

# NOVATO SANITARY DISTRICT

Meeting Date: February 27, 2012

**The Board of Directors of Novato Sanitary District will hold a regular meeting at 6:30 p.m., Monday, February 27, 2012, at the District Offices, 500 Davidson Street, Novato.**

*Materials related to items on this agenda are available for public inspection in the District Office, 500 Davidson Street, Novato, during normal business hours. They are also available on the District's website: [www.novatosan.com](http://www.novatosan.com).*

## **AGENDA**

### **1. PLEDGE OF ALLEGIANCE:**

### **2. AGENDA APPROVAL:**

### **3. PUBLIC COMMENT (Please observe a three-minute time limit):**

This item is to allow anyone present to comment on any subject not on the agenda, or to request consideration to place an item on a future agenda. Individuals will be limited to a three-minute presentation. No action will be taken by the Board at this time as a result of any public comments made.

### **4. REVIEW OF MINUTES:**

- a. Consider approval of minutes of the February 13, 2012 meeting.

### **5. CONSENT CALENDAR:**

The Manager-Engineer has reviewed the following items. To her knowledge, there is no opposition to the action. The items can be acted on in one consolidated motion as recommended or may be removed from the Consent Calendar and separately considered at the request of any person.

- a. Approve regular disbursements, payroll and payroll related disbursements.

### **6. WASTEWATER OPERATIONS:**

- a. Wastewater Operations Committee report.
- b. Receive progress report on odor control, noise abatement, and visual screening.
- c. Consider acceptance of Annual Operations Report.
- d. Consider approval of annual cost adjustment.

### **7. ADMINISTRATION:**

- a. Review draft District brochure.

- b. Consider adoption of District Policy No. 4099 – Board Meeting Technology.

**8. COLLECTION SYSTEM IMPROVEMENT PROJECT 72706 PHASE G:**

- a. Consider approval of a contract in the amount of \$62,000 with the Covello Group for construction management services on a time and materials basis.

**9. STAFF REPORTS:**

- a. National Association of Clean Water Agencies conference.

**10. BOARD MEMBER REPORTS:**

- a. North Bay Water Reuse Authority

**11. MANAGER'S ANNOUNCEMENTS:**

**12. CLOSED SESSION:**

**CONFERENCE WITH LEGAL COUNSEL -- EXISTING LITIGATION**  
(subdivision (a) of Section 54956.9)

Potential Administrative Civil Liability in the matter of sanitary sewer overflows and treatment plant violations including California Regional Water Quality Board Complaint No. R2-2010-0102

**13. ADJOURN:**

Next resolution no. 3040

**Next regular meeting date: Monday, March 12, 2012, 6:30 PM at the Novato Sanitary District office, 500 Davidson Street, Novato, CA**

***In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the District at (415) 892-1694 at least 24 hours prior to the meeting. Notification prior to the meeting will enable the District to make reasonable accommodation to help ensure accessibility to this meeting.***

February 13, 2012

A regular meeting of the Board of Directors of the Novato Sanitary District was held at 6:35 p.m., Monday, February 13, 2012, at the District Office, 500 Davidson Street, Novato.

BOARD MEMBERS PRESENT: President William C. Long, Members Michael Di Giorgio, Jean Mariani, Jerry Peters, and Dennis Welsh.

STAFF PRESENT: Manager-Engineer-Secretary Beverly B. James, Deputy Manager-Engineer Sandeep Karkal, District Counsel Kent Alm and Administrative Secretary Julie Swoboda.

ALSO PRESENT: Bob Guinan, Novato resident  
Joe Carlomagno, Novato resident  
Wally Holmes, Novato resident  
Dasse de longh, NSD employee, Novato resident  
John Bailey, Project Manager, Veolia Water  
Steve Wrightson, The Covello Group

PLEDGE OF ALLEGIANCE:

AGENDA APPROVAL: President Long approved the agenda as written.

PUBLIC COMMENT: None.

REVIEW OF MINUTES:

Consider approval of minutes of the January 23<sup>rd</sup>, 2012 meeting.

*On motion of Member Peters, seconded by Member Mariani, and carried unanimously, the minutes of the January 23<sup>rd</sup> Board meeting were approved.*

CONSENT CALENDAR:

*On motion of Member Di Giorgio, seconded by Member Peters and carried unanimously, the following Consent Calendar items were approved:*

- a. Consider setting meeting dates of February 27<sup>th</sup>, March 12<sup>th</sup> and March 26<sup>th</sup>.
- b. Approval of regular disbursements in the amount of \$487,818.72, capital project disbursements in the amount of \$182,070.51, and Board member disbursements in the amount of \$3,139.36.

WASTEWATER TREATMENT FACILITY UPGRADE PROJECT 72609:

- Receive progress report on odor control, noise abatement, and visual screening:

The Manager gave details of the District's current activities to address neighborhood concerns about odors, noise, and visual screening.

Regarding odor control, she stated that the scheduled completion date for the biofilter retrofit remains February 29<sup>th</sup>. She noted that there will be a 30 to 60 day testing period after restart of the biofilters and that excess bioxide is being added to control odors during the construction period.

Regarding health effects, she stated that Dr. Scofield is moving forward with the air emission and dispersion modeling and that he anticipates meeting with the Lea Drive neighborhood the week of February 20<sup>th</sup>. She stated that District staff will be contacting residents to schedule the meeting.

The Manager reported that additional landscaping is being installed along Lea Drive as well as in the open area of the facilities interior. She stated that consultations are scheduled with Jim Joyce to determine the best combination of planting and barriers for odor, noise and visual screening.

The Manager stated that staff met with an acoustical engineer on January 19<sup>th</sup> and reviewed all of the potential noise sources within the treatment facility. She noted he recommended partial enclosures or soundproofing wraps for muting the sounds. She stated that any work would be scheduled for March after completion of the biofilter retrofit.

Members Di Giorgio and Peters commented on their personal observations of the Lea Drive neighborhood screening progress. The Board discussed the plantings.

Member Welsh questioned the proposed cost for the soundproofing wraps. The Manager noted that the cost was approximately \$9,000 for one unit and \$23,000 for the second unit.

President Long expressed his appreciation to the Manager for the correspondence and updates which she continues to provide to the Lea Drive residents.

- Consider granting final acceptance of the Phase I Landscape Project and authorize staff to file the Notice of Completion:

The Manager gave an overview of the Phase I Landscaping Project, noting that North Bay Landscape Management, Inc. (the Contractor) was granted substantial completion of the project on July 1, 2011. She stated that the Contractor has completed the contract work and that the project is ready for final acceptance. She noted that the final cost of the project was \$45,707.57 or

\$5,242.43 below the bid amount. The Manager recommended the Board grant final acceptance and authorize staff to file the Notice of Completion.

*On motion of Member Di Giorgio, seconded by Member Peters and carried unanimously, the Board granted final acceptance of the Phase I Landscape Project and authorized staff to file the Notice of Completion.*

#### RECYCLED WATER PROJECT 73002:

- Progress report. Steve Wrightson, The Covello Group, gave an overview of the Recycled Water Project, discussing the highlights and current status of the project. He reported that overall, the project is going well. He stated that the following items are at 100% completion:

- Recycled water line complete and tied in
- Northeast corner work
- Demolition
- Wet weather overflow box complete and functional
- New filter control building
- Filter feed pump station structure

Mr. Wrightson discussed the schedule challenges and stated that the project should be completed prior to the ARRA (American Reinvestment Recovery Act) deadline. He noted that 65% of the contract time has elapsed and 45% of the current contract amount has been expended to date. Mr. Wrightson stated that executed/negotiated change orders are at about 2.5% of the total construction budget.

#### BOARD OF DIRECTORS:

- Consider adoption of District Policy No. 4035 - Board of Directors' Health and Dental Insurance. The Manager noted that Policy #4035 was discussed at the previous Board meeting and due to questions from the Directors, had been brought back for review when District Counsel could be present for discussion.

District Counsel Kent Alm discussed the policy with the Board members.

*On motion of Member Mariani, seconded by Member Di Giorgio and passed unanimously, the Board adopted District Policy No. 4035: Board of Directors' Health and Dental Insurance.*

- Appoint Ad Hoc Sewer Service Charge Rate Review Committee. The Manager reported that Tom Gaffney of Bartle Wells is working on a sewer service charge rate study. She noted that typically, the Board President appoints an Adhoc Rate Review Committee to work with staff and consultants in reviewing the analysis. She stated that the committee would be meeting in early March to go over the draft and she discussed

the tentative meeting schedule. The Manager noted that the final rates would be adopted at the Board meeting on June 25<sup>th</sup>.

President Long suggested that the District not change the rate structure at this time.

President Long appointed Members Mariani and Di Giorgio to serve on the Ad Hoc Rate Review Committee. Members Mariani and Di Giorgio accepted the appointment.

- Consider approval of a letter to Representative Woolsey on HR 2765 revising the regulations governing who can sit on State and Regional Water Boards. The Manager stated that CASA (California Association of Sanitation Agencies) is requesting members communicate their support of H.R. 2675 by asking their House of Representatives member to be a co-sponsor. A sample letter to Congresswoman Lynn Woolsey was included with the Board materials for review.

*On motion of Member Mariani, seconded by Member Peters and carried unanimously, the Board approved the letter to Representative Woolsey on HR 2765.*

- Consider approval of a North Bay Water Reuse Authority trip for Bill Long to Washington DC. The Manager stated that President Long is currently serving as the Chair of the North Bay Water Reuse Authority (NBWRA). The NBWRA has scheduled two days of meetings on March 8<sup>th</sup> and 9<sup>th</sup> in Washington DC and has requested that Mr. Long attend as Chairman.

President Long stated that he has been serving as Chair of the NBWRA for many years. He noted that he will be nominating another individual for the next term.

*On motion of Member Di Giorgio, seconded by Member Peters and carried unanimously, the Board approved out of state travel to Washington DC for Chairman Long to represent the North Bay Water Reuse Authority.*

#### ADMINISTRATION:

- Consider approval of a contract amendment with Bob Adamson Environmental Services. The Deputy Manager-Engineer stated that since October, 2011, the District's laboratory has been managed by Bob Adamson, a retired former employee of the Central Marin Sanitation Agency. He stated that Mr. Adamson's original contract of \$30,000 has a balance remaining of \$6,840. The Deputy Manager-Engineer stated that Mr. Adamson's services are anticipated to be needed for an additional 3-4 months to provide coverage until a replacement is hired and for assisting the replacement through the initial transition period. He stated that Mr. Adamson's interim role has been accepted by the State Department of Health Services Environmental Laboratory Accreditation Program.

The Manager stated that the District has been advertising for the open Lab position and will continue to work with North Marin Water District to handle the routine sampling and analysis. She discussed the qualifications necessary to hold the position.

*On motion of Member Peters, seconded by Member Di Giorgio and carried unanimously, the Board approved an amendment to Mr. Adamson's contract in the amount of \$36,000 for a revised total contract not-to-exceed amount of \$66,000 and authorized the Manager-Engineer to execute this amendment.*

- Consider adoption of a resolution creating an employee safety recognition program for 2012. The Manager stated that the District received a dividend of \$20,703 from CA Sanitation Risk Management Authority (CSRMA) based on its claim's experience for Worker's Compensation over the past several years. She stated that the Adhoc Labor Relations Committee recommended the refund be allocated as follows: half the dividend (\$10,000) for distribution to employees at the District working full time from January 1, 2012 through December 31, 2012 and who have not had a lost time accident between January 1, 2012 and December 31, 2012.

District Counsel Kent Alm stated that the recognition program was not deemed a gift of public funds because it is for a program established for the current period not for a retroactive period.

*On motion of Member Di Giorgio, seconded by Member Peters and approved unanimously, the Board adopted Resolution No. 3040, A Resolution of Novato Sanitary District Creating an Employee Safety Recognition Program for 2012.*

#### COLLECTION SYSTEM IMPROVEMENT PROJECT 72706:

- Review bids received and consider authorizing contract award to the lowest responsive bidder, W.R. Forde & Associates, for the Galli Drive project. The Deputy Manager-Engineer summarized the nine bids that were received, noting that W.R. Forde & Associates of Richmond, California submitted the lowest responsive bid of \$418,078.00. He noted that the Engineer's Estimate was \$620,000.

The Deputy Manager-Engineer stated that W.R. Forde's bid documents have been reviewed and are in order. He recommended the Board authorize awarding the contract to W.R. Forde & Associates for the Galli Drive Collection System Improvements for the bid amount of \$418,078.00.

*On motion of Member Mariani, seconded by Member Peters and carried unanimously, the Board authorized the contract award for the Galli Drive Project to W.R. Forde & Associates for the bid amount of \$418,078.00.*

ANNUAL COLLECTION SYSTEM REPAIRS PROJECT 72803:

- Eucalyptus Avenue Sewer Repair, Project 72803-11-01: Review bids received, reject all bids, and authorize the Manager-Engineer to so inform all bidders. The Deputy Manager-Engineer gave an overview of the six bids received for the Eucalyptus Ave.

Sewer Repair Project. He explained that staff recommends rejecting all bids due to criteria set forth in the bid documents that were not met by the first or second bidder. He requested the Board reject the current bids and authorize the Manager-Engineer to so inform all bidders.

*On motion of Peters, seconded by Member Di Giorgio and carried unanimously, the Board rejected all bids for the Eucalyptus Avenue Sewer Repair, Project 72803-11-01 and directed the Manager-Engineer to so inform all bidders.*

PUMP STATION REHABILITATION PROJECT 72403, UNIT 3:

- Consider granting acceptance of completion of the Pump Station Rehabilitation Project, Unit 3, and authorize staff to file the Notice of Completion. The Deputy Manager-Engineer gave an overview of the Project, noting that substantial completion was granted on the projects as follows:

- Hamilton Pump Station No. 02 (Bayside) on 8/19/11
- Western Oaks Pump Station on 9/19/11
- Hamilton Pump Station No. 03 (Southgate) on 10/25/11

The Deputy Manager-Engineer noted that the final cost of the project was \$1,247,501 or \$17,499 below the bid amount. He recommended that final acceptance be granted and that staff be authorized to file the Notice of Completion.

*On motion of Member Peters, seconded by Member Mariani and carried unanimously, the Board granted Final Acceptance of the Pump Station Rehabilitation Project 72403, Unit 3, and authorized staff to file the Notice of Completion.*

STAFF REPORTS:

- Report on Grand Jury Survey of Special Districts in Marin County. The Manager outlined the request received from the Grand Jury, noting that all Special Districts in Marin County were asked to provide the information. She stated that this matter was brought before the Board as an informational item only. She discussed the data provided to the Grand Jury.

BOARD MEMBER REPORTS:

- North Bay Water Reuse Authority. President Long gave a report of his participation at the NBWRA meeting held on January 23<sup>rd</sup> at the District office.

- North Bay Watershed Association. Member Di Giorgio discussed his attendance at the NBWA meeting held on February 3<sup>rd</sup> in Petaluma. He discussed the upcoming

NBWA meeting on April 13<sup>th</sup> and suggested all Board members attend. The topic will be climate change.

- Solid Waste Committee. Members Mariani and Peters gave an overview of their attendance at the Solid Waste Committee meeting held on February 6<sup>th</sup> at the District office. Member Mariani requested that the next time the Solid Waste Committee meets the information be provided to all the Board members similar to what is currently being done for the Wastewater Operations Committee. The Manager stated that Dee Johnson will be making a Solid Waste presentation to the Board at a future board meeting.

MANAGER'S ANNOUNCEMENTS:

- There will be an E-Waste event at the Household Hazardous Waste/Recycling Facility from March 23<sup>rd</sup> - 25<sup>th</sup>.

- Due to a District holiday the Wastewater Operations Committee will meet on Thursday, February 16<sup>th</sup> at 2:00 p.m. instead of February 20<sup>th</sup>.

- The North Bay Water Reuse Authority will meet on February 27<sup>th</sup> at 9:30 a.m. at the Novato Sanitary District.

- A draft copy of the Novato Treatment Plant brochure was handed out to all Board members. The Manager requested their comments be received at the February 27<sup>th</sup> Board meeting.

ADJOURNMENT: There being no further business to come before the Board, President Long adjourned the meeting at 8:07 p.m.

Respectfully submitted,

Beverly B. James  
Secretary

Julie Swoboda, Recording

# Novato Sanitary District Operations Check Register

For February 27, 2012

Date	Num	Name	Credit
<b>Feb 27, 12</b>			
2/27/2012	54122	Pacific, Gas & Electric	50,088.65
2/27/2012	54124	PSC	18,410.40
2/27/2012	54127	Siemens Industry, Inc.	13,620.60
2/27/2012	54108	Downtown Novato Investors, ...	5,008.00
2/27/2012	54115	Meyers, Nave, Riback, Silver ...	4,811.33
2/27/2012	54106	Central Marin Sanitation District	4,623.90
2/27/2012	54125	Shape Incorporated	4,265.14
2/27/2012	54114	McCrometer, Inc	2,557.84
2/27/2012	54104	Cantarutti Electric, Inc	2,373.00
2/27/2012	54093	American Express-22062	2,317.99
2/27/2012	54119	North Marin Water District	1,841.42
2/27/2012	54101	Bartle Wells Assoc, Inc	1,827.45
2/27/2012	54116	Monterey Mechanical, Inc.	1,800.00
2/27/2012	54121	Pacific Sun, Inc.	1,048.00
2/27/2012	ach	Long, William C.	939.33
2/27/2012	54126	Siemens Industry Inc. - Lab	858.79
2/27/2012	54110	Grainger	762.32
2/27/2012	54120	Oratech Controls, Inc.	505.35
2/27/2012	54105	CDW Government, Inc.	432.65
2/27/2012	54123	Pitney Bowes Reserve Account	400.00
2/27/2012	54117	Nextel Communications	396.52
2/27/2012	54103	Cagwin & Dorward Inc.	329.00
2/27/2012	54107	Claremont EAP, Inc.	295.00
2/27/2012	54113	Levy, Larry	250.00
2/27/2012	54102	BoundTree Medical, LLC	188.14
2/27/2012	54092	AirGas-NCN, Inc.	165.46
2/27/2012	54129	Wesco Distribution	130.49
2/27/2012	54128	SRS Private Investigations, Inc	120.00
2/27/2012	54112	IOBP,LLC	117.00
2/27/2012	54109	First Alarm	111.75
2/27/2012	54111	International Code Council Inc	100.00
2/27/2012	54094	American Water Works Asso...	98.00
2/27/2012	54098	AT&T-234-341-6561	95.51
2/27/2012	54118	North Bay Portables, Inc.	92.22
2/27/2012	54097	AT&T-233-841-3672	62.85
2/27/2012	54100	AT&T-415-883-7312	36.94
2/27/2012	54095	AT&T-233-841-3670	31.43
2/27/2012	54096	AT&T-233-841-3671	31.43
2/27/2012	54099	AT&T-237-267-0607	31.43
<b>Feb 27, 12</b>			<b>121,175.33</b>

**Novato Sanitary District**  
**Operations Check Register Detail**  
**Feb 27, 2012**

	<u>Date</u>	<u>Account</u>	<u>Amount</u>
<b>AirGas-NCN, Inc.</b>			
	01/31/2012	65100 · Operating Supplies	165.46
Total AirGas-NCN, Inc.			<u>165.46</u>
<b>American Express-22062</b>			
	02/15/2012	60100 · Operating Supplies	938.00
	02/15/2012	66090 · Office Expense	284.37
	02/15/2012	60100 · Operating Supplies	33.00
	02/15/2012	60100 · Operating Supplies	126.30
	02/15/2012	66090 · Office Expense	201.44
	02/15/2012	66170 · Travel, Meetings & Training	660.00
	02/15/2012	66193 · Telephone	74.88
Total American Express-22062			<u>2,317.99</u>
<b>American Water Works Association</b>			
	01/31/2012	66080 · Memberships	98.00
Total American Water Works Association			<u>98.00</u>
<b>AT&amp;T-233-841-3670</b>			
	02/21/2012	65193 · Telephone	31.43
Total AT&T-233-841-3670			<u>31.43</u>
<b>AT&amp;T-233-841-3671</b>			
	02/21/2012	65193 · Telephone	31.43
Total AT&T-233-841-3671			<u>31.43</u>
<b>AT&amp;T-233-841-3672</b>			
	02/21/2012	65193 · Telephone	62.85
Total AT&T-233-841-3672			<u>62.85</u>
<b>AT&amp;T-234-341-6561</b>			
	02/21/2012	65193 · Telephone	95.51
Total AT&T-234-341-6561			<u>95.51</u>
<b>AT&amp;T-237-267-0607</b>			
	02/21/2012	65193 · Telephone	31.43
Total AT&T-237-267-0607			<u>31.43</u>
<b>AT&amp;T-415-883-7312</b>			
	02/21/2012	61000-4 · Water/Permits/Telephone	36.94
Total AT&T-415-883-7312			<u>36.94</u>
<b>Bartle Wells Assoc, Inc</b>			
	02/14/2012	66123 · O/S Contractual	1,827.45
Total Bartle Wells Assoc, Inc			<u>1,827.45</u>
<b>BoundTree Medical, LLC</b>			
	02/09/2012	64170 · Pollution Prevention/Public Ed	188.14
Total BoundTree Medical, LLC			<u>188.14</u>
<b>Cagwin &amp; Dorward Inc.</b>			
	02/01/2012	66150 · Repairs & Maintenance	329.00
Total Cagwin & Dorward Inc.			<u>329.00</u>
<b>Cantarutti Electric, Inc</b>			
	02/01/2012	63150 · Repairs & Maintenance	110.00
	02/01/2012	65150 · Repairs & Maintenance	220.00
	02/01/2012	65150 · Repairs & Maintenance	220.00
	02/01/2012	63150 · Repairs & Maintenance	640.00
	02/01/2012	63150 · Repairs & Maintenance	140.00
	03/02/2012	65150 · Repairs & Maintenance	1,043.00
Total Cantarutti Electric, Inc			<u>2,373.00</u>
<b>CDW Government, Inc.</b>			
	01/30/2012	66124 · IT/Misc Electrical	432.65
Total CDW Government, Inc.			<u>432.65</u>
<b>Central Marin Sanitation District</b>			

**Novato Sanitary District**  
**Operations Check Register Detail**  
**Feb 27, 2012**

	<u>Date</u>	<u>Account</u>	<u>Amount</u>
	01/28/2012	64170 · Pollution Prevention/Public Ed	4,623.90
Total Central Marin Sanitation District <b>Claremont EAP, Inc.</b>			<u>4,623.90</u>
	02/15/2012	66123 · O/S Contractual	295.00
Total Claremont EAP, Inc. <b>Downtown Novato Investors, LLC</b>			<u>295.00</u>
	02/27/2012	21041 · Cash in Lieu of Bond (Refund manhole deposits)	5,008.00
Total Downtown Novato Investors, LLC <b>First Alarm</b>			<u>5,008.00</u>
	02/15/2012	66150 · Repairs & Maintenance	111.75
Total First Alarm <b>Grainger</b>			<u>111.75</u>
	01/04/2012	60100 · Operating Supplies	762.32
Total Grainger <b>International Code Council Inc</b>			<u>762.32</u>
	02/02/2012	66080 · Memberships	100.00
Total International Code Council Inc <b>IOBP,LLC</b>			<u>100.00</u>
	02/14/2012	66130 · Printing & Publications	117.00
Total IOBP,LLC <b>Levy, Larry</b>			<u>117.00</u>
	02/08/2012	66123 · O/S Contractual	250.00
Total Levy, Larry <b>Long, William C.</b>			<u>250.00</u>
	02/23/2012	66170 · Travel, Meetings & Training	939.33
Total Long, William C. <b>McCrometer, Inc</b>			<u>939.33</u>
	02/07/2012	63150 · Repairs & Maintenance	2,557.84
Total McCrometer, Inc <b>Meyers, Nave, Riback, Silver &amp; Wilson</b>			<u>2,557.84</u>
	02/17/2012	66122 · Attorney Fees	4,811.33
Total Meyers, Nave, Riback, Silver & Wilson <b>Monterey Mechanical, Inc.</b>			<u>4,811.33</u>
	02/15/2012	60153 · Outside Services	1,800.00
Total Monterey Mechanical, Inc. <b>Nextel Communications</b>			<u>1,800.00</u>
	02/20/2012	60193 · Telephone	147.76
	02/20/2012	65193 · Telephone	79.57
	02/20/2012	66193 · Telephone	169.19
Total Nextel Communications <b>North Bay Portables, Inc.</b>			<u>396.52</u>
	02/01/2012	63100 · Operating Supplies	92.22
Total North Bay Portables, Inc. <b>North Marin Water District</b>			<u>92.22</u>
	02/09/2012	63192 · Water - Reclamation	290.31
	02/09/2012	65192 · Water	169.70
	02/16/2012	61000-4 · Water/Permits/Telephone	1,224.82
	02/16/2012	65192 · Water	156.59
Total North Marin Water District <b>Oratech Controls, Inc.</b>			<u>1,841.42</u>
	02/02/2012	64100 · Operating Supplies	505.35
Total Oratech Controls, Inc. <b>Pacific Sun, Inc.</b>			<u>505.35</u>
	02/03/2012	64170 · Pollution Prevention/Public Ed	1,048.00

**Novato Sanitary District**  
**Operations Check Register Detail**  
**Feb 27, 2012**

	<u>Date</u>	<u>Account</u>	<u>Amount</u>
Total Pacific Sun, Inc.			1,048.00
<b>Pacific, Gas &amp; Electric</b>			
	02/15/2012	61000-5 · Gas & Electricity	41,299.08
	02/15/2012	63191 · Gas & Electricity	1,358.30
	02/15/2012	65191 · Gas & Electricity	7,431.27
Total Pacific, Gas & Electric			<u>50,088.65</u>
<b>Pitney Bowes Reserve Account</b>			
	02/21/2012	66090 · Office Expense	400.00
Total Pitney Bowes Reserve Account			<u>400.00</u>
<b>PSC</b>			
	01/31/2012	67500 · Household Hazardous Waste	18,410.40
Total PSC			<u>18,410.40</u>
<b>Shape Incorporated</b>			
	01/18/2012	65150 · Repairs & Maintenance	4,265.14
Total Shape Incorporated			<u>4,265.14</u>
<b>Siemens Industry Inc. - Lab</b>			
	02/10/2012	64150 · Repairs & Maintenance	858.79
Total Siemens Industry Inc. - Lab			<u>858.79</u>
<b>Siemens Industry, Inc.</b>			
	01/26/2012	65101 · Operating Chemicals	13,620.60
Total Siemens Industry, Inc.			<u>13,620.60</u>
<b>SRS Private Investigations, Inc</b>			
	02/02/2012	66090 · Office Expense	120.00
Total SRS Private Investigations, Inc			<u>120.00</u>
<b>Wesco Distribution</b>			
	02/09/2012	63150 · Repairs & Maintenance	130.49
Total Wesco Distribution			<u>130.49</u>
<b>TOTAL</b>			<u><u>121,175.33</u></u>

02/24/12

# Novato Sanitary District Capital Projects Check Register

For February 27, 2012

Date	Num	Name	Credit
<b>Feb 27, 12</b>			
2/27/2012	2243	Gateway Pacific Contractors, ...	402,244.20
2/27/2012	2248	RMC Water & Environment, L...	57,373.56
2/27/2012	2242	Gateway Pacific Contractors -...	44,693.80
2/27/2012	2240	Covello Group, The	43,344.49
2/27/2012	2251	W.R. Forde	11,687.76
2/27/2012	2252	Whitley Burchett & Associate...	8,995.50
2/27/2012	2238	Cagwin & Dorward Inc.	8,754.50
2/27/2012	2239	Cantarutti Electric, Inc	6,539.00
2/27/2012	2253	Willis Professional Land Surv...	2,157.50
2/27/2012	2247	Monterey Mechanical, Inc.	1,800.00
2/27/2012	2246	Miller Pacific Engineering, Inc.	1,662.00
2/27/2012	2237	BakerCorp	1,543.32
2/27/2012	2244	Lateral-Baney, Polly	1,500.00
2/27/2012	2249	Roy's Sewer Service, Inc.	1,500.00
2/27/2012	2241	Daniel Macdonald AIA Archit...	1,006.93
2/27/2012	2245	Marin Independent Journal	769.79
2/27/2012	2250	Verizon Communications	168.35
<b>Feb 27, 12</b>			<b>595,740.70</b>

