2017 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

Prepared by:

Veolia Water Operating Services
March 2018

NOVATO WASTEWATER TREATMENT FACILITY

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NOVATO SANITARY DISTRICT

Veolia Water West Operating Services, Inc.
500 Davidson Street
Novato, CA 94947

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Overview

The continued priorities for 2017 were to meet the goals of zero lost time incidents or OSHA recordable incidents and no treatment plant effluent violations. This is a year in and year out objective plainly stated and firmly established throughout Veolia Water. A term we apply to this end is "Zero Harm". We are very happy and proud to report that both goals were met. 2017 represents our fifth consecutive year of zero effluent violations and sixth 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 include:

- Safety Training
- Regulatory Compliance
- Third Party Facility Reviews – Safety, 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 utilizing tools such as the Oracle Work Asset Management System (OWAM) for Maintenance Tracking, Scheduling, Scheduling, Inventory, and Purchasing.
- Operation, Management, & Oversight of Laboratory and Pretreatment Program.
- Assist in the successful negotiation of the new Discharge (NPDES) Permit.

Process Description & Loading Summary

Wastewater is collected throughout the Novato Sanitary District service area and conveyed by gravity as well as mechanical means (pump stations) to the Davidson Street Treatment Plant.

Preliminary Treatment - Influent Pump Station and Headworks

When the wastewater arrives at the Treatment Plant 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 Novato Wastewater Treatment Plant is measured using a Parshall Flume and Hydro Ranger ™ ultra-sonic level 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 flow proportioned throughout the sampling period (normally 24 hours).

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

2017 FLOWS AND LOADS SUMMARY			
Condition	Value	Unit	Notes
Average Dry Weather Flow	3.70	MGD	Jul / Aug / Sep
Peak Wet Weather Flow (Max Day)	28.43	MGD	1/10/17
Max Peak Wet Weather (1-3 Hour)	~43.00	MGD	1/10/17 1925–2025 hours
Average BOD Loading	10,431	Lbs/D	
Average TSS Loading	10,338	Lbs/D	

Primary Treatment – Primary Clarifiers

Primary clarifiers typically remove 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.

Novato's primary clarifiers are covered to contain air associated with raw sewage. The air 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 either stored for future use, specifically pasture irrigation, or Recycled for a higher use such as irrigation of parks, landscaping, and golf courses. Recycled water receives added treatment in order to comply with stringent Title 22 regulations.

PLANT EFFLUENT 2017		
	Value	Unit
BOD Removal	96	%
TSS Removal	96	%

Performance and Compliance Summary

Treatment Plant Performance Summary

The following summary provides an overview of plant performance and activities for the period January 1, 2017 through December 31, 2017.

Total Volume of Water Processed	2,064	Million Gallons
Total Volume of Water Reclaimed	290	Million Gallons
Total Volume of Water Discharged	1,966	Million Gallons
Recycled – Title 22 (included in Water Reclaimed)	97.664	Million Gallons
Average Daily Dry Weather Flow	3.67	MGD
Maximum Daily Flow	28.43	MGD
Pounds of BOD Treated	3,983,975	Lbs

Pounds of BOD Removed	3,878,490	Lbs
Percent BOD Removal Efficiency	97	%
Pounds of TSS Treated	3,875,935	Lbs
Pounds of TSS Removed	3,762,420	Lbs
Percent of TSS Removal Efficiency	97	%
Pounds of Bio-solids Treated	2,970,257	Lbs
Cubic Feet of Biogas Produced	25,088,356	Cu Ft
Total Number of Violations / Excursions	0	
NPDES (Bay Discharge)	0	
WDR (Reclamation)	0	

Maintenance Program Summary

Total Number of Preventable Work Orders	1,780
Total Number of Corrective Work Orders	220
Percentage Preventive Maintenance Ratio %	12

Consumables and Energy Summary

*Electricity – kWh / Year	3,658,126
Electricity – kWh / MG	1,772
*Natural Gas – Therms / Year	48,482
Natural Gas – Therms / MG	24
Diesel Fuel – Gallons / Year	3430
Diesel Fuel – Gallons / MGD	1.66

*Excludes Administration Building, Recycled Water Plant, and Flare Pilot.

Treatment Plant Compliance Summary

No treatment plant violations were experienced in 2017. The compliance summary table (below) is broken down by constituent and discharge season.

Waste Discharge Limits / Reclamation				
Parameter	Limit	Units	# Analysis	Violations
BOD Monthly Average	40	mg/L	2	0
Total Coliform – 5 Sample Median	240	mpn/100 ml	27	0
Total Coliform - Maximum	10,000	mpn/100 ml	27	0
pH – High	9.0	s.u.	44	0
pH – Low	6.0	s.u.	44	0

NPDES Wet Season Limits - November – April				
Parameter	Limit	Units	# Analysis	Violations
BOD Weekly	45	mg/L	30	0
BOD Monthly	30	mg/L	8	0
TSS Weekly	45	mg/L	30	0
TSS Monthly	30	mg/L	8	0
BOD Removal (minimum)	85	%	8	0
TSS Removal (minimum)	85	%	8	0
Enterococcus - 30 Day Geo Mean	35	Col/100 ml	8	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	7	0
Ammonia - Monthly Average	6	mg/L	7	0
pH – High	8.5	s.u.	151	0
pH – Low	6.5	s.u.	151	0
Oil & Grease - Daily Maximum	15	mg/L	8	0
Oil & Grease - Monthly Average	5	mg/L	8	0

NPDES Dry Season Limits - May, September, & October				
Parameter	Limit	Units	# Analysis	Violations
BOD Weekly	30	mg/L	9	0
BOD Monthly	15	mg/L	3	0
TSS Weekly	20	mg/L	9	0
TSS Monthly	10	mg/L	3	0
BOD Removal (minimum)	85	%	3	0
TSS Removal (minimum)	85	%	3	0
Enterococcus - 30 Day Geo Mean	35	Col/100 ml	3	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	3	0
Ammonia - Monthly Average	6	mg/L	3	0
pH – High	8.5	s.u.	65	0
pH – Low	6.5	s.u.	65	0
Oil & Grease - Daily Maximum	15	mg/L	3	0
Oil & Grease - Monthly Average	5	mg/L	3	0

ENVIRONMENTAL SERVICES REPORT

Wildlife Pond and Reclamation Activities

Samples and weekly/monthly observations at the Wildlife pond were taken according to the WDR (Order No. 92-065) throughout the year. Monthly irrigation wet well samples were monitored during the irrigation season.

