

NOVATO SANITARY DISTRICT

Meeting Date: April 21, 2014

The Wastewater Operations Committee of the Novato Sanitary District will hold a meeting at 2:00 PM, Monday, April 21, 2014 at the District offices, 500 Davidson Street, Novato.

AGENDA

1. AGENDA APPROVAL:

2. 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 Committee at this time as a result of any public comments made.

3. CONSIDER APPROVAL OF MINUTES OF THE MARCH 17, 2014 MEETING

4. WASTEWATER TREATMENT FACILITIES OPERATIONS AND MAINTENANCE REPORT FOR MARCH 2014:

- a. Treatment Plant Performance Report
- b. Maintenance Report
- c. Safety and training
- d. Odor control, noise, and landscaping report

5. COLLECTION SYSTEM OPERATIONS AND MAINTENANCE REPORT FOR MARCH 2014:

- a. Collection System Maintenance
- b. Pump Station Maintenance
- c. Collection System Performance
- d. Safety and Training

6. RECLAMATION FACILITY REPORT FOR MARCH 2014

- a. Ranch Operations
- b. Irrigation Parcels
- c. Irrigation Pump Station

7. ADJOURNMENT:

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.

Materials that are public records and that relate to an open session agenda item will be made available for public inspection at the District office, 500 Davidson Street, Novato, during normal business hours.

March 17, 2014

A regular meeting of the Wastewater Operations Committee of Novato Sanitary District was held at 2:00 p.m., Monday, March 17, 2014, at the District Office, 500 Davidson Street, Novato.

MEMBERS PRESENT: NSD Board Members William Long and Jerry Peters.

STAFF PRESENT: Beverly B. James, Manager-Engineer
Sandeep Karkal, Deputy Manager-Engineer
Steve Krauthem, Field Services Superintendent
John Bailey, Project Manager, Veolia Water
Julie Swoboda, Administrative Secretary
(*Tim O'Connor, Collections System Supervisor, was absent.*)

ALSO PRESENT: Brian Exberger, Assistant Project Manager, Veolia Water
Lynda Rodefer, Administrative Manager, Veolia Water
John O'Hare, Veolia Water
Dave McEwen, Brown and Caldwell

AGENDA APPROVAL: The Manager requested that item 4e: *Brown and Caldwell presentation on odor emissions control* be moved to discussion as first item on agenda. The agenda was approved as adjusted.

PUBLIC COMMENT: None.

APPROVAL OF MEETING MINUTES FOR FEBRUARY 19, 2014: The February 19, 2014 meeting minutes were approved as written.

WASTEWATER TREATMENT FACILITIES OPERATIONS AND MAINTENANCE REPORT FOR FEBRUARY 2014:

- Brown and Caldwell (B&C) presentation on odor emissions control. The Deputy Manager-Engineer stated that on February 7th, John Bailey, David McEwen and himself met with representatives from the Lea Drive neighborhood to discuss odor concerns. He stated that at the meeting, Mr. McEwen gave a Powerpoint presentation and that Mr. McEwen would be providing the same information at this meeting.

Mr. McEwen proceeded with a Powerpoint presentation in which he identified and discussed open sources within the treatment facility which could be associated with offsite odors. He specifically discussed the aeration basins and identified possible compounds causing fugitive emissions and noted that a significant amount of odors are needed to create impactable emissions offsite. Mr. McEwen outlined solutions for odor control in the anoxic zones of the aeration basins. The Deputy Manager-Engineer noted

that some of Mr. McEwen's recommendations have already been implemented with positive results.

At 2:40 p.m., the Committee Chairperson declared a 10 minute break.

Mr. McEwen left the meeting.

The meeting was reconvened at 2:47 p.m.

- Treatment Plant Performance Report, Maintenance Report and Safety & Training:

John Bailey, Plant Manager, Veolia Water, gave an overview of the treatment plant operations for the month of February. He stated there were no permit exceedances, violations or excursions for the month and noted that the average daily flow had increased due to rain events totaling 6.77 inches. He stated that because of previously dry weather the District had transitioned from Bay discharge to reclamation/storage mode but due to significant rainfall during early February, the District transitioned back to Bay discharge on February 11th.

Mr. Bailey stated that routine rounds, readings and maintenance were performed at the Novato Treatment Facility, the Ignacio Transfer Pump Station, the Recycled Water Plant and the Sludge Lagoons. He pointed out the inclusion of process control data graphs and discussed this information with the committee.

Mr. Bailey reported that Veolia employees have been accident free for a total of 1,366 days/62,290 hours. He stated that Jerome Meter (H2S) readings continue to be taken within the treatment plant as well as in the Lea Drive neighborhood area. He stated that no recycled water was produced in February.

- Odor control, noise, and landscaping report: Deputy Manager-Engineer Sandeep Karkal stated that the District is no longer receiving noise complaints now that the sound attenuating structure has been completed.

The Deputy Manager-Engineer reported that Field Services Superintendent Steve Krautheim is in contact with Cagwin and Dorward to address the landscaping issues at the north eastern portion of the plant.

COLLECTION SYSTEMS OPERATION AND MAINTENANCE REPORT FOR FEBRAURY 2014:

The Deputy Manager-Engineer discussed the Collection Systems Monthly Report for February 2014. He reported that the Collection Systems crew cleaned a total of 76,221 feet of sewer pipeline and that the department completed 361 maintenance work orders which were generated in February. The Deputy Manager-Engineer stated that the District's CCTV van (Closed Circuit TV) televised 104 line segments for 21,931 feet of production. He stated that there were no sanitary sewer overflows in the month of February.

The Manager stated that due to a calculating error, the total reported accident free working days at the District had been incorrect. She noted that as of March 17th, the Collections Department and the District have worked accident free for a total of 1,098 days.

RECLAMATION FACILITY REPORT FOR FEBRUARY 2014:

Field Services Superintendent Steve Krautheim presented the Reclamation Facilities report for February. He stated that the rancher cleared two culverts in Site 7 and that the motor from Irrigation Pump No. 2 was removed for repair. He stated that approximately 66 MG of recycled water was placed in the storage ponds and that no irrigation took place.

ADJOURNMENT:

There being no further business to come before the Committee, the meeting adjourned at 3:21 p.m. The next Wastewater Operations Committee meeting will be held on Monday, April 21, 2014.

Respectfully submitted,

Beverly B. James
Manager-Engineer

Julie Swoboda, Recording



April 15, 2014

Mr. Sandeep Karkal
Manager - Engineer
Novato Sanitary District
500 Davidson Street
Novato, CA 94545

Subject: Veolia Water Operations Report – March 2014

Dear Mr. Karkal:

I am pleased to provide this updated activity report for March 2014.

As always, please give me a call at 707-208-4491 should you have any questions.

Best regards,

A handwritten signature in black ink, appearing to read "John Bailey". The signature is fluid and cursive, with a large initial "J" and "B".

John Bailey
Project Manager, Veolia

**MONTHLY OPERATIONS REPORT
March 2014**

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: March 2014:

Bay Discharge – NPDES Limits

Parameter	Value		Limit	
	Ave	Max	#1	#2
Flow, MGD (monthly ave/max)	5.02	7.66	N/A	N/A
Max Peak Hour, MGD – 3/8/14, 1100 Hours	N/A	9	N/A	N/A
Influent BOD ₅ , lb/day (month ave/max)	9,241	11,872	N/A	N/A
Influent TSS, lb/day (monthly ave/max)	11,460	13,639	N/A	N/A
Effluent BOD ₅ , mg/L (monthly ave/weekly max)	<6	10	30	45
Effluent TSS, mg/L (monthly ave/weekly max)	<3	3	30	45
Effluent BOD ₅ - % Removal, Minimum	97	N/A	85	N/A
Effluent TSS - % Removal, Minimum	99	N/A	85	N/A
Ammonia, mg/L – (monthly ave/daily max)	0.30	1.48	6	21
pH, su (min / max)	6.9	7.0	6.5	8.5
Enterococcus, mpn (30 day geo mean)	1.8	N/A	35	N/A
Fecal Coliform, mpn (30 day median)	4	N/A	140	N/A
Fecal Coliform, mpn (90 th percentile)	17	N/A	430	N/A
Total Coliform, mpn (5 Sample Median / Max)	N/A	N/A	240	10,000
Total Permit Exceedances (NPDES)	0			

NA – Not Applicable

Discussion of Violations / Excursions: NONE

Title 22 - Recycled Water Production and Quality (Off Line)

Description	Units	Value	Limit
Volume Produced	Million Gallons	N/A	N/A
Average Turbidity	NTU	N/A	N/A
Turbidity > 5 NTU (in 24 hour)	Minutes	N/A	N/A
Minimum CT (disinfection)	ml-min/L	N/A	N/A
Minimum Dissolved Oxygen (DO)	mg/L	N/A	N/A
Maximum Total Coliform	mpn/100 ml	N/A	N/A

Total Rainfall. – 2.71 inches

Daily Max 3/29 – 0.74 inches

OPERATIONS & MAINTENANCE STATUS / REVIEW:

Key events for the period:

Novato

- Routine rounds, readings and maintenance
- Repaired and rewired Return Activated Sludge (RAS) Pump #2
- New tires on maintenance truck
- Repaired Secondary Clarifier #3 mercoïd (pressure) switch
- Repaired #3 water line on Aeration Basin #4
- Replaced all Ferric feed lines
- Adjusted belt on Digester #1 Sludge Transfer Pump
- Replaced o-rings on Digester Pressure Relief Valves
- Replaced pump and pressure switch on Gravity Belt Thickener (GBT) Polymer Pump
- Replace hour meter on Wetwell #2, Influent Pump #3
- Replaced Ultraviolet Transmittance (UVT) meter and tubing
- Repaired #3 waterline on Channel #2 Grit Vortex
- Adjusted seal on #3 water Automatic Strainer

Equipment Out of Service – Due to Planned Servicing, Maintenance, or Replacement

- Primary Clarifier #1

Ignacio Transfer Pump Station

- Routine rounds, readings and maintenance
- Repaired SCADA desktop computer
- Replaced drive on Grinder
- Troubleshoot and replace filters on emergency generator

Equipment Out of Service – Due to Planned Servicing, Maintenance, or Replacement

- None

Recycled Water Plant

- Performed plant rounds and maintenance
- No recycled water production in March

Equipment Out of Service – Due to Planned Servicing, Maintenance, or Replacement

- None

Sludge Lagoons

- Performed routine rounds and inspection

ADMINISTRATION:

- February Electronic Self Monitoring Report submitted on March 27, 2014
- February DMR submitted on March 27, 2014

SAFETY AND TRAINING:

- Monthly plant safety inspections for Novato WWTP and Ignacio Pump Station completed
- Five Minute Tailgate training is held daily with all staff.
- No safety incidents for the month of March 2014
- Accident Free: 6/1/10 – 3/31/14: 1,397 days / 63,703 Hours
- General Electrical Training
- Lockout/Tagout Training – Control of Hazardous Energy

ODORS:

- Jerome Meter (H2S) readings performed in neighborhood and within treatment plant.
- Reviewed findings with neighbors

MISCELLANEOUS

- Process Control Management Plan (PCMP) meetings held weekly.

Veolia Support Staff On/Off Site (Various Times)

John O'Hare	Technical Support
Chris McAuliffe	District Manager
Mel Demsky	Regional Director of Asset Management

Novato Sanitary District
BOD/TSS Report



March, 2014

Date	Flow MGD	Influent				Effluent				BOD % Removal PERCENT	TSS % Removal PERCENT
		BOD		TSS		BOD		TSS			
		mg/l	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	lb/d		
03/01/14	7.66										
03/02/14	6.72										
03/03/14	6.73	163	9,149	243	13,639	10	561	<3	<168	93.9	98.8
03/04/14	6.57										
03/05/14	6.25										
03/06/14	5.78										
03/07/14	5.42	206	9,312	248	11,210	5	226	<3	<136	97.6	98.8
03/08/14	5.05	193	8,129	224	9,434	<5	<211	<3	<126	97.4	98.7
03/09/14	5.10										
03/10/14	4.96	198	8,191	252	10,424	<5	<207	<3	<124	97.5	98.8
03/11/14	4.44	233	8,628	282	10,442	<5	<185	<3	<111	97.9	98.9
03/12/14	4.24										
03/13/14	4.15	343	11,872	344	11,906	<5	<173	<3	<104	98.5	99.1
03/14/14	4.03										
03/15/14	4.04										
03/16/14	4.15										
03/17/14	4.48	225	8,407	321	11,994	6	224	<3	<112	97.3	99.1
03/18/14	4.45	225	8,350	258	9,575	6	223	<3	<111	97.3	98.8
03/19/14	4.35	246	8,925	316	11,464	6	218	<3	<109	97.6	99.1
03/20/14	4.33										
03/21/14	4.26										
03/22/14	4.31										
03/23/14	4.46										
03/24/14	4.26	275	9,770	338	12,009	<5	<178	<3	<107	98.2	99.1
03/25/14	4.02	274	9,186	356	11,936	12	402	<3	<101	95.6	99.2
03/26/14	4.57	288	10,977	354	13,492	<5	<191	3	114	98.3	99.2
03/27/14	4.11										
03/28/14	3.99										
03/29/14	6.56										
03/30/14	5.02										
03/31/14	7.30										
Weekly Averages											
03/01/14	Week 1	247	4,670	306	5,945	10	205	3	72		
03/08/14	Week 2	187	4,020	238	5,184	7	151	3	65		
03/15/14	Week 3	258	4,338	293	4,955	5	85	3	51		
03/22/14	Week 4	232	3,883	298	4,994	6	100	3	50		
03/29/14	Week 5	279	4,526	349	5,660	7	117	3	49		
Monthly											
Minimum	3.99	163	8,129	224	9,434	<5	<78	<3	<46	94	99
Maximum	7.66	343	11,872	356	13,639	12	255	3	<76	99	99
Total	155.76										
Average	5.02	239	9,241	295	11,460	<6	<113	<3	<54	97	99