**Novato Sanitary District  
Capital Projects  
Check Register Detail**

	Date	Feb. 27, 2012	Account	Amount
<b>BakerCorp</b>				
	01/31/2012		72609 · WWTP Upgrade - Contract B	1,543.32
Total BakerCorp				<u>1,543.32</u>
<b>Cagwin &amp; Dorward Inc.</b>				
	01/31/2012		73002 · WWTP Up - Cont D - Rec- ARRA Fu	8,754.50
Total Cagwin & Dorward Inc.				<u>8,754.50</u>
<b>Cantarutti Electric, Inc</b>				
	02/01/2012		72805 · Annual Trtmt Plnt/Pump St Impr	6,539.00
Total Cantarutti Electric, Inc				<u>6,539.00</u>
<b>Covello Group, The</b>				
	02/01/2012		73002 · WWTP Up - Cont D - Rec- ARRA Fu	39,751.49
	02/01/2012		72706 · 2008 Collection System Improv	1,000.00
	02/01/2012		72403 · Pump Station Rehabilitation	843.00
	02/01/2012		72609 · WWTP Upgrade - Contract B	1,750.00
Total Covello Group, The				<u>43,344.49</u>
<b>Daniel Macdonald AIA Architects, Inc.</b>				
	01/31/2012		73003 · Admin Building Upgrades	1,006.93
Total Daniel Macdonald AIA Architects, Inc.				<u>1,006.93</u>
<b>Gateway Pacific Contractors - Escrow</b>				
	02/23/2012		73002 · WWTP Up - Cont D - Rec- ARRA Fu	44,693.80
Total Gateway Pacific Contractors - Escrow				<u>44,693.80</u>
<b>Gateway Pacific Contractors, Inc.</b>				
	02/23/2012		73002 · WWTP Up - Cont D - Rec- ARRA Fu	402,244.20
Total Gateway Pacific Contractors, Inc.				<u>402,244.20</u>
<b>Lateral-Baney, Polly</b>				
	02/17/2012		72706 · 2008 Collection System Improv	1,500.00
Total Lateral-Baney, Polly				<u>1,500.00</u>
<b>Marin Independent Journal</b>				
	01/31/2012		72706 · 2008 Collection System Improv	769.79
Total Marin Independent Journal				<u>769.79</u>
<b>Miller Pacific Engineering, Inc.</b>				
	02/14/2012		72803 · Annual Collection Sys Repairs	1,662.00
Total Miller Pacific Engineering, Inc.				<u>1,662.00</u>
<b>Monterey Mechanical, Inc.</b>				
	02/15/2012		73002 · WWTP Up - Cont D - Rec- ARRA Fu	900.00
	02/15/2012		73002 · WWTP Up - Cont D - Rec- ARRA Fu	900.00
Total Monterey Mechanical, Inc.				<u>1,800.00</u>
<b>RMC Water &amp; Environment, Inc.</b>				
	02/10/2012		73002 · WWTP Up - Cont D - Rec- ARRA Fu	36,061.42

**Novato Sanitary District  
Capital Projects  
Check Register Detail**

	Date	Feb. 27, 2012	Account	Amount
	02/13/2012	73001	WWTP Upgrade - Contract C	20,404.14
	02/13/2012	72609	WWTP Upgrade - Contract B	908.00
Total RMC Water & Environment, Inc.				<u>57,373.56</u>
<b>Roy's Sewer Service, Inc.</b>				
	02/03/2012	72803	Annual Collection Sys Repairs	1,500.00
Total Roy's Sewer Service, Inc.				<u>1,500.00</u>
<b>Verizon Communications</b>				
	02/10/2012	73002	WWTP Up - Cont D - Rec- ARRA Fu	168.35
Total Verizon Communications				<u>168.35</u>
<b>W.R. Forde</b>				
	02/15/2012	72803	Annual Collection Sys Repairs	11,687.76
Total W.R. Forde				<u>11,687.76</u>
<b>Whitley Burchett &amp; Associates Inc</b>				
	02/06/2012	72706	2008 Collection System Improv	8,995.50
Total Whitley Burchett & Associates Inc				<u>8,995.50</u>
<b>Willis Professional Land Surveying</b>				
	02/10/2012	72803	Annual Collection Sys Repairs	2,157.50
Total Willis Professional Land Surveying				<u>2,157.50</u>
				<u><u><b>595,740.70</b></u></u>

**Novato Sanitary District  
Payroll and Payroll Related Check Register  
February 2012**

<b>Date</b>	<b>Name</b>	<b>Credit</b>
<b>Feb 24 - 29, 12</b>		
02/29/2012	February Payroll	111,842.40
02/29/2012	Retiree Health Benefits	15,810.53
02/29/2012	CALPERS Retirement	29,643.06
02/29/2012	United States Treasury	21,861.16
02/29/2012	EDD	6,025.46
02/29/2012	Dearborn National	2,472.05
02/29/2012	Lincoln Financial Group-401a Plan	3,877.23
02/29/2012	Lincoln Financial Group	3,691.80
02/29/2012	State Street Bank & Trust	2,966.66
02/29/2012	CALPERS Retirement	1,830.36
02/29/2012	Calpers Health	28,500.77
02/29/2012	Marin Employ Federal Credit Union	517.00
02/29/2012	Local Union 315	540.00
02/29/2012	Torres, Cari	400.00
<b>Feb 24 - 29, 12</b>		<b><u>229,978.48</u></b>

# NOVATO SANITARY DISTRICT BOARD AGENDA ITEM SUMMARY

<b>TITLE: Wastewater Operations Report for January 2012</b>	<b>MEETING DATE: February 27, 2012</b>
	<b>AGENDA ITEM NO.:</b>
<b>RECOMMENDED ACTION:</b> Information	
<b>SUMMARY AND DISCUSSION:</b>  The January 2012 operations reports for the wastewater treatment, collection, and reclamation facilities are attached.  <b>Wastewater Treatment Facility</b>  Water quality performance for January was excellent with all parameters well within effluent standards. Flows remain low with only 3.43 inches of rainfall during the month. There were no significant maintenance issues. Safety performance was excellent with an accident-free month for a total of 608 accident-free days. Raw sewage odors were reduced by the addition of bioxide at the outlying pump stations. The District continues to receive complaints on odors and noise. The program for addressing odors, noise, and visual impacts is covered separately in the odor control report.  <b>Collection System</b>  The January Collection System report summarizes the performance for January 2012 and compares the performance with 2011. The crews cleaned a total of 58,829 feet of sewer line. The District had one 75-gallon overflow in January caused by a contractor working on a sewer line. Safety performance was excellent with no lost time accidents for a total of 323 accident-free days. The District was recruiting for two open collection worker positions, both of which were filled in February.  <b>Reclamation Facility</b>  All cattle were removed and irrigation stopped by mid-November. The exceptionally dry January may affect the survival of the new grass plantings. The irrigation screens have been removed for repair.	
<b>DEPT.MGR.:</b>	<b>MANAGER:</b>



February 14, 2012

Ms. Beverly James  
Manager - Engineer  
Novato Sanitary District  
500 Davidson Street  
Novato, CA 94545

**Subject: Veolia Water Operations Report – January 2012**

Dear Ms. James:

I am pleased to provide this updated activity report for January 2012.

As always, please give me a call at 415-798-6075 should you have any questions.

Regards,

A handwritten signature in purple ink that reads "John Bailey".

John Bailey  
Project Manager

**MONTHLY OPERATIONS REPORT  
January 2012**

Prepared for

**NOVATO SANITARY DISTRICT (NSD)  
WASTEWATER TREATMENT PLANT  
500 Davidson Street  
Novato, CA 94545**

Prepared by

**Veolia Water West Operating Services, Inc. (VWWOS)**

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**TREATMENT PLANT PERFORMANCE SUMMARY:**

**January 2012:**

**BAY DISCHARGE**

Parameter	Monthly Performance			
	Value		Limit	
	Ave	Max	#1	#2
Flow, MGD (monthly ave/max)	4.99	10.31	N/A	N/A
Influent BOD <sub>5</sub> , lb/day (month ave/max)	9,377	18,315	N/A	N/A
Influent TSS, lb/day (monthly ave/max)	10,548	19,021	N/A	N/A
Effluent BOD <sub>5</sub> , mg/L (monthly ave/weekly max)	9	13	30	45
Effluent TSS, mg/L (monthly ave/weekly max)	7	7	30	45
Effluent BOD <sub>5</sub> - % Removal	96	N/A	85	N/A
Effluent TSS - % Removal	97	N/A	85	N/A
Ammonia mg/L (monthly average / daily max)	0.46	0.83	6	21
pH, su (min / max)	6.8	7.4	6.5	8.5
Enterococcus, mpn (30 day geo mean)	1.9	N/A	35	N/A
Fecal Coliform, mpn (30 day median)	4	N/A	140	N/A
Fecal Coliform, mpn (90 <sup>th</sup> percentile)	8	N/A	430	N/A
<b>Total Permit Exceedances (NPDES)</b>	0			

NA – Not Applicable

**Discussion of Violations / Excursions:        NONE**

**OPERATIONS & MAINTENANCE STATUS / REVIEW:**

**Key events for the period:**

**Novato**

- Water intrusion at electrical vaults, pumped down
- Loss of flow signal in AB Zone 4D, troubleshooting ongoing
- Primary Clarifier #1 run signal lost
- Actuator – IPS Wet Well #2 failed – Bay Valve (contractor) out for troubleshooting/repared (February)
- Hypochlorite tank #2 removed by contractor for replacement
- Inspected, filtered cleaned / polished (removed bacterial sludge and rust particles) diesel fuel in bulk storage tank.

**Ignacio Transfer Pump Station**

- Grinder failure due to blockage, repaired
- Equalization Basin Pump – Below Capacity, Troubleshooting in progress
- Influent Pump Station, Pump #3 De-ragged
- New wear rings on order for all TPS Influent pumps
- Inspected, filtered cleaned / polished (removed bacterial sludge and rust particles) diesel fuel in bulk storage tank.

**Reclamation Area**

- Decant pumps repaired
- Installed Decant pump #5
- Installed Thermal Protection on Decant Pumps #5 & #6
- Struvite observed

**CONSTRUCTION UPDATE:**

- Attended weekly construction meetings

**ADMINISTRATION:**

- Electronic Self Monitoring Report for December 2011, submitted on 1/25/12

**SAFETY AND TRAINING:**

- Monthly plant safety inspections for Novato WWTF completed on 1/4/12
- Five Minute Tailgate training is held daily with the O&M staff.
- No safety incidents for the month of January 2012
- Accident Free: 6/1/10 – 1/31/12: 608 days / 27,724.80 hours
- NPDES Permit Overview 1/12/12
- Hazard Communication (Haz Com) Training 1/31/12
- Wet Weather Procedure / Pump Operation – Hands On 1/19/12

**ODORS:**

- Jerome Meter (H2S) readings performed in neighborhood and within treatment plant

**MISCELLANEOUS**

- Process Control Management Plan (PCMP) meetings held weekly

**SOP Review & Development:**

- Micro Turbine Operation

**Veolia Support Staff On/Off Site (Various Times)**

John O'Hare

Technical Support / Chris McAuliffe

District Manager

**WORK ORDER STATISTICS**

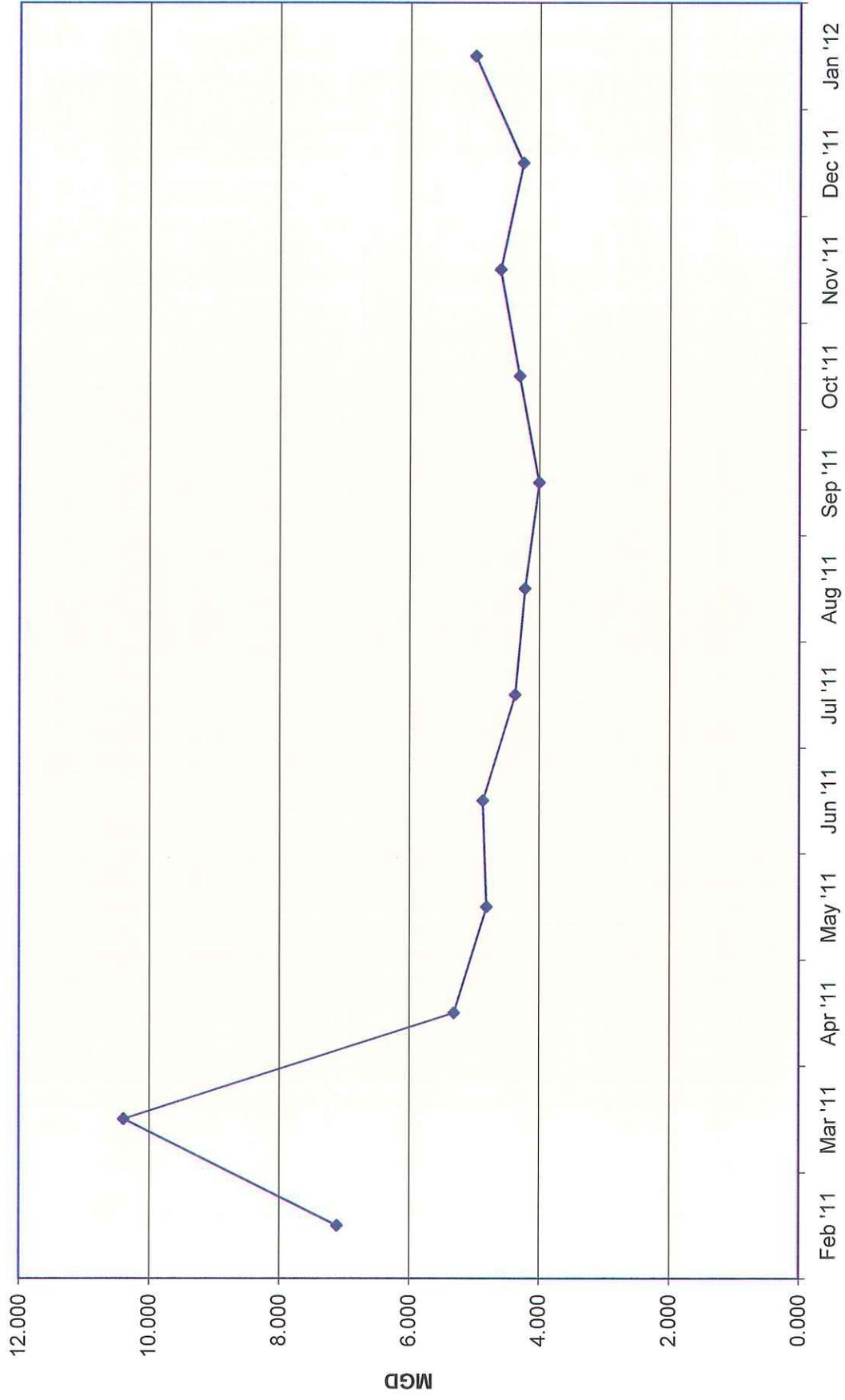
**January 1, 2012 - January 31, 2012**

	<b>Open Work Orders Due Prior to 1/1/12</b>	<b>Open Work Orders 1/1/12 - 1/31/12</b>	<b>Total Open Work Orders</b>
Preventative	2	214	216
Corrective	7	21	28
<b>Total</b>	<b>9</b>	<b>235</b>	<b>244</b>

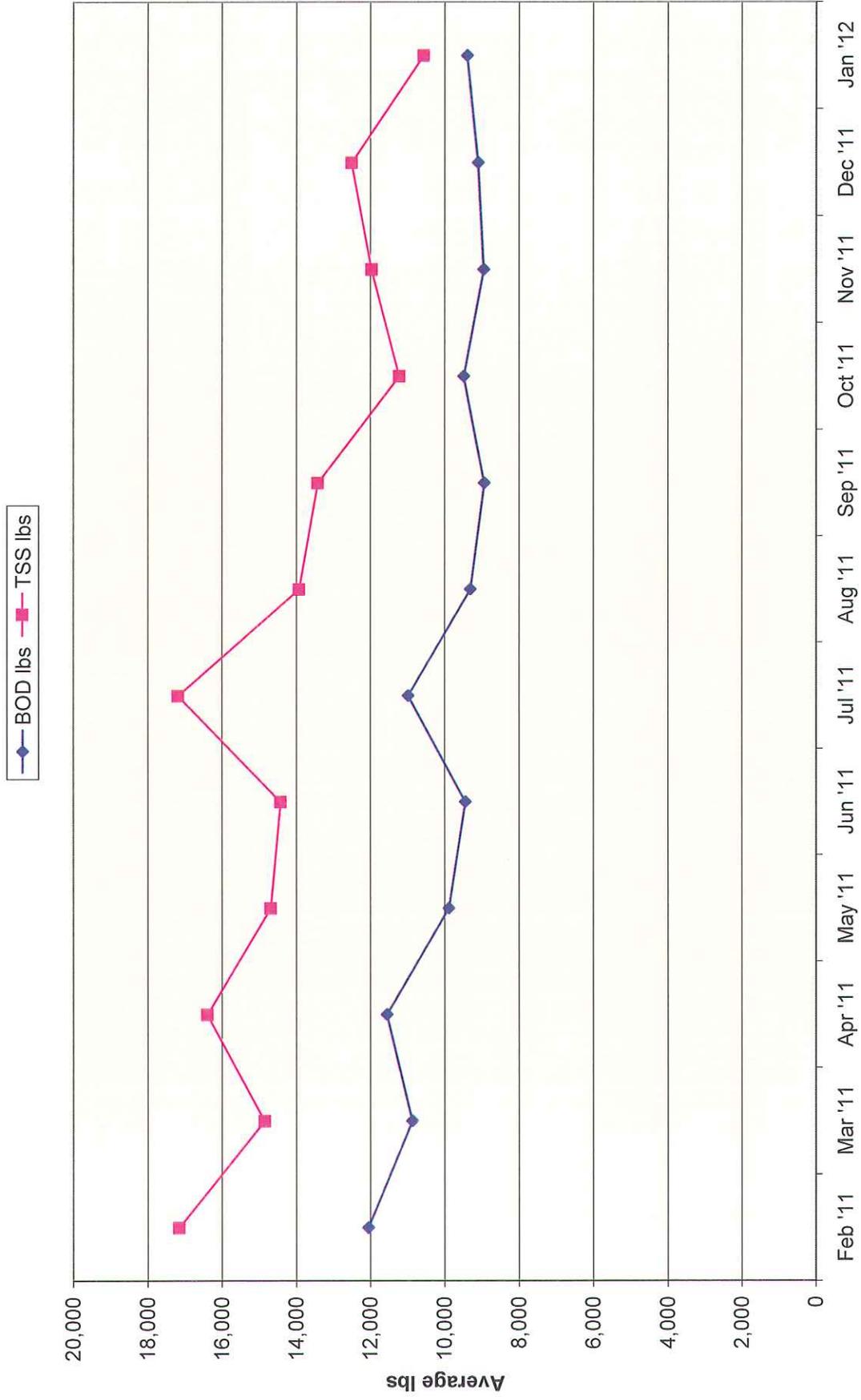
	<b>Closed Work Orders 1/1/12 - 1/31/12</b>
Preventative	218
Corrective	18
<b>Total</b>	<b>236</b>

<b>Total Outstanding Work Orders as of February 1, 2012</b>	<b>8</b>
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# Plant Flow

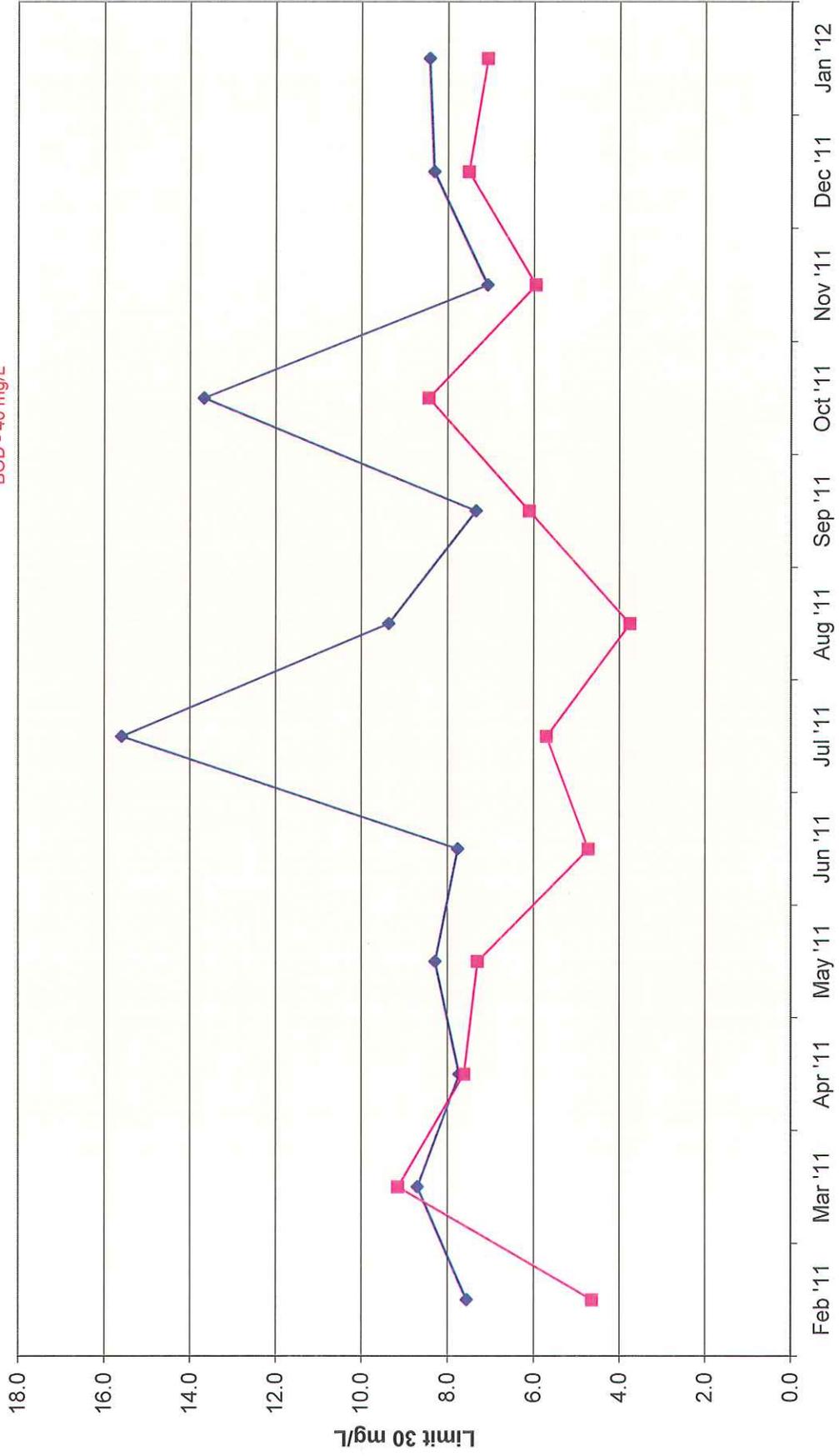


# Influent Load BOD TSS lbs

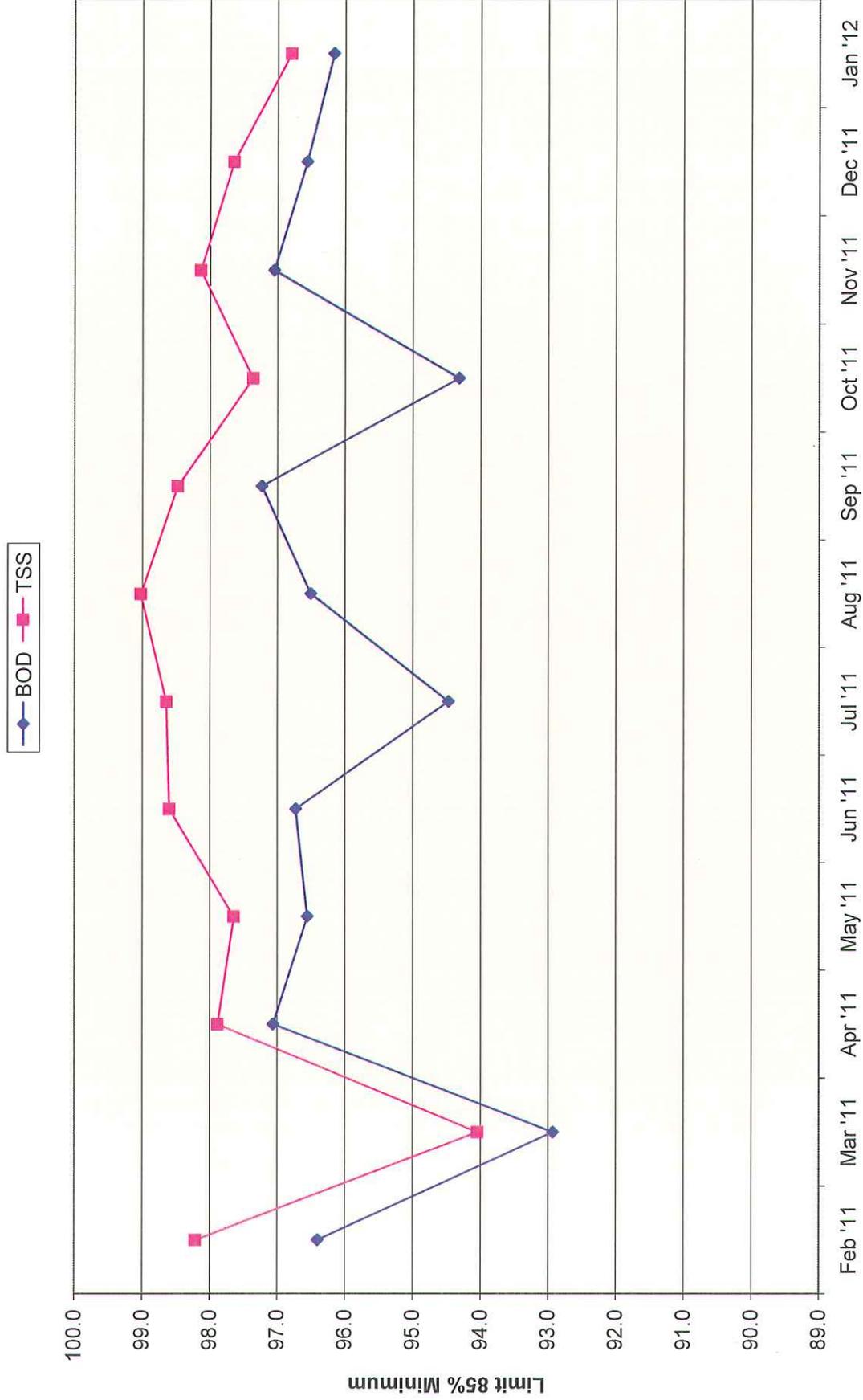


# Effluent BOD TSS Concentration

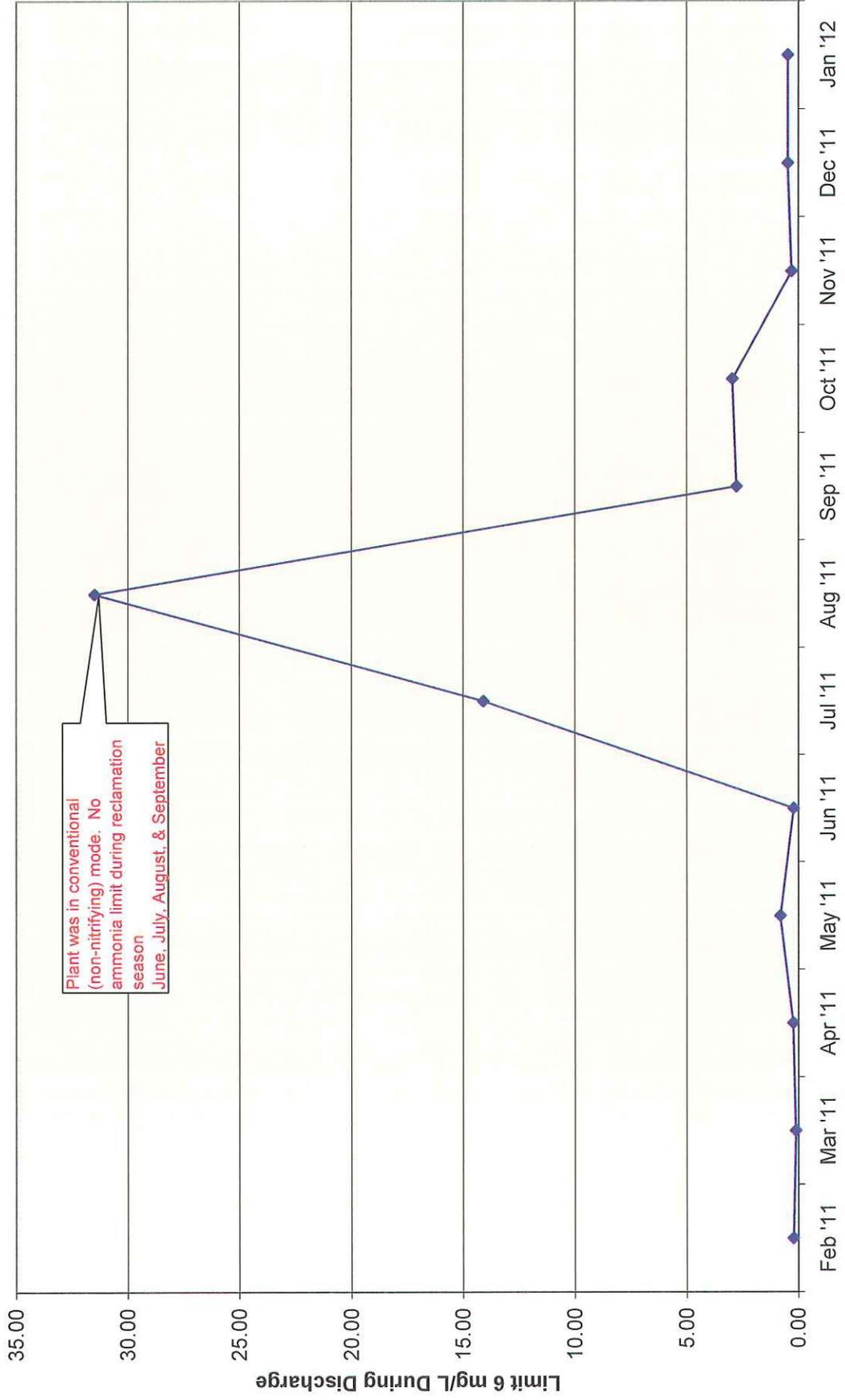
**NPDES LIMITS WET SEASON**  
 BOD & TSS - 30 mg/L Monthly Ave, 45 mg/L Weekly Ave  
**NPDES LIMITS DRY SEASON**  
 BOD - 15 mg/L Monthly Ave, 30 mg/L Weekly Ave  
 TSS - 10 mg/L Monthly Ave, 20 mg/L Weekly Ave  
 WDR (Waste Discharge Requirements) RECLAMATION  
 BOD - 40 mg/L