NPDES and WDR Permit Monitoring Program

All on the sample monitoring requirements were successfully completed during 2017.

Laboratory

Annual Proficiency Testing for all certified methods occurred with 100% success.

Public Education

- We assisted in Wetlands Days for the Marin County public education group staffing two stations, “Bird Bingo” and “The Toilet is not a Trashcan”.
- Staffed North Bay Science Discovery Day with other Veolia Staff showing what “dispersibles” are (toilet paper vs. tissues and paper towels). Cleaned and disinfected clogs from pumps, looking like mopheads, were on display to demonstrate the problem. Clearly visible in the clogs are dental floss, wipes and strings. This is a hands on educational event and very popular.
- We hosted tours for different age groups starting with age appropriate engaging talks about how collection systems work, “making” sewage and then discussing the treatment process with visual aids. Then the students go out into the plant for the tour and sometimes having time in the laboratory to see the microorganisms that do the work of wastewater treatment.

Training

Liz Falejczyk and Kurt Hawkyard both earned training contact hours for attending regulatory agency and professional association meetings and trainings.

BACWA

Liz Falejczk attended many of the BACWA Pretreatment, Permits and Laboratory Committee meetings throughout the year.

Pretreatment

Permits Renewed

- Optical Metals
- BioMarin (BMK)

New Permits

- 3 temporary groundwater discharge permit
- BioMarin (35 Leveroni) Zero Discharge Permit

Inspections

- All 5 Significant Industrial Users
- 30 Food Service Establishments(FSE) for Fats Oil and Grease (FOG)
    - Inspections and/or compliance checks
- 4 non-permitted industries (XCell, Mercaptor, Stone Works)

Sampling

- BioMarin BMK (2 events)
- BioMarin Galli (2)
- Buck Center (1)
- Optical Metals (1)
- NMWD (1)

Coordination of Environmental Services with NSD Staff

Besides working closely with Erik Brown and Sandeep Karkal regarding the implementation of the industrial pretreatment program, in 2017 communication and coordination of activities focused on the goals and objective below:

- Engineering-coordination on inspections and file review
- Finance-invoicing and tracking payments
- Public Education-support for staffing and emphasizing specific pollutants
- Collections-targeting problem areas for FOG

Asset Management Program

Key components of an Asset Management Program include:

- Computerized Maintenance Management System (CMMS)
- Preventive, Predictive, and Corrective Maintenance
- Equipment Inventory
- Criticality Assessment

Computerized Maintenance Management System (CMMS)

Oracle Work Asset Management (OWAM or WAM) software program. 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 run time (x hours) or period schedule (weekly / quarterly). An accurate equipment inventory is crucial to all phases of Asset Management. Equipment at the Novato facility has been entered into the OWAM data base. The Criticality Assessment is typically performed every 5 years. The next scheduled assessment is planned for 2019. The assessment evaluates processes and equipment and rates the relative importance. The results of the assessment are used in developing the priorities for equipment replacement and preventative maintenance.

Maintenance Activities Less Than $10,000.00*

January 2017	
Equipment	**Activity**
RAS Bubbler #1 Compressor	Replaced contactor and switch
Blower #3	Replaced capacitors & VFD fan
Ignacio EQ Pump	Replaced VFD board
Sludge Ponds	Flushed drain lines

February	
Equipment	**Activity**
Wet Weather Pump #2	Replaced battery charger and batteries

March	
Equipment	**Activity**
Influent Pump #1	Replaced sensor prom
UVT Meter	Replaced pump
Laboratory Truck	Replaced entire brake system and fuel line

April	
Equipment	**Activity**
Wet Weather Pump #1	Replaced battery charger & batteries
Ignacio Hypochlorite Tank	Installed new hypochlorite tank (6,000 gallons)
Bulk Diesel Fuel Tanks	Annual fuel tank sampling
Jerome Meter	Annual calibration

May	
Equipment	**Activity**
Main Diesel Fuel Tank	Filtered/polished fuel
Fire Extinguishers	Annual service/recharge
Cranes/Hoist	Annual inspection/certification
Grit Classifier #2	Replaced wear shoes & hardware

June	
Equipment	**Activity**
Secondary Clarifiers	Replaced control wiring
Boiler	Annual boiler service/inspection
Flow Meters (Ignacio, WWTP, RWP)	Annual flow meter calibration

July	
Equipment	**Activity**
Blower MMC Room	Replaced/reprogrammed operator

	interface
UV Crane	Replaced VFD
Decant Pump	Motor rewind
Filters Screens	Annual service

August	
Equipment	**Activity**
Transformers	Annual transformer inspection
WWTP/RWP/Ignacio	Annual thermography/electrical/VFD inspections
Maintenance Truck	Replaced brake booster
UV Diesel Fuel Tank	Replaced transducer

September	
Equipment	**Activity**
Transformers	Annual transformer inspection
WWTP/RWP/Ignacio	Annual thermography/electrical/VFD inspections
Maintenance Truck	Replaced brake booster
UV Diesel Fuel Tank	Replaced transducer

October	
Equipment	**Activity**
Flygt Pumps (WWTP/Ignacio)	Annual inspection
Odor Beds	Topped off all bed with new media
Ignacio Operator Interface	Replaced operator interface
WAS Pump #1	Replaced pump

November	
Equipment	**Activity**
Flygt Pumps (RWP)	Annual inspection
Primary Clarifier #2	Replaced flow tube

December	
Equipment	**Activity**
UV Transformer #3	Installed new power circuit
Emergency Generator #3	Replaced water pump
Blowers	Annual blower inspection

* Limit Set by Section 3.0 of the Service Agreement between Veolia and NSD.