Novato Sanitary District
Conventional Pollutants Report



March, 2014

Date	INFLUENT - A001			Effluent - E002							
	Flow Total	pH	Ammonia	Coliform / Bacteria			pH	Ammonia	Unionized Ammonia	Oil & Grease	Temp
				Fecal	Entero	Total					
MGD	su	mg/L	MPN/100 mL			su	mg/L	mg/L			
03/01/14	7.66										
03/02/14	6.72										
03/03/14	6.73	7.3	20	2.0	<1.0		7.0	1.48			18.0
03/04/14	6.57	7.1					6.9				18.1
03/05/14	6.25	6.7					7.0	0.35			18.8
03/06/14	5.78	6.7					7.0	0.32			18.9
03/07/14	5.42	6.7		4.0	<1.0		7.0	0.21	0.00076	<1.4	18.8
03/08/14	5.05			4.0	1.0			0.10			
03/09/14	5.10										
03/10/14	4.96	7.4		2.0	1.0		7.0	0.15			19.3
03/11/14	4.44	6.9		<2.0	1.0		7.0	0.13			19.1
03/12/14	4.24	7.2					7.0				19.0
03/13/14	4.15	7.1		<2.0	5.1		7.0	0.16			19.1
03/14/14	4.03	7.6					6.9				19.5
03/15/14	4.04										
03/16/14	4.15										
03/17/14	4.48	8.5		23.0	3.1		7.0	0.23			19.3
03/18/14	4.45	7.2		2.0	9.6		6.9	0.15			20.4
03/19/14	4.35	7.0		7.0	7.5		6.9	0.19			19.5
03/20/14	4.33	7.1					7.0				19.9
03/21/14	4.26	7.1					6.9				19.2
03/22/14	4.31										
03/23/14	4.46										
03/24/14	4.26	6.6		4.0	<1.0		7.0	0.20			19.5
03/25/14	4.02			4.0	1.0		7.0	0.30			19.3
03/26/14	4.57	7.2		17.0	1.0		6.9	0.28			19.2
03/27/14	4.11	8.3					7.0				19.7
03/28/14	3.99	7.3					7.0				19.7
03/29/14	6.56										
03/30/14	5.02										
03/31/14	7.30	7.2					7.0				18.5
Monthly											
Minimum	3.99	6.6	20	<2.0	<1.0		6.9	0.10			18.0
Maximum	7.66	8.5	20	23.0	9.6		7.0	1.48	0.00076	<1.4	20.4
Total	155.76										
Average	5.02	7.2	20				7.0	0.30	0.00076	<1.4	19.2

Novato Plant : Bacterial Results

EFFLUENT: E-002 Station

Mar-14

Fecal Coliform		Enterococcus	
(1) 30-Day Median not to exceed 140 MPN/100 mL		(2) 90th Percentile not to exceed 430 MPN/100 mL	30-Day Geometric mean not to exceed 35 MPN/100 mL

March 1, 2014		
March 2, 2014		
March 3, 2014	2	
March 4, 2014		
March 5, 2014		
March 6, 2014		
March 7, 2014	4	
March 8, 2014	4	
March 9, 2014		
March 10, 2014	2	
March 11, 2014	< 2	
March 12, 2014		
March 13, 2014	< 2	
March 14, 2014		
March 15, 2014		
March 16, 2014		
March 17, 2014	23	
March 18, 2014	2	
March 19, 2014	7	
March 20, 2014		
March 21, 2014		
March 22, 2014		
March 23, 2014		
March 24, 2014	4	
March 25, 2014	4	
March 26, 2014	17	
March 27, 2014		
March 28, 2014		
March 29, 2014		
March 30, 2014		
March 31, 2014		

90th Percentile Ranking		
Sample #1		<2
Sample #2		<2
Sample #3		2
Sample #4		2
Sample #5		2
Sample #6		4
Sample #7		4
Sample #8		4
Sample #9		4
Sample #10		7
Sample #11		17
Sample #12		23
Sample #13		
Sample #14		
Sample #15		
Sample #16		

March 1, 2014		
March 2, 2014		
March 3, 2014	<	1.0
March 4, 2014		
March 5, 2014		
March 6, 2014		
March 7, 2014	<	1.0
March 8, 2014		1.0
March 9, 2014		
March 10, 2014		1.0
March 11, 2014		1.0
March 12, 2014		
March 13, 2014		5.1
March 14, 2014		
March 15, 2014		
March 16, 2014		
March 17, 2014		3.1
March 18, 2014		9.6
March 19, 2014		7.5
March 20, 2014		
March 21, 2014		
March 22, 2014		
March 23, 2014		
March 24, 2014	<	1.0
March 25, 2014		1.0
March 26, 2014		1.0
March 27, 2014		
March 28, 2014		

Max	23
Min	2.0
Avg	6.08
30-Day Median	4

90th Percentile Value **17**

Max	9.6
Min	1.0
Avg	2.8
30 Day Geo. Mean	1.8

¹ = indicates that more than ONE UV channel was in operation at sample time; All UV channels in operation were sampled.

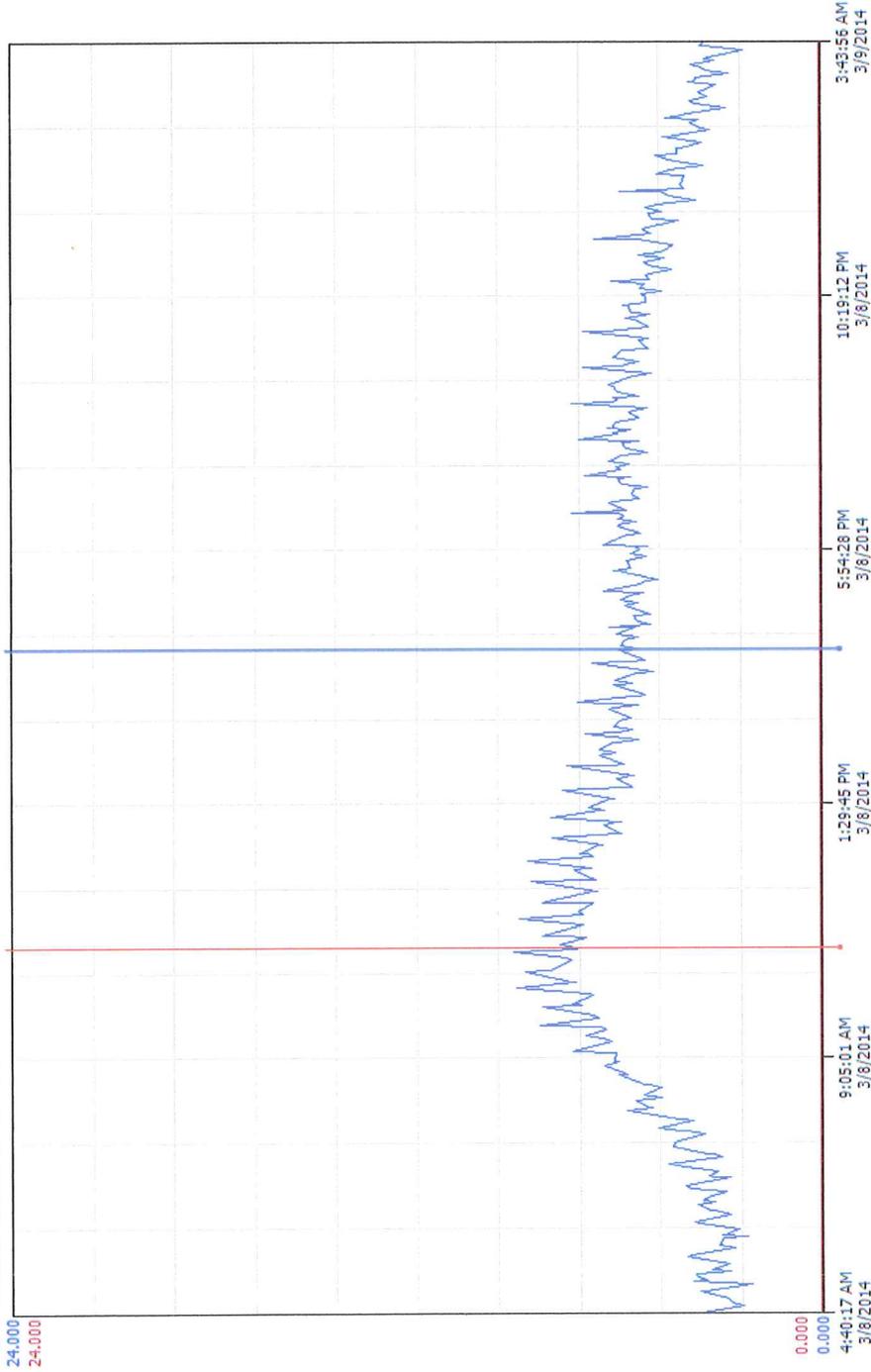
90th Percentile	12.00	0.9	10.8
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Peak Wet weather Flow

(3/8/2014 10:59:57 AM) 9.148 MGD

(3/8/2014 4:10:28 PM) 6.004 MGD

-3.145 MGD (0 days, 05:10:31)