# BOD TSS Percent Removal

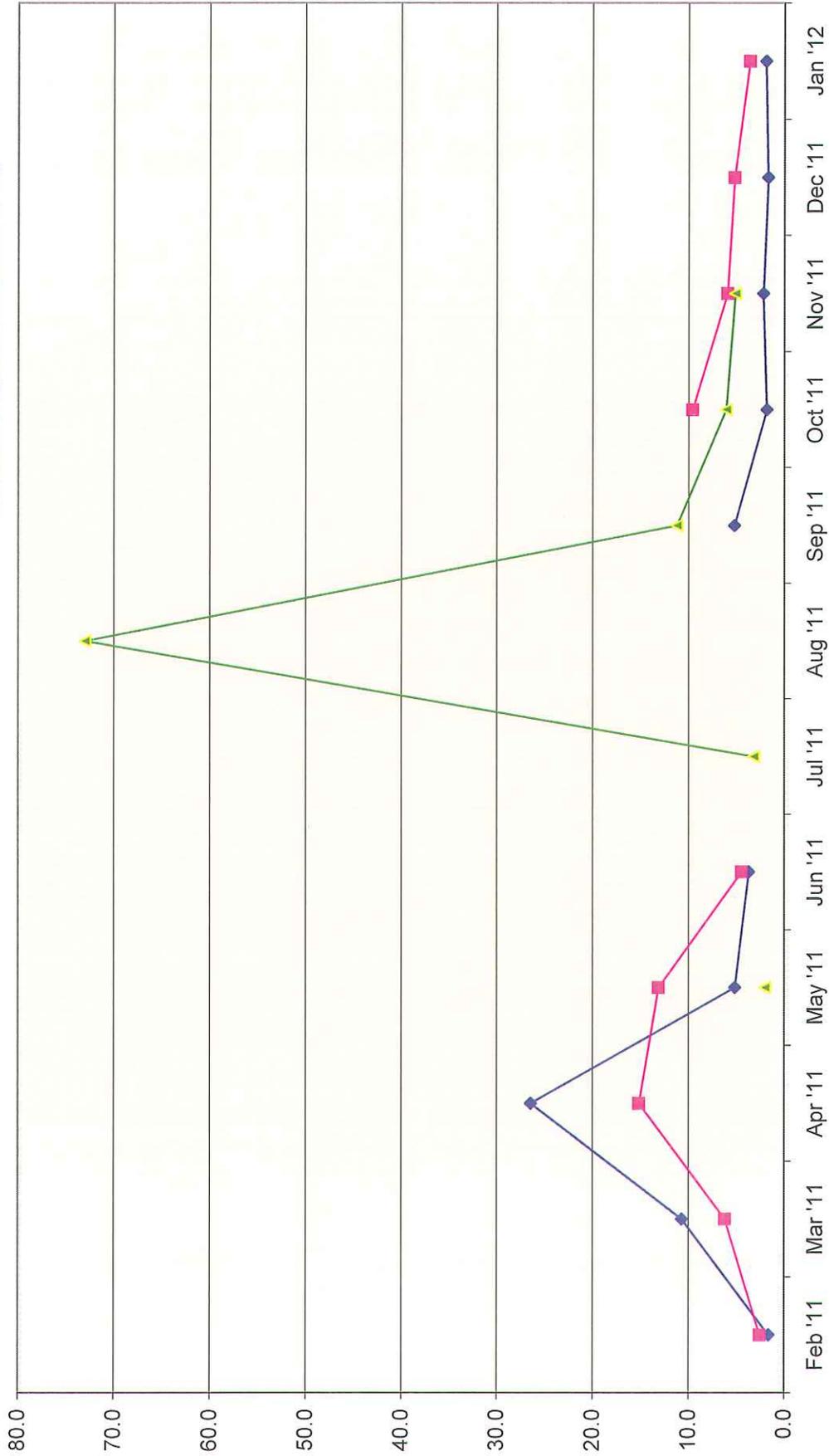


# Effluent Ammonia

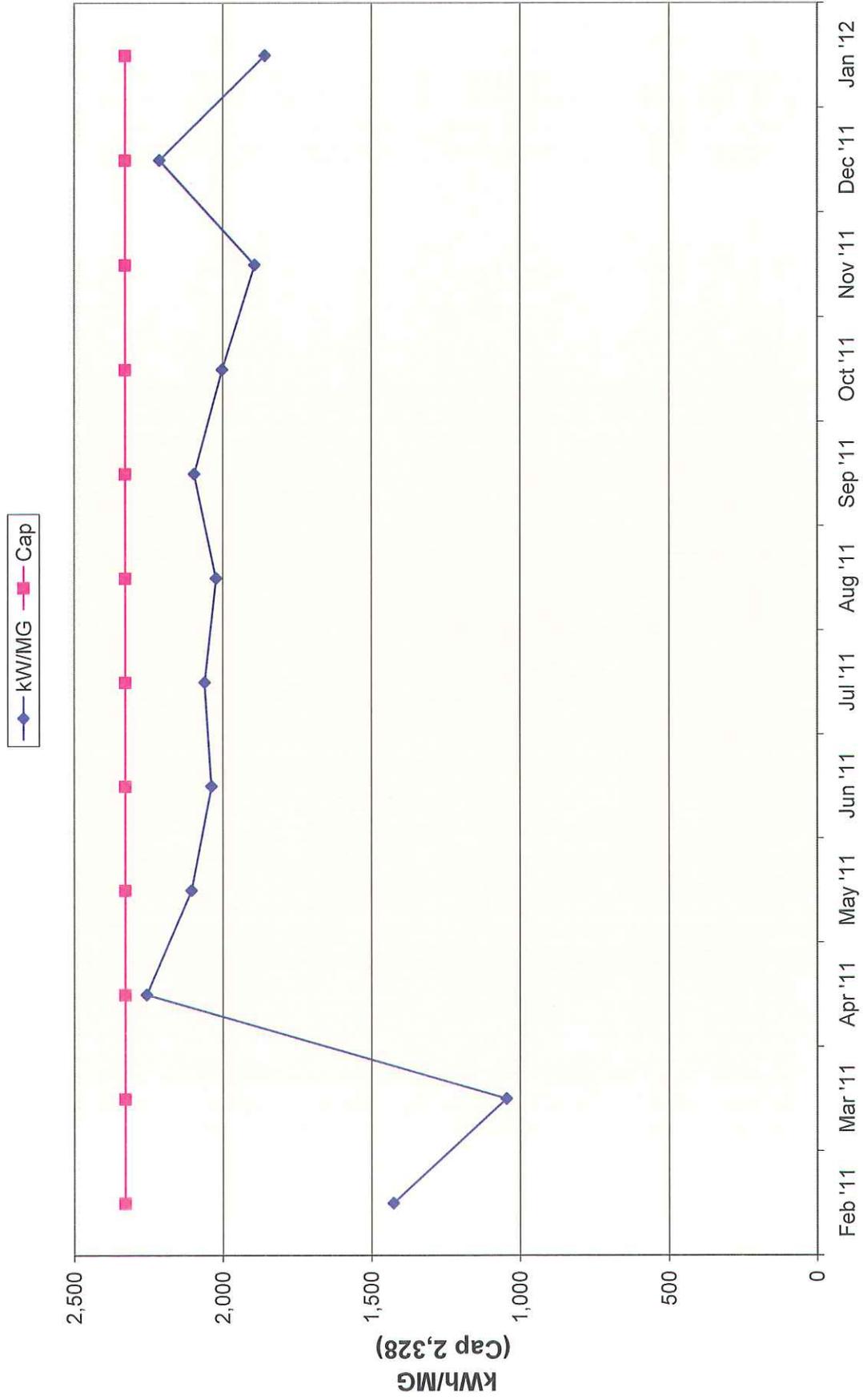


# Disinfection

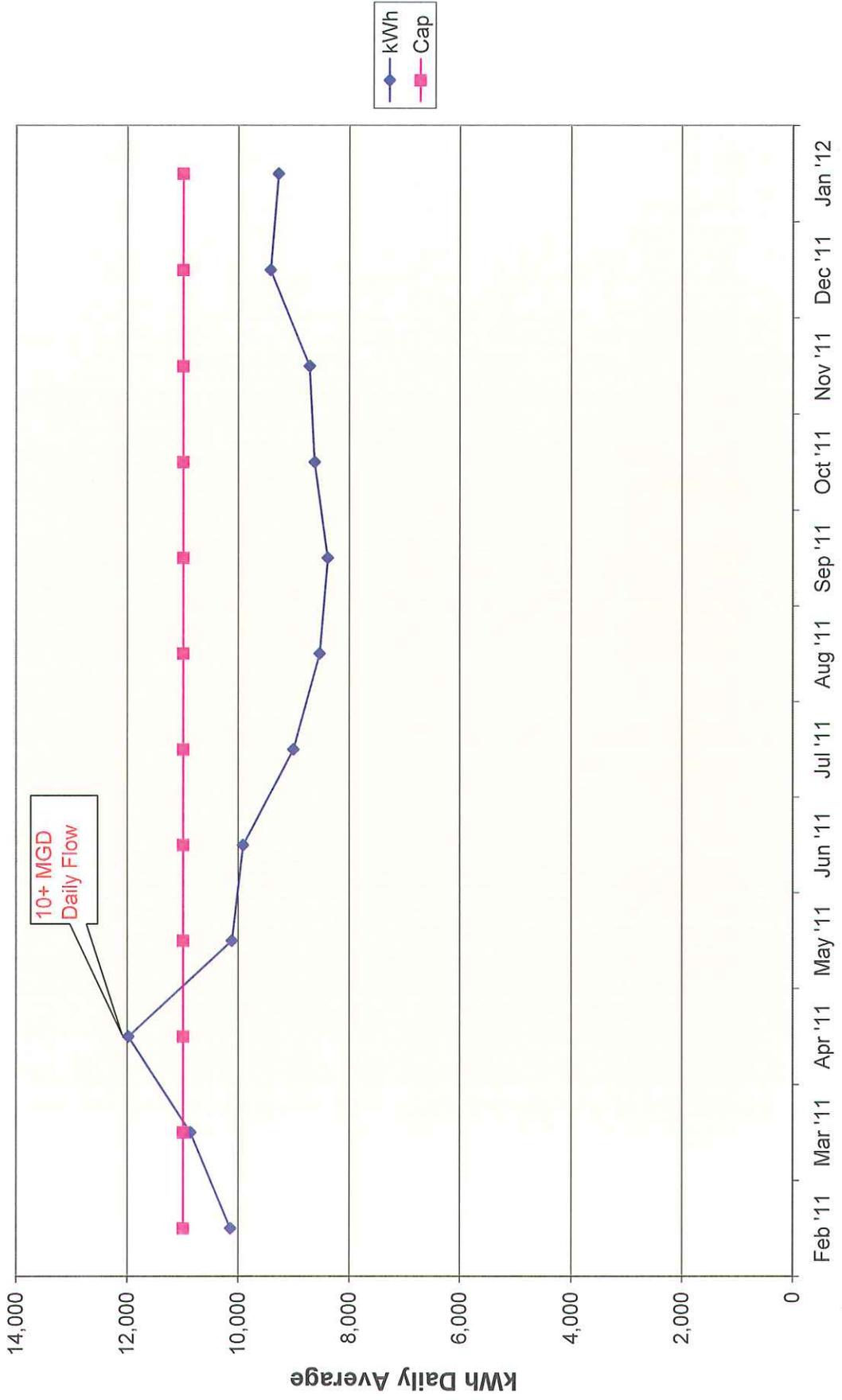
**LIMITS - NPDES**  
 Entero 30 day geo mean 35 mpn /100ml  
 Fecal 140 mpn monthly median  
 Fecal 430 mpn 90th percentile 30 day  
**LIMITS - RECLAMATION**  
 Total Coliform 240 mpn 5 sample median  
 Total Coliform maximum 10,000 mpn/100 ml



# Energy kWh/MG

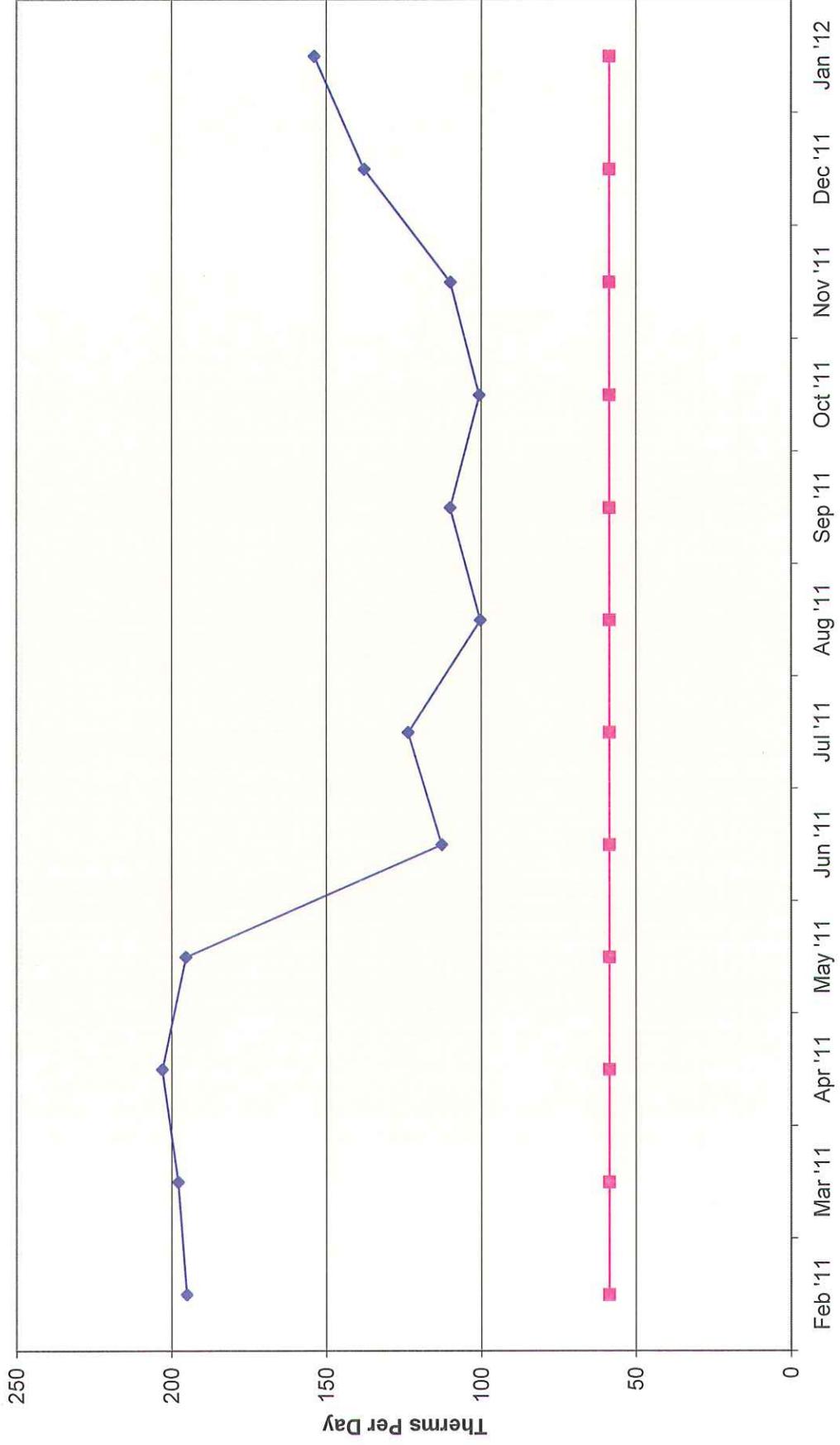


# Energy kWh



# Natural Gas Use

—◆— Natural Gas —■— Natural Gas



**Novato Sanitary District  
Wastewater Operations Committee meeting  
Collection System Operations Report  
January, 2012**

**General:**

For the month of January 2012, the Collection System Department spent about 62% of its time on sewer maintenance, and 38% of its time on pump station maintenance. At full strength, the department has eight (8) workers plus the Superintendent for Collections System and Pump Station O&M.

After accounting for vacations, holidays, sick leave, and industrial injury leave, for the month of December, the Collection System had the equivalent of: (a) 3.1 full time field workers plus the Collection System Superintendent for on Sewer Maintenance, and (b) 1.9 full time field workers Plus the Collection System Superintendent on Pump Station Maintenance.

**Sewer Maintenance:**

A total of 58,929 feet of sewer pipelines was cleaned for the month. Staff completed 291 maintenance work orders with 14 outstanding work orders. The footage cleaned per hour, line cleaned/month, and outstanding work orders are within established parameters for the department. Graphs showing the length of line cleaned/month, footage cleaned/hour worked, along with the overflows/month is attached.

**Pump Station Maintenance:**

Approximately 279 lift station inspections were conducted for the month of January 2012, with 87 of the visits generated through the JobCal Plus CMMS system. The breakdown of these inspections is as follows: 22 Flygt submersible pump stations, 2 times per month, 9 Gorman/Rupp dry well/wet well stations, 1 entry per month, and 4 main stations that are visited daily. Staff repaired a u joint for pump #2 at E. Hamilton P.S. on 1/13/12, replaced pump #1 at Enfrente P.S. on 1/24/12, replaced pump #2 at Los Robles P.S. on 1/25/12 and assisted in the replacement of the motor starter for pump #1 at Los Robles.

**Pump Station Construction:**

As part of the District's continuing multi-year Pump Station Rehabilitation Project (Capital Improvement Project No. 72403), Bayside, South Gate, and Western Oaks pump stations have been accepted for beneficial occupancy and are in varying stages of final completion.

**Novato Sanitary District  
Wastewater Operations Committee meeting  
Collection System Operations Report  
January, 2012**

**Sanitary Sewer Overflows (SSOs):**

For the month of January 2012, there was one (1) SSO:

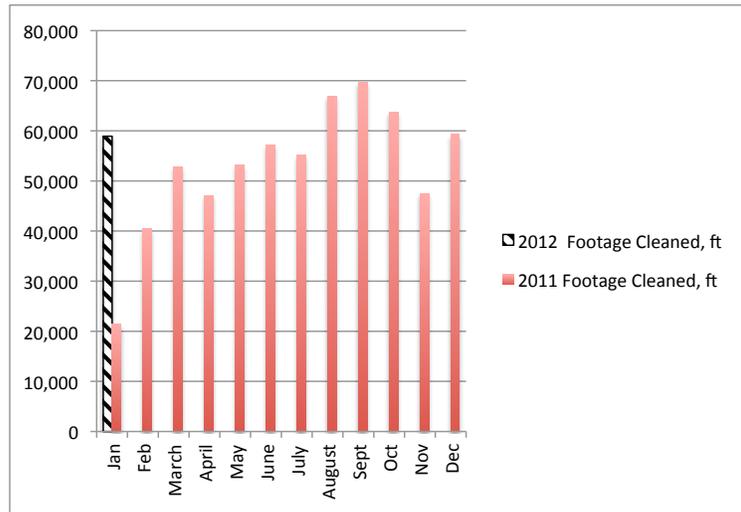
<b>No.</b>	<b>Date</b>	<b>Location</b>	<b>Amount, gal</b>	<b>Cause</b>
1	1/25/2012	0 Alameda Del Prado	75	Contractor Error



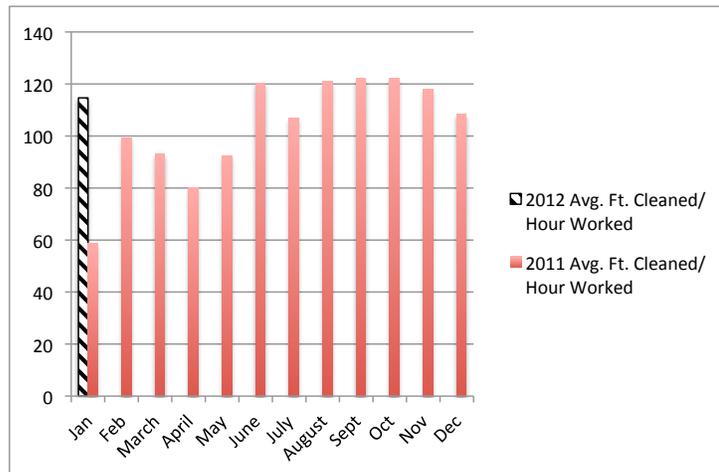


## Collection System 2011-12 Graphs

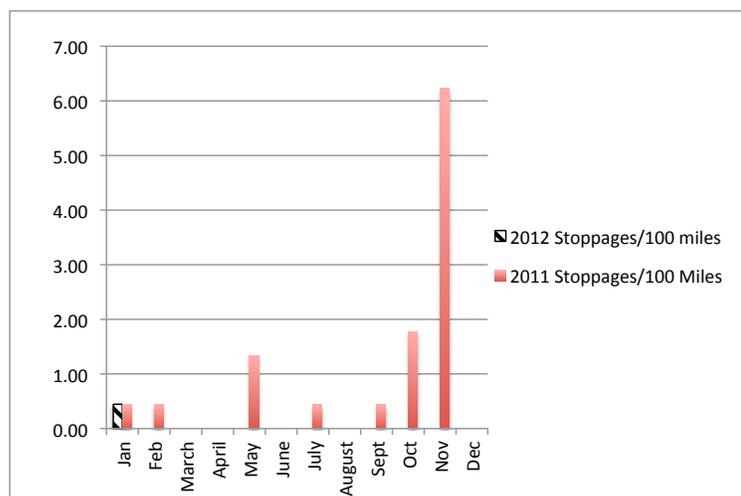
Month	2012 Footage Cleaned, ft	2011 Footage Cleaned, ft
Jan	58,929	21,360
Feb	0	40,428
March	0	52,785
April	0	46,972
May	0	53,110
June	0	57,214
July	0	55,114
August	0	66,852
Sept	0	69,621
Oct	0	63,731
Nov	0	47,375
Dec	0	59,246
Total	58,929	633,808



Month	2012 Avg. Ft. Cleaned/Hour Worked	2011 Avg. Ft. Cleaned/Hour Worked
Jan	115	59
Feb	0	99
March	0	93
April	0	80
May	0	93
June	0	120
July	0	107
August	0	121
Sept	0	122
Oct	0	122
Nov	0	118
Dec	0	108
Annual Avg	10	104



Month	2012 Stoppages/100 miles	2011 Stoppages/100 Miles
Jan	0.44	0.44
Feb	0.00	0.44
March	0.00	0.00
April	0.00	0.00
May	0.00	1.33
June	0.00	0.00
July	0.00	0.44
August	0.00	0.00
Sept	0.00	0.44
Oct	0.00	1.78
Nov	0.00	6.22
Dec	0.00	0.00
Total	0.44	11.1



**NOVATO SANITARY DISTRICT**  
**Wastewater Operations Committee Meeting**  
**Reclamation Facilities Report**  
**January 2012**

**Summary:**

Minor gate maintenance on Site 2 was performed this month. The irrigation strainers and flow meter at the Irrigation Pump Station were removed for service.

**Rancher Operations:**

The rancher focused on weed spraying, sprinkler repairs and fence repairs.

The chain link fabric on the gates to the pastures along the main access road on Site 2 was replaced. This fabric was damaged over the years by cattle sticking their head through the gate frame.

**Irrigation Systems:**

No activities to report this month.

**Irrigation Pump Station:**

Pump 2 is still out of service and at the shop for repairs. Both irrigation water strainers were removed and shipped to the manufacturer for refurbishment. The flow meter was also removed and sent to the manufacturer for calibration.

**Sludge Handling & Disposal:**

No activities to report this month.

## ODOR LOG

February 13 - 19

NEIGHBOR	Mon 2/13		Tue 2/14		Wed 2/15		Thu 2/16		Fri 2/17		Sat 2/18		Sun 2/19		Notes
	Time	Time	Time	Time	Time	Time	Time	Time	Time	Time	Time	Time	Time		
1144 Lea	1		1		1		1		1		1				Email dated 2/18 noted odors all week.
1139 McClelland							1	17:00							
485 Lea															Noise beginning 2/26 am 24/7
487 Lea															
1138 Lea															
1141 Lea															
1141 McClelland															

### Legend

Description	
Aeration Basins	1
Raw Sewage	2
H2S	3
Aeration + Sewage	4
Aeration, Sewage, H2S	5
Sewage + H2S	6
Other (see notes)	7
Not Specified / Unknown	8
Intensity	
Mild Intermittent	1
Mild Persistent	2
Moderate Intermittent	3
Moderate Persistent	4
Strong Intermittent	5
Strong Persistent	6

## ODOR/Noise LOG

February 20 - 26

NEIGHBOR	Mon		Tue		Wed		Thu		Fri		Sat		Sun		Notes
	Time		Time		Time		Time		Time		Time		Time		
1144 Lea															
1139 McClelland															
485 Lea															Fan sound 2/18 -22
487 Lea															
1138 Lea															Fan sound 2/18-23
1141 Lea	3	6	AM												
1141 McClelland															

### Legend

Description	
Aeration Basins	1
Raw Sewage	2
H2S	3
Aeration + Sewage	4
Aeration, Sewage, H2S	5
Sewage + H2S	6
Other (see notes)	7
Intensity	
Mild Intermittent	1
Mild Persistent	2
Moderate Intermittent	3
Moderate Persistent	4
Strong Intermittent	5
Strong Persistent	6

# NOVATO SANITARY DISTRICT BOARD AGENDA ITEM SUMMARY

<b>TITLE: Wastewater Facility Upgrade Project: Odor Control, Landscaping &amp; Noise</b>	<b>MEETING DATE: February 27, 2011</b>  <b>AGENDA ITEM NO. :</b>
<b>SUMMARY AND DISCUSSION:</b>  <p>The District's current activities to address neighborhood concerns about odors, noise, and visual screening are updated below. Neighborhood comments and complaints since the last board meeting are summarized in the attached tables.</p> <p><b>Biofilter Retrofit</b></p> <p>The media has been placed in the odor control biofilters and air feed began on February 16<sup>th</sup> to the headworks, aeration basin, and GBT biofilters. The contractor completed air balancing on these units on February 21st. The back pressure is very low, approximately 1" and the beds can be operated with only one blower. The contractor is waiting for parts for Primary Clarifier No. 1 bed but the clarifier has been taken out of service due to low flows. While all of the operating facilities will be ducted through the filters by the completion date of February 29<sup>th</sup>, it appears that there will be additional work to complete the P-traps and Clarifier No. 1 bed in the first week of March. The testing period will be between 30 and 60 days after restart of the biofilters. It will be necessary to have some night lighting during the time there are open excavations for safety of District personnel. Excess bioxide is being added to control odors during the construction period.</p> <p><b>Health Effects</b></p> <p>Dr. Scofield is delayed about two weeks in his work on the health effects study. District staff will be contacting people to schedule the meeting in the week of March 5<sup>th</sup> or 12th.</p> <p><b>Visual Screening</b></p> <p>The landscaper will be replacing some of the grasses with Pacific Wax Myrtle, a native tree to improve screening along Lea Drive. Irrigation is being installed along the fence to support vines to cover the fence. Further planting or screening is on hold pending meetings with Jim Joyce to determine the best combination of planting and barriers for odor, noise and visual screening.</p> <p><b>Noise</b></p> <p>Fan noise has been reduced as of February 23<sup>rd</sup> due to lower air pressures and a reduced number of blowers. Veolia will be installing temporary sound walls around the headworks blower to test the effectiveness. Construction will be scheduled for March 2012 after the biofilter retrofit is complete.</p>	
<b>DEPT. MGR. :</b>	<b>MANAGER'S APPROVAL:</b>

February 24, 2012

Memo to: Board of Directors

From: Beverly B. James, Manager-Engineer

Subject: Annual Operations and Maintenance Report

The Contract Service Agreement for Operation, Maintenance, and Management of Wastewater Treatment Facilities (Agreement) requires that Veolia Water provide the District with an “Annual Operations and Maintenance Report” that covers the following topics:

- Summaries of maintenance, repair and replacement activities;
- Condition assessment, details of any modifications made, and an analysis of the effectiveness of any repairs, replacements, or upgrades;
- A summary of the information provided in monthly reports;
- A summary of environmental, safety, and regulatory compliance;
- An assessment of any outstanding issues;
- Operating budget summary;
- Notable achievements, awards and/or any performance issues related to the facility.

Veolia Water has provided and staff reviewed the Annual Report for the period August 6, 2010 through July 31, 2011. The draft report was provided to the Wastewater Operations Committee at their January meeting and further reviewed at their February meeting. The final report is included with this board packet.

## Highlights

*Maintenance:* Veolia implemented and followed a computerized scheduled maintenance program to perform all required maintenance, including warranty items. They completed 2589 work orders of which three were for work in excess of \$10,000. Veolia paid for 2 of these for a total of \$22,142 and the District paid for one for a total of \$14,624.

*Condition Assessment:* Veolia performed a condition assessment and criticality review.

*Treatment Plant Performance:* The treatment plant processed 2.1 billion gallons of wastewater. Key plant performance indicators showed excellent plant performance with an average Biochemical Oxygen Demand (BOD) removal efficiency of 96% and Total Suspended Solids (TSS) removal efficiency of 98%. The electrical and diesel fuel usage was below the caps set in the contract. Natural gas usage may have exceeded the cap but it is not possible to confirm since the separate metering for the administration building usage was not available until March 2011.

*Regulatory Compliance:* There was one NPDES violation caused by the electrical failure of the waste activated return pumps that was a construction defect repaired under warranty. There were 3 coliform violations during the non-discharge season caused by fouling of the UV lamps by ferric chloride.

*Safety and Training:* All 365 days of the contract year were incident-free resulting in a perfect safety record. All required safety training was completed as well as daily safety training. Veolia corporate conducted a thorough safety audit. Veolia provided additional training to support three operators increasing their certification levels.