Maintenance Activities Greater Than $10,000*

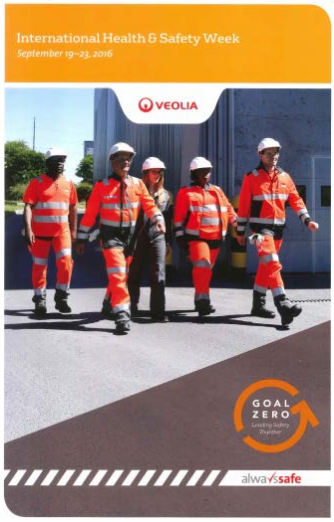
January 2017	
Equipment	**Activity**
Influent Pump #3	Rebuild

* Limit Set by Section 3.0 of the Service Agreement between Veolia and NSD.

PREVENTIVE MAINTENANCE

CORRECTIVE MAINTENANCE

Safety and Training



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 will provide 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 Novato has had no incidents from June 1, 2010 to present. This report reflects January – December 2017 with on accidence or incident. In recognition of this achievement - each employee received a cash incentive reward from the Veolia Water for 7 years no loss time incidents as a group and also as individual achievements.

Each day safety topics referred to as 5-minute Safety Moments are reviewed and discussed during the morning meetings. Subjects range from personal to job related safety topics.
In addition to daily safety discussion, formal monthly training of worksite relevant safety topics is conducted by the Project Manager or Safety Coordinator. The formal training is also conducted based on OSHA standards which in includes a final quiz. Below were the monthly safety training topics.

2017 Safety Training	
January	Hazardous Communication
February	Incident Investigation for Accidents & Near Misses
	Lock Out / Tag Out Training

March	Fire Extinguisher Use
	Fire Prevention
	Distracted Driving
April	Confined Spaces / Dangerous Spaces
May	Ladder Safety
	Hand and Power Tool Safety
June	Hearing Conservation
July	Compressed Gas Cylinders
	Active Shooter Awareness
August	Cranes and Hoists Safety
September	Respiratory Protection
October	Safety Showers and Eye Washes
November	Electrical Safety
December	Bloodborne Pathogens
	Fall Protection for General Industry
	SPCC Plan Ignacio
	SPCC Plan Novato

Staffing and Organization

STAFFING & CERTIFICATION STATUS (Current)

John Bailey – Project Manager
Grade V California Wastewater Treatment Plant Operator #4123, December 31, 2018

Brian N. Exberger – Assistant Project Manager / Operations Manager
Grade V California Wastewater Treatment Plant Operator #10424, June 30, 2020

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

Anthony M. Silva – Operator III
Grade V California Wastewater Treatment Plant Operator #10973, December 31, 2020

Grade II Collection System Maintenance Technician, #354, January 31, 2019

Manual Arias – Operator III
Grade III California Wastewater Treatment Plant Operator #III-29081, December 31, 2018
Grade I Laboratory Analyst #1308210200, September 30, 2018

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

Preston Ingram – Operator III
Grade IV California Wastewater Treatment Plant Operator #10277, June 30, 2020

Jeffrey D. Hendricks – Operator II
Grade II California Wastewater Treatment Plant Operator #II-28377, December 31, 2020
Grade I Plant Maintenance Technologist, #070750011, July 31, 2018
Grade I Collection System Maintenance, #801210049, January 31, 2019

Alejo Cuntapay – Maintenance Technician II

Elizabeth G. Falejczyk – Environmental Services Manager
Operator III California Wastewater Treatment Plant Operator #6334, August 17, 2018

Kurt Hawkyard – Laboratory Technician/Pretreatment Programs Inspector
Laboratory Analyst Grade I, #130931002, June 30, 2018
Industrial Waste Grade II, #1308211129, June 30, 2018
Environmental Compliance Inspector, Grade II, 130821437, March 31, 2018