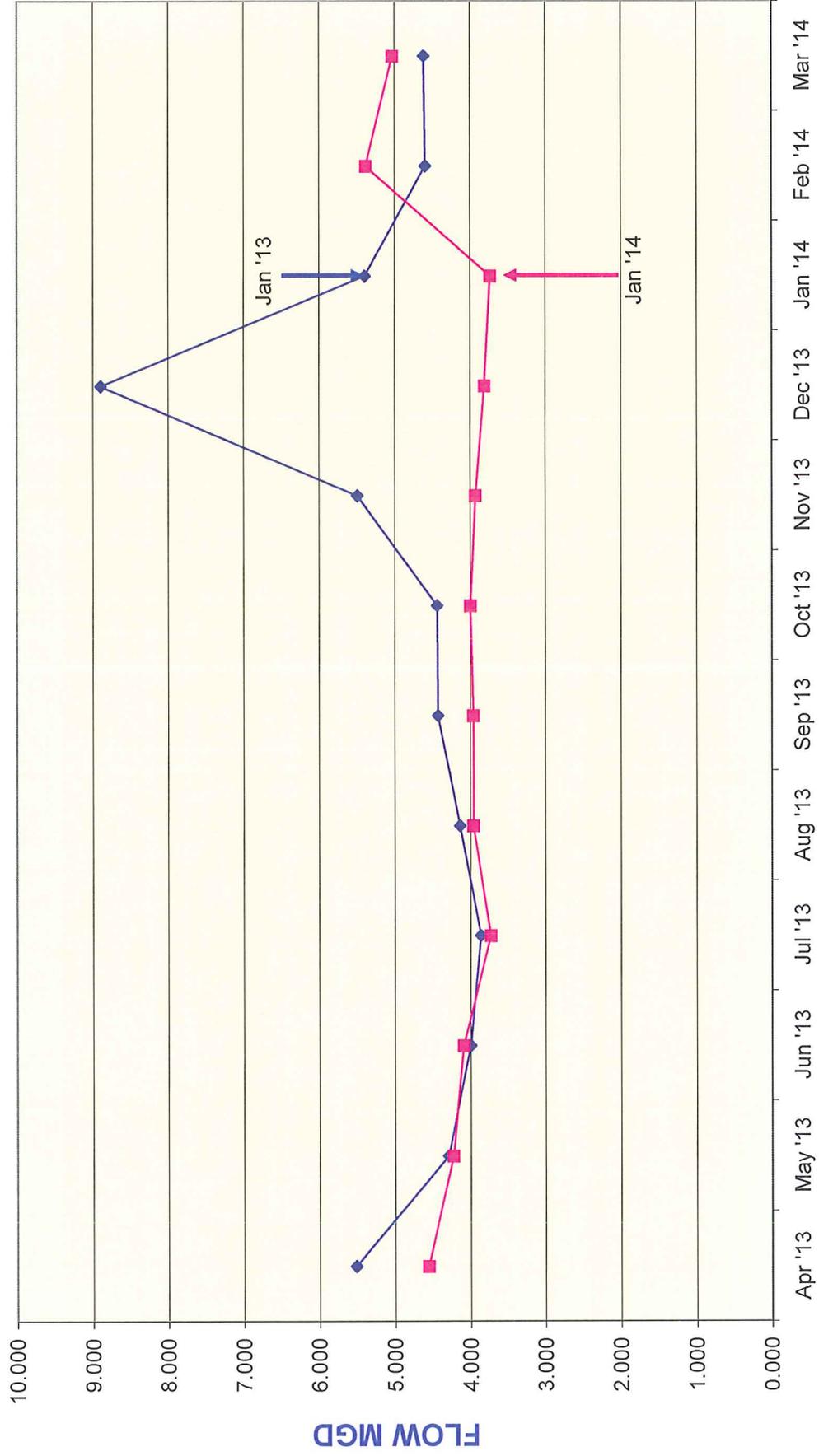


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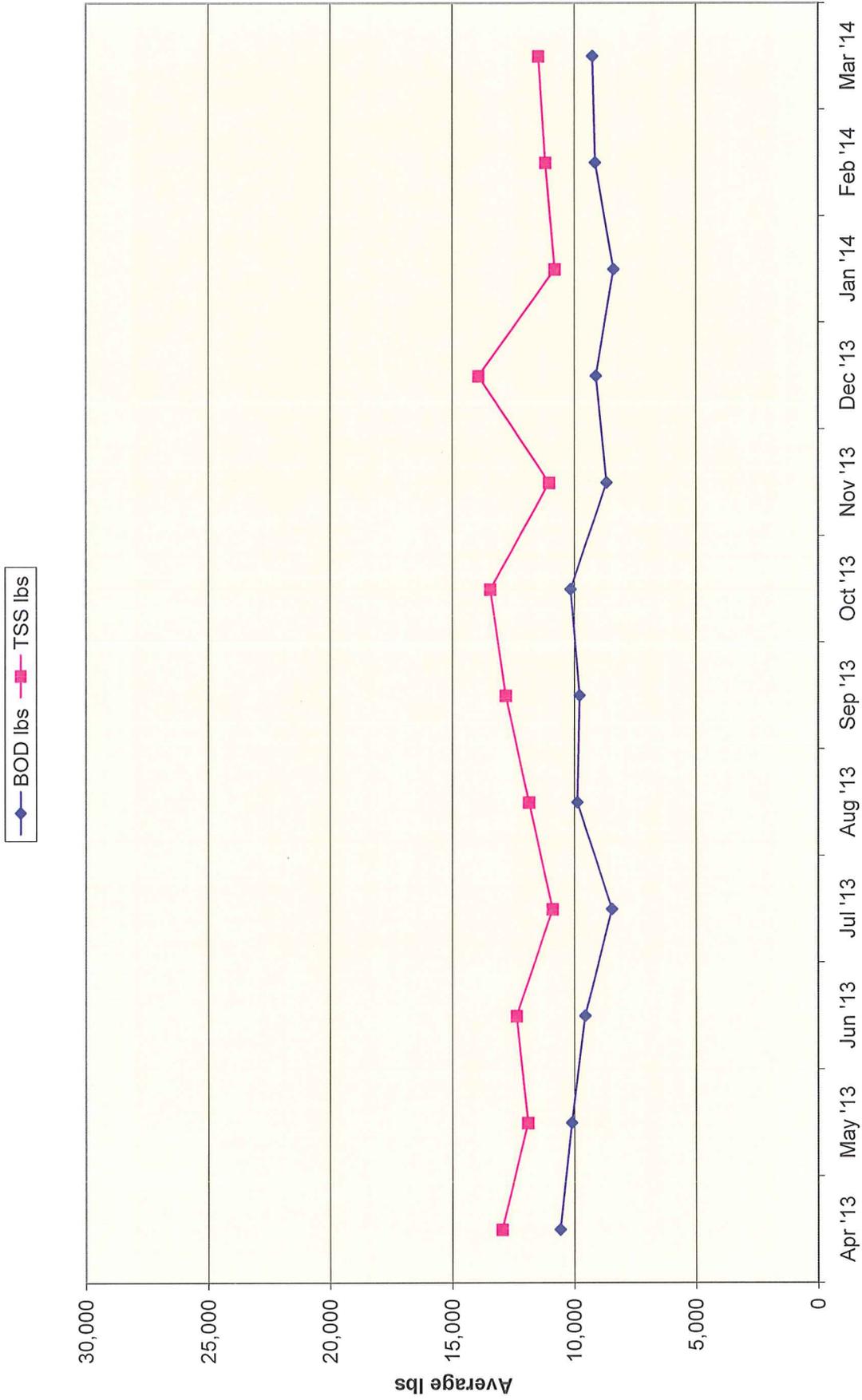
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FLOW COMPARISON

—◆— 2012 / 13 —■— 2013 / 14



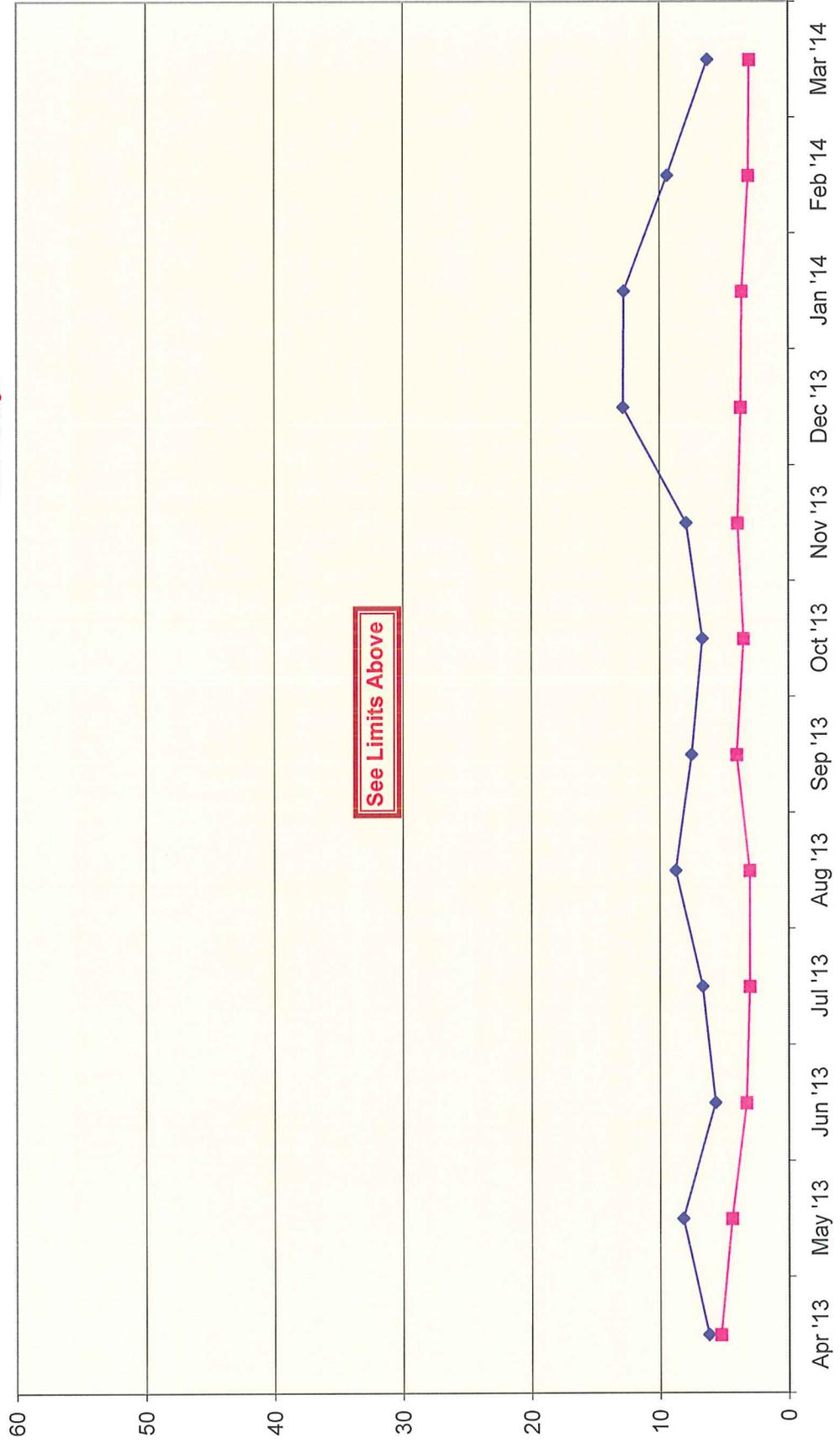
Influent Load BOD / TSS lbs



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

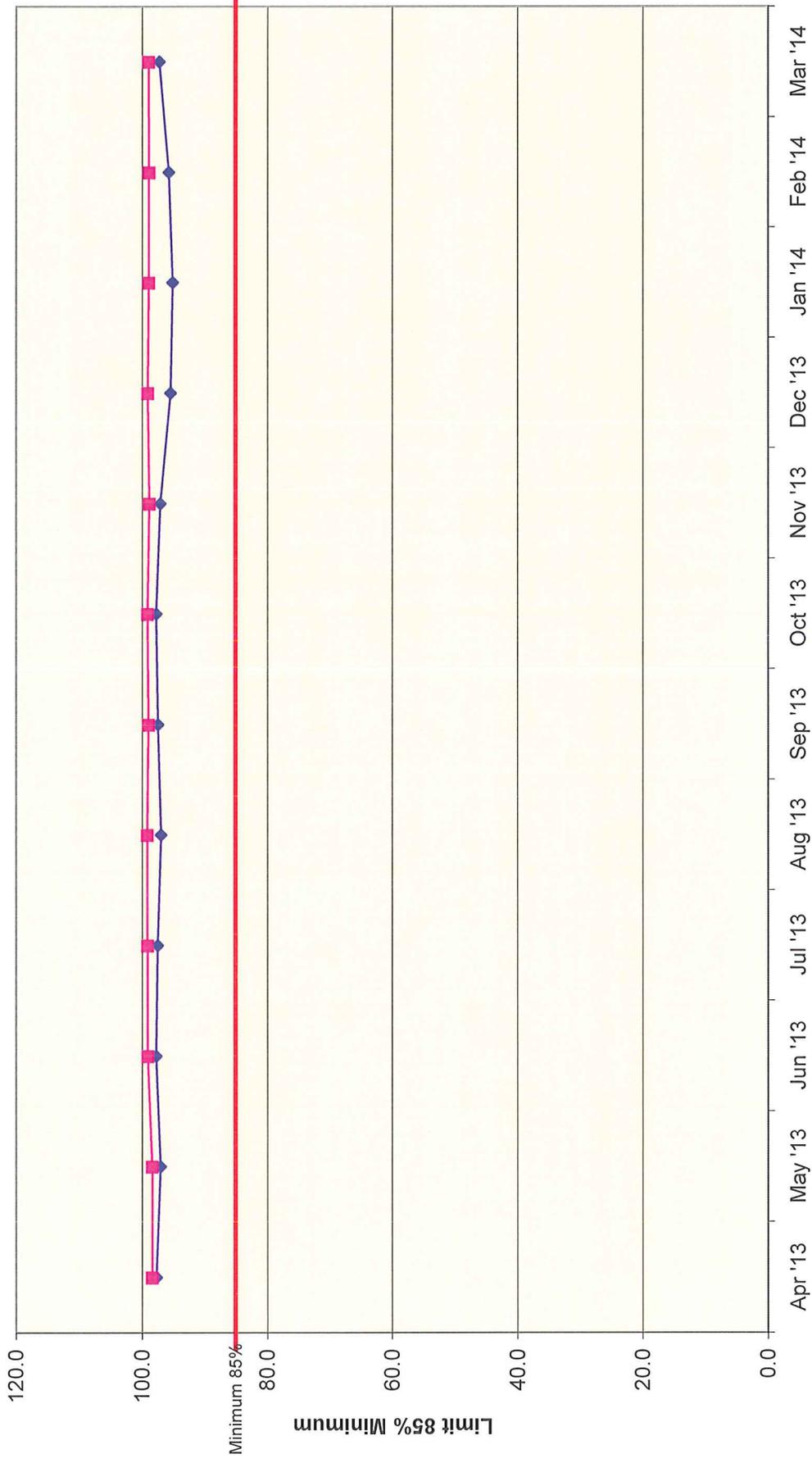
—◆— BOD —■— TSS



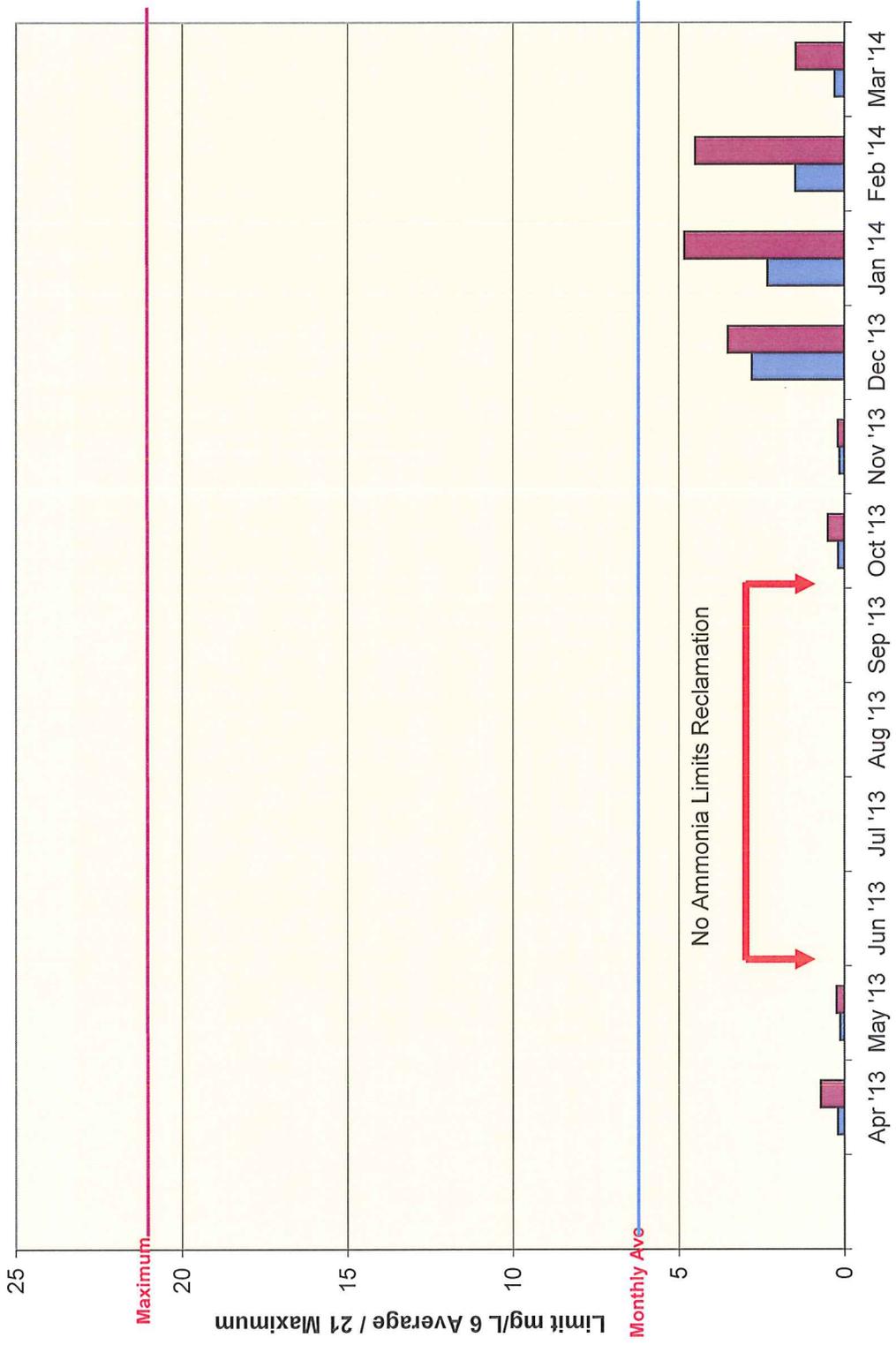
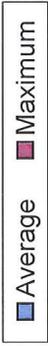
See Limits Above