*Outstanding Issues:* The one significant outstanding issue has been performance of the odor control system. An independent review of the system by a recognized expert identified this as a design problem. The design consortium is in the process of retrofitting the system.

*Operating Budget Summary:* Veolia operated under two different budgets during the 2010-11 operating year:

- For August and September 2010 prior to the shutdown of the Ignacio Treatment Facility they were under Service Fee A and Cap A.
- From October 2010 through July 2011 they were under Service Fee B and Cap B.

The original fees were set as of June 30, 2010 and subject to an annual inflation adjustment based on a Blended Adjustment Index made up of the Consumer Price Index, the Employment Cost Index, and the Producer Price Index. The service fee was also adjusted to account for the number of former District employees transitioning to Veolia. The service fee for the operating year totaled \$1,951,637.52. The Agreement also provided for pass through of the performance bond and insurance costs, which totaled \$55,774.55.

### **Flow and Loading Adjustment**

The Service fee is subject to adjustment based on flow and loading. The loading was slightly higher than the contract amount as shown in Table 1, resulting in an adjustment for the 2010-11 operating year is \$4,954.

### **Cost Savings Sharing**

The Agreement has a provision for sharing the cost savings for electric power use below the usage cap. The incentive payment is 50% of the value of the Kwh usage quantity below the cap. The plant used 706,852 Kwh less than the cap for the operating year resulting in a total savings of \$84,822. The incentive payment totals \$42,411.

### **Performance Incentives**

The Agreement also provides for financial credits and penalties for perfect NPDES permit compliance, staff obtaining Grade III or IV certification, no lost time accidents, and no odor complaints. The performance incentives total \$2,200 for the 2010-11 operating year.

### **Summary and Conclusions**

Veolia successfully operated the Novato and Ignacio wastewater treatment facilities through the first year of their contract. This coincided with the start up and testing of the new Novato Wastewater Treatment Facility which was accomplished with an excellent record of environmental performance. The total credit due to Veolia for this period is \$49,565.

### **Staff Recommendation**

District staff recommends that the Board of Directors authorize payment to Veolia of \$49,565.

**Table 1: Novato Sanitary District  
2010-11 Treatment Facility Operations Annual Adjustments**

Parameter	Contract Value - low	Contract Value - high	Actual Value	Basis	Annual Credit to Veolia
Flow, mgd, 12-month average, August 1, 2010 to July 31, 2011	4.36	6.54	5.67	\$12,711/mgd	\$0
BOD, lbs/day 12-month average, August 1, 2010 to July 31, 2011	6,700	10,050	10,694	\$1.952/ lb/day	\$1,257
TSS, lbs/day 12-month average, August 1, 2010 to July 31, 2011	8,504	12,756	14,541	\$2.071/lb/day	\$3,697
<b>Subtotal Flow and Loading adjustment</b>					<b>\$4,954</b>
Electricity, kWh/year 8/1/2010 - 7/31/2011 (Note 2)		4,247,717	3,540,865	1/2 of \$0.12/kwh	\$42,411
Electricity, kWh/mgd 8/1/2010 - 7/31/2011		2,465	1,711		\$0
Natural Gas, therms/year 8/1/2010 - 7/31/2011		28,353	Note 1		
Natural Gas, therms/mgd 8/1/2010 - 7/31/2011		16.45	Note 1		
Diesel fuel, gal/year 8/1/2010 - 7/31/2011		2,595	1,616	none	\$0
Diesel fuel, gal/mgd 8/1/2010 - 7/31/2011		1.6	0.78		\$0
<b>Subtotal Cost Savings Sharing</b>					<b>\$42,411</b>
NPDES Permit Violations		0	1		\$0
Staff Grade III certifications obtained (\$200 credit/certificate)			2	\$200	\$400
Staff Grade IV certifications obtained			0		\$0
Lost Time Accidents (\$200 credit/employee)	0		0		\$1,800
Odor Complaints	0				\$0
<b>Subtotal Performance Excellence incentives</b>					<b>\$2,200</b>
<b>Total</b>					<b>\$49,565</b>

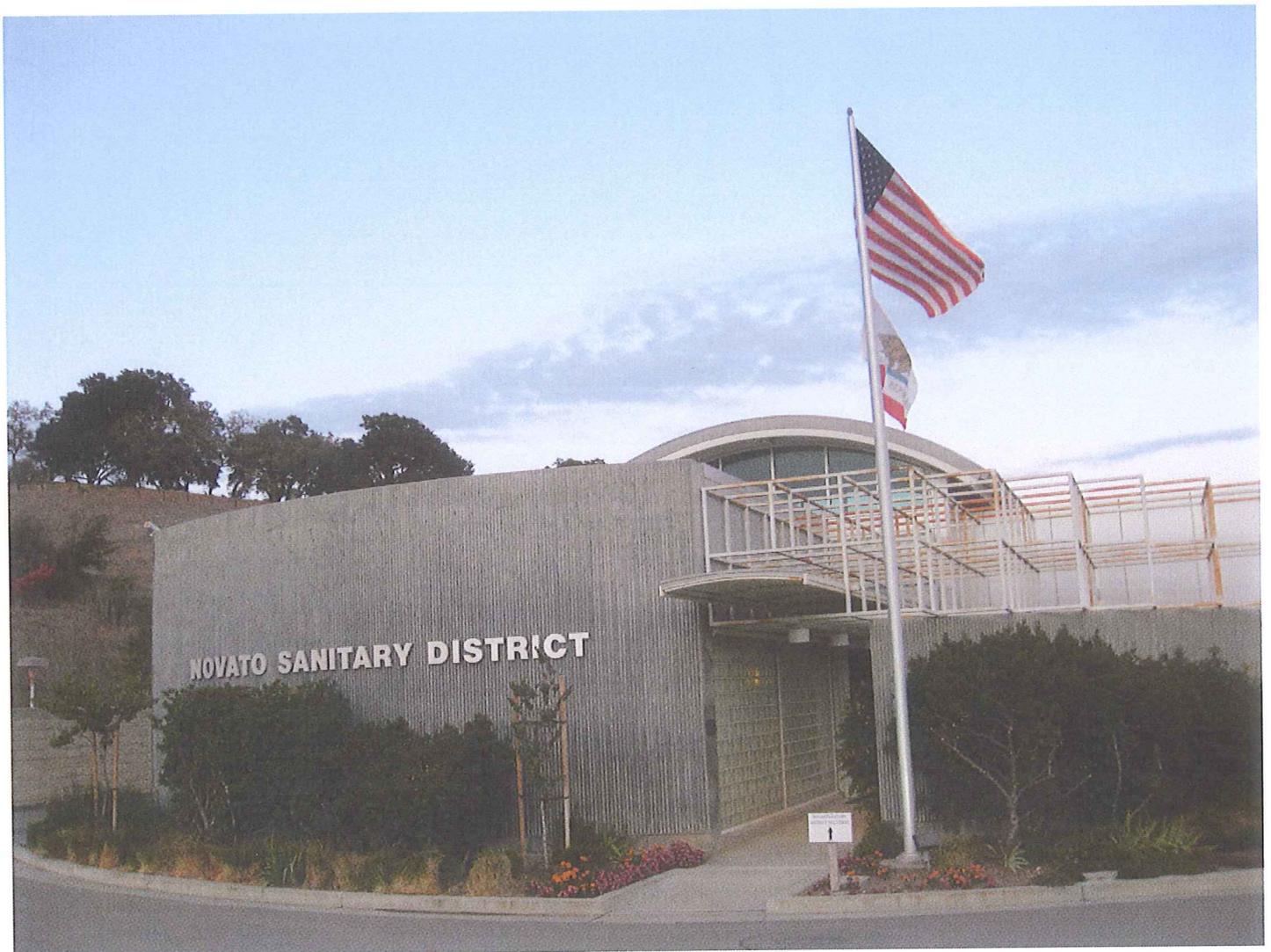
Note 1: Not able to calculate because separate meter reading for admin building not available until March 2011.

Note 2: Average Electrical cost for NTP and Ignacio PS = \$0.12/kwh for year.

Prior year averaged \$0.13/kwh for the year so Veolia met the requirement in Schedule 11 to manage the electrical load to minimize the cost/kwh.



# ANNUAL OPERATIONS AND MAINTENANCE REPORT AUGUST 2010 – JULY 2011



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**ATTACHMENTS**

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- 3 Condition Assessment
- 4 Five Year Capital Improvement Plan (in development)
- 5 Replacement Plan (in development)

# Section 1

# ANNUAL OPERATIONS REPORT

## August 2010 – July 2011

### Veolia Water West Operating Services Novato

## Section 1 Overview

On August 7, 2010 Veolia Water North America (Veolia) resumed operation and maintenance under the contract agreement dated September 24, 2009.

The following summary provides an overview of plant performance and activities for the period August 1, 2010 through July 31, 2011.

Total Volume of Water Processed	2,064.01	Million Gallons
Total Volume of Water Reclaimed	508.34	Million Gallons
Total Volume of Water Discharged	1,555.67	Million Gallons
Average Daily Dry Weather Flow	4.21	MGD
Maximum Daily Flow	19.97	MGD
Pounds of BOD Treated	4,043,360	
Pounds of BOD Removed	3,832,490	
Percent BOD Removal Efficiency	96%	
Pounds of TSS Treated	5,430,968	
Pounds of TSS Removed	5,315,463	
Percent of TSS Removal Efficiency	98%	
Pounds of Bio-solids Treated	3,040,543	
Cubic Feet of Biogas Produced	26,287,513	
Total Number of Violations / Excursions	4	
NPDES (Bay Discharge)	1	pH (low)
WDR (Reclamation)	3	Total Coliform

#### Maintenance

Total Number of Work Orders Issued	2748
Total Number of Work Orders Closed	2589
Percentage Preventive Maintenance	93%
Average Completion	7.36 Days

#### Consumables

Electricity – kWh / Year	3,540,865
Electricity – kWh / MG	1,711
Natural Gas – Therms / Year	53,841
Natural Gas – Therms / MG	26
Diesel Fuel – Gallons / Year	1,616
Diesel Fuel – Gallons / MGD	0.78

# ANNUAL OPERATIONS REPORT

## August 2010 – July 2011

### Veolia Water West Operating Services Novato

#### Key Events

#### August 2010:

- Reinstalled Channel Grinder @ Ignacio Transfer Pump Station (ITPS) in preparation for decommissioning of Ignacio Wastewater Treatment Plant.
- Novato – Channel Screen #1 – Annual Service
- Novato - Digester #1 – Startup, Operating at 60% Capacity

#### September 2010:

- Ignacio Wastewater Treatment Plant decommissioning
- Novato - Digester #1 Startup, Operating at 100% Capacity
- Criticality Assessment (processes and equipment) underway by Veolia Asset Management group

#### October 2010:

- Begin Bay Discharge October 12, 2010, NPDES Standard in effect
- Annual NPDES Compliance Inspection
- Drained/cleaned Secondary Clarifier & Primary Clarifier @ Ignacio

#### November 2010:

- Odors and Odor Control – Some of the measures taken to date include:
  - Daily discussion at morning meeting to reinforce importance to all
  - Weekly change out of grit bin
  - Clean grit bin with sodium hypochlorite
  - Turn off aeration in screenings channel to prevent fugitive odors
  - Application of sodium hypochlorite and ferric chloride upstream of
- Boiler repaired (replaced cracked section) back in service

#### December 2010:

- Old Chlorine Contact and Effluent Storage Basins cleaned.
- Influent Flow Meters calibrated
- Odors
  - Reassigned ferric feed to headworks (from digester) for hydrogen sulfide control
  - Soil bed samples taken on 12/3/10
  - Biological seeding performed on 12/7/10
  - Held neighborhood meeting on 12/9/10
  - Meeting with BAAQMD on 12/17/10
  - Performed Jerome Metering testing, no significant H<sub>2</sub>S levels detected
  - Short circuiting observed around large (headwork's) soil bed.

**January 2011:**

- Old Flare removed from service
- Replaced Wet Weather diesel pump batteries
- Soil Bed (Headworks / Clarifier #2 – Contractor Installing PVC Liner)
- Replaced Boiler Recirculation Pump

**February 2011:**

- Cleared Decant Sludge Line
- Boiler repaired – replaced cracked section
- Soil Bed Odor Scrubber rehabilitation complete, back in service 2/28/11

**March 2011:**

- Boiler repaired – replaced cracked section, investigating cause of repeated failure
- Tested Wet Weather Pumps
- Installed Wash Down Water System

**April 2011:**

- Digester #1 – mixer failure, repaired
- Aluminum gates ordered to replace heavy stainless gates @ Aeration Basins
- Clarifier #1 removed from service for dry season
- Pulled Flash Mixer @ Ignacio Dechlorination Station

**May 2011:**

- Digester #2 removed from service
- Aeration Basin #3 removed from service
- Repair of High Pressure Water Pump
- Install temporary Odor Scrubber at Manhole and collection system, East side of the Treatment Plant

**June 2011:**

- Transitioned from Bay Discharge to Reclamation on 6/1/11
- Switched from Reclamation to Bay Discharge on 6/14/11
- Gravity Belt Thickener (GBT) repaired, replaced bearings
- SCADA repaired – New human machine interface (HMI) installed @ Ignacio

**July 2011:**

- Transitioned from Bay Discharge to Reclamation on July 1, 2011
- Boiler Repaired – replaced cracked section
- Shape Inc hired to perform 18 point inspection all Flygt Pumps and Mixers
- Shape pulled 3 Influent Pumps for repair
- California Diesel & Power – Annual serviced generators/Wet Weather Pumps
- Pulled Decant Pumps, at reclamation – repaired/cleaned

## Section 2

# ANNUAL OPERATIONS REPORT

## August 2010 – July 2011

### Veolia Water West Operating Services Novato

## Section 2. Treatment Plant Performance Compliance Summary

Throughout the reporting period, August 2010 through July 2011, there were three exceedances of waste discharge requirements (WDR) during reclamation and one NPDES violation while in bay discharge.

In August 2010, there were three WDR exceedances for total coliform. The most likely cause of these violations was a buildup of ferric chloride on the sleeves of the Ultra Violet disinfection system bulbs. The buildup reduces the intensity of the UV light thereby compromising disinfection.

In December 2011 a low effluent pH value was recorded. Our allowable pH range is 6.5 to 8.5 standard units (s.u.). The low pH of 6.4 s.u. was likely caused by a process problem. Two mixed liquor return pumps failed as the result of an electrical problem. The mixed liquor return pumps drive the process that raises alkalinity and pH. The pumps were repaired under warranty by the vendor and the pH problem has not resurfaced.

The table that follows provides a compliance summary broken out by constituent.

Waste Discharge Limits / Reclamation				
Parameter	Limit	Units	Analysis	Violations
BOD Monthly Average	40	mg/L	5	0
Total Coliform - 5 Sample Median	240	mpn/100 ml	49	3
Total Coliform - Maximum	10,000	mpn/100 ml	49	0
pH – High	9.0	s.u.	93	0
pH – Low	6.0	s.u.	93	0

NPDES Wet Season Limits - November - April				
Parameter	Limit	Units	Analysis	Violations
BOD Weekly	45	mg/L	26	0
BOD Monthly	30	mg/L	6	0
TSS Weekly	45	mg/L	26	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	6	0
Fecal Coliform - 90th Percentile	430	mpn/100 ml	6	0
Ammonia - Daily Maximum	21	mg/L	25	0
Ammonia - Monthly Average	6	mg/L	6	0
pH – High	8.5	s.u.	130	0
pH – Low	6.5	s.u.	130	1
Oil & Grease - Daily Maximum	15		5	0
Oil & Grease - Monthly Average	5		5	0

NPDES Dry Season Limits - May, September, & October				
Parameter	Limit	Units	Analysis	Violations
BOD Weekly	30	mg/L	7	0
BOD Monthly	15	mg/L	2	0
TSS Weekly	20	mg/L	7	0
TSS Monthly	10	mg/L	2	0
BOD Removal (minimum)	85	%	2	0
TSS Removal (minimum)	85	%	2	0
Enterococcus - 30 Day Geo Mean	35	Col/100 ml	2	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	10	0
Ammonia - Monthly Average	6	mg/L	2	0
pH – High	8.5	s.u.	35	0
pH – Low	6.5	s.u.	35	0
Oil & Grease - Daily Maximum	15		1	0
Oil & Grease - Monthly Average	5		1	0

**\*TREATMENT PLANT PERFORMANCE SUMMARY:**

**August 2010:**

Parameter	Monthly Performance August 2010	
	Novato WWTP	Ignacio WWTP
Flow, MGD (monthly average)	4.097	
Influent BOD <sub>5</sub> , mg/L (monthly average)	216	240
Influent TSS, mg/L (monthly average)	289	190
Effluent BOD <sub>5</sub> , mg/L (monthly average)	13	
Effluent TSS, mg/L (monthly average)	8	
Effluent BOD <sub>5</sub> - % Removal	94	
Effluent TSS - % Removal	97	
Ammonia mg/L (monthly average)	2.10	
Total Coliform, mpn (Maximum)	900	
<b>Total Permit Exceedances (WDR)</b>	<b>3</b>	

WDR EXCEEDANCE (RECLAMATION)	PARAMETER	RESULT	DATE
E002	Total Coliform	300 mpn/100 mL	8/2/2010
E002	Total Coliform	300 mpn/100 mL	8/3/2010
E002	Total Coliform	300 mpn/100 mL	8/31/2010

**Discussion of Violations / Excursions:**

**Total Coliform** – As a result of high coliform result on July 26<sup>th</sup>, 27<sup>th</sup> and August 2<sup>nd</sup>, we exceeded our 5 sample median limit of 240 mpn on August 2<sup>nd</sup> and 3<sup>rd</sup>. Our third exceedance occurred on August 31<sup>st</sup>.

- Working in conjunction with the design engineer, RMC Water Environmental, Inc, three potential causes of the high total coliform results have been identified:
- Airborne contamination due to dust from construction activities in the area (grading)
- An outbreak of nuisance organisms (snails) which contribute to fouling of the ultra violet (UV) disinfection system sleeves.
- Fouling of the UV sleeves by iron salts from ferric chloride application. Ferric is added to the influent, primarily for hydrogen sulfide control in the digester.

In response to high coliform values the following corrective measures were taken. ultra violet (UV) dose was increased from 35,000 to 60,000 uW/sec/cm<sup>2</sup>. Mats were installed over UV channel grating to prevent possible airborne contamination. Frequency and methods for UV lamp cleaning has been modified. Ferric chloride feed to influent has been reassigned to the digester to prevent possible iron scaling of the UV sleeves.

## \*TREATMENT PLANT PERFORMANCE SUMMARY:

**December 2010:**

Parameter	Monthly Performance December 2010	
	Novato WWTP	Comments
Flow, MGD (monthly average)	7.642	
Influent BOD <sub>5</sub> , mg/L (monthly average)	204	
Influent TSS, mg/L (monthly average)	283	
Effluent BOD <sub>5</sub> , mg/L (monthly average)	10	
Effluent TSS, mg/L (monthly average)	7	
Effluent BOD <sub>5</sub> - % Removal	94	
Effluent TSS - % Removal	97	
Ammonia mg/L (monthly average)	0.27	
Fecal Coliform, mpn (Geo Mean)	38.7	
Enterococcus, mpn (Geo Mean)	11.6	
pH	6.4	12/27/2010
<b>Total Permit Exceedances (NPDES)</b>	1	

### **Discussion of Violations / Excursions:**

**\*\*pH NPDES – E-002 (Final Effluent):** We experienced a pH violation on December 27<sup>th</sup>. pH is affected by the removal of ammonia (loss of alkalinity). We are working on a process control fix. If this is not achievable we will add chemical to increase pH.

**\*\*Note (1/19/2011) –** It was determined that the low pH was due to an electrical failure of the mixed liquor return system. The loss of mixed liquor return prevented denitrification and recovery of the associated alkalinity.

\*Descriptions taken from August 2010 and December 2010 Monthly Operational Reports (MOR)

# Section 3

# ANNUAL OPERATIONS REPORT

## August 2010 – July 2011

### Veolia Water West Operating Services Novato

## Section 3 O&M Manual, SOP, and Hach WIMS

### Electronic Operation and Maintenance (eO&M) Manual

An electronic operations and maintenance (eO&M) manual was developed by HDR Engineering as part of the recent treatment facility upgrade. The eO&M provides facility descriptions, operating scenarios, troubleshooting information, and much more. The manual also provides links to equipment operations and maintenance manuals, design information, diagrams, schematics, and other relevant information. The eO&M manual is a living document that will be updated as needed.

### Standard Operating Procedures (SOP)

The eO&M manual is supplemented by SOP. The SOP provides specific instruction on performing tasks. The general SOP layout is as follows:

- description of the work to be performed
- safety considerations
- personal protective equipment required
- lockout Tagout or other special requirements
- step by step instructions on completing the work

### Hach WIMS (Water Information Management System)

Like Hach Job Plus Hach WIMS is an off-the-shelf non-proprietary software system used to store and access data. Operational and laboratory information is entered into the data base. WIMS provides preformatted reports as well as wizards that allow the user to build customized reports.

The following pages offer examples of the eO&M and Hach WIMS as well as a list of SOP.

# Section 4

# ANNUAL OPERATIONS REPORT

## August 2010 – July 2011

### Veolia Water West Operating Services Novato

#### Section 4.A. Asset Management

Key components of an Asset Management Program include:

- Computerized Maintenance Management System
- Preventive, Predictive, and Corrective Maintenance
- Equipment Inventory
- Reliability / Criticality Assessment (Hierarchy of Equipment Priority)
- Condition Assessment
- Replacement Program
- Recommended Capital Improvements

##### Computerized Maintenance Management System

Veolia uses *Job Cal Plus*<sup>™</sup> (Job Plus) as the basis for scheduling and tracking maintenance and repairs at Novato. Job Plus is an off-the-shelf, non proprietary software program available from Hach. Job Plus uses the Micro Soft Access data base platform to store and access information. A description of Job Plus can be found at the end of this section.

##### Preventive, Predictive, and Corrective Maintenance

Preventive maintenance (PM) is a scheduled maintenance activity generally tied to equipment run time (500 hours) or period schedule (weekly / quarterly). Routines such as lubrication, oil change, filter change fall into the category of PM. Predictive maintenance (PdM) is performed to determine when maintenance might be required and or condition. Tasks such as vibration, temperature, and oil analysis are types of PdM. Corrective maintenance is maintenance initiated when a deficiency is found.

##### Equipment Inventory

An accurate equipment inventory is crucial to all phases of Asset Management. Equipment must be accounted for to be maintained or for replacement to be planned. All equipment at the Novato facility has been inventoried and loaded into Job Plus

##### Reliability / Criticality Assessment (Hierarchy of Equipment Priority)

A Criticality Assessment was performed at the Novato facility in August 2010. The assessment evaluates processes and equipment rates the relative importance. The evaluation process looks at consequences and likelihood of failure and redundancy. The product helps the user prioritize replacement and

maintenance. A portion of the Criticality Assessment is included as Attachment 2.

#### Condition Assessment

Equipment condition is an important factor in planning repair and replacement. A condition assessment was performed in August 2011. Condition assessment looks at general condition such as rust and corrosion and a number of indicators such as vibration, temperature, and noise. A portion of the Condition Assessment is included in Attachment Section 3.

#### Replacement Program

A replacement program is a planning tool that provides an opportunity to set aside funding for aging equipment. Although the Novato facility is new equipment begins to age the day it is placed into service. Even with the best maintenance and care it will eventually need to be replaced. Prudent asset management suggests that funds be set aside as equipment ages. Veolia's Asset Management group is developing a Replacement Plan for Novato and the Ignacio Transfer Pump station. The plan should be complete by Spring 2012 and will be submitted as an addendum to this report as Attachment 4.

#### Recommended Capital Improvements

Several potential capital improvements and projects have been identified for consideration. As with the Replacement Program the Capital Improvement Plan will be submitted as an addendum to this report as Attachment 5.

# HACH - JOB CAL PLUS COMPUTERIZED MAINTENANCE MANAGEMENT SOFTWARE SYSTEM

## Introduction and Overview

JOB Plus is a computerized maintenance management program that assists you in your maintenance operations. The Calendar is the heart of the JOB Plus system. It displays all the work to be done, completed work, overdue work, and skipped work for a 52-week period. Jobs can be closed, rescheduled, deleted, and created using the calendar.

## General Theory

JOB Plus is a scheduling program that displays **jobs (work orders)** on a calendar on the date they need to be done. The terms **work order** and **job** is interchangeable. A **job** is a **task** (work to be done) on a specific piece of equipment for a specific date. A **task** is a function to be performed; for example, changing oil would be a **task**. **Equipment** is an object that you want to perform tasks on.

Once you have a **task** set up, you assign pieces of **equipment** to the task. For example, you could assign a truck and a car to the **task** "Change Oil". When you assign equipment to a task, you set up a schedule of when you want the task performed on that equipment. For example, the truck could be scheduled every 5000 miles and the car could be scheduled every 90 days. Now that you have accomplished this, the system automatically generates work orders for the task and updates the calendar.

When work orders are placed on the calendar they can be marked as closed (completed), rescheduled, modified, skipped, etc. Work orders can also be printed. The closed job information is placed in a history file and can be accessed at any time. You can produce reports from this data to give you historical information.

## PREVENTATIVE vs. CORRECTIVE Job types

**Preventative Jobs** are scheduled work orders for tasks that occur regularly. JOB Plus then places these jobs on your calendar. For example, changing the oil in a truck every three months is Preventative Maintenance.

There are 3 methods to schedule Preventative Jobs:

- **Schedule By Days**
- **Schedule By Meter**
- **Schedule By Days/Meter**

**Schedule By Days.** This method generates work orders by using dates only. (JOB Plus uses this as its default schedule. An estimated task is based on the Days).

Schedule by Days allows you to choose between **fixed** or **floating** as the schedule type. For example;

If a job is **fixed** and is scheduled every 30 days, JOB Plus would schedule jobs on June 22<sup>nd</sup>, July 22<sup>nd</sup>, August 22<sup>nd</sup>, etc...If the first work order is closed on June 29<sup>th</sup> (7 days late), the other work orders won't be affected

because they are fixed in place.

If a job is **floating** JOB Plus automatically adjusts the calendar. For example;

The first work order was closed 7 days later than it was due, the other work orders will have their due dates changed to be 7 days later because the jobs float (i.e. the next job would be due on July 29<sup>th</sup> instead of July 22<sup>nd</sup>).

**Schedule By Meter.** This method generates work orders by using meter readings only. In order to schedule a job by Meter or Days/Meter the equipment must be metered (the Metered checkbox must be checked on the equipment record). If there has been a meter reading entered there will either be 1 open job and 1 estimated job or else just 1 estimated job on the screen for any task and equipment combination. JOB Plus automatically monitors the meter readings and if the meter reading comes due, the task is scheduled (changed from estimated to scheduled) and a new estimated job is also created. With this method the only schedule type is floating.

**Schedule By Days/Meter.** This generates a work order based on the “which ever comes first” rule. With this method the only schedule type is floating. For example;

If the task is floating and the first work order was closed 7 days later than it was due, the other work orders would have their due dates changed to be 7 days later because the jobs float (i.e. the next job would be due on July 29<sup>th</sup> instead of July 22<sup>nd</sup>).

**Should a task be fixed or floating?** It depends on the task. The following examples illustrate when to use **fixed** and **floating**.

**Fixed** Example:

Hanging Christmas lights. The task is scheduled for Dec 10th. If you do not hang the lights until Dec 24th this year, you would still want the job scheduled for Dec 10th the next year.

**Float** Example:

Change Oil every 60 days. The job is scheduled for June 5th, August 4th, etc... If you change the oil on July 10th instead of June 5th you would not want to change the oil again on August 4th. If the task is float, JOB Plus will automatically adjust the August 4th due date to September 9th.

**Corrective Jobs** are one-time or emergency work such as changing a flat tire on a truck. Corrective information is often entered for the purpose of keeping a good equipment record file.