Additional Support

Sachin Chawla – Vice President of Operations

Matt Nausin – Maintenance Supervisor, Richmond Project

Dennis Flosi – Instrumentation and Controls Specialist, Richmond Project

Dave Coffman – Asset Manager, West Region

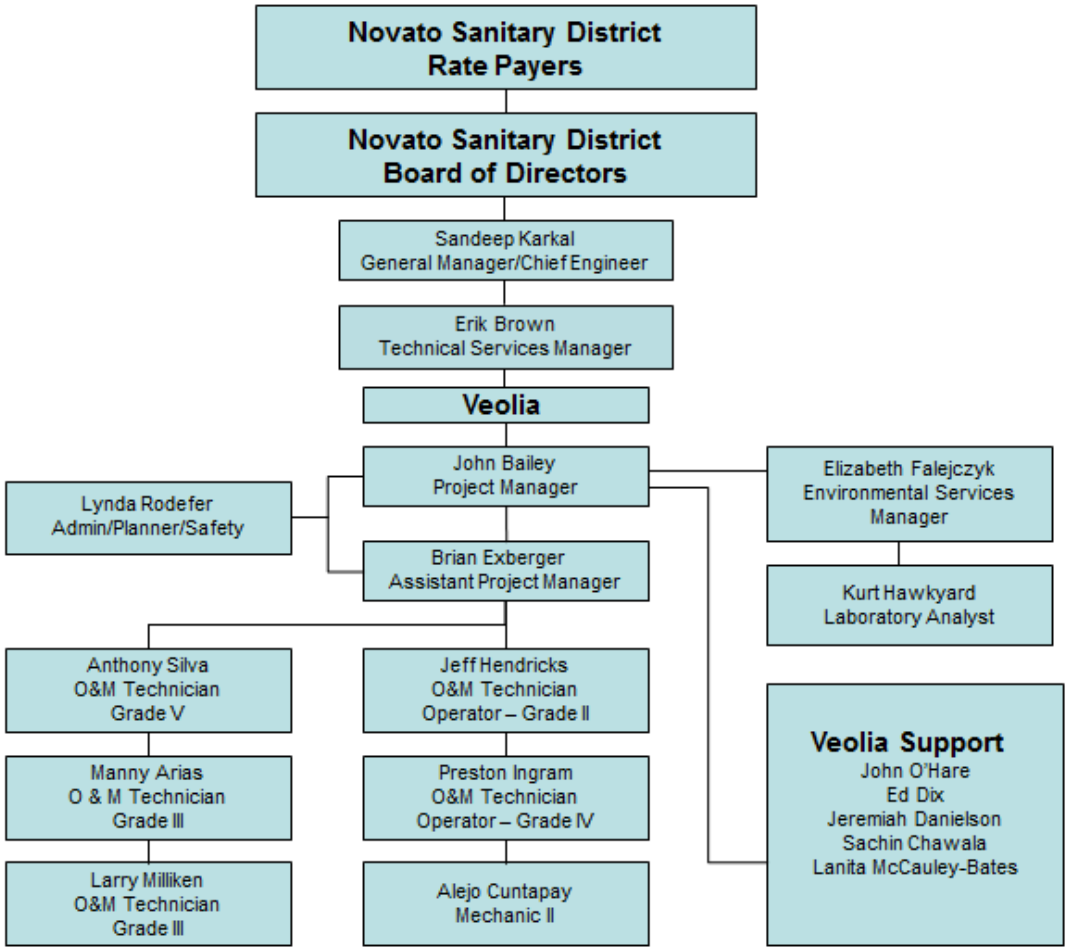
Ed Dix – Technical Director / Technical Support, West Region

Jeremiah Danielson – Director of Health and Safety, Veolia Municipal and Commercial

John O'Hare – Pretreatment Programs Manager, Municipal & Commercial Business
Grade V, Wastewater Treatment Plant Operator, California, # 10669 (2005)
Grade IV, Wastewater Treatment Plant Operator, Association of Boards of Certification, # S40011R (2004)
Grade I, Environmental Compliance Inspection, California, CWEA # 04074112 (2004)

Grade I, Laboratory Analyst, California, CWEA # 05013114 (2014)
Grade I, Plant Maintenance Technologist, California, CWEA # 05075101 (2005)
Grade I, Water Distribution Operator, California Department of Public Health, #34234 (2008)

Organization Chart – Veolia Water/Novato Sanitary District



ADJUSTMENTS OCCUR ON A "CONTRACT YEAR CYCLE", JULY - JUNE

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 2017/18 service fee adjustment was 2.247%.

Community Outreach Activities 2017

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 2017.

School Fuel – Tour of Novato – donation of bottled water for participants & Booth with sand art activities

Member Rotary Club Novato Sunrise (RCNS)

2017 American Crown Circus/Circus Osorio (RCNS)

Member – Novato Chamber of Commerce

Margaret Todd Senior Center Monthly Birthday Celebrations

Senior Pharmaceutical Collection

Senior Health Fair

Chamber of Commerce Annual Golf Tournament – provided a small gift for participants

North Bay Leadership Council - Algebra Academy

North Bay Science Fair

NORTH BAY DISCOVERY DAY (Science Fair)
October 28, 2017

TITLE 22 – Recycled Water Production Report for 2017

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

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

Recycle Water Table 1 below provides a summary of the quantity and quality of recycled water produced by NSD.

Recycle Water Table 1

Novato Sanitary District 2017 Recycled Water Production Data								
	Water Delivered (Million Gal)	Effluent Turbidity (NTU)		Effluent CT Value (mg min/L)		Effluent Coliform (mpn/100 ml)		Notes
Criteria	1.7 mgd	<2		>450		<2.2		
		Max	Ave	Min	Ave	Max	7Med	
January	0.000							No Production
February	0.000							No Production
March	0.000							No Production
April	0.749	1.2	1.1	>450	>450	<1.8	<1.8	
May	16.664	1.8	1.3	>450	>450	<1.8	<1.8	
June	19.465	1.6	1.1	>450	>450	<1.8	<1.8	
July	19.712	1.6	0.9	>450	>450	<1.8	<1.8	
August	14.554	1.2	1.0	>450	>450	<1.8	<1.8	
September	13.101	0.7	0.9	>450	>450	<1.0	<1.0	
October	11.798	0.6	0.4	>450	>450	<1.0	<1.0	
November	1.018	1.6	0.6	>450	>450	<1.0	<1.0	
December	0.583	2.0	1.5	>450	>450	<1.0	<1.0	
TOTAL	97.640							