BOD / TSS Percent Removal

◆ BOD
■ TSS



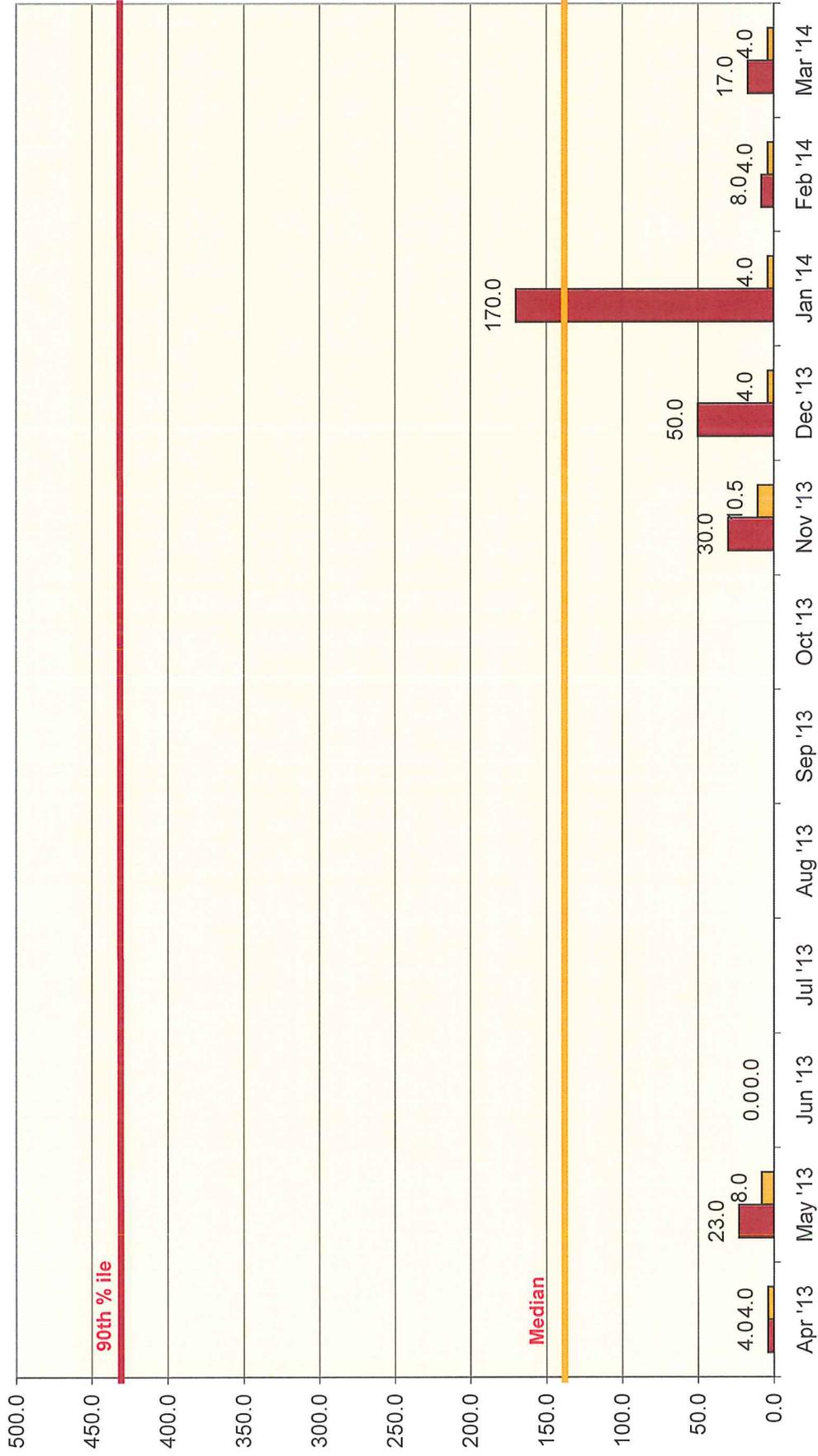
Effluent Ammonia



Disinfection

LIMITS - NPDES
 Fecal 140 mpn monthly median
 Fecal 430 mpn 90th percentile 30 day

