

## NOVATO SANITARY DISTRICT

Meeting Date: January 20, 2015

### **NOTE REVISED DATE AND TIME**

**The Wastewater Operations Committee of the Novato Sanitary District will hold a meeting at 9:00 AM, Tuesday, January 20, 2015\* 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. APPROVE MINUTES OF DECEMBER 15, 2014 MEETING**

**4. WASTEWATER TREATMENT FACILITIES REPORT FOR DECEMBER 2014:**

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

**5. COLLECTION SYSTEM REPORT FOR DECEMBER 2014:**

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

**6. RECLAMATION FACILITY REPORT FOR DECEMBER 2014**

- a. Ranch Operations
- b. Irrigation Parcels
- c. Irrigation Pump Station
- d. Sludge Handling and Disposal

**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.***

**\*Time and date revised from regularly scheduled time and date of 2:00 pm, 3<sup>rd</sup> Monday of the month due to the Martin Luther King holiday on January 19, 2015.**

December 15, 2014

A regular meeting of the Wastewater Operations Committee of Novato Sanitary District was held at 2:00 p.m., Monday, December 15, 2014, at the District Office, 500 Davidson Street, Novato.

MEMBERS PRESENT: Committee Members Jerry Peters and Brant Miller.

STAFF PRESENT: Sandeep Karkal, Manager-Engineer  
Steve Krautheim, Field Services Manager  
Tim O'Connor, Collections System Superintendent  
John Bailey, Project Manager, Veolia  
Julie Swoboda, Administrative Secretary

OTHERS PRESENT: None.

AGENDA APPROVAL: Approved as presented.

PUBLIC COMMENT: None.

APPROVAL OF MEETING MINUTES FOR NOVEMBER 17, 2014: The November 17, 2014 meeting minutes were approved as written.

WASTEWATER TREATMENT FACILITIES OPERATIONS AND MAINTENANCE REPORT FOR NOVEMBER 2014:

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

Veolia Project Manager John Bailey gave an overview of treatment plant operations for the month of November and stated that there were no permit exceedances, violations or excursions. He discussed the key operations and maintenance events at the Novato facility, the Ignacio Transfer Pump Station, the Recycled Water Plant, and the Sludge Lagoons. He discussed training events completed in November and stated that as of November 30<sup>th</sup>, Veolia employees have been accident free for a total of 1,641 days / 74,830 hours. He discussed the training Veolia employees participated in during November. He reviewed the operations and maintenance report and stated that 1.34 million gallons of recycled water were produced.

The Project Manager stated that Jerome Meter (H<sub>2</sub>S) readings continue to be taken within the treatment plant as well as in the Lea Drive neighborhood area and that ten (10) odor notifications were received in November. He reviewed a diagram which illustrated where odor samples are taken within the treatment facility and within the Lea Drive neighborhood.

- Odor control, noise, and landscaping report: The Manager-Engineer stated that in November, the odor control bed between primary clarifiers #1 and #2 was topped off with additional media to enhance odor removal. He stated that after an initial acclimation and stabilization period, the media beds appear to be performing satisfactorily.

The Manager-Engineer discussed the landscaping in the northeast area of the plant site. He stated that there was only light activity in the area in November but that staff continues to work with District landscape contractor Cagwin and Dorward. He stated that depending on the weather, all of the anticipated plantings will occur in December or early January.

COLLECTION SYSTEMS OPERATION AND MAINTENANCE REPORT FOR NOVEMBER 2014:

The Collections System Superintendent gave the Collection Systems Monthly Report for November 2014. He reported that the Collection Systems crew cleaned a total of 63,279 feet of sewer pipeline and that the department completed 383 maintenance work orders which were generated in November. He stated that the District's CCTV van (Closed Circuit TV) televised 39 line segments for 5,636 feet of production and he outlined the areas identified as needing repairs or further evaluation. He reported on the current Collection System Projects and outlined the specialized training that his department completed.

The Collections System Superintendent stated that there were zero sanitary sewer overflows in the month of November. He stated that as of November 30, 2015, the Collections Department and the District have worked accident free for a total of 1,625 days.

RECLAMATION FACILITY REPORT FOR NOVEMBER 2014:

The Field Services Manager gave the Reclamation Facilities report for November. He stated that the rancher prepared to move his operation off site for the season. He stated that Pump No. 2 at Drainage Pump Station No. 7 was inspected and no problems were found. He noted that there was no irrigation or sludge handling activities in November.