NOVATO SANITARY DISTRICT - VEOLIA

PLANT FLOW

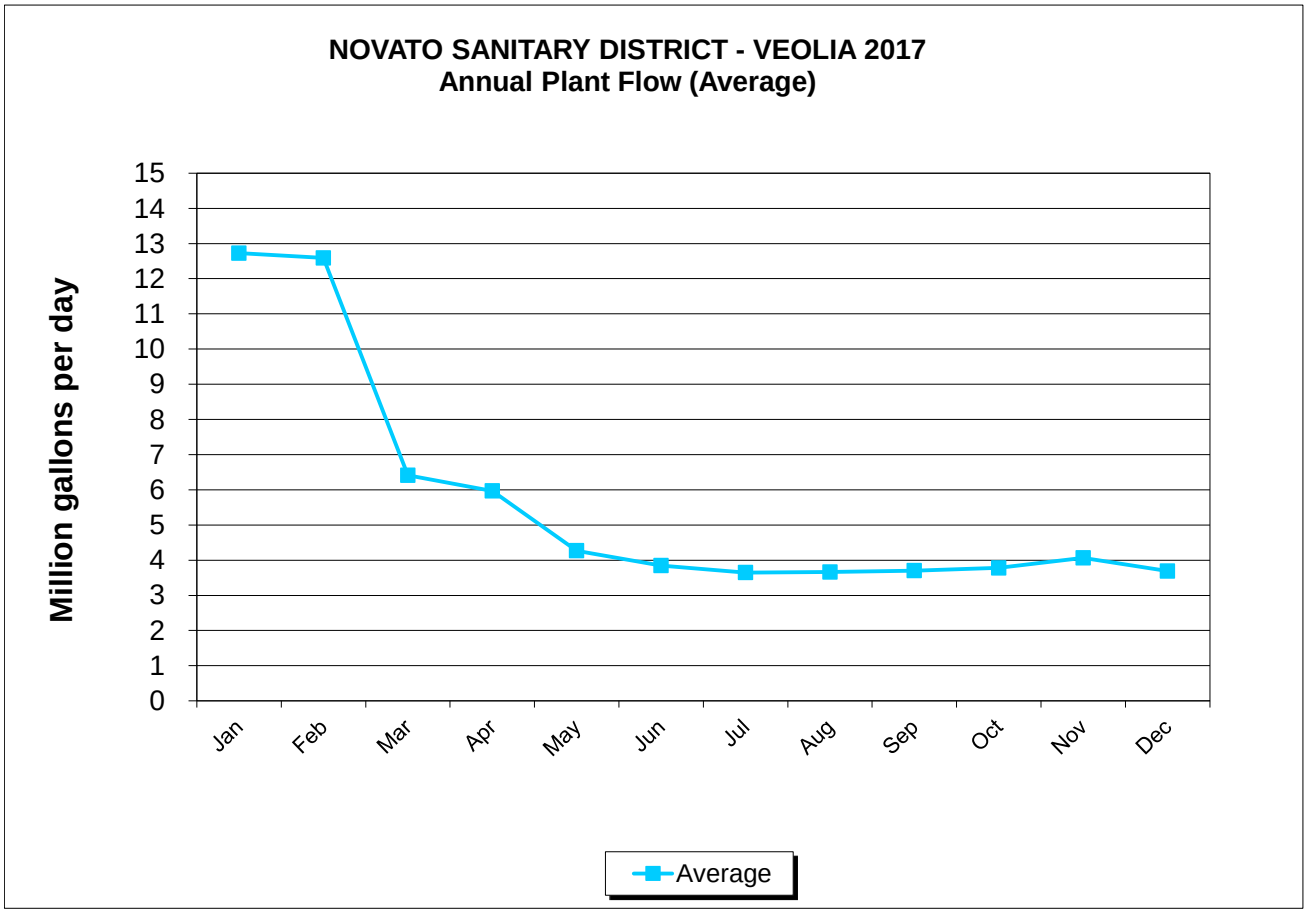
Annual Waste Characteristics & Loading Summary

(IN GALLONS TIMES 1,000,000)

YEAR: 2017

PRINT DATE: 21-Mar-2018

	Total Flow	High	Low	Average		
January	394.47	28.43	4.41	12.72		
February	352.56	24.21	6.27	12.59		
March	198.74	10.59	4.61	6.41		
April	179.12	11.53	4.47	5.97		
May	132.29	4.80	3.92	4.27		
June	115.51	5.00	3.26	3.85		
July	113.12	4.16	3.39	3.65	Three month dry weather averages:	3.65
August	113.61	4.04	3.44	3.66		3.66
September	111.12	4.10	3.41	3.70		3.70
October	117.22	4.78	3.35	3.78		
November	121.91	5.52	3.48	4.06		
December	114.40	4.28	3.16	3.69		
ANNUAL TOTAL	2064.07					
ANNUAL MAX.	394.47	28.43			Max.	3.70
ANNUAL MIN.	111.12		3.16		Min.	3.65
ANNUAL AVG.	172.01			5.70	**Avg. Dry Weather Flow**	**3.67**