■ 90th % ile ■ 30 day med



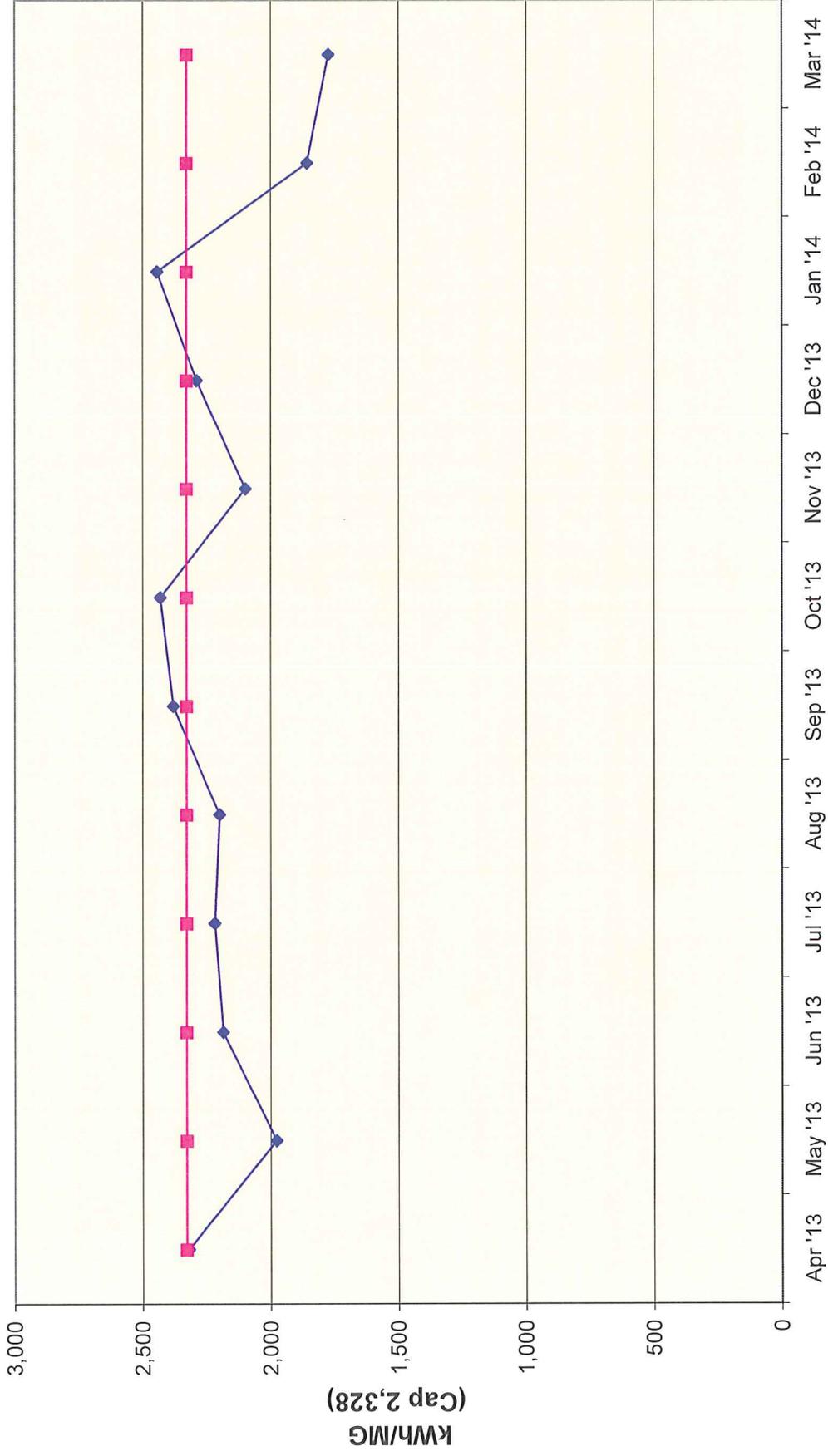
Disinfection

LIMITS - NPDES
Entero 30 day geo mean 35 mpn /100ml

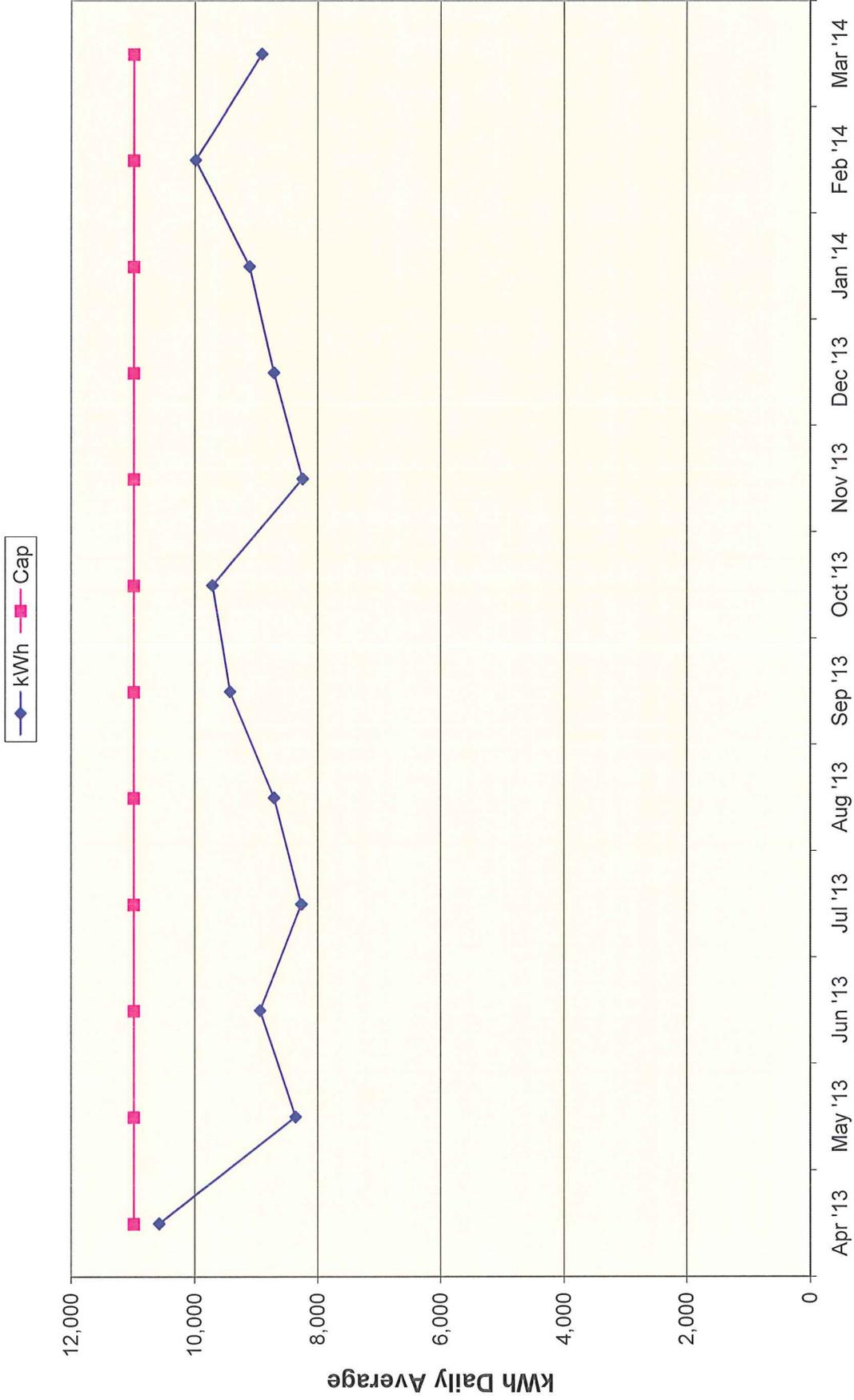


Energy kWh/MG

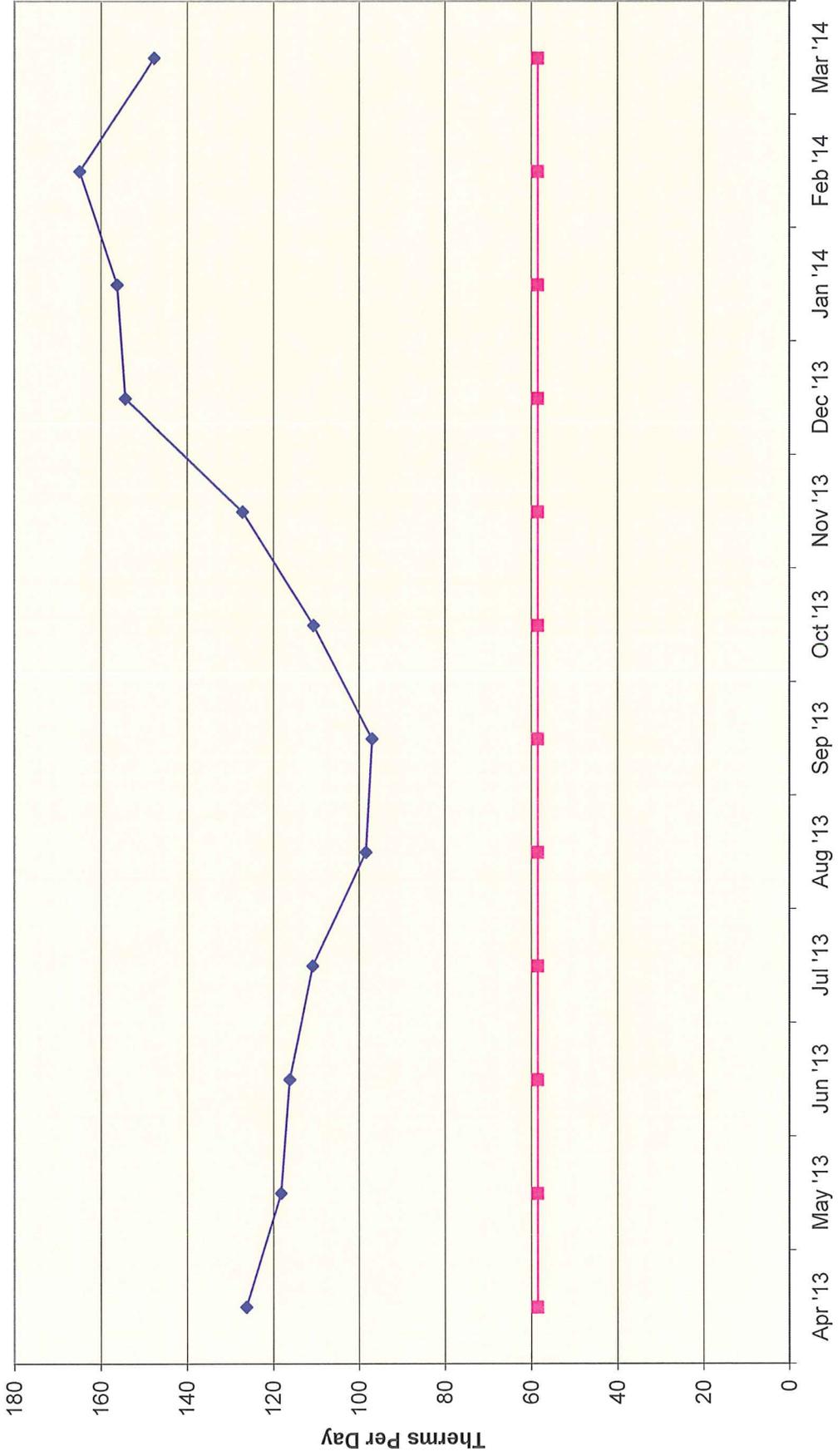
—◆— kWh/MG —■— Cap



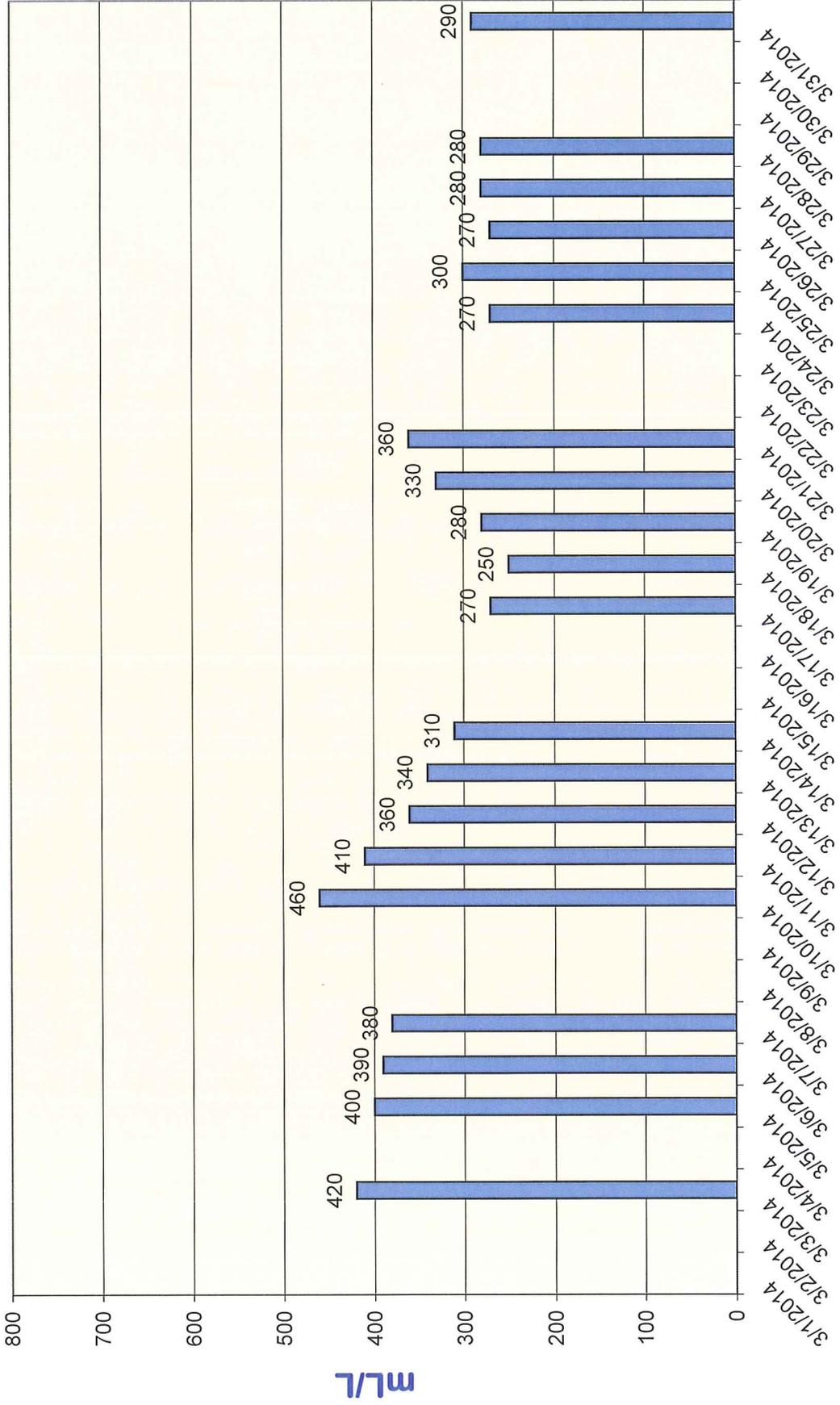
Energy kWh



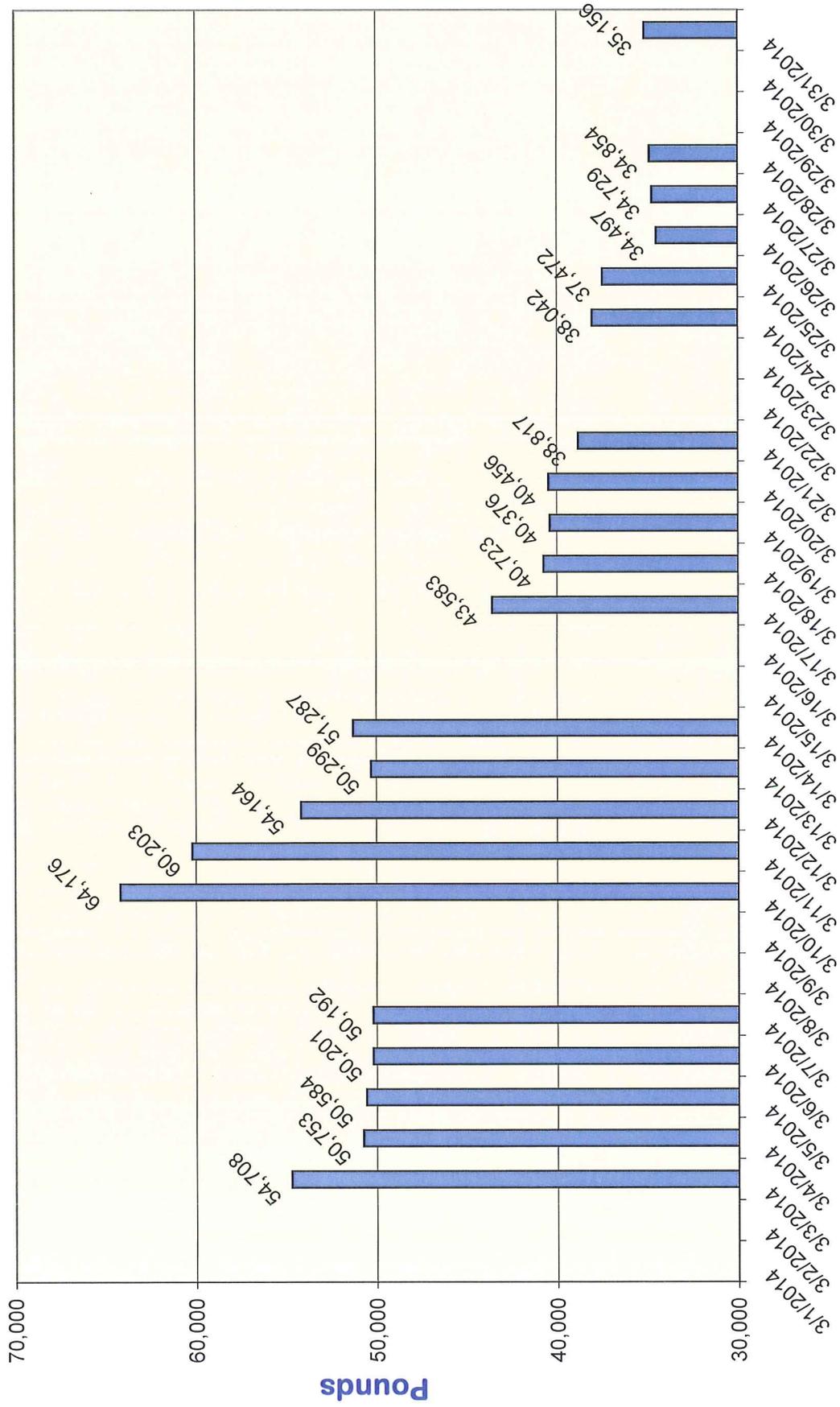
Natural Gas Use



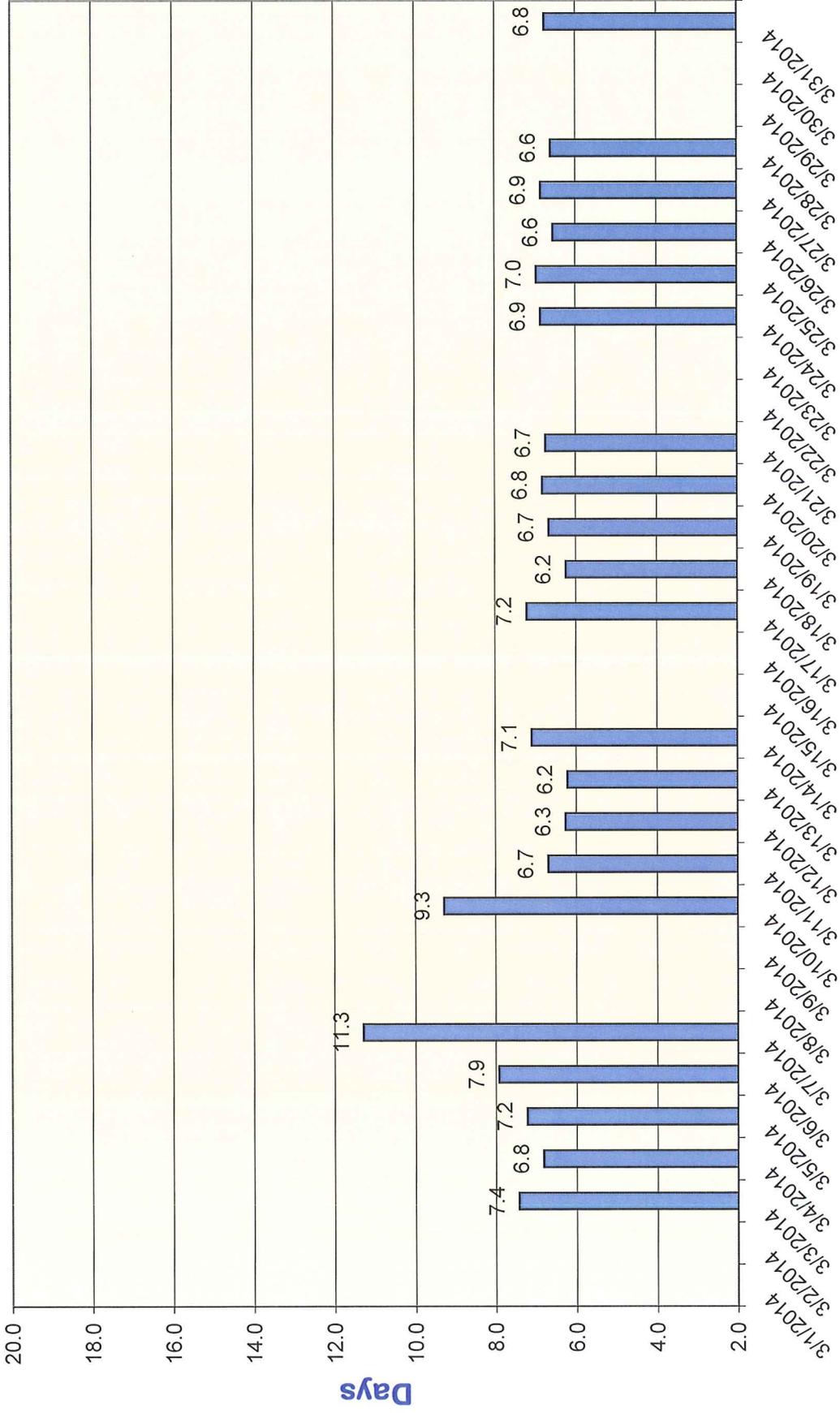
Settleability



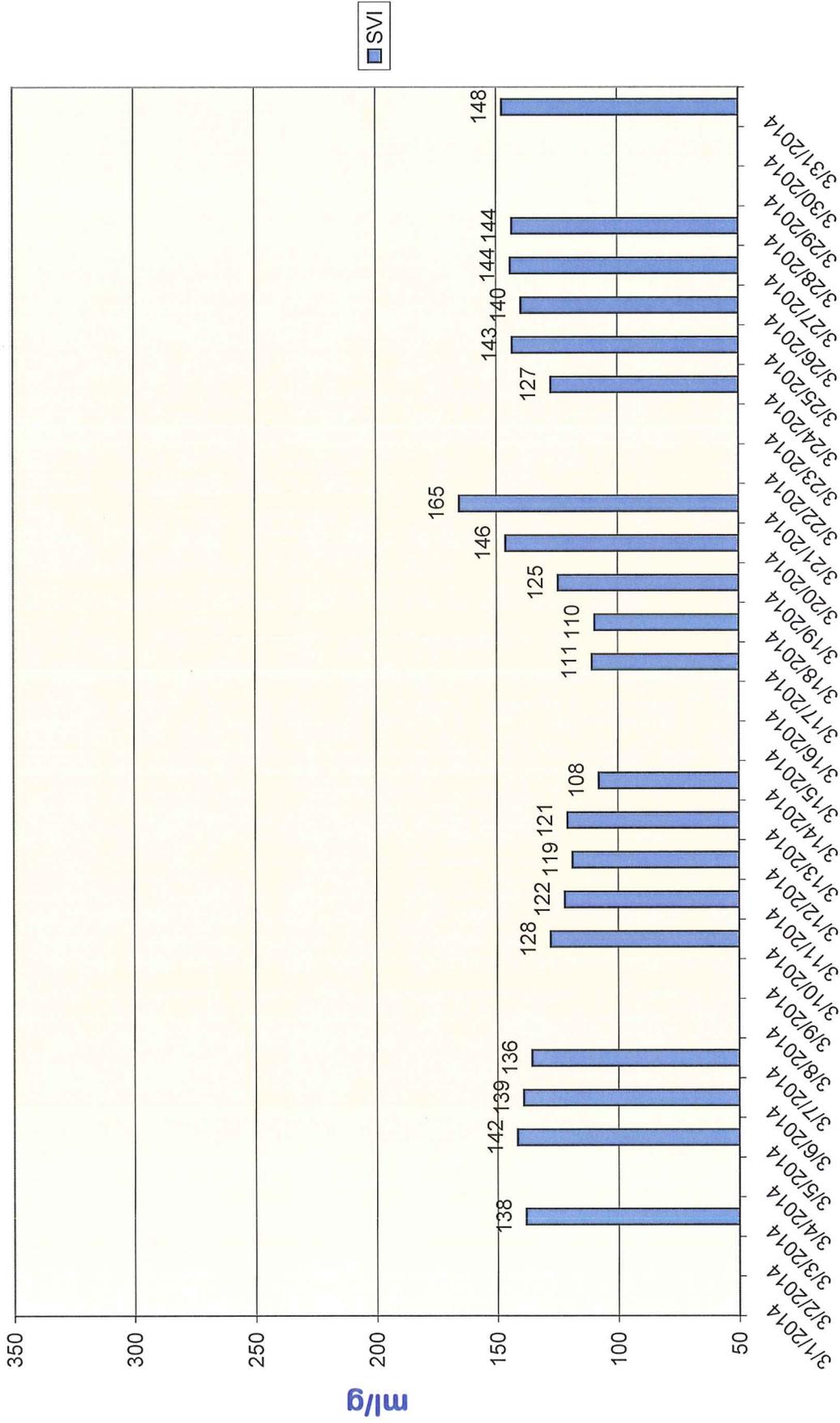
MLSS Inventory



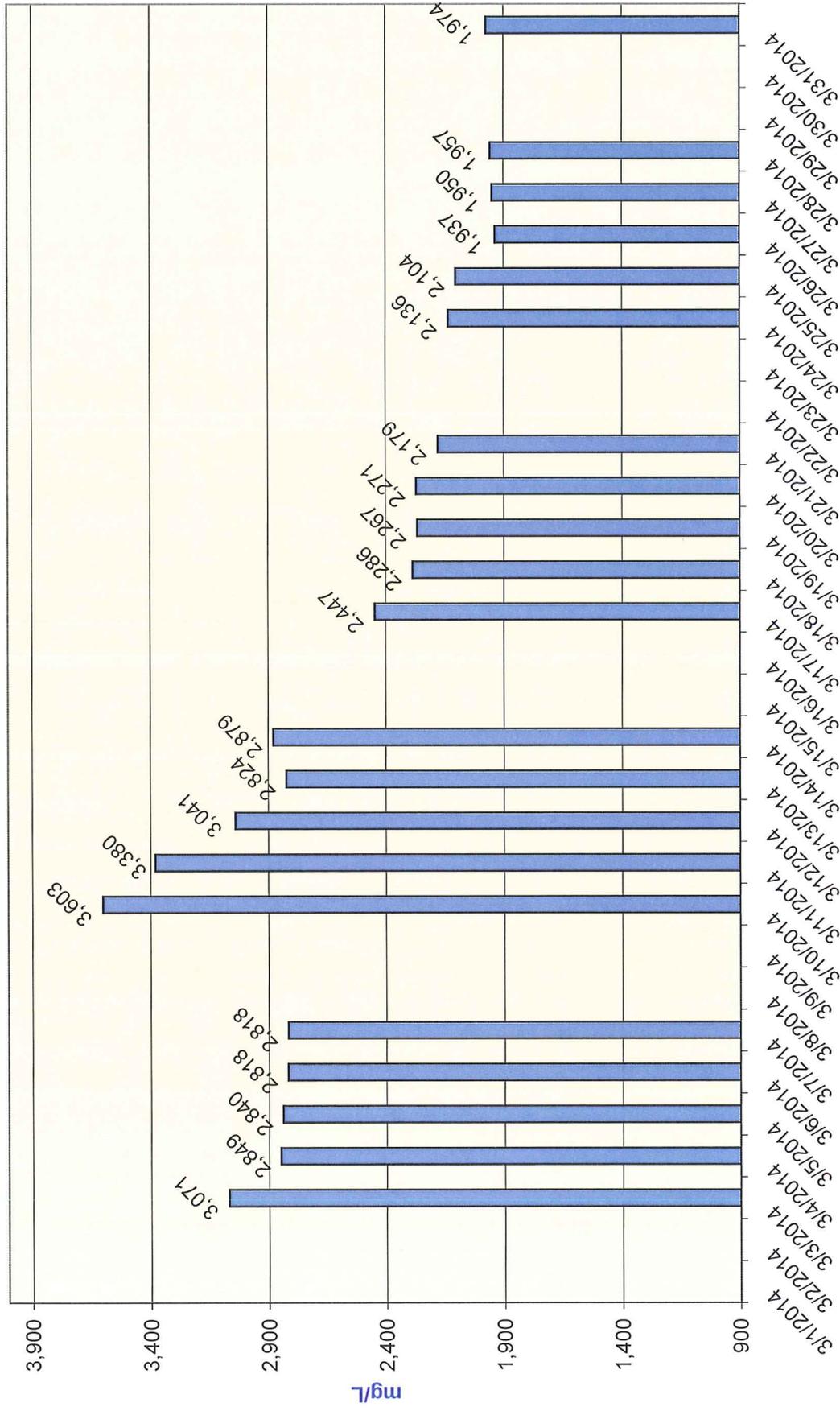
Mean Cell Residence Time



Sludge Volume Index



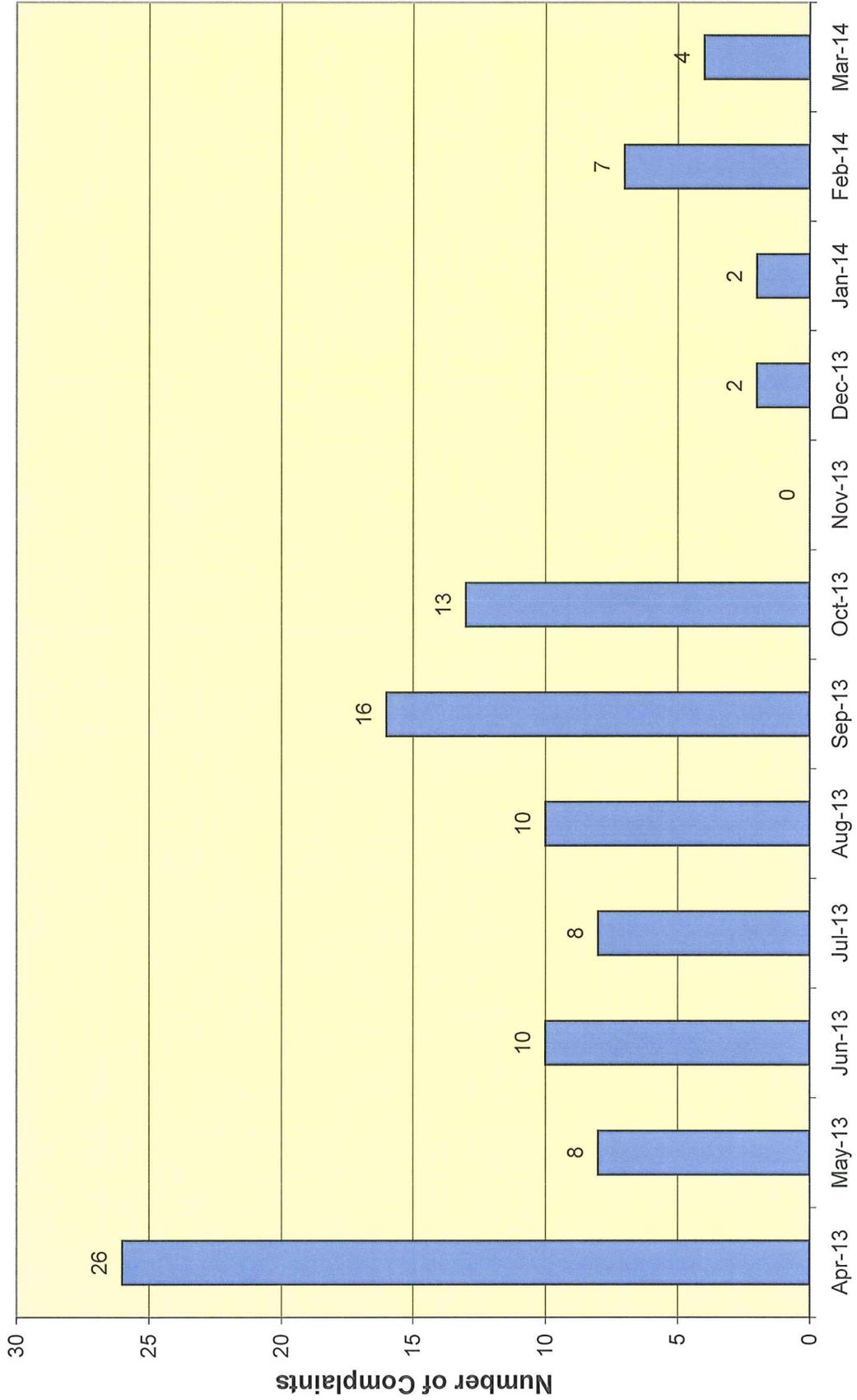
MLSS Concentration



Process Control Data

	Influent Flow	Settleability	MLSS Concentration	MLSS Inventory	F:M Ratio	MCRT	SVI
3/1/2014	7.66						
3/2/2014	6.72						
3/3/2014	6.73	420	3,071	54,708	0.14	7.4	138
3/4/2014	6.57		2,849	50,753		6.8	
3/5/2014	6.25	400	2,840	50,584		7.2	142
3/6/2014	5.78	390	2,818	50,201		7.9	139
3/7/2014	5.42	380	2,818	50,192	0.19	11.3	136
3/8/2014	5.05						