## Section 4.B. Asset Management

### Repairs – Less than \$10,000

Month	Description
Jul-11	Cal Diesel in for Annual West Weather pump & Emergency Generator Annual Service (Novato & Ignacio)
	Drained Inspected Clarifier #1
	Drained Inspected Aeration Basin #4
	Pulled decant pump - cleaned
	Diablo Boiler tear down and repair boiler
	Replaced channel air blower -Aeration basin
	Repair to Auger Motor Drive - Brush replacement
	Tear down, clean, reassemble Decant Pump
	Clean and trace wire to MCC panel W/Craig Deasy
	Troubleshoot and repair OIT on GBT
	Troubleshoot and repair clarifier #1 run light
	Troubleshoot and repair OIT in headworks
	2001 Ops Pickup truck - Fuel Pump
	Troubleshoot and repair failed UV Channel #2 communications
	Was Pump #1 - repair
	Decant pump - disassemble, clean re-assemble
Jun-11	Replaced GBT bearings and Shaft /Dave Frost form Ashbrook in for direction/assistance for warranty
	Fabricated 2 Aluminum Gated to replace Steel Gates - Safety Hazard - Lifting
	Motorized #3 Strainer - repair
	Odor Control Fan #1 - PC#1 - belt replace
	Replaced UV DCA units/wiper system
	Calibrated DO Probes - Aeration Basin #1 & #2
	Unplugged Cyclone Degritter - #1
	Replaced fitting on Sodium Hypo pump #1
May-11	High Pressure Water Pump - tear down - clean/replace
	Repairs to sludge lagoon #4
	All-West - Repaired 3 way hot water valve (digester)
	Drained Primary Clarifier #2
	Repipped hypo pumps @ Novato
	Replaced batteries in all Rotork Actuators
	Adjusted Scum Pit Discharge valve on Secondary Clarifier #2
Apr-11	Pulled Flash Mixer # Ignacio/overhauled/in storage
	Flushed chemical pumps @ Ignacio
Mar-11	Repaired Hypochlorite Pumps (2 re-build kits)
	Diablo Boiler tear down and repair boiler

Mar-11	Disassembled, cleaned re-assembled Digested Sludge Pump #1
	Switched out Hypo pump at Ignacio with Novato Pump
	Calibrated and replaced sensors on microclip gas detectors
	Flushed rotometer - Hypo Pump #1
	Repair to fall arrest system - Sent in for repair
	Replaced fuse on GBT/Panel Digester Mixing Pump
	Replaced display on mag flow meter - primary clarifier
	Replaced sensor on GBT #1
Jan-11	Replaced batteries in wet weather pumps
	Installed emergency lighting system in Old storage building (new maintenance shop)
	Repair polymer pump/GBT
	Replace bearing in GBT #1
	Repair union at Grit Vortex #2 fluidizer
	Items purchased for Deer Island cleanup
Feb-11	plain leg section supplied - purchased from Diablo Boiler separately
Dec-10	Drained Primary Clarifier #1 - Leveling of weirs by Contractor
	Changed out Primary Clarifier #1 Motor – Contractor
	Hot water recirculation pump - boiler (Diablo boiler)
	2005 Dodge Crew Cab – brakes
	Ultrasonic cell cleaner failure - removed, repaired and reinstalled (HF Scientific)
	Replaced key cylinder/transmission service for 2005 Chevy. Ops truck
Oct-10	Annual Screen Service - Roy's Sewer & Crane Rental)
	Roy's Sewer in to pump out Primary Clarifier #2 Pump Pit
	Repaired solenoid valve Mechanical Filter Screen - Channel #2
	Cleaned and calibrated UVT Meter - Ultra Sonic Cleaning System not working
	Removed and cleared debris form Aeration Basin Odor Bed Spray heads
	Installed safety chain at all walkways/stairways, Attached warning signs to all decommissioned equipment
	Replaced hour meter - TWAS Pump #1
	Neoprene mats over UV channels (alliance industrial
	Ops Truck Repair - Distributor and spark plugs
	Digested Sludge Transfer Pump repair

Sep-10	Repaired #3 water system
	Re-assembled 4" Gorman Rupp Pump and verified operation
	Repair #3 water system
Aug-10	EQ Pump @ Ignacio - pulled - sent to shape – reinstalled
	Hose retrofit on Clarifiers
	Installed Channel Grinder @ Ignacio
	Modified Grab sample location @ effluent
	Above ground fuel tank @ Ignacio - cleaned rust and applied inhibitor/affixed new warning signs
	Prepped Hypo Tank @ Ignacio for decommission
	Sludge Scum Pump #2 - Jammed - pulled and sent to shape – warranty
	Installed drain on GBT #1 Feed Tank (Harrington)
	Wet weather vault for diesel piping/Generator vault - pumped leaking vaults and replaced float
	Replaced solenoid on screening washer compactor – JWC
	Hypo to Biotower and trickling filter @ Ignacio

### Repairs – Greater than \$10,000

<b>Veolia</b>		
<b>Month</b>	<b>Description</b>	<b>Cost for Repair</b>
Jul-11	Shape Performed 18 point inspection on 25 Pumps and mixers	10,733.00
Feb-11	Diablo Boiler tear down and repair boiler (supplied plain leg section)	11,409.00
	Total	22,142.00

<b>Novato Sanitary District</b>		
<b>Month</b>	<b>Description</b>	<b>Cost for Repair</b>
Nov-10	Diablo Boiler tear down and repair boiler (Diablo boiler & Cal Hydro, San Jose Boiler) Distirct invoiced	14,624.00
	Total	14,624.00

# Section 5

**ANNUAL OPERATIONS REPORT**  
**August 2010 – July 2011**  
**Veolia Water West Operating Services Novato**

**Section 5. Staffing and Organization**

**STAFFING & CERTIFICATION STATUS (current)**

John Bailey – Project Manager

Grade V California Wastewater Treatment Plant Operator #V-4123, December 31, 2012

Grade T2 Water Treatment Operator #18030, June 1, 2014

Edward M. Mann – Assistant Project Manager / Operations Manager

Grade V California Wastewater Treatment Plant Operator #V-4850, June 30, 2013

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

Anthony M. Silva – Operator III

Grade III California Wastewater Treatment Plant Operator #III-10973, June 30, 2013

Grade II Collection System Maintenance Technician, 354, January 31, 2013

Dean B. Heffelfinger – Operator III

Grade III California Wastewater Treatment Plant Operator #III-27610, June 30, 2013

Christian R. Williams – Operator III

Grade III California Wastewater Treatment Plant Operator #III-28555, June 30, 2013

Grade II Plant Maintenance Technologist, 080151005, January 31, 2013

Peter M. Delaney – Operator III

California Wastewater Treatment Plant Operator #III-10941, June 30, 2013

Jeffrey D. Hendricks – Operator II

California Wastewater Treatment Plant Operator #II-28377, December 31, 2013

Grade I Collection System Maintenance Technician, 0801210049, January 31, 2012

Grade I Plant Maintenance Technologist, 070750011, July 31, 2012

Ralph Loveless – Maintenance Technician

# Section 6

# ANNUAL OPERATIONS REPORT

## August 2010 – July 2011

### Veolia Water West Operating Services Novato

## Section 6. Safety and Training

Veolia Water North America (VWNA) 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. VWNA is committed to providing its employees a healthful and safe place of employment. To that end, VWNA will provide proper training, materials, and equipment so that work can be performed safely and in compliance with the Occupational Safety and Health Administration regulations (OSHA) and other applicable standard. In turn, each employee is responsible to participate in a cooperative effort to maintain an effective health and safety program. Adherence to company policies and work proactive guidelines is an essential part of this responsibility. By maintaining an effective program, we reduce the risk of personal injury, operational interruptions, regulatory fines, and maintain the company's reputation as a world leader in environmental management.

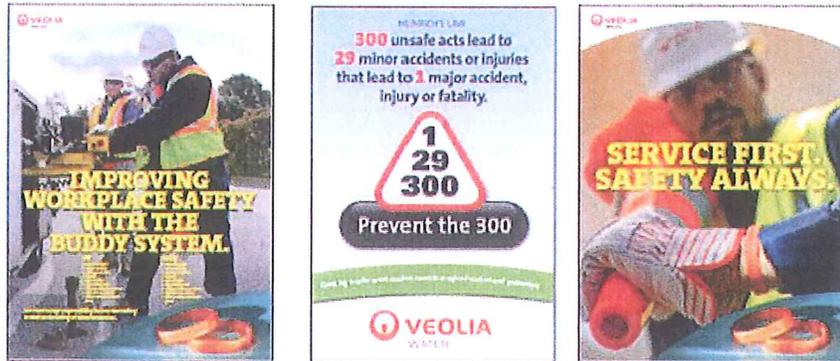
Our highest duty - to ensure health, safety and security for all. It is our highest duty, essential business priority, and the individual responsibility of each of us to ensure that at all time and in all of our operations, the health, safety and security of the general public, our customers, subcontractors and our fellow employees are protected. We allow for no compromise in this matter, and we strive to proactively identify potential risks and take diligent corrective and preventative actions to reduce and eliminate them. In the same spirit, we support, advise and encourage our fellow employees to maintain good personal health, as well as to develop positive practices and behaviors in that respect.

VWNA Novato has a zero harm safety record from reinstatement of the Operations Contract. We have had no incidents from 6/1/10 to present. This reporting period from 8/1/110 - 7/31/11 resulting in 365 days - accident/incident free. In recognition of this achievement - staff celebrated at a luncheon with gifts of appreciation. Each employee received a cash incentive reward from the Company for 1 year no lost time incidents as a group and also as individual achievements.

Listed Below are highlights of 2010 - 2011:

- Staff conducted monthly internal safety inspections
- Monthly Safety Report submitted to corporate
- Facility underwent corporate safety audit
- Participated in the Great California Shake Out earthquake simulation/drill

## It's a Culture, Not a Campaign



VWNA Novato provides job specific safety training for employees. The following is training provided from August 1, 2010 through July 31, 2011.

<b>Safety Training</b>	
<b>Date</b>	<b>Topic</b>
Sept. 2010	Injury, Illness & Prevention Program
Oct. 2010	Emergency Action Plan and Earthquake Drill
Nov. 2010	Arc Flash Awareness Training
Dec. 2010	Bulk Chemical Off-Loading & Re-Use of Chemical Tanks Policy
	Cellular Telephones - Vehicle Operations Policy
	Veolia Mission Statement
Jan. 2011	Cold Stress Policy
Feb. 2011	Hazardous Material Awareness Policy
	Incentive Program/Employee Recognition – Policy
	Safety Rules – Policy
Mar. 2011	Lockout / Tagout Policy
	Eye Protection Policy
	Foot Protection Policy
	Jerome Metering Training – Odors
Apr. 2011	Overexertion Injuries - Sprains & Strains Policy
May. 2011	Fire Extinguisher Training
Jun. 2011	Lockout / Tagout Site Specific Revision
	Bloodborne Pathogens Policy
	Confined Space Training
Jul. 2011	Emergency Action Plan review

## Confined Space Training Exercise

June 14 & 15 2011

A mix of classroom reinforced by hands-on participation made this two day class interesting and successful.



Left - Safety coordinator Lynda Rodefer checks her harness before making the entry. Trainer / Environmental, Health, Safety, and Security (EHS&S) Manager, Jeremiah Danielson in background.

Right - Veolia EHS&S Manager Jeremiah Danielson provides hands-on instruction to staff at the Novato site. Topics included rigging, rescue, hazards, job site security, communication, personal protective equipment, as well as duties and responsibilities of entrant, attendant, and entry supervisor.



Left – Jeffrey Hendricks, Ed Mann, and Ralph Loveless prepare for confined space entry at headworks.

Below – Ralph Loveless assists Christian Williams prior to confined space entry.

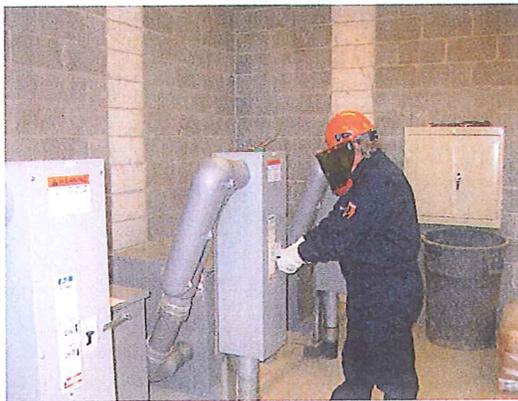
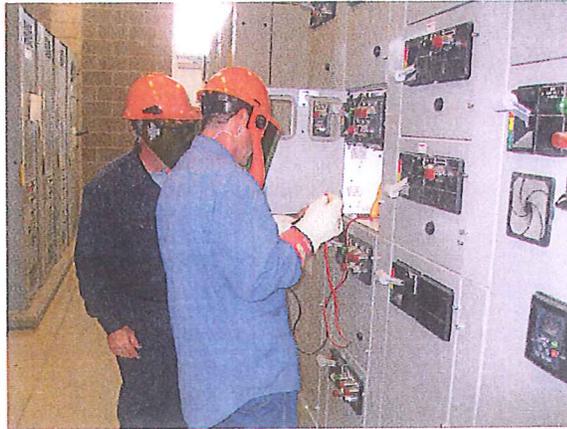


# Arc Flash Training Exercise

November 3 & 4 2010



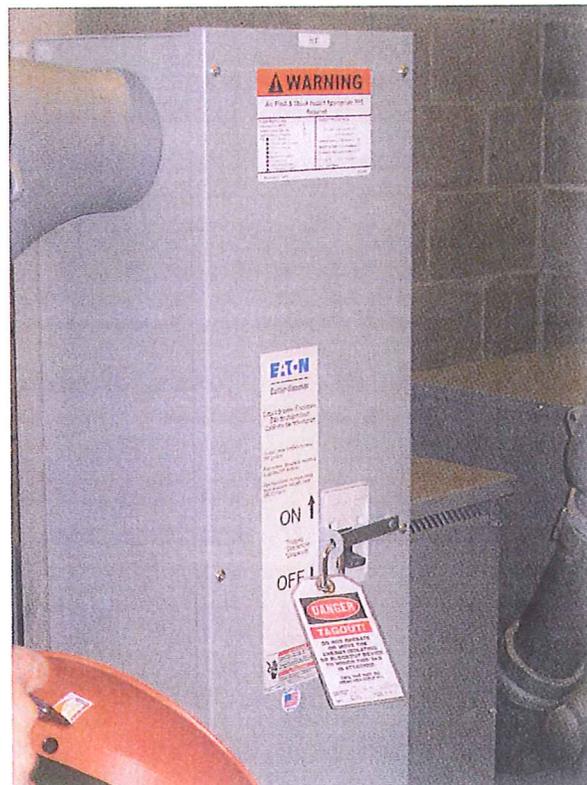
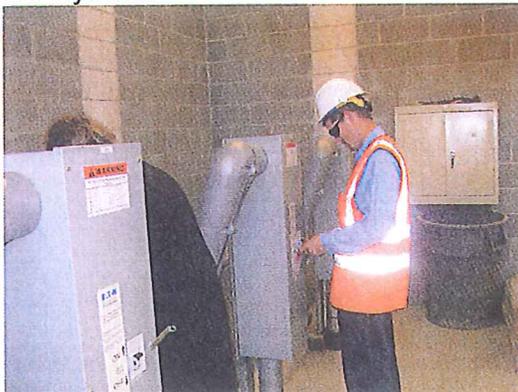
November 3 & 4, 2010  
Rock Rayl provides Arc Flash training to Jeffrey Hendricks and others at Novato.



Left - Ed Mann dons level 3 arc flash personal protective equipment to isolate ultra violet (UV) disinfection system breaker.

Right – UV breaker properly locked out and secured

Below – Christian Williams locks and tags a breaker prior to working on UV system



# Section 7

# ANNUAL OPERATIONS REPORT

## August 2010 – July 2011

### Veolia Water West Operating Services Novato

## Section 7 Budget

The Novato Operations and Maintenance Service Agreement dated September 24, 2009 is a fixed price contract. Normal operations, maintenance, and management are included in the contract price. Variables to the fixed price include:

### Schedule 7 & Schedule 13 - Pass Through Costs

- Performance Bond
- Insurance Cost

### Schedule 8 – Cost Adjustments and Escalation Indices

### Schedule 8 – Flow and Loading Adjustments

### Schedule 11 - Utility Caps

- Electrical
- Natural Gas
- Diesel
  - Cap A – With Ignacio Wastewater Treatment Plant in service
  - Cap B – Ignacio Wastewater Treatment Plant decommissioned

### Schedule 14 - Service Fee and Incentives

- Service Fee A – Ignacio Wastewater Treatment Plant in service
- Service Fee B – Ignacio Wastewater Treatment Plant decommissioned

Equipment repairs in excess of \$10,000.

# Attachment 1

**NOVATO SANITARY DISTRICT - VEOLIA  
PLANT FLOW**

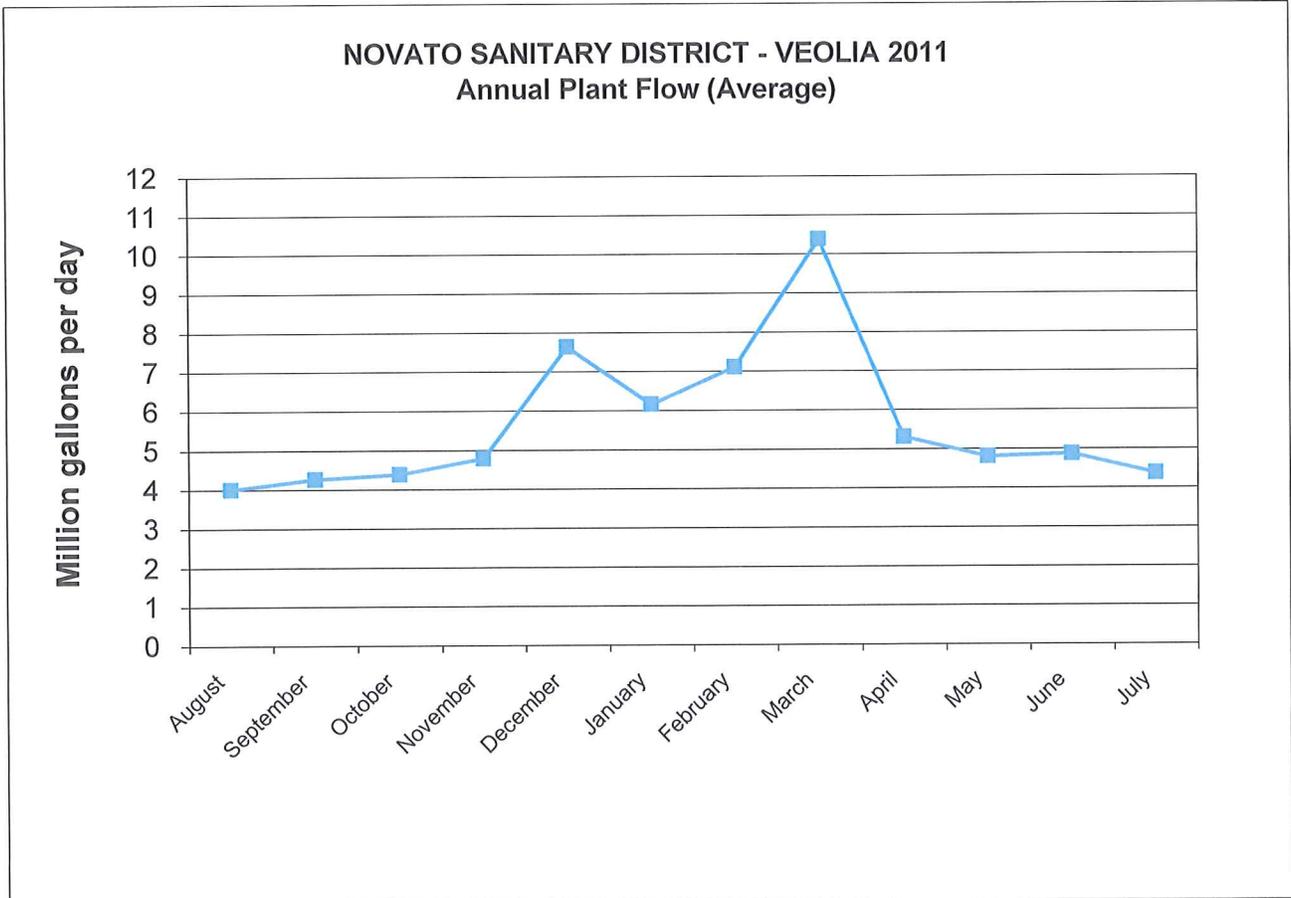
Annual Waste Characteristics & Loading Summary

(IN GALLONS TIMES 1,000,000)

August 2010 - July 2011

PRINT DATE: 24-Feb-2012

	Total Flow	High	Low	Average		
August	124.18	4.53	1.00	4.01	Three month dry weather averages:	4.01
September	127.96	5.13	3.83	4.27		4.27
October	135.92	7.13	3.77	4.38		
November	143.63	6.44	4.07	4.79		
December	236.89	12.59	4.34	7.64		
January	184.96	12.42	4.71	6.17		
February	199.00	13.58	4.56	7.11		
March	322.03	19.97	6.07	10.39		
April	159.22	6.77	4.61	5.31		
May	148.92	6.28	4.33	4.80		
June	145.90	7.89	4.20	4.86		
July	135.40	4.98	4.00	4.37		4.37
ANNUAL TOTAL	2064.01					
ANNUAL MAX.	322.03	19.97			Max.	4.37
ANNUAL MIN.	124.18		1.00		Min.	4.01
ANNUAL AVG.	172.00			5.674	Avg. Dry Weather Flow	4.21



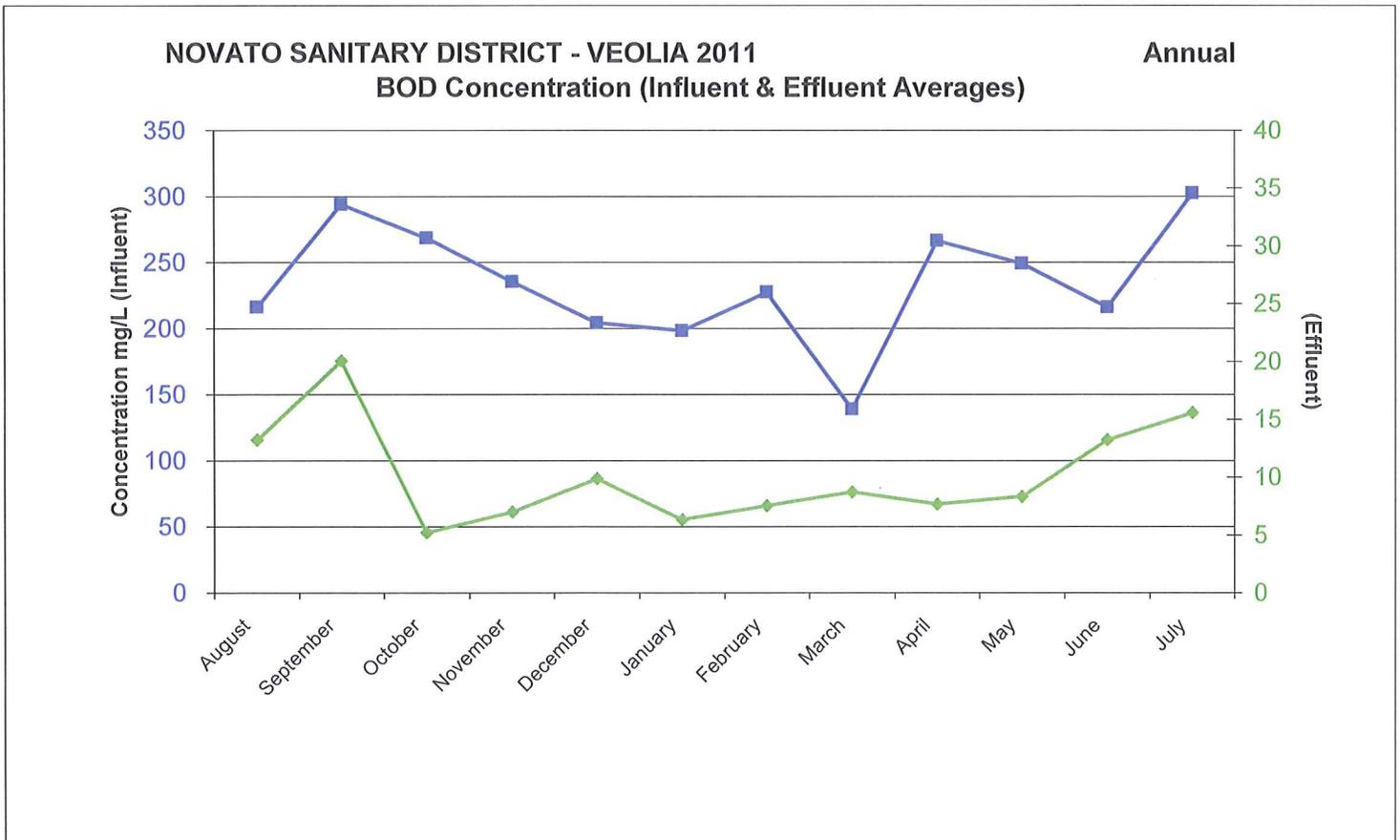
**NOVATO SANITARY DISTRICT - VEOLIA  
BOD (Influent & Effluent)**

Annual Waste Characteristics & Loading Summary

August 2010 - July 2011

PRINT DATE: 24-Feb-2012

	INFLUENT							EFFLUENT						
	Concentration (mg/L)			No. of Samples	Loading (kg/day)			Concentration (mg/L)			No. of Samples	Loading (kg/day)		
	High	Low	Average		High	Low	Average	High	Low	Average		High	Low	Average
August	324	147	216	12	10241	1426	6869	25	6	13	12	790	50	427
September	450	212	294	10	15237	7291	10459	64	13	20	13	2183	268	756
October	318	236	269	13	12385	7696	9334	7	4	5	13	262	138	182
November	288	158	236	10	11973	5416	9052	17	3	7	9	594	108	267
December	329	41	204	14	18877	2780	11476	20	5	10	15	1357	315	595
January	256	132	198	12	10547	5471	9154	10	3	6	12	636	130	307
February	379	140	227	9	16036	7849	12047	18	3	8	11	780	120	434
March	191	75	139	14	16627	6813	10858	19	2	9	14	2358	165	745
April	373	213	267	12	16736	9603	11544	14	5	8	12	584	211	330
May	323	201	249	12	12032	7326	9876	16	2	8	12	608	72	326
June	324	147	216	12	12502	5210	8893	25	6	13	12	1119	247	545
July	625	230	303	11	24082	8229	10979	19	9	16	12	681	337	561
ANNUAL HIGH	625	236	303	14	24082	9603	12047	64	13	20	15	2358	337	756
ANNUAL LOW	191	41	139	9	10241	1426	6869	7	2	5	9	262	50	182
ANNUAL AVG.	348	161	235	12	14773	6259	10045	21	5	10	12	996	180	456



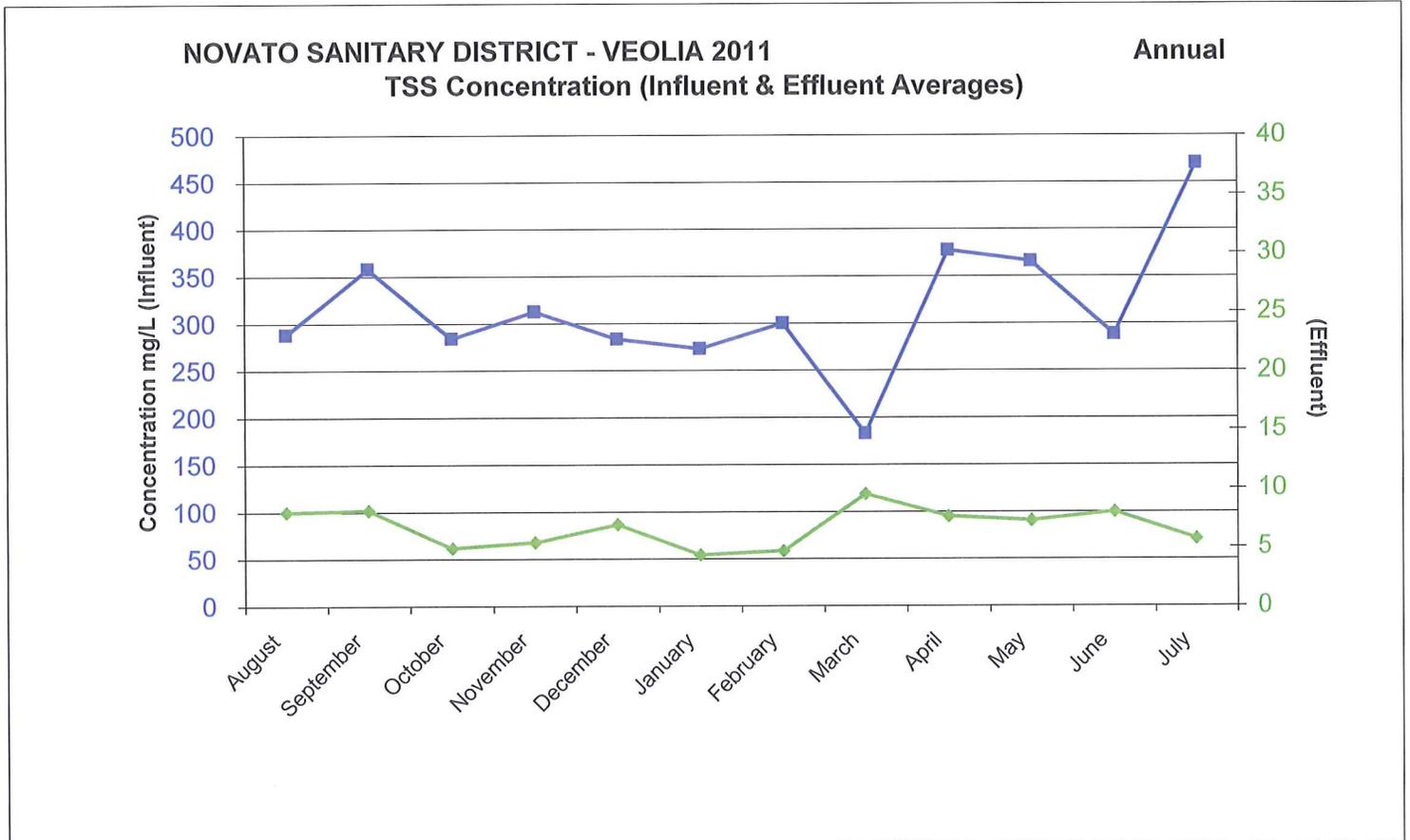
**NOVATO SANITARY DISTRICT - VEOLIA  
SUSPENDED SOLIDS (Influent & Effluent)**