NOVATO SANITARY DISTRICT - VEOLIA

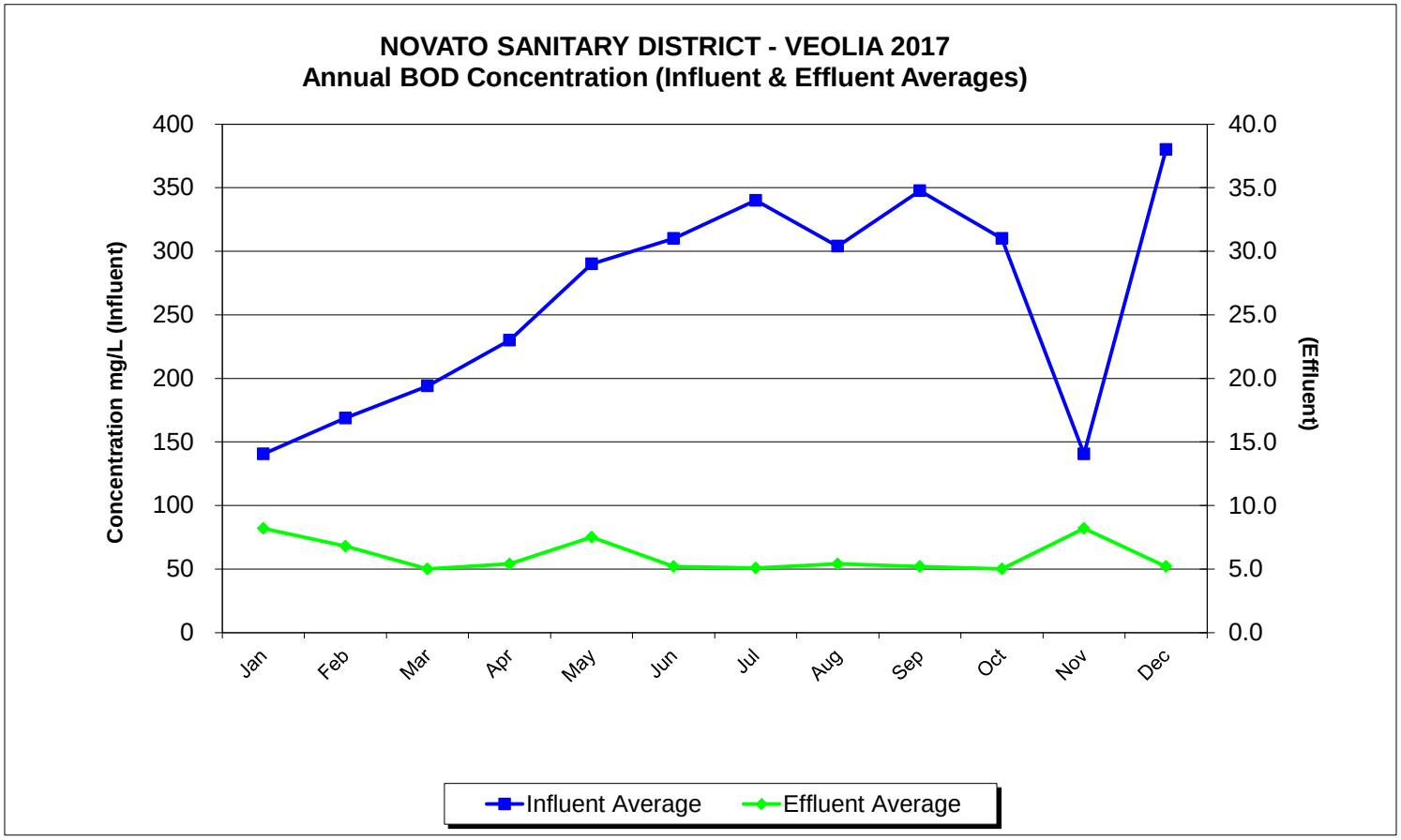
BOD (Influent & Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2017

PRINT DATE: 21-Mar-2018

	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	180	42	141	4	17028	6722	11744	18.0	3.0	8.2	5	1803	180	903
February	250	85	169	4	21872	8308	15967	10.0	4.0	6.8	5	849	391	583
March	250	140	194	5	12844	8068	9815	5.0	5.0	5.0	6	288	204	258
April	280	200	230	4	15552	7890	10935	6.0	5.0	5.4	5	305	197	256
May	380	250	290	5	13311	8444	10277	15.0	5.0	7.5	6	525	214	282
June	320	280	310	4	13344	9014	10353	6.0	5.0	5.2	5	209	151	174
July	490	270	340	4	14017	7859	10181	6.0	5.0	5.1	12	158	143	151
August	370	260	304	5	11541	7806	9627	8.0	5.0	5.4	15	194	150	165
September	500	280	348	4	15387	8126	10524	6.0	5.0	5.2	5	174	145	158
October	340	260	310	4	10180	8023	9169	5.0	5.0	5.0	5	154	143	148
November	180	42	141	4	6800	1282	5080	18.0	3.0	8.2	5	635	110	306
December	480	340	380	4	14371	10293	11501	6.0	4.0	5.2	5	183	120	159
ANNUAL HIGH	500	340	380	5	21872	10293	15967	18.0	5.0	8.2	15	1803	391	903
ANNUAL LOW	180	42	141	4	6800	1282	5080	5.0	3.0	5.0	5	154	110	148
ANNUAL AVG.	335	204	263	4	13854	7653	10431	9.1	4.5	6.0	7	456	179	295



NOVATO SANITARY DISTRICT - VEOLIA

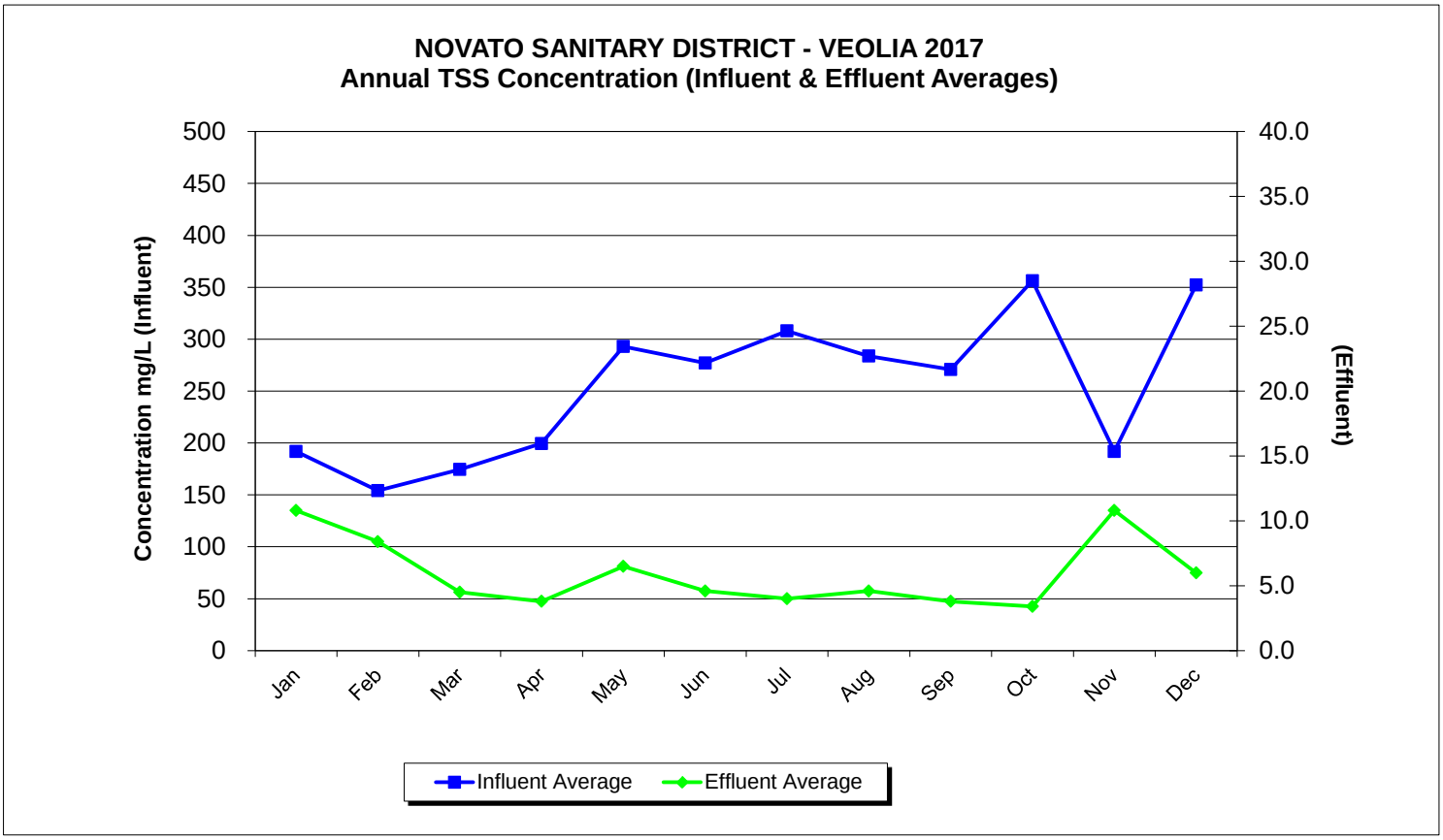
SUSPENDED SOLIDS (Influent & Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2017