3/9/2014	5.10						
3/10/2014	4.96	460	3,603	64,176	0.11	9.3	128
3/11/2014	4.44	410	3,380	60,203	0.13	6.7	122
3/12/2014	4.24	360	3,041	54,164		6.3	119
3/13/2014	4.15	340	2,824	50,299	0.12	6.2	121
3/14/2014	4.03	310	2,879	51,287		7.1	108
3/15/2014	4.04						
3/16/2014	4.15						
3/17/2014	4.48	270	2,447	43,583	0.17	7.2	111
3/18/2014	4.45	250	2,286	40,723	0.17	6.2	110
3/19/2014	4.35	280	2,267	40,376	0.20	6.7	125
3/20/2014	4.33	330	2,271	40,456		6.8	146
3/21/2014	4.26	360	2,179	38,817		6.7	165
3/22/2014	4.31						
3/23/2014	4.46						
3/24/2014	4.26	270	2,136	38,042	0.22	6.9	127
3/25/2014	4.02	300	2,104	37,472	0.17	7.0	143
3/26/2014	4.57	270	1,937	34,497	0.20	6.6	140
3/27/2014	4.11	280	1,950	34,729		6.9	144
3/28/2014	3.99	280	1,957	34,854		6.6	144
3/29/2014	6.56						
3/30/2014	5.02						
3/31/2014	7.30	290	1,974	35,156		6.8	148
Minimum	3.99	250.00	1,936.50	34,497	0.11	6.2	108
Maximum	7.66	460	3,603	64,176	0.22	11.3	165
Total	143.44	6,360	51,651	920,114	1.80	143.8	2,507
Average	4.95	335	2,583	46,006	0.16	7.2	132