Annual Waste Characteristics & Loading Summary

August 2010 - July 2011

PRINT DATE: 24-Feb-2012

	INFLUENT							EFFLUENT						
	Concentration (mg/L)			No. of Samples	Loading (kg/day)			Concentration (mg/L)			No. of Samples	Loading (kg/day)		
	High	Low	Average		High	Low	Average	High	Low	Average		High	Low	Average
August	378	230	289	12	13430	7845	9744	14	4	8	12	409	135	268
September	716	272	358	14	26812	9261	12969	14	5	8	14	524	166	285
October	335	222	284	13	12343	7369	10064	11	1	5	13	428	33	179
November	635	147	313	11	22878	5480	11631	11	2	5	11	486	74	209
December	987	61	283	15	35725	4136	14709	14	3	7	15	789	203	402
January	400	154	273	12	16971	9468	12297	6	3	4	12	344	124	202
February	818	147	300	12	31109	9537	17134	6	4	5	12	566	153	304
March	410	99	183	15	31561	9583	14831	22	5	10	15	2730	315	821
April	680	224	378	13	28413	9173	16374	12	5	8	13	546	211	330
May	536	110	366	12	24899	4183	14672	11	4	7	12	416	146	285
June	378	230	289	12	15135	8756	11780	14	4	8	12	501	178	316
July	1182	297	470	12	45543	11567	17167	10	2	6	12	351	71	207
ANNUAL HIGH	1182	297	470	15	45543	11567	17167	22	5	10	15	2730	315	821
ANNUAL LOW	335	61	183	11	12343	4136	9744	6	1	4	11	344	33	179
ANNUAL AVG.	621	183	316	13	25402	8030	13614	12	4	7	13	674	151	317



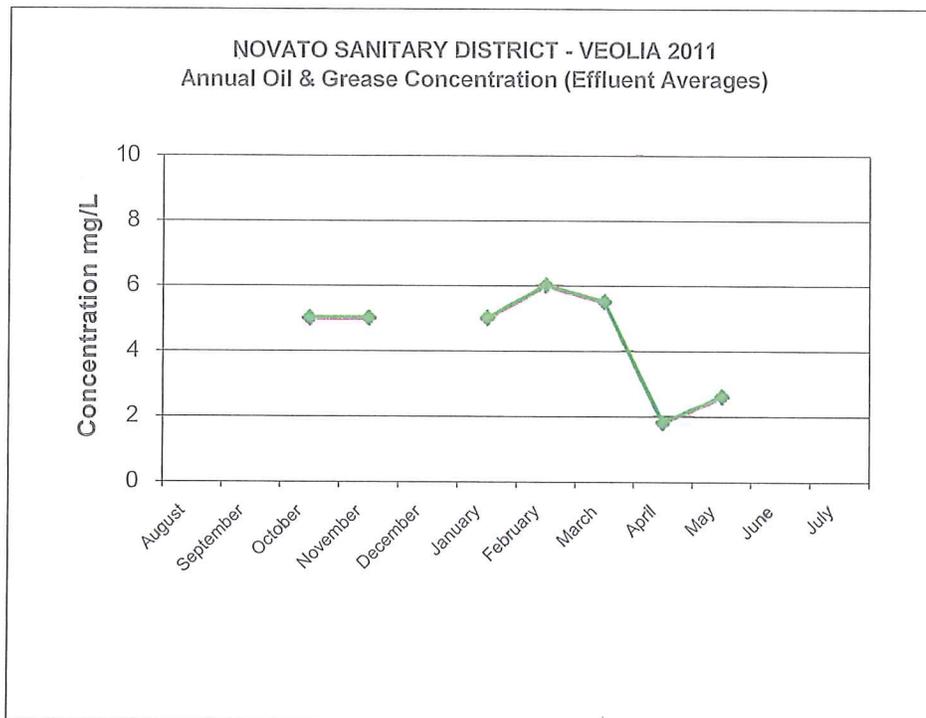
**NOVATO SANITARY DISTRICT - VEOLIA  
OIL & GREASE (Effluent)**

Annual Waste Characteristics & Loading Summary

August 2010 - July 2011

PRINT DATE: 13-Dec-2011

	EFFLUENT						
	Concentration (mg/L)			No. of Samples	Loading (kg/day)		
	High	Low	Average		High	Low	Average
August							
September							
October	5	5	5	4	83	75	78
November	5	5	5	1	82	82	82
December							
January	5	5	5	1	130	130	130
February	6	6	6	1	210	210	210
March	6	6	6	1	190	190	190
April	2	2	2	1	34	34	34
May	3	3	3	1	43	43	43
June							
July							
ANNUAL HIGH	6	6	6	4	210	210	210
ANNUAL LOW	2	2	2	1	34	34	34
ANNUAL AVG.	4	4	4	1	110	109	110



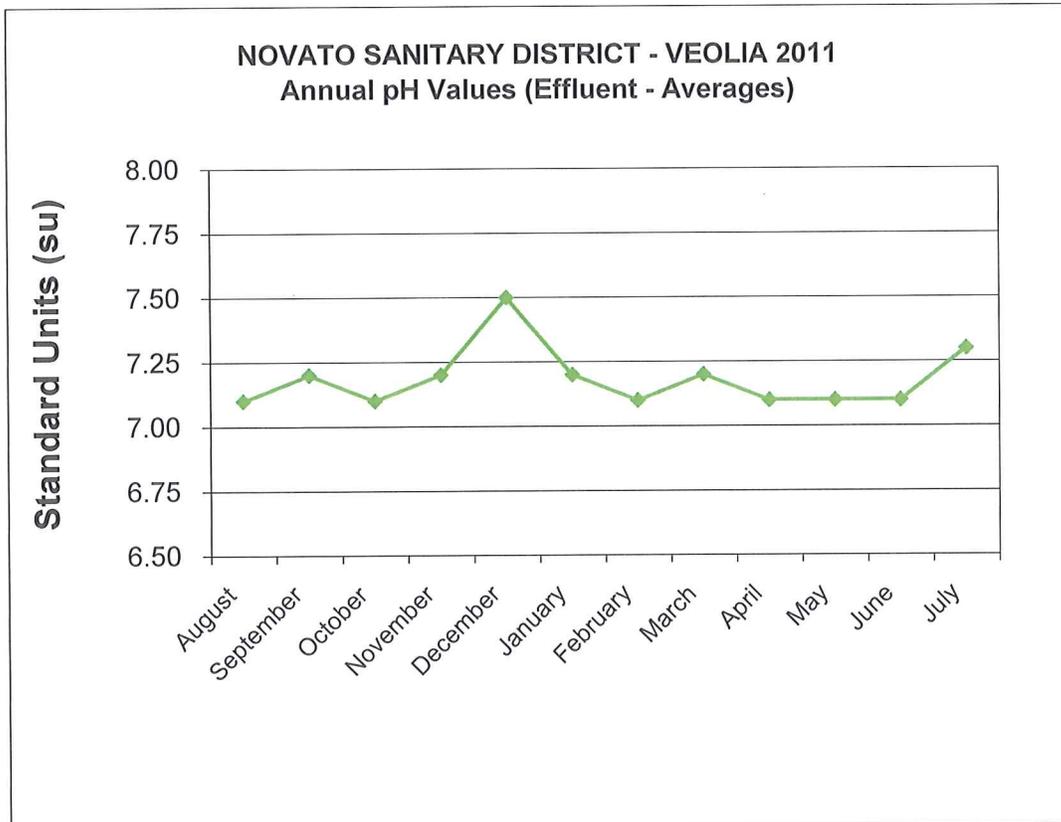
**NOVATO SANITARY DISTRICT - VEOLIA  
pH (Effluent)**

Annual Waste Characteristics & Loading Summary

August 2010 - July 2011

PRINT DATE: 24-Feb-2012

	High	Low	Average	Number of Samples						
August	7.1	6.9	7.0	22						
September	7.2	6.9	7.0	22						
October	7.1	6.8	7.0	21						
November	7.2	6.5	6.8	22						
December	7.5	6.4	6.7	23						
January	7.2	6.5	6.6	20						
February	7.1	6.6	7.0	20						
March	7.2	6.8	7.0	23						
April	7.1	6.6	6.8	21						
May	7.1	6.6	6.8	21						
June	7.1	6.9	7.0	21						
July	7.3	6.8	7.1	21						
ANNUAL MAX.				7.50	6.90	7.09	Number of Samples Total = 257			
ANNUAL MIN.				7.10	6.40	6.63	1st Qtr.	65	2nd Qtr.	65
ANNUAL AVG.				7.18	6.69	6.90	3rd Qtr.	64	4th Qtr.	63



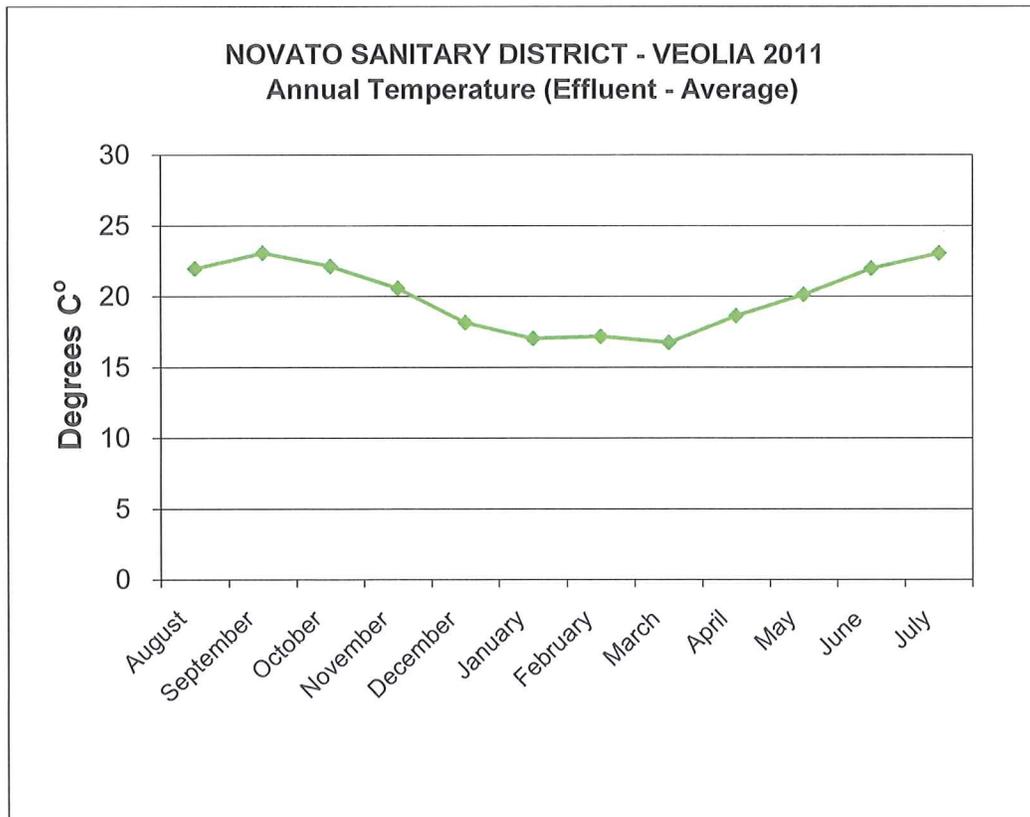
**NOVATO SANITARY DISTRICT - VEOLIA  
TEMPERATURE (Effluent)**

Annual Waste Characteristics & Loading Summary

August 2010 - July 2011

PRINT DATE: 24-Feb-2012

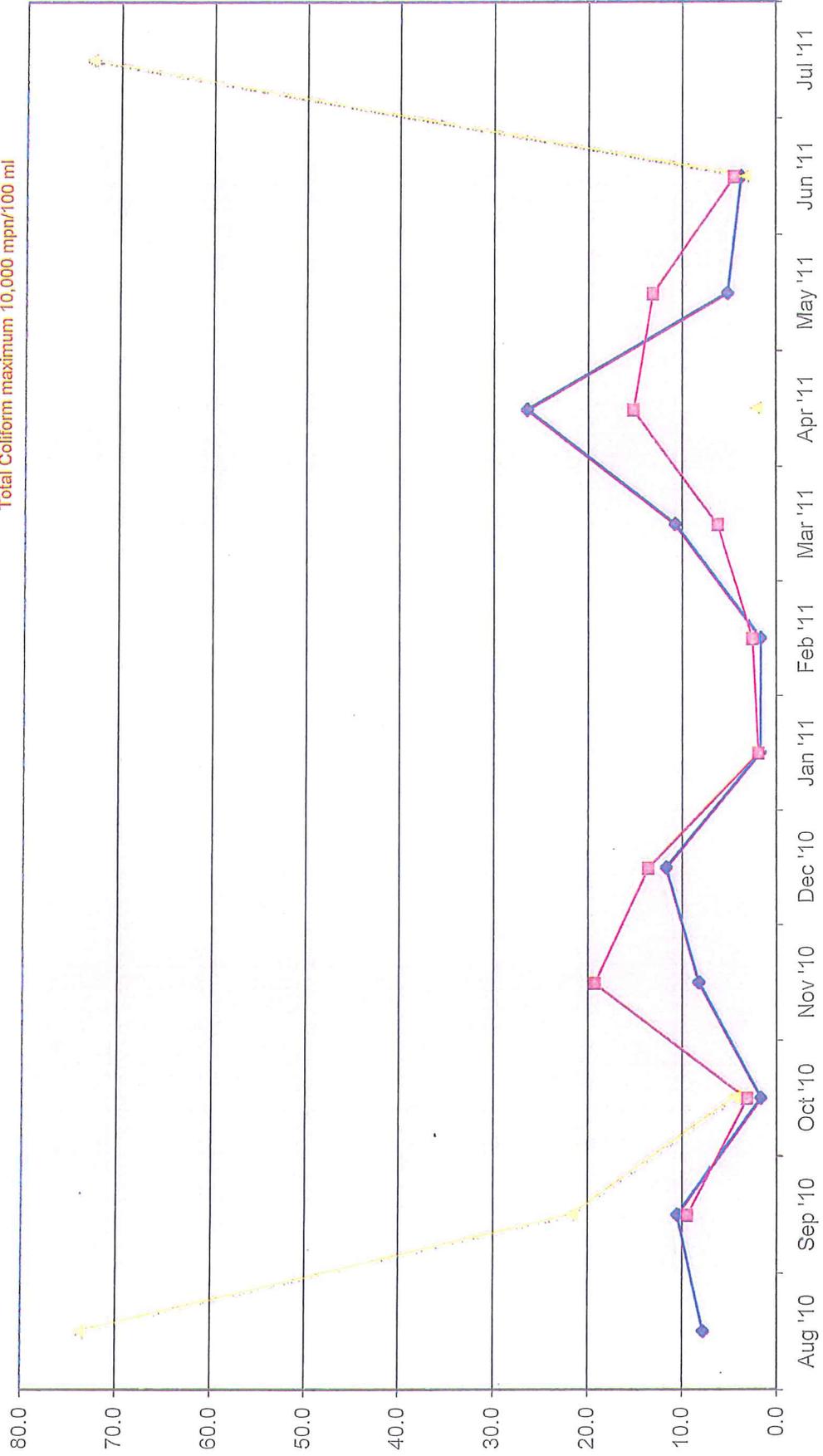
	High	Low	Average	Number of Samples				
August	24.2	21.0	22.0	22.0				
September	24.6	21.3	23.1	22.0				
October	24.1	20.0	22.1	21.0				
November	22.4	18.6	20.6	22.0				
December	20.0	15.7	18.2	23.0				
January	18.2	15.9	17.0	20.0				
February	18.9	15.3	17.2	20.0				
March	18.4	15.5	16.7	23.0				
April	19.4	17.4	18.6	21.0				
May	20.7	19.3	20.1	21.0				
June	24.2	21.0	22.0	21.0				
July	23.7	22.3	23.1	21.0				
ANNUAL MAX.				24.6	22.3	23.1	Number of Samples Total = 257	
ANNUAL MIN.				18.2	15.3	16.7	1st Qtr. 65	2nd Qtr. 65
ANNUAL AVG.				21.6	18.6	20.1	3rd Qtr. 64	4th Qtr. 63





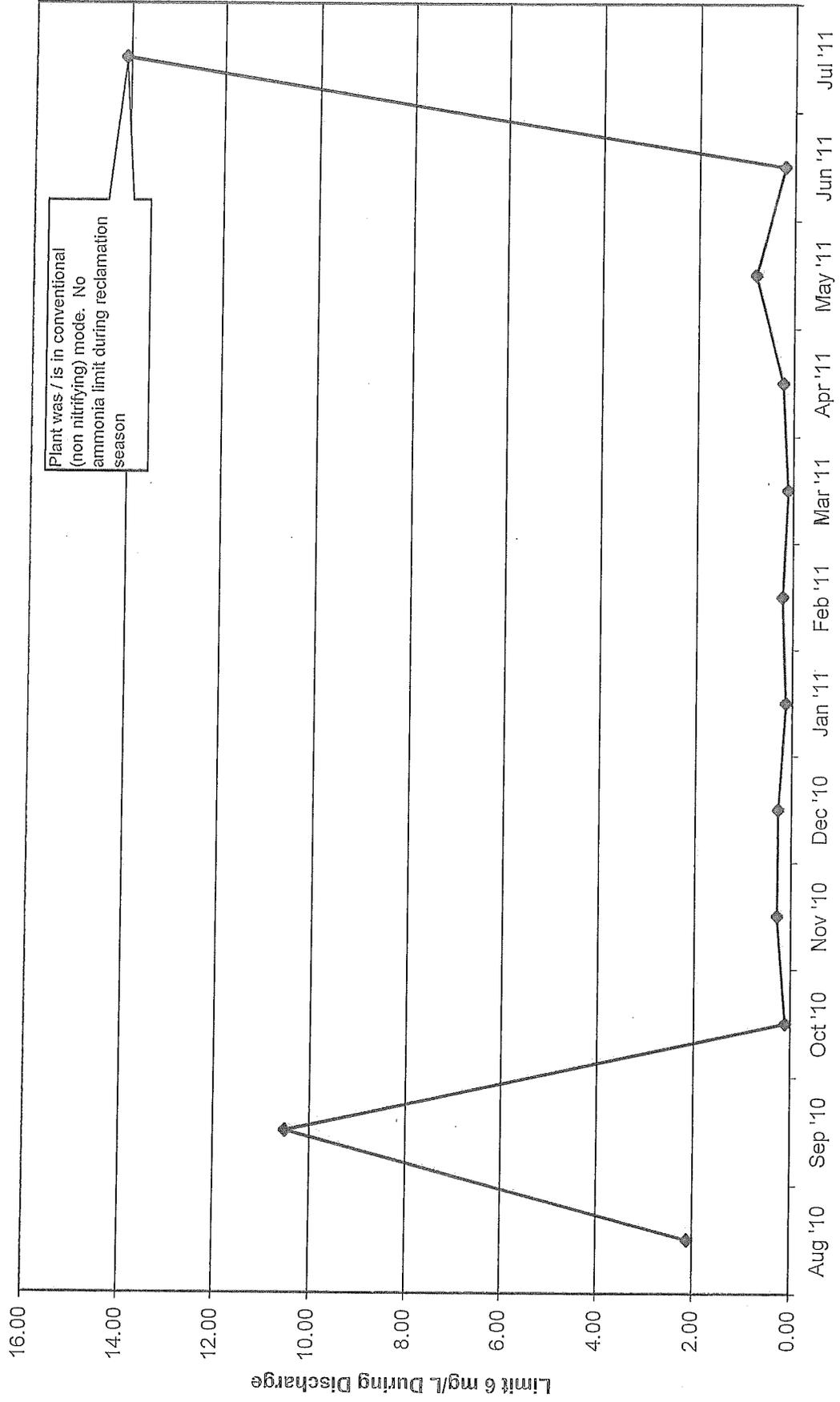
# Disinfection

**LIMITS - NPDES**  
 Entero 30 day geo mean 35 mpn /100ml  
 Fecal 140 mpn monthly median  
 Fecal 430 mpn 90th percentile 30 day  
**LIMITS - RECLAMATION**  
 Total Coliform 240 mpn 5 sample median  
 Total Coliform maximum 10,000 mpn/100 ml



Annual Summary pH - Ammonia - Temperature								
Date	Flow	pH		Ammonia		Temperature		
	MGD	Min	Max	Max	Ave	Min	Max	Ave
		6.5	8.5	21	6	N/A	N/A	N/A
08/01/20	4.10	6.9	7.1	6.60	2.10	21.0	24.2	22.0
09/01/20	4.27	6.9	7.2	19.00	10.50	21.3	24.6	23.1
10/01/20	4.38	6.8	7.1	0.10	0.10	20.0	24.1	22.1
11/01/20	4.79	6.5	7.2	0.69	0.28	18.6	22.4	20.6
12/01/20	7.64	6.4	7.5	0.75	0.27	15.7	20.0	18.2
01/01/20	6.14	6.5	7.2	0.21	0.12	15.9	18.2	17.1
02/01/20	7.11	6.6	7.1	0.56	0.21	15.3	18.9	17.2
03/01/20	10.39	6.8	7.2	0.11	0.10	15.5	18.4	16.7
04/01/20	5.31	6.6	7.1	0.34	0.22	17.4	19.4	18.6
05/01/20	4.80	6.6	7.1	2.30	0.80	19.3	20.7	20.1
06/01/20	4.86	6.6	7.1	0.26	0.20	20.1	22.9	21.5
07/01/20	4.37	6.8	7.3	23.00	14.08	22.3	23.7	23.1
Total	68.15							
Maximum	10.4	6.9	7.5	23	14.08	22.3	24.6	23.0864
Minimum	4.10	6.4	7.1	0.10	0.10	15.3	18.2	16.7304
Average	5.68			4.49	2.41	18.53	21.46	20.02

# Effluent Ammonia



NOVATO SANITARY DISTRICT - VEOLIA  
Wastewater Treatment Plant

INFLUENT & EFFLUENT DATA

MONTH: AUGUST 2010  
PRINT DATE: 1/20/2012

DATE	TOTAL PLANT FLOW x 1,000,000	BOD INFLUENT Mg/l	BOD INFLUENT Kg/day	BOD % REMOVAL	BOD EFFLUENT Mg/l	BOD EFFLUENT Kg/day	SUSPEND MATTER 24-HRC INFLUENT Mg/l	SUSPEND MATTER 24-HRC INFLUENT Kg/day	TSS % REMOVAL	SUSPEND MATTER 24-HRC EFFLUENT Mg/l	SUSPEND MATTER 24-HRC EFFLUENT Kg/day	GREASE & OIL INFLUENT Mg/l	GREASE & OIL INFLUENT Kg/day	GREASE & OIL % REMOVAL	GREASE & OIL EFFLUENT Mg/l	GREASE & OIL EFFLUENT Kg/day	pH EFFLUENT	TEMP C° EFFLUENT	
1	4.18																		
2	4.07																7.00	21.5	
3	4.12																7.10	21.5	
4	4.09	190	6481	91	17.00	580	230	7845	98	5	171						6.90	21.4	
5	4.04	207	6975	97	7.00	236	240	8085	98	4	135						7.00	21.1	
6	4.06	214	7246	95	9.00	305	316	10700	99	4	135						7.00	21.0	
7	4.02																		
8	4.15																		
9	4.08																7.10	21.6	
10	3.95																7.00	21.6	
11	4.21						246	8637	96	10	351						7.00	21.5	
12	4.03	192	6453	94	12.00	403	332	11159	98	7	235						7.10	21.0	
13	1.00	171	1426	96	6.00	50											6.90	22.2	
14	4.11																		
15	4.14																		
16	4.16																		
17	4.10						306	10616	97	9	312						7.00	22.1	
18	4.13	222	7647	94	14.00	482	237	8163	96	9	310						7.00	21.7	
19	4.12	208	7147	95	10.00	344	299	10274	97	8	275						6.90	21.8	
20	4.18	190	6275	94	10.00	349	282	9831	97	8	279						7.00	21.6	
21	4.07	147	4990	93	11.00	373											7.00	21.8	
22	4.22																		
23	4.21																		
24	4.53																7.10	22.7	
25	3.50	258	7531	92	21.00	613	272	7840	95	14	409						7.00	23.3	
26	4.26	282	10019	94	17.00	604	378	13430	98	9	320						7.00	24.2	
27	3.79	324	10241	92	25.00	790	324	10241	97	9	284						7.10	22.9	
28	4.13																7.10	22.8	
29	4.33																		
30	4.02																		
31	4.18																7.00	22.1	
TOTAL FLOW	124.18																6.90	22.0	
MAXIMUM	4.53	324	10241	97	25	790	378	13430	99	14	409				0	0	7.10	24	
MINIMUM	1.00	147	1426	91	6	50	230	7845	95	4	135				0	0	6.90	21	
AVERAGE	4.01	216	6869	94	13	427	289	9744	97	8	268				#DIV/0!	#DIV/0!	7.01	22	
COUNT	31	12	12	12	12	12	12	12	12	12	12				0	0	22	22	

lbs/day 8.34

Enter Kg/day or lbs/day on Input 1 Tab Cell D6

CITY OF BENICIA  
Wastewater Treatment Plant

INFLUENT & EFFLUENT DATA

MONTH: SEPTEMBER 2010  
PRINT DATE: 1/20/2012

DATE	TOTAL PLANT FLOW x 1,000,000	BOD INFLUENT Mgl	BOD INFLUENT Kg/day	BOD % REMOVAL	BOD EFFLUENT Mgl	BOD EFFLUENT Kg/day	SUSPEND MATTER 24 HR.C INFLUENT Mgl	SUSPEND MATTER 24 HR.C INFLUENT Kg/day	TSS % REMOVAL	SUSPEND MATTER 24 HR.C INFLUENT Mgl	SUSPEND MATTER 24 HR.C INFLUENT Kg/day	GREASE & OIL INFLUENT Mgl	GREASE & OIL INFLUENT Kg/day	GREASE & OIL EFFLUENT Mgl	GREASE & OIL EFFLUENT Kg/day	pH	TEMP
1	3.96	221	7299	95	12	396	315	10403	97	8	264					6.90	23.3
2	4.32	251	9043	95	13	468	347	12502	97	9	324					6.90	23.7
3	4.49	387	14492	96	15	562	716	26812	98	14	524					7.00	23.3
4	5.13																
5	5.02																
6	4.27																
7	4.04																
8	4.30	212	7603	96	8	287	290	10400	98	6	215					6.90	23.9
9	4.01	218	7291	96	8	268	360	12040	98	6	201					7.10	23.2
10	4.27	243	8654	97	8	285	309	11004	98	6	214					7.00	22.7
11	4.31															7.00	22.8
12	3.83															6.90	23.3
13	4.16																
14	5.04																
15	4.39																
16	4.08	348	11870	82	28	272	272	9959	95	13	476					7.10	22.5
17	4.06	450	15237	86	64	2167	310	10574	98	6	205					7.10	22.2
18	4.07						368	12461	98	8	271					7.20	21.3
19	4.25															7.00	23.3
20	4.16															7.10	23.3
21	4.39																
22	4.47	342	12750	96	14	522	463	17261	98	9	336					7.10	23.2
23	4.58	271	10351	96	11	420	338	12949	98	6	229					7.20	22.0
24	3.98						279	9261	98	5	166					7.00	22.3
25	3.99															7.00	22.9
26	4.10															6.90	22.6
27	4.15																
28	3.98																
29	4.07	306			10		352			9						7.00	24.6
30	4.08	282			6		297			9						7.00	24.0
TOTAL FLOW	127.96															7.10	23.7
MAXIMUM	5.13	450	15237	97	64	2183	716	26812	98	14	524			0	0	7.20	25
MINIMUM	3.83	212	7291	82	6	268	272	9261	95	5	166			0	0	6.90	21
AVERAGE	4.27	294	10459	93	20	756	358	12969	98	8	285			#DIV/0!	#DIV/0!	7.02	23
COUNT	30	12	10	10	13	10	14	12	12	14	12			0	0	22	22

lbs/day 8.34  
Enter Kg/day or lbs/day on Input 1 Tab Ceil D6

NOVATO SANITARY DISTRICT - VEOLIA  
Wastewater Treatment Plant

INFLUENT & EFFLUENT DATA

MONTH: OCTOBER 2010  
PRINT DATE: 12/13/2011

DATE	TOTAL PLANT FLOW x 1,000,000	BOD INFLUENT Mg/l	BOD INFLUENT Kg/day	BOD EFFLUENT Mg/l	BOD EFFLUENT Kg/day	BOD % REMOVAL	SUSPEND MATTER 24 HRC INFLUENT Mg/l	SUSPEND MATTER 24 HRC INFLUENT Kg/day	TSS % REMOVAL	SUSPEND MATTER 24 HRC EFFLUENT Mg/l	SUSPEND MATTER 24 HRC EFFLUENT Kg/day	GREASE & OIL INFLUENT Mg/l	GREASE & OIL INFLUENT Kg/day	GREASE & OIL EFFLUENT Mg/l	GREASE & OIL EFFLUENT Kg/day	PH	TEMP
1	4.04	312	4771	5	76	98	264	4037	97	7	107					7.10	22.5
2	4.08																
3	4.29																
4	4.37																
5	3.91	236	3493	7	104	97				3	44					7.10	21.9
6	3.98	245	3681	5	75	98	222	3344	98	4	60					7.10	24.1
7	4.13	306	4783	4	63	99	335	5237	99	4	63					7.00	22.7
8	4.11	254	3951	5	78	98	270	4200	99	2	31					7.10	22.7
9	3.77																23.2
10	4.34																
11	3.94	252	3758	5	75	98	292	4355	99	3	45					7.10	23.8
12	4.03																
13	4.02	306	4656	5	76	98	294	4473	100	1	15			5	76	7.00	23.0
14	3.97	239	3591	5	75	98	296	4448	100	1	15			5	75	7.00	24.1
15	4.00																24.1
16	4.14																23.1
17	4.34																
18	4.39	243	4038	5	83	98	301	5001	99	3	50			5	83	7.00	21.5
19	4.11	254	3951	5	78	98	299	4651	98	6	93			5	78	7.00	21.6
20	4.30	263	4280	5	81	98	280	4232	98	5	81					7.00	21.1
21	4.37																21.5
22	4.34																20.0
23	4.89																
24	7.13																
25	5.00																
26	4.56						296	5602	97	8	151					6.80	20.9
27	4.49	264	4487	7	119	97	278	4725	96	11	187					7.00	20.5
28	4.74																20.4
29	4.67	318	5621	5	88	98	287	5073	96	11	194					6.90	21.1
30	4.92																21.0
31	4.55																
TOTAL FLOW	135.92																
MAXIMUM	7.13	318	5621	7	119	99	335	5602	100	11	194			5	83	7.10	24
MINIMUM	3.77	236	3493	4	63	97	222	3344	96	1	15			5	75	6.80	20
AVERAGE	4.38	269	4236	5	82	98	284	4568	98	5	81			5	78	7.00	22
COUNT	31	13	13	13	13	13	13	13	13	14	14			4	4	21	21

kg/day 3.785  
Enter Kg/day or lbs/day in B56

NOVATO SANITARY DISTRICT - VEOLIA  
Wastewater Treatment Plant

INFLUENT & EFFLUENT DATA

MONTH: NOVEMBER 2010  
PRINT DATE: 12/13/2011

DATE	TOTAL PLANT FLOW x 1,000,000	BOD INFLUENT Mg/l	BOD INFLUENT Kg/day	BOD EFFLUENT Mg/l	BOD EFFLUENT Kg/day	BOD % REMOVAL	SUSPEND MATTER 24 HRC INFLUENT Mg/l	SUSPEND MATTER 24 HRC INFLUENT Kg/day	TSS % REMOVAL	SUSPEND MATTER 24 HRC EFFLUENT Mg/l	SUSPEND MATTER 24 HRC EFFLUENT Kg/day	GREASE & OIL INFLUENT Mg/l	GREASE & OIL INFLUENT Kg/day	GREASE & OIL % REMOVAL	GREASE & OIL EFFLUENT Mg/l	GREASE & OIL EFFLUENT Kg/day	pH	TEMP
1	4.66																6.70	21.3
2	4.25																6.70	21.5
3	4.32	276	4513	5	82	98	635	10383	99	4	65						6.80	22.0
4	4.33	288	4720	3	49	99	382	6261	98	3	49				5	82	6.70	22.0
5	4.11	158	2458	5	78	97	310	4822	98	7	109						6.80	21.8
6	4.39																	
7	5.69																	
8	5.17																	
9	4.43																	
10	4.38	244	4045	5	83	98	272	4509	98	5	83						6.80	20.7
11	4.47						147	2487	96	6	102						7.00	20.7
12	4.45	252	4244	3	51	99	241	4059	99	2	34						6.80	21.1
13	4.44																6.80	20.4
14	4.44																6.80	20.5
15	4.33																	
16	4.25						398	6402	98	6	97						6.50	22.4
17	4.19	257	4076	17	270	93	264	4187	98	5	79						6.70	21.7
18	4.78																6.60	21.3
19	4.07	240	3697	5	77	98	266	4098	97	7	108						6.60	20.8
20	6.44																6.70	20.9
21	5.58	161	3400	11	232	93				5	106							
22	5.63	255	5434	8	170	97	276	5881	99	4	85						6.50	19.5
23	5.77																6.70	19.7
24	5.30	224	4494	6	120	97	248	4975	96	11	221						6.70	18.7
25	5.12																7.20	19.1
26	4.62																7.10	19.1
27	5.52																	
28	5.06																	
29	4.88																6.60	18.6
30	4.56																6.70	19.0
31																		
TOTAL FLOW	143.63																	
MAXIMUM	6.44	288	5434	17	270	99	635	10383	99	11	221				5	82	7.20	22
MINIMUM	4.07	158	2458	0	49	93	147	2487	96	2	34				5	82	6.50	19
AVERAGE	4.79	236	4108	6	121	97	313	5279	98	5	95				5	82	6.75	21
COUNT	30	10	10	10	10	10	11	11	11	12	12				1	1	22	22