PRINT DATE: 21-Mar-2018

	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	266	68	192	4	23538	10883	16389	24.0	3.0	10.8	4	2404	180	1179
February	227	88	154	4	21641	8602	14954	16.0	4.0	8.4	4	2813	263	1077
March	200	150	175	5	10275	6525	9000	6.0	3.0	4.5	5	346	146	232
April	245	147	200	4	13608	5958	9536	4.0	3.0	3.8	4	291	158	196
May	454	236	293	5	15903	8404	10360	9.0	5.0	6.5	5	315	179	232
June	292	265	277	4	12176	8039	9277	6.0	3.0	4.6	4	250	97	155
July	417	250	308	4	11929	7277	9241	6.0	3.0	4.0	4	183	88	120
August	374	225	284	5	11666	6962	8964	8.0	3.0	4.6	5	259	87	140
September	339	176	271	4	10433	5108	8196	5.0	3.0	3.8	4	145	89	114
October	469	289	356	4	13651	8267	10543	5.0	3.0	3.4	4	143	85	100
November	266	68	192	4	10050	2076	6920	24.0	3.0	10.8	4	847	110	373
December	359	342	352	4	10928	10439	10671	8.0	5.0	6.0	4	244	151	183
ANNUAL HIGH	469	342	356	5	23538	10883	16389	24.0	5.0	10.8	5	2813	263	1179
ANNUAL LOW	200	68	154	4	10050	2076	6920	4.0	3.0	3.4	4	143	85	100
ANNUAL AVG.	326	192	254	4	13816	7378	10338	10.1	3.4	5.9	4	687	136	342



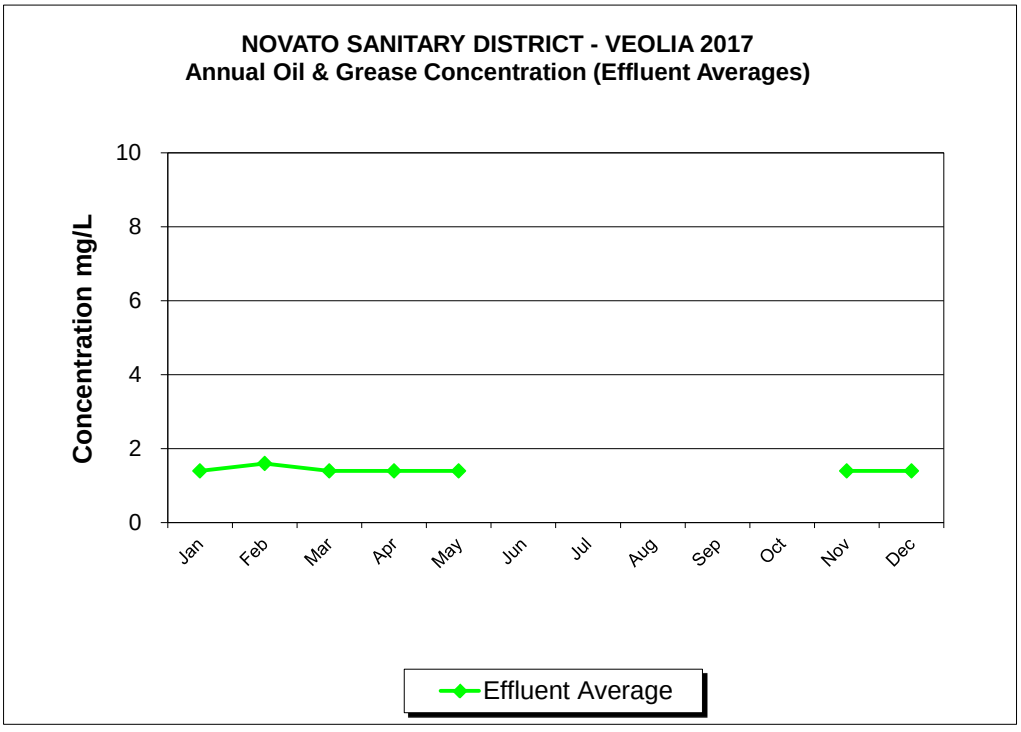
NOVATO SANITARY DISTRICT - VEOLIA

OIL & GREASE (Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2017 PRINT DATE: 21-Mar-2018