Complaints / Contacts Received



NOVATO SANITARY DISTRICT
Wastewater Operations Committee Meeting
Odor Control, Noise, and Landscaping Report
March 2014

Background:

Staff and the District's consultant continue to work to address issues of concern relating to odor control and landscaping, specifically from the Lea Drive neighborhood, and in the northeast corner of the Novato Treatment Plant (NTP) site.

As explained in earlier reports, and to demonstrate its commitment, the District has already expended significant amounts beyond the substantial investment for odor control, noise, and landscaping included in the original WWTP Upgrade, Contract B - Novato Treatment Plant (NTP), Project No. 72609. These additional costs have included operational changes, measures related to further odor control measures, noise abatement, visual screening, wind shielding, and daily monitoring. The District has also retained Brown and Caldwell (B&C) and their project manager, Mr. Dave McEwen, to study the issue of potential odor emissions from the aeration basins, and identify any other potential sources not previously considered or overlooked.

A summary of activities since the last Committee meeting is provided below.

Odor control:

The District's odor control consultant, Mr. Dave McEwen of Brown and Caldwell (B&C) issued preliminary recommendations for odor control at the aeration basins. Mr. McEwen made a detailed presentation to Wastewater Operations Committee at its March meeting. This presentation was the same one as had been made to neighborhood representatives in February – a copy of that presentation had been previously provided and is not being provided with this report.

As mentioned before, Mr. McEwen's most significant recommendation, i.e. converting anoxic zones B and C at the aeration basins to aerobic zones, was implemented in February. Results thus far have been good, and staff continues to monitor performance.

Also, earlier in the process, staff had anticipated that implementation and further testing and validation of Mr. McEwen's recommendations would begin in March and April, and that he would issue a draft technical memorandum of his work later this spring. However, upon further review, it is being recommended that this next stage of testing and validation be deferred until summer, since testing during warm weather conditions will present a more appropriate "worst-case" testing scenario.

Landscaping:

Staff continues to work with the District's landscaping contractor Cagwin and Dorward (C&D), on the landscaping installed at the District's fence-line on Lea Drive at the northeast corner area of the NTP. C&D will continue to provide services on an as-needed and as-requested basis by the District to care for the landscaping in this area. Staff also anticipates bringing further landscaping improvements to this area for the Committee's consideration, at a future meeting.

**Novato Sanitary District
Wastewater Operations Committee meeting
Collection System Operations Report
March 2014**

General:

The breakdown of Collection System department staff time for March 2014, in terms of equivalent full-time employee (FTE) hours utilized, works out approximately as follows:

- 2.2 FTE field workers for Sewer Maintenance (main line cleaning)
- 1.1 FTE field workers for Pump Station Maintenance
- 1.0 FTE field workers for CCTV work
- 2.1 FTE field workers for time spent on data input, training, service calls, overflow response, or any other activity that does not directly relate to main line cleaning, CCTV work or pump station maintenance, and
- 0.6 FTE field workers Vacation/Sick Leave/Holiday.

Collection System Maintenance:

Performance metrics for the department are presented in the attached graphs showing the length of line cleaned/month, footage cleaned/hour worked, overflows/month, and the CCTV footage achieved. A brief discussion is also provided below.

Line Cleaning Performance: A total of 62,317 feet of sewer pipelines were cleaned for the month by District staff. Staff completed 393 maintenance work orders generated by the ICOM3 CMMS system, with no (zero) outstanding work orders. Outside contractors cleaned 6,492 feet of larger diameter District main line.

Staff is working with ICOM/RedZone to correct apparent discrepancies between footages listed in the ICOM3 system and those listed on District maps; therefore the footage listed in the Collection System reports is based off of footage obtained by the field crews during cleaning operations. The field crews measure line segment lengths using a measuring wheel whenever they note a line segment length discrepancy of more than 10 ft. between the work order and District maps.

In March, the Sterling hydro-flusher was out of service for 5 working days due to mechanical issues with the power take-off (PTO) unit on the truck, it is now back in service. The Peterbilt hydro-flusher was out of service for 12 days due to safety issues with the hose reel and is currently having the front hose reel system rebuilt by the manufacturer. It is expected to be back in service towards the end of April.

CCTV Performance: The District's CCTV van was in the field for a total of 16 working days and televised 191 line segments for 31,116 feet of CCTV production. Outside contractors televised 6,492 ft. of larger diameter District main.

CCTV Findings: The March CCTV work indicated three (3) significant defects in District mains televised that will require evaluation to determine if they are eligible candidates for infrastructure repair, or require a change in maintenance frequency/method.

**Novato Sanitary District
Wastewater Operations Committee meeting
Collection System Operations Report
March 2014**

Collection System Projects:

As part of the ongoing Collections System repair projects (Account No. 72803), one point repair was made on San Domingo Dr. during the month of March.

Pump Station Maintenance:

The Collection System Department conducted 266 lift station inspections for the month with 142 of the inspection visits generated through the JobCal Plus CMMS system*. There are 5 outstanding work orders for the month of March. The breakdown of the lift station inspections is as follows: 27 Flygt submersible pump stations, 1 time per month, 6 Gorman/Rupp dry well/wet well stations, 1 entry per month, and 4 main stations that are visited daily.

A Collection Systems (Pump Stations) Work Order Statistics summary is attached.

***Note:** The JobCal Plus program is not only used for scheduling and tracking pump station related maintenance work orders, it is also used for ladder inspections, reclamation maintenance work orders, SCADA backup scheduling, and vehicle maintenance scheduling.

Pump Station Rehabilitation:

Currently, there are two (2) pump stations under construction as part of the District's continuing multi-year Pump Station Rehabilitation Project (Capital Improvement Project Account No. 72403). This current phase, (Project Unit 5), includes rehabilitation of the Los Robles Pump Station and relocation and replacement of the Digital Drive pump station. Construction work began on these stations on March 31, 2014.

Site drainage improvements for Marin Village and E. Hamilton pump stations began in March as part of the Annual Treatment Plant and Pump Station Improvements, (Capital Improvement Project Account No. 72805). These improvements will reconfigure each pump station site to return any water that falls on that site back into its wet well.

Safety and Training:

General: The Collection System crew attended four safety tailgate meetings.

Specialized training: Collection System staff attended Hydro-flusher hose re-spooling training in March 2014

Safety performance: There were no lost time accidents this month for a total of 1,112 accident-free days.

**Novato Sanitary District
Wastewater Operations Committee meeting
Collection System Operations Report
March 2014**

Standard Operating Procedures (SOPs):

Department staff continues to work on generating new SOPs, and working towards finalizing earlier draft SOPs. One (1) SOP and one (1) SOP revision were issued in March. The Collection System Superintendent and the Safety Director are developing a template for energy management SOPs to assist staff with pump removal procedures.

Emergency Operating Procedures (EOPs) – Pump Stations:

Staff has also been working with DKF Solutions since summer 2013 to generate the 38 Emergency Operating Procedures (EOPs) required for all of the District pump stations. At this time, one EOP is almost complete (except for some minor edits), 24 have had a final review, and 2 more require a final review. The contractor has not yet submitted 12 EOP's for initial staff review. It is anticipated that the EOPs will be in place (along with all relevant training performed) by May 2014.

Sanitary Sewer Overflows (SSOs):

In March, there was one (1) SSO, as discussed below.

No.	Date	Location	Amount, gal	Cause
1	3/30/2014	74 San Luis Ct	180	Roots

1. SSO at 74 San Luis Ct.: This SSO was a Category I event with the estimated discharge volume of approximately 180 gallons going to a storm drain and Novato Creek. There was no recovery (0%) for this discharge due to the fact it was an intermittent, low volume event that was not reported by local residents until two days after the initial start date.

This discharge was determined to be the result of a partial root blockage in the main line. Volume estimation using the visual volume estimation times duration, winter water usage rates times duration, and reporting party/local resident interviews were all used to estimate the duration and volume for this event.

The District initially received this report at 09:20, arrived on site at 09:38 and cleared the blockage at 09:48. The line segment was immediately televised and root intrusion was noted at multiple locations in the line segment.

The line segment was last cleaned using the hydro-flusher on 1/22/2013 and was on a 36 month cleaning frequency for the hydro-flusher. The cleaning frequency for this line segment has been changed to a 6 month frequency and it has been added to the District's Chemical Root Abatement Program for FY 2013/14.

This event was reported into the CIWQS database on 4/2/2014 as a Category I event, SSO Event ID #805181 and was certified in CIWQS on 4/11/2014, Certification ID # 389660. All reporting requirements were met for this spill event.

Novato Sanitary District
Collection System Monthly Report For March 2014 (as of March 31, 2014)