**ADJOURNMENT:** There being no further business to come before the Committee, the meeting adjourned at 2:39 p.m. The next Wastewater Operations Committee meeting will be held on Tuesday, January 20<sup>th</sup>, 2015, as Monday, January 19<sup>th</sup> is a District holiday (Martin Luther King Day). The February 2015 meeting will be held on Tuesday, February 17<sup>th</sup>, as Monday, February 16<sup>th</sup> is a District holiday (President's Day).

Respectfully submitted,

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Sandeep Karkal  
Manager-Engineer

Julie Swoboda, Recording



January 13, 2015

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

**Subject: Veolia Water Operations Report – December 2014**

Dear Mr. Karkal:

I am pleased to provide the Monthly Operation Report for December 2014.

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

Best regards,

A handwritten signature in blue ink, appearing to read "John Bailey".

John Bailey  
Project Manager, Veolia



**MONTHLY OPERATIONS REPORT  
December 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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• Customer Notifications (Odor)	

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## TREATMENT PLANT PERFORMANCE SUMMARY: December 2014:

## Bay Discharge – NPDES Limits

Parameter	Value		Limit	
	Ave	Max	#1	#2
Flow, MGD (monthly ave/max)	11.08	28.04	N/A	N/A
Max Peak Hour, MGD – 12/11/14, 0815 Hours	N/A	35	N/A	N/A
Influent BOD <sub>5</sub> , lb/day (month ave/max)	12,111	19,799	N/A	N/A
Influent TSS, lb/day (monthly ave/max)	19,521	47,304	N/A	N/A
Effluent BOD <sub>5</sub> , mg/L (monthly ave/weekly max)	<6	8	30	45
Effluent TSS, mg/L (monthly ave/weekly max)	<5	9	30	45
Effluent BOD <sub>5</sub> - % Removal, Minimum	95	N/A	85	N/A
Effluent TSS - % Removal, Minimum	97	N/A	85	N/A
Ammonia, mg/L – (monthly ave/daily max)	0.17	0.43	6	21
pH, su (min / max)	6.9	7.1	6.5	8.5
Enterococcus, mpn (30 day geo mean)	12.2	N/A	35	N/A
Fecal Coliform, mpn (30 day median)	13	N/A	140	N/A
Fecal Coliform, mpn (90 <sup>th</sup> percentile)	220	N/A	430	N/A
Total Coliform, mpn (5 Sample Median / Max)	N/A	N/A	240	10,000
<b>Total Permit Exceedances (NPDES)</b>	0			

NA – Not Applicable

Discussion of Violations / Excursions: NONE

## Title 22 - Recycled Water Production and Quality

Description	Units	Value	Limit
Volume Produced	Million Gallons	0.78	N/A
Average Turbidity	NTU	1.4	2.0
Turbidity > 5 NTU (in 24 hour)	Minutes	0	72
Minimum CT (disinfection)	mg-min/L	>450	450
Minimum Dissolved Oxygen (DO)	mg/L	8.8	1.0
Maximum Total Coliform	mpn/100 ml	<2	2

Total Rainfall. – 16.68 inches

Daily Max 12/11/14 – 4.13 inches

Rainfall data from weather station readings at 500 Davidson St (WWTP)

**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 December.
- Accident Free: 6/1/10 – 12/31/14: 1,672 days / 76,243 hours
- Monthly Safety Topic and Training – SPCC Plan – Novato & SPCC Plan – Ignacio (Spill Prevention Control and Countermeasures Plan)
- Forklift Training/Certification
- Reviewed Wet Weather Operating Procedures (table top + hands-on)

**OPERATIONS & MAINTENANCE STATUS / REVIEW:****Key events for the period:****Novato**

- Routine rounds, readings and maintenance
- Replaced door handles on Digested Sludge Building (lever handles)
- Replaced tension chain guide on Filter Screen #2
- Flushed and cleared decant line
- Replaced motor starter contact on Grinder
- Secondary Clarifier #2 put into service – Wet Weather / High Flow
- Aeration Basin #2 put into service – Wet Weather / High Flow
- Primary Clarifier #1 put into service – Wet Weather / High Flow
- Repaired water line on Grit Vortex
- Replaced UPS batteries in Blower Room

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

- Aeration Basins 1 (not needed at current flows)

**Ignacio Transfer Pump Station**

- Routine rounds, readings and maintenance
- Installed power cable on Conveyance Pump #2
- Repaired EIM valve actuators