	EFFLUENT						
	Concentration (mg/L)			No. of Samples	Loading (lb/day)		
	High	Low	Average		High	Low	Average
January	1.4	1.4	1.4	2	190	51	120
February	1.6	1.6	1.6	1	281	281	281
March	1.4	1.4	1.4	1	68	68	68
April	1.4	1.4	1.4	1	102	102	102
May	1.4	1.4	1.4	1	52	52	52
June				1			
July				0			
August				0			
September				1			
October				1			
November	1.4	1.4	1.4	2	46	41	44
December	1.4	1.4	1.4	1	44	44	44
ANNUAL HIGH	1.6	1.6	1.6	2	281	281	281
ANNUAL LOW	1.4	1.4	1.4	0	44	41	44
ANNUAL AVG.	1.4	1.4	1.4	1	112	91	102



NOVATO SANITARY DISTRICT - VEOLIA

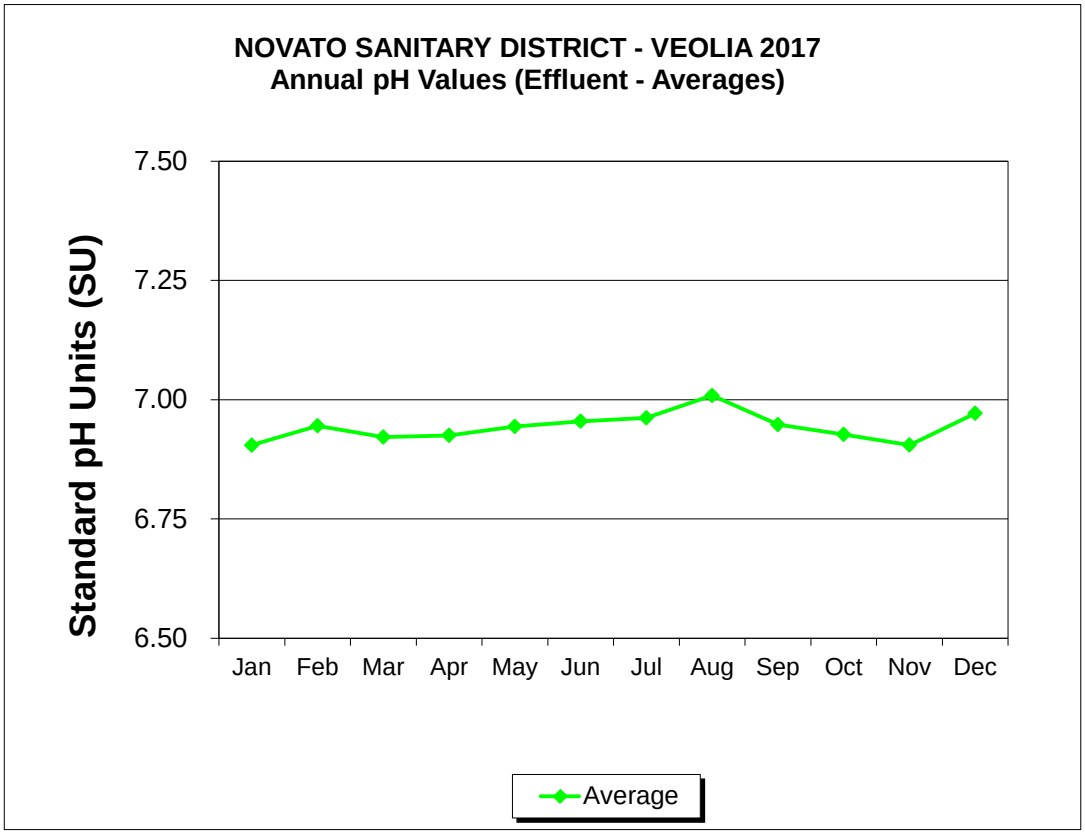
pH (Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2017

PRINT DATE: 21-Mar-2018

	High	Low	Average	Number of Samples
January	7.0	6.8	6.9	22
February	7.2	6.8	6.9	20
March	7.0	6.8	6.9	23
April	7.0	6.8	6.9	20
May	7.0	6.8	6.9	23
June	7.1	6.8	7.0	22
July	7.0	6.8	7.0	21
August	7.1	6.9	7.0	23
September	7.1	6.8	6.9	21
October	7.0	6.8	6.9	22
November	7.0	6.8	6.9	21
December	7.0	6.9	7.0	21
				Number of Samples Total = 259
ANNUAL MAX.	7.20	6.90	7.01	
ANNUAL MIN.	7.00	6.80	6.90	1st Qtr. 65 2nd Qtr. 65
ANNUAL AVG.	7.04	6.82	6.94	3rd Qtr. 65 4th Qtr. 64



NOVATO SANITARY DISTRICT - VEOLIA

TEMPERATURE (Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2017

PRINT DATE: 21-Mar-2018

	High	Low	Average	Number of Samples
January	17.9	14.6	16.0	22.0
February	18.2	15.6	16.7	20.0
March	19.0	16.6	17.8	23.0
April	19.9	17.8	19.0	20.0
May	22.2	20.5	21.3	23.0
June	24.4	21.8	23.0	22.0
July	25.3	22.8	24.1	21.0
August	24.9	22.6	24.2	23.0
September	26.3	23.8	24.7	21.0
October	24.2	21.9	23.2	23.0
November	17.9	14.6	16.0	21.0
December	20.2	18.4	19.4	21.0
				Number of Samples Total = 260
ANNUAL MAX.	26.3	23.8	24.7	
ANNUAL MIN.	17.9	14.6	16.0	1st Qtr. 65 2nd Qtr. 65
ANNUAL AVG.	21.7	19.3	20.4	3rd Qtr. 65 4th Qtr. 65