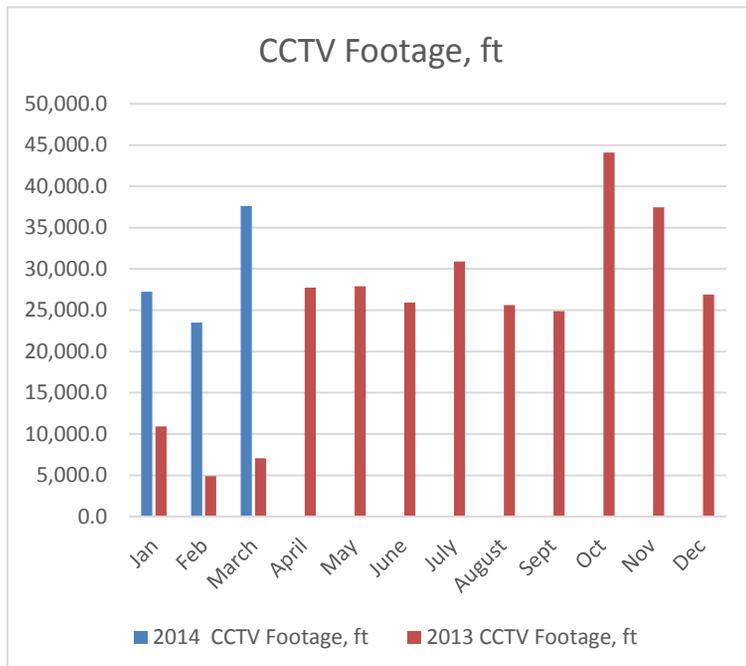
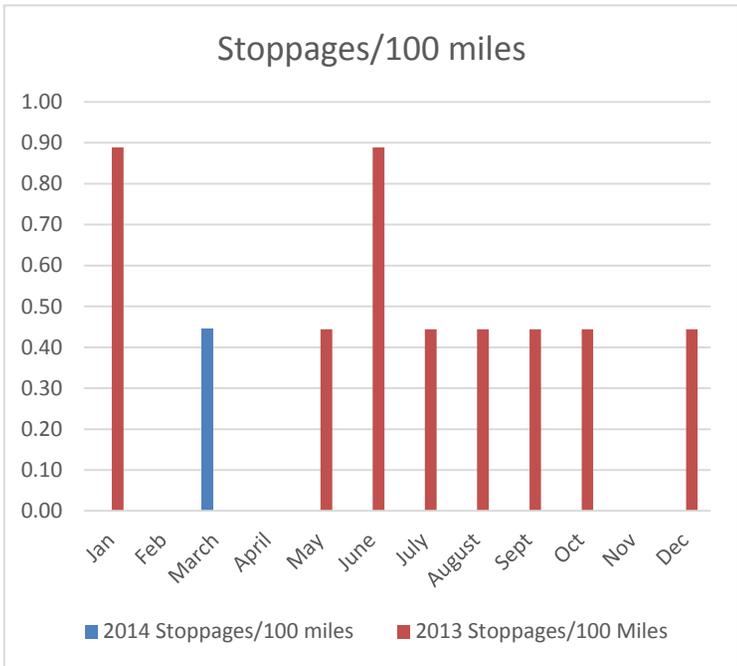
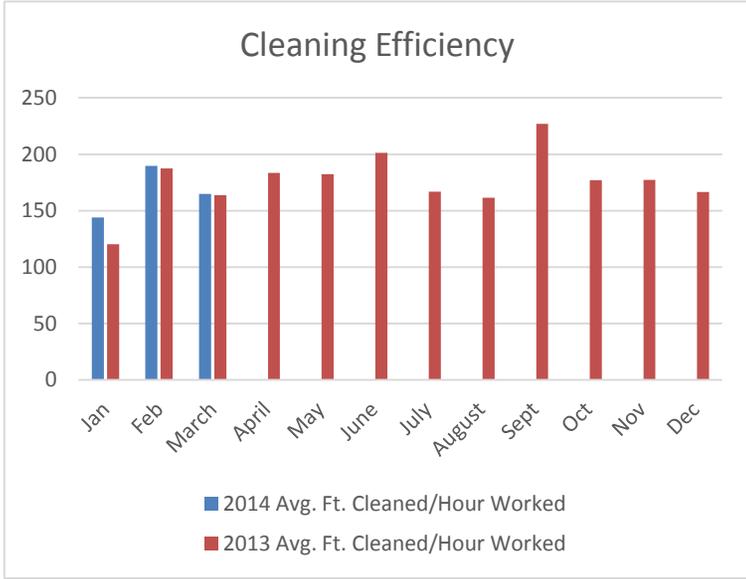
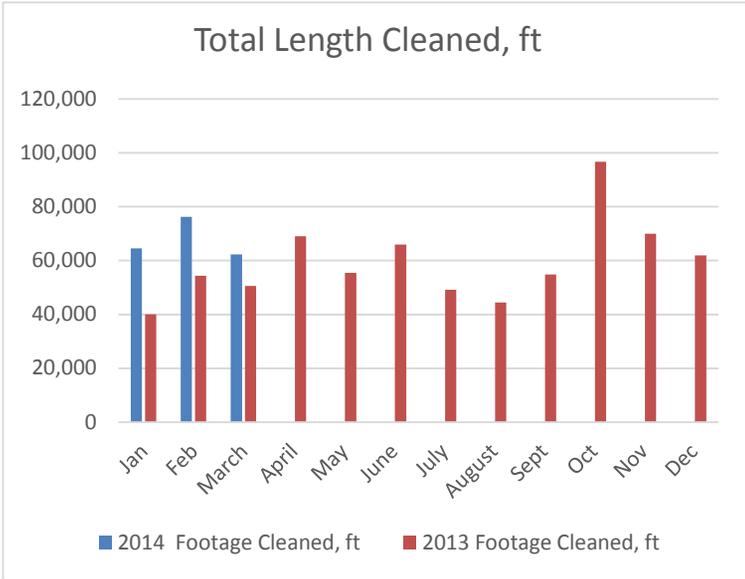
	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Total Year to Date	Average Year to Date
A. Employee Hours Worked														
Number of FTEs (main line cleaning), hrs.	2.6	2.5	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.6
Number of FTEs (other)	1.7	1.6	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.5
Number of FTEs (CCTV)	0.9	0.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.2
Total, FTEs	5.2	4.9	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	1.3
Regular Time Worked, (main line cleaning), hrs	448	402	378											
Regular Time Worked on Other, hrs (1)	294	262	350											
Regular Time Worked on CCTV (2)	158	125	172											
Total Regular time, worked, hrs	900	789	900	0	0	0	0	0	0	0	0	0	2,589	216
Total Vacation/Sick Leave/Holiday, hrs	285	151	101										537	179
Vacation/Sick Leave/Holiday, FTEs	1.6	0.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.3
Overtime Worked on Coll. Sys., hrs	2	8	3										13	4
Overtime Worked on Other, hrs (1)	22	17	16										55	18
Overtime Worked on CCTV (2)	0	0	0										0	0
Total Overtime , hrs	24	25	19	0	0	0	0	0	0	0	0	0	68	6
B. Productivity														
1. Line Cleaning														
Rodder Work Orders generated	57	30	24										111	37
Rodder 3203 ft. cleaned	10,989	3,337	6,378										20,704	6,901
Rodder - outside services, ft cleaned	0	0	0										0	0
Flusher Work Orders generated	351	352	369										1,072	357
Truck 3205V ft. cleaned	16,187	16,552	18,158										50,897	16,966
Truck 3206V ft. cleaned	37,342	56,332	37,781										131,455	43,818
Flusher - outside services, ft. cleaned	2,301	1,570	6,492										10,363	
Total Footage cleaned(3)	64,518	76,221	62,317	0	0	0	0	0	0	0	0	0	203,056	16,921
Work Orders completed	408	361	393										1,162	387
Work Orders backlog	66	21	0	0	0	0	0	0	0	0	0	0	87	7
2. Closed Circuit Television (CCTV)														
Camera Work Orders generated	0	0	0	0	0	0	0	0	0	0	0	0	0	
CCTV Truck 3126T, ft. videoed	24,487	21,931	31,116										77,534	25,845
CCTV (hand cam), ft. videoed	449	0	0	0	0	0	0	0	0	0	0	0	449	
CCTV Inspection - outside services, ft. videoed	2,301	1,570	6,492	0	0	0	0	0	0	0	0	0	10,363	
Total CCTV footage(3)	27,237	23,501	37,608	NA	NA	NA	NA	NA	NA	NA	NA	NA	88,346	
C. Sanitary Sewer Overflows (SSOs)														
Minor (Category III)	0	0	0										0	NA
Major (Category II)	0	0	0										0	NA
Major (Category I)	0	0	1										1	NA
Overflow Gallons	0	0	180										180	NA
Volume Recovered	0	0	0										0	NA
Percent Recovered	NA	NA	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	0%	NA
D. Service Calls (non-SSO related)														
Service calls, normal hours, #	8	3	5										16	5
Normal hours S.C. response time, mins (avg.)	38	19	25										82	27
Service Callouts, after hours, #	0	1	1										2	1
After Hours S.C. response time, mins (avg.)	0	15	40										55	18
E. Benchmarks														
Average Ft. Cleaned/Hour Worked	144	190	165	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	166
Total Stoppages/100 Miles	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	NA
Average spill response time (mins)	0	0	18										NA	6
Callouts/100 Miles	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.1
Overtime hours/100 Miles	1	4	1	0	0	0	0	0	0	0	0	0	5.78	0
Overflow Gallons/100 Miles	0	0	80	0	0	0	0	0	0	0	0	0	80	7

(1) This category includes time spent on: Data input, Training, Service Calls, Overflow Response, as well as any other activity that does not directly relate to main line cleaning or CCTV work.

(2) This category separates time spent on CCTV from other Collection System maintenance activities.

(3) Does not include outside services (tracked separately)

Collection System 2013-14 Graphs

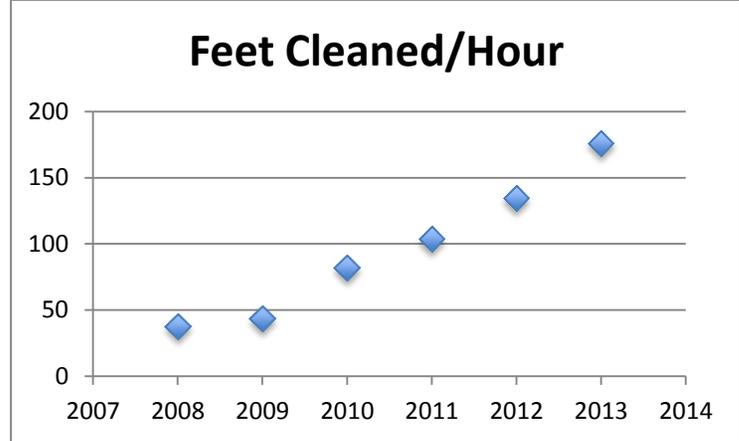
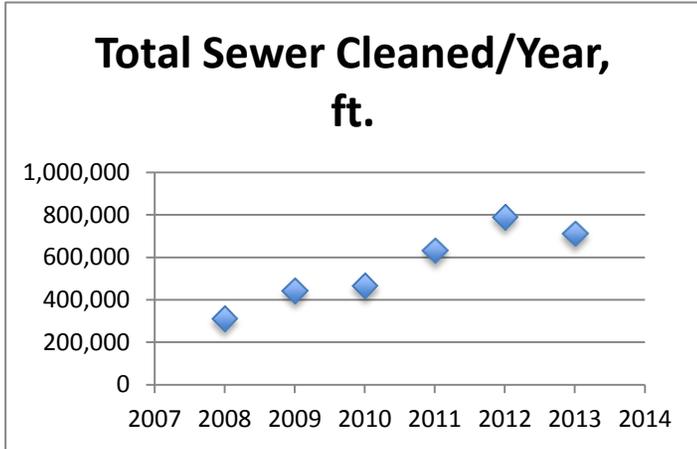


**COLLECTION SYSTEM (Pump Stations)
WORK ORDER STATISTICS
March 1, 2014 - March 31, 2014**

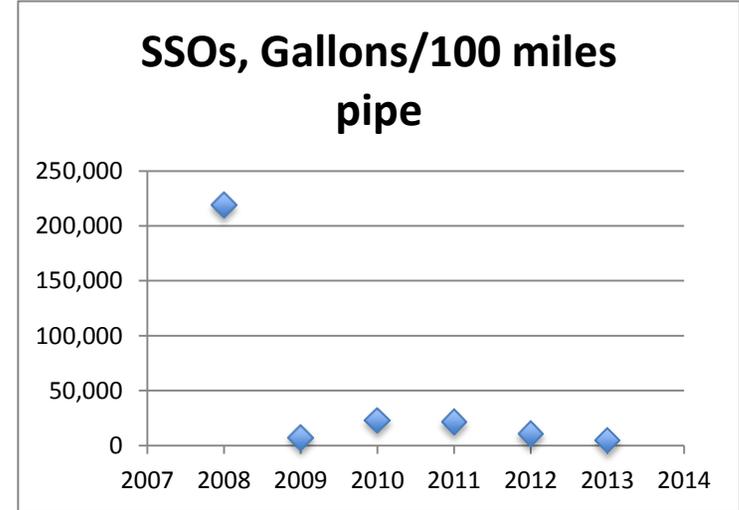
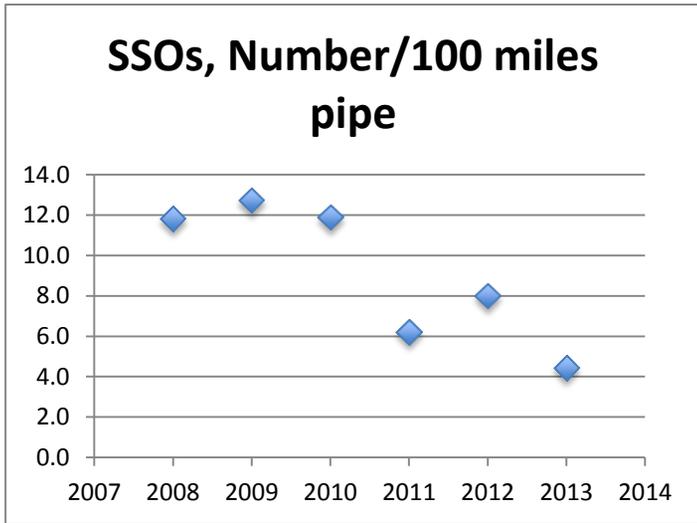
	Open Work Orders Due Prior to 3/1/2014	Open Work Orders 3/1/2014 - 3/31/2014	Total Open Work Orders
Preventive	4	142	146
Corrective	1	0	1
Total	5	142	147

	Closed Work Orders 3/1/2014 - 3/31/2014
Preventive	142
Corrective	0
Total	142

Total Outstanding Work Orders as of 3/31/2014	5
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Collection System Multi-year Trends 2008-2013

NOVATO SANITARY DISTRICT
Wastewater Operations Committee Meeting
Reclamation Facilities Report
March 2014

Summary:

Approximately 7 MG of recycled water was used for irrigation this month. The motor for Irrigation Pump No. 2 was installed and tested.

Ranch Operations:

There were no scheduled rancher activities this month.

Irrigation Parcels:

There were no irrigation parcel activities this month.

Irrigation Pump Station:

Due to the dry conditions, in January, the District was granted permission by the Regional Water Quality Control Board to irrigate the pastures to encourage newly planted seed to sprout and the pasture grass to grow. On March 18th District staff enabled the irrigation on the parcels previously seeded and irrigation was disabled on March 25th when rain was predicted. Approximately 7 MG of recycled water was used for irrigation of the parcels during this time period.

As reported earlier, the motor for Irrigation Pump No. 2 was removed and taken to an outside vendor's shop for analysis and repair when the pump's main breaker tripped for no apparent reason. After disassembly and performance of various checks and tests the vendor reported they did not find any abnormalities within the motor. Subsequent shop tests were performed in the presence of District staff and the District's electrical consultant and the motor performed normally.

The motor for Irrigation Pump No. 2 was delivered and installed this month. After the motor was installed, the wiring, connections and related equipment were inspected and tested prior to energizing the motor. In addition, the wiring, connections and related equipment were inspected and tested for the motors on Irrigation Pumps 1 & 3. The tests and inspections did not reveal any problems and the pump motors were run and no issues were found. The motors ran normally without fault for the duration of irrigation this month.

Sludge Handling & Disposal:

There were no sludge handling and disposal activities this month.