Kg/day  
Enter Kg/day or lbs/day in B56

NOVATO SANITARY DISTRICT - VEOLIA  
Wastewater Treatment Plant

INFLUENT & EFFLUENT DATA

MONTH: DECEMBER 2010  
PRINT DATE: 12/13/2011

DATE	TOTAL PLANT FLOW x 1,000,000	BOD INFLUENT Mg/l	BOD INFLUENT Kg/day	BOD EFFLUENT Mg/l	BOD EFFLUENT Kg/day	BOD % REMOVAL	SUSPEND MATTER 24 HRC INFLUENT Mg/l	SUSPEND MATTER 24 HRC INFLUENT Kg/day	TSS % REMOVAL	SUSPEND MATTER 24 HRC EFFLUENT Mg/l	SUSPEND MATTER 24 HRC EFFLUENT Kg/day	GREASE & OIL INFLUENT Mg/l	GREASE & OIL INFLUENT Kg/day	GREASE & OIL EFFLUENT Mg/l	GREASE & OIL EFFLUENT Kg/day	% REMOVAL	TEMP
1	4.62	318	5561	20	360	94	474	8239	97	12	210						19.0
2	4.34	305	5010	11	181	96	987	16213	99	12	197						19.2
3	4.81	329	5990	9	164	97	362	6591	97	11	200						19.1
4	4.53																
5	7.72																
6	6.76	193	4938	10	256	95	380	9723	96	14	358				107	5.0	18.8
7	5.66																
8	7.57			6						5	143						6.70
9	6.20																6.70
10	5.39	198	4039	7	143	96	247	5039	98	6	122						6.70
11	5.43						139	2857	96	5	103						6.80
12	5.22																6.80
13	4.91																6.90
14	5.07																6.70
15	5.07	251	4817	10	192	96	310	5949	98	7	134						6.70
16	5.11	246	4758	19	367	92	263	5087	98	6	116						6.80
17	7.97	284	6567	13	392	95	307	9261	98	6	181						6.70
18	8.89																6.70
19	11.18	168	7109	5	212	97	140	5924	98	3	127						19.9
20	11.43	124	5365	9	389	93	124	5365	94	7	303						20.0
21	12.35																6.50
22	11.62	113	4970	5	220	96	135	5938	96	6	264						6.70
23	8.52																6.50
24	7.81																6.60
25	10.71																6.90
26	8.74																17.1
27	7.85	159	4724	5	149	97	153	4546	97	5	165						6.40
28	12.59									4	119						6.40
29	11.62	132	5806	14	616	89	170	7477	96	6	264						6.50
30	9.07																6.50
31	8.13	41	1262	5	154	88	61	1877	95	3	92						7.50
TOTAL FLOW	236.89																
MAXIMUM	12.59	329	8567	20	616	97	987	16213	99	14	358			0	107		20.
MINIMUM	4.34	41	1262	5	143	88	61	1877	94	3	92			0	107		16.
AVERAGE	7.64	204	5208	10	270	94	263	6676	97	7	182			#DIV/0!	107		18.
COUNT	31	14	14	15	14	14	15	15	15	17	17			0	1		23.

Kg/day 3.765  
Enter Kg/day or lbs/day in B56

NOVATO SANITARY DISTRICT - VEOLIA  
Wastewater Treatment Plant

INFLUENT & EFFLUENT DATA

MONTH: JANUARY 2011  
PRINT DATE: 1/20/2012

DATE	TOTAL PLANT FLOW x 1,000,000	BOD INFLUENT Mg/l	BOD INFLUENT Kg/day	BOD % REMOVAL	BOD EFFLUENT Mg/l	BOD EFFLUENT Kg/day	SUSPEND MATTER 24 HRC INFLUENT Mg/l	SUSPEND MATTER 24 HRC INFLUENT Kg/day	TSS % REMOVAL	SUSPEND MATTER 24 HRC EFFLUENT Mg/l	SUSPEND MATTER 24 HRC EFFLUENT Kg/day	GREASE & OIL INFLUENT Mg/l	GREASE & OIL INFLUENT Kg/day	GREASE & OIL % REMOVAL	GREASE & OIL EFFLUENT Mg/l	GREASE & OIL EFFLUENT Kg/day	pH	TEMP
1	10.30																	
2	12.42																	
3	9.42																6.50	15.9
4	8.42																6.50	15.9
5	7.63	156	9927	94	10	636	154	9800	98	3	191						6.70	16.5
6	6.88	171	9812	95	8	459	165	9468	96	6	344				5	287	6.50	16.6
7	6.46	176	9462	95	9	485	220	11853	98	4	216						6.50	16.6
8	6.52																6.60	16.1
9	6.60																	
10	5.60	203	9481	98	5	234	220	10275	98	5	234						6.50	16.3
11	5.70																6.70	16.6
12	5.25	219	9589	96	9	394	226	9895	97	6	263						6.80	17.0
13	5.72																6.50	17.3
14	5.28	221	9732	97	7	308	260	11449	98	5	220						6.70	17.8
15	5.40																	
16	5.21	237	10298	99	3	130	320	13904	98	5	217							
17	5.66																	
18	5.21																7.20	17.4
19	5.14	224	9602	98	5	214	253	10846	99	3	129						6.50	17.0
20	5.13																6.70	17.6
21	4.97	132	5471	96	5	207	326	13513	99	3	124						6.60	17.5
22	5.03																6.60	17.0
23	5.00																	
24	5.10	241	10251	98	5	213	399	16971	99	4	170						6.60	17.9
25	4.82																6.60	18.2
26	4.94	256	10547	98	5	206	337	13884	99	4	165						6.60	17.7
27	4.72																6.60	17.4
28	4.71	144	5657	97	5	196	400	15713	99	4	157						6.70	17.1
29	5.34																	
30	6.38																	
31																		
TOTAL FLOW	184.96																	
MAXIMUM	12.42	256	10547	99	10	636	400	16971	99	6	344				5	287	7.20	18
MINIMUM	4.71	132	5471	94	3	130	154	9468	96	3	124				5	287	6.50	16
AVERAGE	6.17	199	9154	97	6	307	273	12297	98	4	202				5	287	6.63	17
COUNT	30	12	12	12	12	12	12	12	12	12	12				1	1	20	20

lbs/day 8.34

Enter Kg/day or lbs/day on Input 1 Tab Cell D6

NOVATO SANITARY DISTRICT - VEOLIA  
Wastewater Treatment Plant

INFLUENT & EFFLUENT DATA

MONTH: FEBRUARY 2011  
PRINT DATE: 1/20/2012

DATE	TOTAL PLANT FLOW x 1,000,000	BOD INFLUENT Mg/l	BOD INFLUENT Kg/day	BOD % REMOVAL	BOD EFFLUENT Mg/l	BOD EFFLUENT Kg/day	SUSPEND MATTER 24 HR.C Mg/l	SUSPEND MATTER 24 HR.C Kg/day	TSS % REMOVAL	SUSPEND MATTER 24 HR.C EFFLUENT Mg/l	SUSPEND MATTER 24 HR.C EFFLUENT Kg/day	GREASE & OIL INFLUENT Mg/l	GREASE & OIL INFLUENT Kg/day	GREASE & OIL % REMOVAL	GREASE & OIL EFFLUENT Mg/l	GREASE & OIL EFFLUENT Kg/day	pH	TEMP
1	5.00																6.80	17.4
2	5.06	188	7849	97	5	211	226	98	9537	4	169						6.70	17.8
3	4.78	288	10684	99	3	120	293	99	11681	4	159						6.60	17.7
4	4.59	245	9379	95	12	459	252	98	9647	4	153						6.80	17.7
5	4.81																	
6	4.90																	
7	4.77																	
8	4.73																6.80	18.9
9	4.69	287	10444	93	18	704	336	99	13143	4	156						6.70	16.8
10	4.56																6.80	17.9
11	4.56	379	14414	97	11	418	818	99	31109	5	190						7.10	17.7
12	4.83																7.10	18.0
13	4.94				5													
14	6.11																	
15	8.59																7.10	17.6
16	9.23				5												7.10	18.0
17	13.58														6.0	462	7.00	17.3
18	13.36	140	15599	95	7	780	147	97	16379	5	557						7.10	16.2
19	11.88																7.10	15.3
20	9.39																	
21	8.79																	
22	7.55																7.10	15.8
23	6.83	188	10709	97	5	285	214	98	12190	4	228						7.10	16.8
24	8.40	190	13311	95	7	490	218	98	15272	4	280						7.10	16.6
25	10.45	184	16036	97	5	438	292	98	25449	6	523						7.10	16.7
26	8.38																7.10	16.6
27	7.54																	
28	6.60																7.10	16.4
29																		
30																		
31																		
TOTAL FLOW	199.00																	
MAXIMUM	13.58	379	16036	99	18	780	818	99	31109	6	566				6	462	7.10	19
MINIMUM	4.56	140	7849	93	3	120	147	97	9537	4	153				6	462	6.60	15
AVERAGE	7.11	227	12047	96	8	434	300	98	17134	5	304				6	462	6.97	17
COUNT	28	9	9	9	11	9	12	12	12	12	12				1	1	20	20

lbs/day 8.34

Enter Kg/day or lbs/day on Input 1 Tab Cell D6

NOVATO SANITARY DISTRICT - VEOLIA  
Wastewater Treatment Plant

INFLUENT & EFFLUENT DATA

MONTH: MARCH 2011  
PRINT DATE: 1/20/2012

DATE	TOTAL PLANT FLOW x 1,000,000	BOD INFLUENT Mg/l	BOD INFLUENT Kg/day	BOD % REMOVAL	BOD EFFLUENT Mg/l	BOD EFFLUENT Kg/day	SUSPEND MATTER 24 HRC INFLUENT Mg/l	SUSPEND MATTER 24 HRC INFLUENT Kg/day	TSS % REMOVAL	SUSPEND MATTER 24 HRC EFFLUENT Mg/l	SUSPEND MATTER 24 HRC EFFLUENT Kg/day	GREASE & OIL INFLUENT Mg/l	GREASE & OIL INFLUENT Kg/day	GREASE & OIL % REMOVAL	GREASE & OIL EFFLUENT Mg/l	GREASE & OIL EFFLUENT Kg/day	pH	TEMP	
1	7.99																		
2	11.16	177.00	16474	92	15	1396	222	20663	98	5	465						7.00	16.4	
3	8.60	126.00	9037	94	8	574	140	10041	95	7	502						6.90	16.4	
4	7.74	166.00	10845	92	13	859	175	11297	96	7	452						7.00	16.9	
5	7.82																7.10	16.7	
6	11.30																		
7	8.69	94.00	6813	94	6	435	137	9929	96	6	435						7.20	16.2	
8	7.53																6.90	16.9	
9	7.25	159.00	9614	94	9	544	193	11670	97	6	363						7.10	16.9	
10	6.84																7.00	16.7	
11	6.30	191.00	10036	97	5	263	197	10351	97	6	315						7.10	17.2	
12	6.07																		
13	7.50																		
14	7.17																		
15	9.88	182.00	14997	99	2	165	212	17469	97	7	577						6.90	17.7	
16	9.15	146.00	11141	95	8	610	216	16483	96	8	610	6	420				7.00	17.4	
17	8.46																	7.10	17.0
18	12.78	156.00	16627	94	10	1066	215	22916	96	8	853						7.00	17.0	
19	19.42																	7.00	16.1
20	16.56																		
21	11.78	75.00	7368	92	6	589	99	9726	89	11	1081						7.00	16.2	
22	12.54																	7.00	16.1
23	13.33						158	17565	92	13	1445						6.90	16.1	
24	19.97																	7.00	15.5
25	14.88	78.00	9680	76	19	2358	102	12658	78	22	2730						6.80	15.6	
26	14.78																		
27	11.49	75.00	7187	93	5	479	100	9583	93	7	671								
28	9.74																		
29	8.64																	6.90	16.5
30	9.23	165.00	12701	95	8	616	410	31561	97	14	1078						7.00	16.9	
31	7.44	193.00	9494	95	8	496	170	10548	93	12	745						6.90	18.0	
TOTAL FLOW	322.03																	6.90	18.4
MAXIMUM	19.97	191	16627	99	19	2358	410	31561	98	22	2730	6	420				7.20	16	
MINIMUM	6.07	75	6813	76	2	165	99	9583	78	5	315	6	420				6.80	16	
AVERAGE	10.39	139	10658	93	9	745	183	14831	94	10	821	6	420				6.99	17	
COUNT	31	14	14	14	14	14	15	15	15	14	15	1	1				23	23	

lbs/day 8.34

Enter Kg/day or lbs/day on Input 1 Tab Cell D6

NOVATO SANITARY DISTRICT - VEOLIA  
Wastewater Treatment Plant

INFLUENT & EFFLUENT DATA

MONTH: APRIL 2011  
PRINT DATE: 1/20/2012

DATE	TOTAL PLANT FLOW x 1,000,000	BOD INFLUENT Mg/l	BOD INFLUENT Kg/day	BOD % REMOVAL	BOD EFFLUENT Mg/l	BOD EFFLUENT Kg/day	SUSPEND MATTER INFLUENT Mg/l	SUSPEND MATTER INFLUENT 24 HRC Kg/day	TSS % REMOVAL	SUSPEND MATTER EFFLUENT Mg/l	SUSPEND MATTER EFFLUENT 24 HRC Kg/day	GREASE & OIL INFLUENT Mg/l	GREASE & OIL INFLUENT Kg/day	GREASE & OIL % REMOVAL	GREASE & OIL EFFLUENT Mg/l	GREASE & OIL EFFLUENT Kg/day	pH	TEMP
1	6.77																6.90	18.6
2	6.66																	
3	6.51																	
4	6.09																	
5	6.23																6.90	18.2
6	5.82	271.00	13154	97	7	340	443	21503	98	10	485					6.80	18.6	
7	5.89	218.00	10709	98	5	246	383	18814	98	7	344					6.90	18.1	
8	5.46	239.00	10883	97	7	319	352	16029	97	12	546					7.00	17.5	
9	5.54																6.90	17.4
10	5.52	213.00	9806	96	8	368	300	13811	98	6	276							
11	4.70																	
12	5.03																	
13	5.00	262.00	10925	95	14	584	320	13344	97	9	375					6.80	18.4	
14	4.91																6.80	17.9
15	4.65	249.00	9656	96	9	349	306	11887	97	8	310					7.10	18.0	
16	4.77																6.80	18.8
17	5.07																	
18	5.01	254.00	10613	97	7	292	680	28413	99	8	334					6.60	19.3	
19	5.05																	
20	4.97	295.00	12228	98	6	249	388	16497	97	10	414					6.70	19.0	
21	4.88														1.8	75	6.70	19.2
22	4.93	300.00	12395	97	10	411	412	16940	99	6	247					6.70	19.0	
23	5.08																6.70	18.9
24	5.36																	
25	4.84																	
26	5.05	228.00	9603	98	5	211	360	15162	99	5	211					6.90	19.4	
27	5.38	373.00	16736	98	6	269	426	19114	98	5	224					6.70	19.2	
28	4.66																6.80	19.3
29	4.78	298.00	11880	97	8	319	306	12199	98	6	239					6.90	19.3	
30	4.61																6.90	18.9
31																		
TOTAL FLOW	159.22																	
MAXIMUM	6.77	373	16736	98	14	584	680	28413	99	12	546				2	75	7.10	19
MINIMUM	4.61	213	9603	95	5	211	224	9173	97	5	211				2	75	6.60	17
AVERAGE	5.31	287	11544	97	8	330	378	16374	98	8	330				2	75	6.82	19
COUNT	30	12	12	12	12	12	13	13	13	13	13				1	1	21	21

lbs/day 8.34

Enter Kg/day or lbs/day on Input 1 Tab Cell D6

NOVATO SANITARY DISTRICT - VEOLIA  
Wastewater Treatment Plant

INFLUENT & EFFLUENT DATA

MONTH: MAY 2011  
PRINT DATE: 1/20/2012

DATE	TOTAL PLANT FLOW x 1,000,000	BOD INFLUENT Mg/l	BOD INFLUENT Kg/day	BOD % REMOVAL	BOD EFFLUENT Mg/l	BOD EFFLUENT Kg/day	SUSPEND MATTER 24 HR.C INFLUENT Mg/l	SUSPEND MATTER 24 HR.C INFLUENT Kg/day	TSS % REMOVAL	SUSPEND MATTER 24 HR.C EFFLUENT Mg/l	SUSPEND MATTER 24 HR.C EFFLUENT Kg/day	GREASE & OIL INFLUENT Mg/l	GREASE & OIL INFLUENT Kg/day	GREASE & OIL EFFLUENT % REMOVAL	GREASE & OIL EFFLUENT Mg/l	GREASE & OIL EFFLUENT Kg/day	pH	TEMP	
1	4.75																		
2	4.54	276.00	10450	97	9	341	405	15395	97	11	416						6.80	20.0	
3	4.76																	6.80	20.2
4	4.56	248.00	9432	94	16	608	110	4183	92	9	342						6.70	20.6	
5	4.63																	7.00	20.5
6	4.58	315.00	12032	98	7	267	341	13025	99	5	191						6.70	20.3	
7	4.78																		
8	4.92																		
9	4.62																		
10	4.33	323.00	11664	99	2	72	515	18598	98	8	289						6.80	20.0	
11	4.37	201.00	7326	98	5	182	272	9913	99	4	146				2.5	95	6.70	20.7	
12	4.36																	6.60	19.8
13	4.38	250.00	9132	98	6	219	355	12968	98	8	292						6.70	20.6	
14	4.68																	6.80	20.3
15	4.91																		
16	5.97	233.00	11601	99	2	100	406	20215	99	5	249								
17	6.28																		
18	5.57	255.00	11846	98	6	279	536	24899	99	8	372						7.00	19.6	
19	5.18																	6.90	19.3
20	4.78	238.00	9488	94	15	598	419	16704	98	9	359						6.80	19.6	
21	5.21																	7.00	20.2
22	5.08	218.00	9236	96	8	339	300	12710	99	4	169						7.10	20.2	
23	4.55	209.00	7931	94	13	493	370	14040	96	7	266						6.90	20.2	
24	4.40																	6.70	20.2
25	5.00																	6.80	20.0
26	4.50																	6.90	20.1
27	4.44	226.00	8369	95	11	407	384	13479	98	9	333						6.80	20.4	
28	4.63																		
29	4.35																		
30	4.91																		
31	4.90																		
TOTAL FLOW	148.92																	6.80	20.2
MAXIMUM	6.28	323	12032	99	16	608	536	24999	99	11	416				3	95	7.10	21	
MINIMUM	4.33	201	7326	94	2	72	110	4183	92	4	146				3	95	6.60	19	
AVERAGE	4.80	249	9876	97	8	326	366	14672	98	7	265				3	95	6.82	20	
COUNT	31	12	12	12	12	12	12	12	12	12	12				1	1	21	21	

lbs/day 8.34

Enter Kg/day or lbs/day on Input 1 Tab Cell D6

NOVATO SANITARY DISTRICT - VEOLIA  
Wastewater Treatment Plant

INFLUENT & EFFLUENT DATA

MONTH: JUNE 2011  
PRINT DATE: 1/20/2012

DATE	TOTAL PLANT FLOW x 1,000,000	BOD INFLUENT Mg/l	BOD INFLUENT Kg/day	BOD % REMOVAL	BOD EFFLUENT Mg/l	BOD EFFLUENT Kg/day	SUSPEND MATTER 24 HR.C INFLUENT Mg/l	SUSPEND MATTER 24 HR.C INFLUENT Kg/day	TSS % REMOVAL	SUSPEND MATTER 24 HR.C EFFLUENT Mg/l	SUSPEND MATTER 24 HR.C EFFLUENT Kg/day	GREASE & OIL INFLUENT Mg/l	GREASE & OIL INFLUENT Kg/day	GREASE & OIL % REMOVAL	GREASE & OIL EFFLUENT Mg/l	GREASE & OIL EFFLUENT Kg/day	pH	TEMP
1	4.99																	
2	4.89																7.00	21.5
3	5.70																7.10	21.5
4	7.89	190	12502	91	17	1119	230	15135	98	5	329						6.90	21.4
5	6.37	207	10997	97	7	372	240	12750	98	4	213						7.00	21.1
6	5.33	214	9513	96	9	400	316	14047	99	4	178						7.00	21.0
7	4.99																	
8	4.96																	
9	4.70																	
10	4.72																	
11	4.61																7.10	21.6
12	4.76	192	7622	94	12	476	246	9458	96	10	384						7.00	21.6
13	4.93	171	7031	96	6	247	332	13180	98	7	278						7.00	21.5
14	4.77																	
15	4.73																	
16	4.45																	
17	4.42																	
18	4.43	222	8202	94	14	517	237	8756	96	9	334						7.00	22.1
19	4.49	208	7789	95	10	374	299	11197	97	8	300						6.90	21.8
20	4.32	180	6485	94	10	360	282	10160	97	8	288						7.00	21.6
21	4.25	147	5210	93	11	390	306	11357	97	9	334						7.00	21.8
22	4.35																	
23	4.20																	
24	4.38																	
25	4.29	258	9231	92	21	751	272	9732	95	14	501						7.10	22.7
26	4.31	282	10137	94	17	611	378	13587	98	9	324						7.00	23.3
27	4.44	324	11998	92	25	926	324	11998	97	9	333						7.10	24.2
28	5.71																	
29	4.94																	
30	4.58																	
31																		
TOTAL FLOW	145.90																	
MAXIMUM	7.89	324	12502	97	25	1119	378	15135	99	14	501				0	0	7.10	24
MINIMUM	4.20	147	5210	91	6	247	230	8756	95	4	178				0	0	6.90	21
AVERAGE	4.86	216	8893	94	13	545	289	11780	97	8	316				#DIV/0!	#DIV/0!	7.01	22
COUNT	30	12	12	12	12	12	12	12	12	12	12				0	0	21	21

lbs/day 8.34

Enter Kg/day or lbs/day on Input 1 Tab Cell D6

NOVATO SANITARY DISTRICT - VEOLIA  
Wastewater Treatment Plant

INFLUENT & EFFLUENT DATA

MONTH: JULY 2011  
PRINT DATE: 1/20/2012

DATE	TOTAL PLANT FLOW x 1,000,000	BOD INFLUENT Mg/l	BOD INFLUENT Kg/day	BOD EFFLUENT Mg/l	BOD EFFLUENT Kg/day	BOD % REMOVAL	SUSPEND MATTER 24 HR.C INFLUENT Mg/l	SUSPEND MATTER 24 HR.C INFLUENT Kg/day	TSS % REMOVAL	SUSPEND MATTER 24 HR.C EFFLUENT Mg/l	SUSPEND MATTER 24 HR.C EFFLUENT Kg/day	GREASE & OIL INFLUENT Mg/l	GREASE & OIL INFLUENT Kg/day	GREASE & OIL % REMOVAL	GREASE & OIL EFFLUENT Mg/l	GREASE & OIL EFFLUENT Kg/day	pH	TEMP		
1	4.49																6.80	22.5		
2	4.96																			
3	4.15																			
4	4.47																			
5	4.98																			
6	4.67						297	11567	98	7	273						6.90	23.0		
7	4.53	235	8678	14	529	94	316	11939	98	7	264						7.20	23.2		
8	4.49	263	9848	9	337	97	531	19884	99	6	225						7.00	22.9		
9	4.44			15						6	222						7.00	23.3		
10	4.66																			
11	4.01																			
12	4.41																			
13	4.21	281	9866	18	632	94	452	15870	98	10	351						7.10	22.3		
14	4.28	367	13100	16	571	96	440	15706	98	9	321						7.30	22.4		
15	4.3	292	10472	17	610	94	411	14739	96	7	251						7.20	22.6		
16	4.48																			
17	4.5																			
18	4.64																			
19	4.37																			
20	4.25	246	8719	15	532	94	352	12477	99	2	71						7.20	23.0		
21	4.29	230	8229	14	501	94	388	13167	99	3	107						7.00	23.0		
22	4.24	266	9406	16	566	94	540	19095	99	3	106						7.10	23.6		
23	4.11																			
24	4.03																			
25	4.32																			
26	4.41																			
27	4.62	625	24082	16	616	97	1182	45543	100	5	193						6.90	23.1		
28	4.3	252	9396	19	681	93	373	13377	99	5	179						7.00	23.2		
29	4	263	8774	18	600	93	379	12643	99	4	133						7.30	23.7		
30	4.16																			
31	4.23																			
TOTAL FLOW	135.40																			
MAXIMUM	4.98	625	24082	19	681	97	1182	45543	100	10	351						0	0	7.30	24
MINIMUM	4.00	230	8229	9	337	98	297	11567	98	2	71						0	0	6.80	22
AVERAGE	4.37	303	10979	16	561	94	470	17167	99	6	207						#DIV/0!	#DIV/0!	7.09	23
COUNT	31	11	11	12	11	11	12	12	12	13	13						0	0	21	21

lbs/day 8.34

Enter Kg/day or lbs/day on Input 1 Tab Cell D6

# Attachment 2

# Relative Criticality Ranking Report of Novato's Treatment Plant Systems



Performed by:

Veolia Novato Staff &  
WLLC Asset Management Team

August 16<sup>th</sup> – 18<sup>th</sup>, 2010

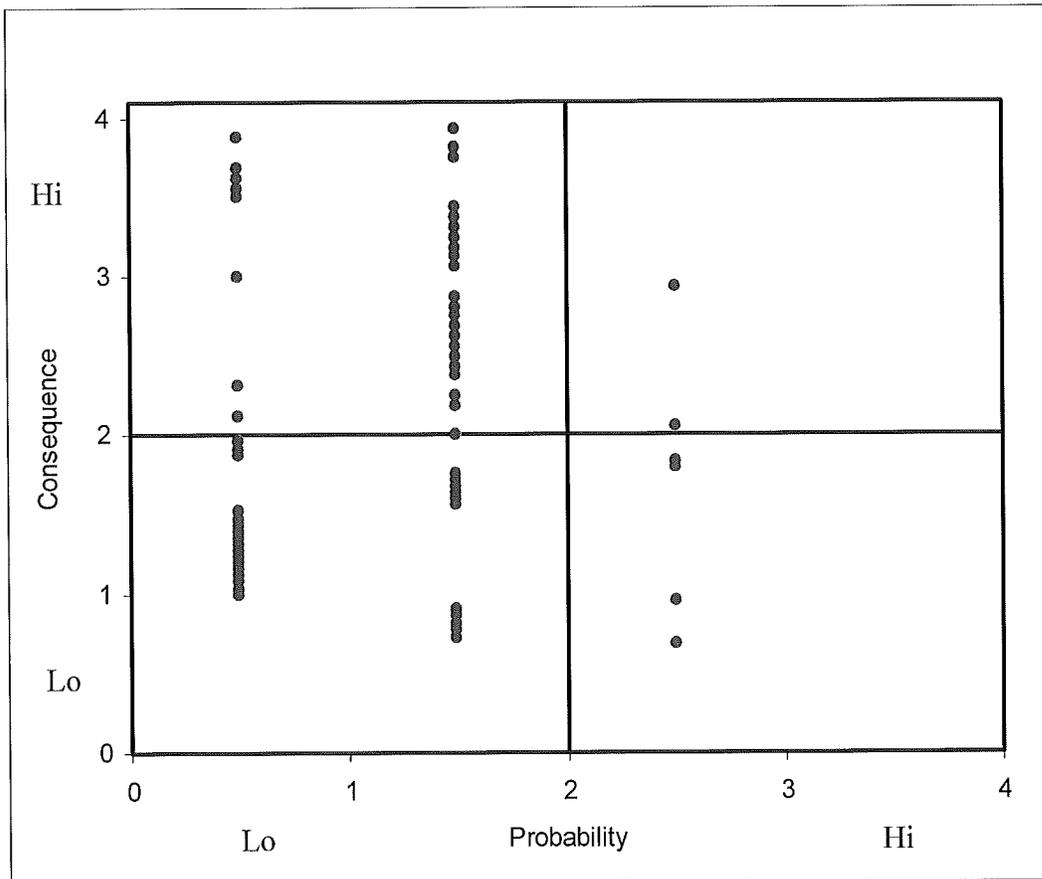
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## 1. Criticality Process Overview:

A systematic relative criticality review was completed for the Novato Treatment Facility. A criticality ranking process allows identification and prioritization of assets based on rankings from a standardized scale for consequence and likelihood of worst case failure scenarios. The ranking is useful in selecting between preventative and condition based services, prioritization of corrective work orders, and prioritization for condition assessment of assets. Additional benefits include increased understanding of causes and effects of failures, staff training on plant failure scenarios, and documentation of tribal knowledge. Further in-depth Reliability Centered Maintenance (RCM) studies can be prioritized based on critical systems. Graph 1 pictorially demonstrates the relationship between consequence and likelihood of failure. Systems that fall to the upper right of the graph are high priority systems and systems that fall to the lower left of the graph are low priority systems.

