRINT DATE: 15-Jan-2020

	High	Low	Average	Number of Samples
January	7.1	6.7	6.9	23
February	7.0	6.8	6.9	20
March	7.0	6.8	6.9	21
April	7.1	6.9	6.9	22
May	6.9	6.8	6.9	23
June	7.0	6.9	6.9	20
July	7.1	6.8	6.9	23
August	7.2	6.7	7.0	22
September	7.1	6.6	6.9	21
October	7.2	6.8	7.0	23
November	7.2	6.9	7.0	21
December	7.2	6.9	7.0	22
				Number of Samples Total = 261
ANNUAL MAX.	7.20	6.90	7.02	
ANNUAL MIN.	6.90	6.60	6.86	1st Qtr. 64 2nd Qtr. 65
ANNUAL AVG.	7.09	6.80	6.94	3rd Qtr. 66 4th Qtr. 66



NOVATO SANITARY DISTRICT - VEOLIA

TEMPERATURE (Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2019 PRINT DATE: 15-Jan-2020

	High	Low	Average	Number of Samples
January	18.5	15.9	17.5	23.0
February	18.4	14.6	16.1	20.0
March	18.7	15.6	17.0	21.0
April	21.1	18.0	19.3	22.0
May	21.5	19.6	20.7	23.0
June	23.8	21.2	22.8	20.0
July	24.5	23.0	23.9	23.0
August	26.6	23.6	24.9	22.0
September	25.6	23.3	24.6	21.0
October	24.3	21.4	22.8	23.0
November	22.5	18.2	21.1	21.0
December	19.1	16.1	17.8	22.0
				Number of Samples Total = 261
ANNUAL MAX.	26.6	23.6	24.9	
ANNUAL MIN.	18.4	14.6	16.1	1st Qtr. 64 2nd Qtr. 65
ANNUAL AVG.	22.1	19.2	20.7	3rd Qtr. 66 4th Qtr. 66