**Graph 1. Criticality System Ranking Results**



In a workshop with the plant staff and the Asset Management group, key criteria for each system were evaluated: Safety, Capacity, Environmental, Operating Cost, Stakeholder Impact, and Collateral Impact. Appendix A defines the criteria and the ratings for each key criteria. Using a VWNA proprietary tool, each system was ranked relative to the rest of the systems.

## 2. Criticality Ranking Results:

The results of the ranking are presented in Table 1 below. The criticality ranking has both a numeric and an alpha portion.

The numeric portion is listed as X:X:X:X and describes the severity of failures. The left most number is the summary number of key criteria that fall in the unacceptable category, the second number is criteria in the major category, the third number is criteria in the undesirable category, and the fourth number is criteria in the minor category. The higher the number rankings further to the left, the more critical the system.

The alpha portion is listed as A, B, C, or D and describes the frequency of failures. A stands for Common, B for Probable, C for Uncommon, and D for Rare. The higher the frequency of failure, then the more critical the system.

The combination of the numeric and alpha portions creates the final criticality ranking. This criticality ranking is then utilized to prioritize work orders, condition assessment and RCM studies. A complete listing of the failure scenarios identified for each system can be found in Appendix B.

**Table 1. Criticality System Ranking Results**

Description	Consequence	Probability	CMMS Ranking
STP00PRE00PMP00 - Influent Raw Sewage Pumping System	2:2:1:1	C	5
STP00PEF00PMP03 - Plant Effluent Wet Weather Pumping System	2:2:1:1	D	5
SCS00PST01GNR00 - Ignacio Generator System	2:2:0:2	C	5
SCS00PST01PMP01 - Ignacio Pumping/Wetwell System	2:2:0:2	C	5
SCS00PST01ELE00 - Ignacio Electrical Systems	2:2:0:2	D	5
STP00PWR00ELE00 - Motor Control Center System	2:1:0:3	D	5
STP00PWR00GNR01 - Standby Generators 1 & 2 System	2:1:0:3	D	5
STP00PWR00GNR02 - UV Area Emergency Generator System	2:1:0:3	D	5
SCS00PST01PMP02 - Ignacio Equalization Pumping System	2:0:2:2	C	5
STP00PEF00PMP02 - Utility Water Pumping & Filtration System	2:0:2:2	C	5
STP00DGS00GAS00 - Digester Gas System	1:2:1:2	C	5
STP00BCB00STL02 - Secondary Clarification System	1:1:2:2	C	5
STP00PEF00TSP01 - UV Influent Channel System	1:1:1:3	C	5
STP00PEF00TSP02 - UV Effluent Channel System	1:1:1:3	C	5
STP00PEF00UVD00 - UV Disinfection System	1:1:1:3	C	5
STP00PWR00TNS00 - Main Utility Switchgear System	0:3:1:2	D	5

STP00CST00SCA00 - SCADA and Network System	0:2:2:2	B	3
STP00CST00CTR00 - PLC and Remote I/O System	0:2:2:2	C	3
STP00SED00STL01 - Primary Settling System	0:2:2:2	C	3
STP00BCB00TSP01 - Aeration Splitter Box System	0:2:1:3	C	3
STP00BCB00TSP02 - Secondary Clarifier Splitter Box System	0:2:1:3	C	3
STP00PRE00TSP00 - Raw Sewage Distribution Box & Metering System	0:2:1:3	C	3
STP00CST00MNT01 - Fire Safety Monitoring System	0:1:3:2	C	3
STP00SED00PMP00 - Primary Scum/Sludge Pumping System	0:1:3:2	C	3
STP00DGS00HTG00 - Hot Water Heating & Circulation System	0:1:2:3	C	3
STP00DGS00PMP02 - Digester Recirculation Pump & Heating System	0:1:2:3	C	3
STP00DGS00MBL00 - Digesters & Mixing System	0:1:2:3	D	3
STP00BCB00AER01 - Aeration Blower System	0:1:1:4	C	3
STP00BCB00PMP02 - RAS Pumping System	0:1:1:4	C	3
SCS00PST01STR00 - Ignacio Equalization Basins & Diversion Structure	0:1:1:4	D	3
STP00SPS00SAF00 - Safety Equipment System	0:1:0:5	B	3
STP00CHM00CHF04 - Generator Fuel Bulk Tank System	0:0:5:1	C	3
STP00BGR00GRN00 - Facility Site System - Grounds	0:0:4:2	D	2
STP00PEF00STR00 - Flow Equalization Pond System	0:0:4:2	D	2
STP00PWR00GNR03 - Admin Building Generator System	0:0:4:2	D	2
STP00BCB00MBL00 - Aeration Basins System	0:0:3:3	B	2
STP00SLC00PMP02 - Sludge Storage Lagoon Decant Pumping System	0:0:3:3	B	2
STP00BCB00PMP03 - WAS Pumping System	0:0:3:3	C	2
STP00DGS00PMP01 - Digested Sludge Pumping System	0:0:3:3	C	2
STP00PRE00SCR00 - Bar Screen System	0:0:3:3	C	2
STP00SLC00STR01 - Sludge Storage Lagoon System	0:0:3:3	C	2
STP00SLL00PMP02 - TWAS Pumping System	0:0:3:3	C	2
STP00SLL00PMP03 - GBT Filtrate Pumping System	0:0:3:3	C	2
SCS00PST01BLD01 - Ignacio Control Building	0:0:3:3	D	2
SCS00PST01BLD02 - Ignacio Generator Building	0:0:3:3	D	2
SCS00PST01GRN00 - Ignacio Grounds System	0:0:3:3	D	2
STP00BGR00BLD01 - Headworks/Generator Building	0:0:3:3	D	2
STP00BGR00BLD02 - Grit Bin Building	0:0:3:3	D	2
STP00BGR00BLD03 - Aeration/Electrical Building	0:0:3:3	D	2
STP00BGR00BLD04 - UV Building	0:0:3:3	D	2
STP00BGR00BLD05 - Wet Weather Pumping Building	0:0:3:3	D	2

STP00BGR00BLD06 - Main Electrical Room Building	0:0:3:3	D	2
STP00BGR00BLD07 - GBT Building	0:0:3:3	D	2
STP00BGR00BLD08 - Solids Processing Building	0:0:3:3	D	2
STP00BGR00BLD09 - Administration Building	0:0:3:3	D	2
STP00SLL00THK00 - Gravity Belt Thickener System	0:0:3:3	D	2
STP00SPS00GAS00 - Natural Gas Feed System	0:0:3:3	D	2
STP00CHM00CHF03 - Polymer Dosing System	0:0:2:4	B	1
SCS00PST01FLT00 - Ignacio Odor Control System	0:0:2:4	C	1
STP00PRE00GRT00 - Grit Removal System	0:0:2:4	C	1
STP00PWR00GNR04 - Micro Turbine System	0:0:2:4	C	1
STP00SLL00PMP01 - High Pressure Washwater Pumping System	0:0:2:4	C	1
STP00SPS00FLT02 - Odor Bed Odor Control System	0:0:2:4	C	1
STP00PRE00SPT00 - Septage/Vactor Disposal System	0:0:1:5	B	1
STP00SPS00SMP00 - Sampling Equipment System	0:0:1:5	B	1
SCS00PST01CTR00 - Ignacio Control Systems	0:0:1:5	C	1
SCS00PST01TSP00 - Ignacio Influent Channel/Grinder System	0:0:1:5	C	1
STP00CHM00CHF01 - Ferric Chloride Dosing System	0:0:1:5	C	1
STP00CHM00CHF02 - Sodium Hypochlorite Dosing System	0:0:1:5	C	1
STP00PEF00PMP01 - Plant Effluent Dry Weather Pumping System	0:0:1:5	D	1
STP00CST00NET00 - Administrative Computer Network	0:0:0:6	B	1
STP00SPS00HTL00 - Maintenance Handtools System	0:0:0:6	B	1
STP00BCB00AER02 - Mixed Liquor Channel Blower System	0:0:0:6	C	1
STP00BCB00PMP01 - Mixed Liquor Recycle Pumping System	0:0:0:6	C	1
STP00BCB00PMP04 - Secondary Scum Pumping System	0:0:0:6	C	1
STP00BCB00PMP05 - Secondary Drainage Pumping System	0:0:0:6	C	1
STP00CST00CMM00 - Plant Communications System	0:0:0:6	C	1
STP00PEF00AER02 - UV Channel Aeration Blower System	0:0:0:6	C	1
STP00SPS00RSK00 - Service Vehicle System	0:0:0:6	C	1

### 3. Items of Interest:

Items of interest are items that were identified as operational controls or redesign considerations that if implemented would increase the reliability of the system. Incorporation of these items could result in lowering of the criticality of the system. Table 2. identifies the operational controls recommendations and Table 3 identifies the redesign considerations.

**Table 2. Operational Controls Recommendations**

	Systems	Criticality		Operational Controls Suggestions
<b>Ignacio Pump Station</b>				
	SCS00PST01TSP00 - Ignacio Influent Channel/Grinder System	0:0:1:5:C	1	Recommend 5 year concrete inspection PM.
	SCS00PST01PMP01 - Ignacio Pumping/Wetwell System	2:2:0:2:C	5	Recommend 5 year concrete inspection.
	SCS00PST01CTR00 - Ignacio Control Systems	0:0:1:5:C	1	Ensure PM's for alarm verification of the back-up float system.
<b>Preliminary Treatment Process</b>				
	STP00PRE00PMP00 - Influent Raw Sewage Pumping System	2:2:1:1:C	5	Recommend 5 year concrete inspection PM.
	STP00PRE00SCR00 - Bar Screen System	0:0:3:3:C	2	Recommend 5 year PM for concrete inspection. Review spares for screw conveyor.
	STP00PRE00GRT00 - Grit Removal System	0:0:2:4:C	1	Recommend 5 year concrete inspection PM.
	STP00PRE00TSP00 - Raw Sewage Distribution Box & Metering System	0:2:1:3:C	3	Recommend 5 year concrete inspection PM.
<b>Primary Sedimentation Process</b>				
	STP00SED00STL01 - Primary Settling System	0:2:2:2:C	3	Recommend 5 year concrete inspection PM.
<b>Secondary Treatment Process</b>				
	STP00BCB00TSP01 - Aeration Splitter Box System	0:2:1:3:C	3	Recommend 5 year concrete inspection PM.
	STP00BCB00MBL00 - Aeration Basins System	0:0:3:3:B	2	Recommend 5 year concrete inspection PM.
	STP00BCB00TSP02 - Secondary Clarifier Splitter Box System	0:2:1:3:C	3	Recommend 5 year concrete inspection PM.
	STP00BCB00STL02 - Secondary Clarification System	1:1:2:2:C	5	Recommend 5 year concrete inspection PM.
	STP00BCB00PMP02 - RAS Pumping System	0:1:1:4:C	3	Recommend investigating spare RAS pump stock.
<b>Plant Effluent Process</b>				
	STP00PEF00TSP01 - UV Influent Channel System	1:1:1:3:C	5	Recommend 5 year concrete inspection PM.
	STP00PEF00TSP02 - UV Effluent Channel System	1:1:1:3:C	5	Recommend 5 year concrete inspection PM.
<b>Digestion Process</b>				
	STP00DGS00PMP01 - Digested Sludge Pumping System	0:0:3:3:C	2	Investigate contingency plan for solids hauling. Options for sludge trucking - location to open and ability to get solids into a truck and truck companies.
<b>Power Systems Process</b>				
	STP00PWR00TNS00 - Main Utility Switchgear System	0:3:1:2:D	5	Recommend review of PM's for critical electrical components.
	STP00PWR00ELE00 - Motor Control Center System	2:1:0:3:D	5	Recommend review of PM's for critical electrical components.

**Table 3. Redesign Considerations**

	<b>Systems</b>	<b>Criticality</b>		<b>Redesign Considerations</b>
<b>Sludge Storage Process</b>				
	STP00SLC00PMP02 - Sludge Storage Lagoon Decant Pumping System	0:0:3:3:B	2	'System is aged and potentially corroded from weather/H2S. Recommend condition assessment review of system and capital plan development (guide rails, pumps, valves).

## APPENDIX A – Ranking Criteria

### Introduction:

The following guidelines are provided for use when evaluating criticality of systems in preparation for RCM analysis or other purposes. Users are encouraged to review and revise these as appropriate for each site and/or use. However, use caution to ensure that these scales are of RISK, not value. In other words, it may be tempting to place dollar values on operating cost scales or seriousness of injury on safety scales, but as soon as either costs are actually increased, or injury actually occurs, unacceptable results have taken place. As a specific example, say a handrail mounting rots out. Until someone is in the specific location and leans on the rail in a way that depends on the rail, there are no measurable safety consequences. However, risk has increased considerably.

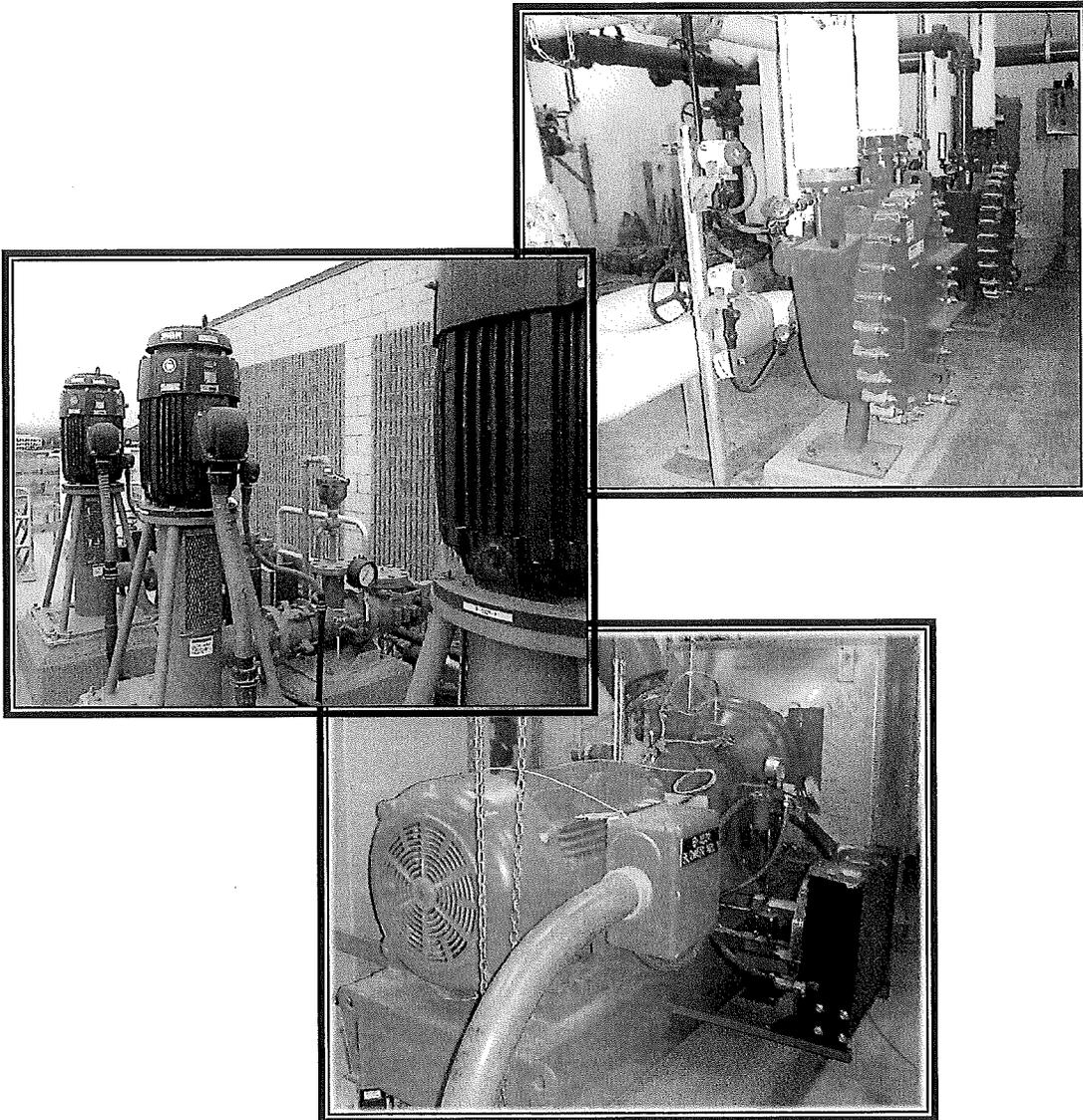
### Safety

- |              |   |
|--------------|---|
| Unacceptable | Failure virtually assures injury, fine, or citation. The danger of likelihood of injury is immediate and there is little or no way to discover and mitigate the danger following failure. Examples might include chlorine leaks or liquid polymer spills.   |
| Major        | Risk of injury, fine, or citation is very high. The danger or likelihood of injury could be significantly mitigated only if almost immediately detected and actions taken following failure. Examples might include dry polymer spills or hypochlorite, caustic, or other aggressive chemical spills.   |
| Undesirable  | Risk of injury, fine, or citation is increased. The danger or likelihood of injury can be significantly mitigated if there are secondary or indirect means or detecting and responding to the failure. Examples might include non-aggressive chemical leaks, visibly or easily observed missing or damaged protective devices such as gratings or handrails, etc. |
| Minor        | Risk of injury, fine, or citation is not significantly affected. There is little increased safety risk due to failure   |

# Attachment 3



# Novato WWTP Condition Report Vibration and Ultrasonic Assessment



Prepared by:  
Veolia Water Operating Services

# Novato WWTP Condition Report

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## SECTION 1 - METHODOLOGY

### Condition Assessment

A condition assessment was completed for all major plant assets with a replacement value of over \$10,000. The condition assessment is intended to be a “snap shot” of the condition of an asset and give it a ranking number based on deficiency scoring where 1 is new and 5 is failed. The purpose of developing a ranking number is to prioritize where maintenance and capital should be focused to increase reliability of system functions.

The basic approach for performing the condition assessment entails the use of three major steps. These are:

- Data Preparation – Extracting or compiling the asset registry from the CMMS and adding it to the condition assessment tool.
- Assessment – A process and set of tools by which field evaluation of assets can be accomplished and the results recorded, based on ranking standards. Where available performance testing was completed. Each asset was ranked in multiple areas such as performance, appearance, vibration, reliability, safety, etc.
- Review – When the ranking is complete, using filtering to review the final scores and make repair and replacement recommendations.

### Predictive Maintenance Tools

A variety of predictive maintenance tools in conjunction with an experienced mechanic review and review of the work order history were utilized to compile the condition assessment score. Two key tools utilized were a peak vibration meter and an ultrasonic meter.

The portable ultrasonic meter used was the SDT 270. This meter detects, measures, and collects ultrasound pressure waves that are both structure borne and air borne. The Structure borne ultrasound is utilized to detect mechanical issues such as in bearing housings and gearboxes. The air borne ultrasound is utilized to detected electrical issues and leaks in compressed air and vacuum systems.

The peak vibration meter used was the SPM VIB-11B. This meter is a straight-forward diagnostic tool for predictive maintenance that measures the magnitude of vibration severity to detect common faults such as imbalance, structural weakness, loose parts, etc. The meter gathers data in three directions – vertical, horizontal, and axial. This data was summarized into an overall score.

For submersible pumps meggering and amp readings were compiled by an outside contractor, Shape. These results were compiled with the other assessment readings for the overall scores. No problems were noted.

## SECTION 2 – CONDITION ASSESSMENT RESULTS

Below is a summary and Figure 1. of the condition assessment results. Overall the assets were in good to excellent condition. Twenty assets were not inspected as they could not be operated at the time of the review. These will be assessed during the next condition assessment.

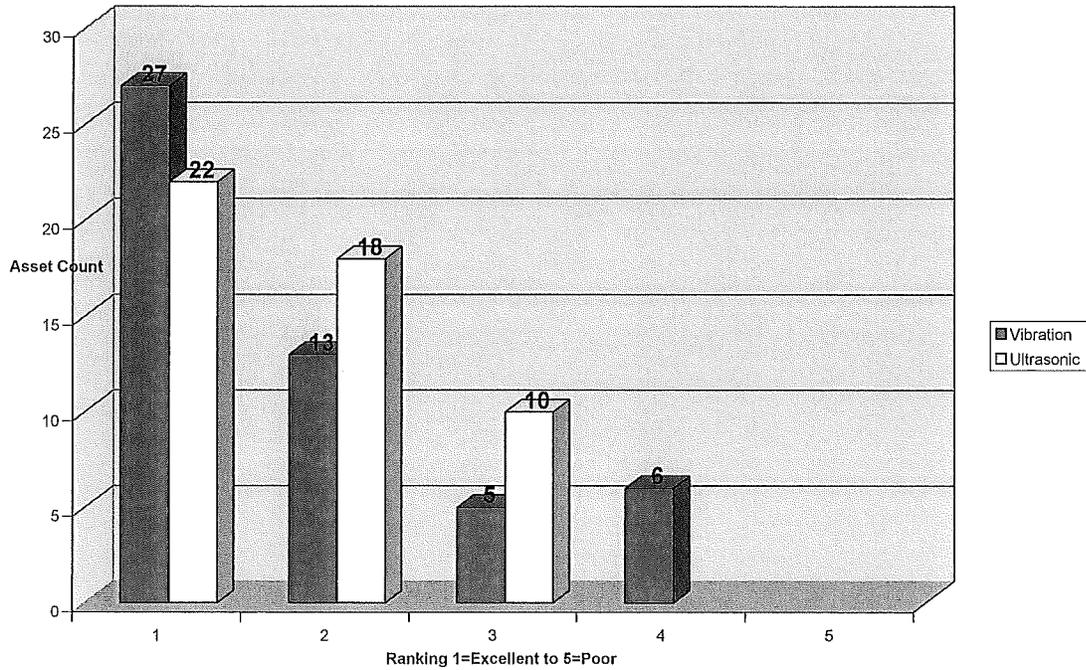
Particular items of interest found include the following:

- Aeration Blower # 3 was unable to start; diagnosed with a temperature sensor issue. The Variable Frequency Drive had a problem with a cooling fan which was repaired.
- Aeration Blower # 1 was evaluated for a noted vibration; company representatives assessed the unit and determined that it was within design specifications.
- EF-1690-20.01 Gravity Belt Thickener Area Odor Control Fan # 2 taken out of service; warranty issues addressed.
- Digester #2 systems out of service and certain ancillary equipment could not be operated. This unit is to be refurbished.
- The Odor Control Fans had higher vibration readings. It is recommended to invest in a belt laser alignment tool, such as the SKF Belt Alignment TMEB-2 at a cost of approximately \$1,500. This will be reassessed following the refurbishing of the odor control beds.
- It is recommended to review the Preventative Maintenance frequency of the predictive maintenance tasks and add preventative maintenance tasks for thermographic checks on the Variable Frequency Drive and electrical panels.

# Novato WWTP Condition Report

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**Figure 1. Summary Results of the Vibration and Ultrasonic Readings**  
Vibration & Ultrasonic Scores



# NOVATO SANITARY DISTRICT BOARD AGENDA ITEM SUMMARY

<b>TITLE: Administration: Board Meeting Technology Policy</b>	<b>MEETING DATE: February 27, 2012</b>
	<b>AGENDA ITEM NO.:</b>
<b>RECOMMENDED ACTION:</b> Adopt District Policy No. 4099 – Board Meeting Technology.	
<b>SUMMARY AND DISCUSSION:</b>  The District has begun a pilot program to test the use of tablet computers for Board member agenda packets in order to reduce staff costs, reduce paper use, and increase the ability of Board members to efficiently review the packet materials.  In order to assure Brown Act compliance when using the technology District staff recommends adopting the attached Policy No. 4099 detailing the restrictions on technology use during board meetings. District Counsel has reviewed the policy and his comments have been incorporated.	
<b>ALTERNATIVES:</b> Do not adopt policy	
<b>BUDGET INFORMATION:</b> No impact.	
<b>DEPT.MGR.:</b>	<b>MANAGER:</b>

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# Novato Sanitary District

## POLICY HANDBOOK

**POLICY TITLE:** Board Meeting Technology  
**POLICY NUMBER:** 4099

**4099** In order to maintain efficient and effective operations, the District may provide Board Members with appropriate technology. When using technology, Board Members shall maintain the confidentiality of such District information.

**4099.1** Upon receipt of, or provision of access to, technology services and/or hardware, Board Members will sign an agreement for their use, as guided by District Administrative Policies. Any hardware provided remains the property of the District and will be returned upon District request or when leaving the District.

**4099.2** During District Board meetings noticed and open to the public, the intent is that any electronic devices will be used solely to access the District paperless agenda materials for that meeting. Pursuant to the Ralph M. Brown Act, the use of technology hardware, including cell phones, smart phones, tablets, notebooks, computers, and other devices, by Board Members to access the internet/intranet or receive/send phone calls, email, text messages, or other types of electronic communication, is not permitted. This prohibition shall not apply to electronic communication to or from family members that does not address District business.

**4099.3** The District is not providing internet connection or telephone services for Board member use.

# NOVATO SANITARY DISTRICT BOARD AGENDA ITEM SUMMARY

<b>TITLE:</b> Collection System Improvements; Galli Drive Sewer Improvement Project; Project 72706, Phase G	<b>MEETING DATE:</b> February 27, 2012  <b>AGENDA ITEM NO.:</b>
<b>RECOMMENDED ACTION:</b> Approve a contract in the amount of \$62,000 with the Covello Group for construction management services on a time and materials basis.	
<b>SUMMARY AND DISCUSSION:</b>  <p>At its February 13<sup>th</sup> meeting the Board awarded the construction contract for the Galli Drive Sewer Improvement Project. Staff requested a proposal from The Covello Group (TCG) to provide construction management services on the Galli Drive Project. The Covello Group has been providing construction management services for the District on collection system and sewer pump station improvements over the past few years and is currently providing construction management services to the North Marin Water District's recycled water line projects. The Covello Group has built a positive working relationship with the City of Novato inspection staff. Their prior work has demonstrated a high level of professionalism and project management that has resulted in better projects and cost savings to the District.</p> <p>The Covello Group has submitted a Proposal in the amount of \$61,580.00 to provide construction management services for the Galli Drive Sewer Project. This fee includes sub-consultant costs for required materials testing for the project, and is about 9.93% of the estimated construction costs for the projects. This number is consistent with the current range of 8%-12% for construction management services obtained from the BACWA engineering group for agencies in our industry, and staff recommends that the Board approve the contract with the Covello Group and authorize the Manager-Engineer to execute a contract.</p>	
<b>ALTERNATIVES:</b> Do not approve the contract.	
<b>BUDGET INFORMATION:</b> This work will be funded from the budget for the Collection System Improvements Project, Project 72706, which has a FY2011-12 budget of \$2,000,000.	
<b>DEPT.MGR.:</b>	<b>MANAGER:</b>