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

- None

**Recycled Water Plant (RWP)**

- Performed plant rounds and maintenance

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

- None

**Sludge Lagoons**

- Performed routine rounds and inspection

**ADMINISTRATION:**

- November Electronic Self Monitoring Report submitted on December 30, 2014
- November Electronic DMR Report submitted on December 30, 2014

**ODORS:**

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

**MISCELLANEOUS**

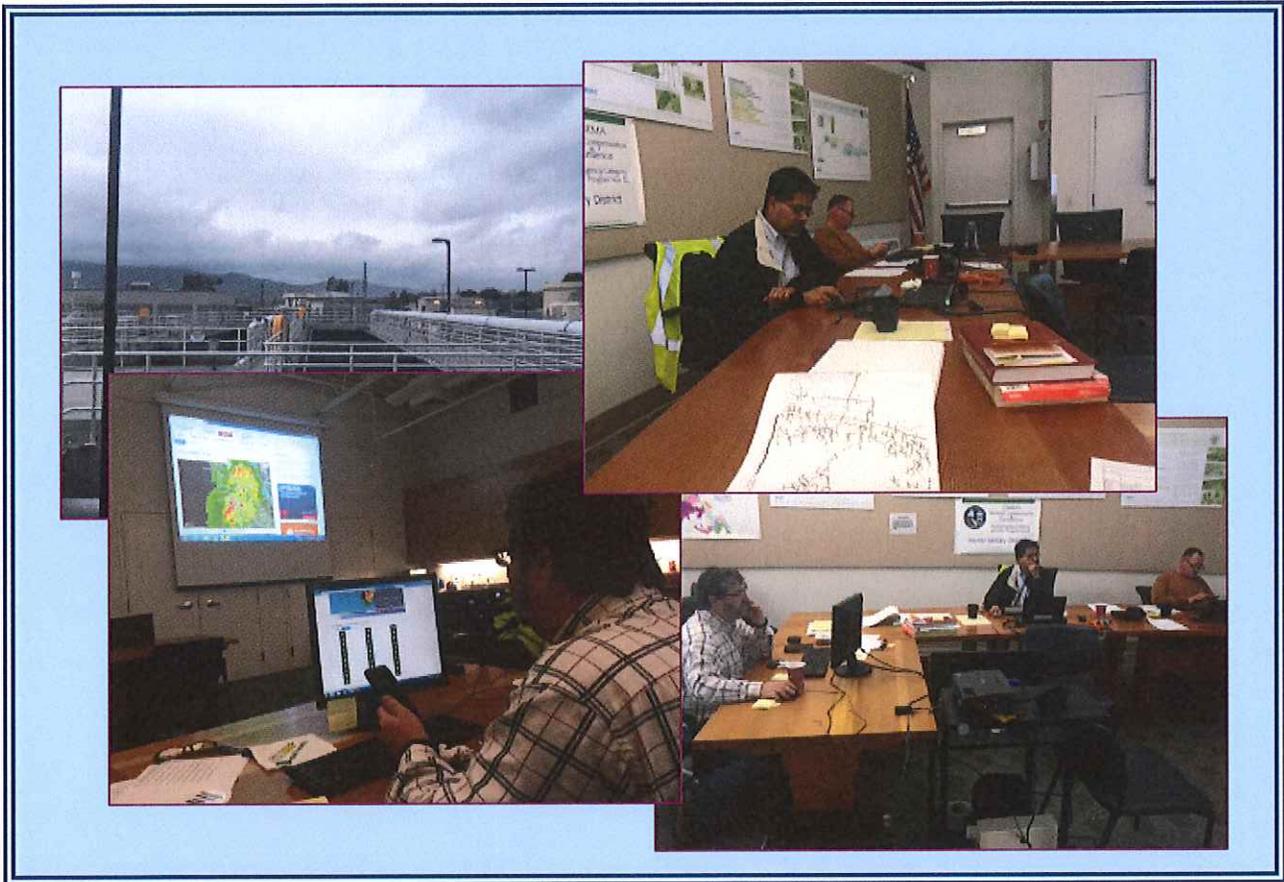
- Process Control Management Plan (PCMP) meetings held weekly.
- Regional Water Board Tour

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

John O'Hare                      Technical Support  
Ed Dix                              Technical Support

## DECEMBER 10<sup>TH</sup> PREPARING FOR THE STORM

Over Five Inches of Rain on December 10<sup>th</sup> & 11<sup>th</sup>.



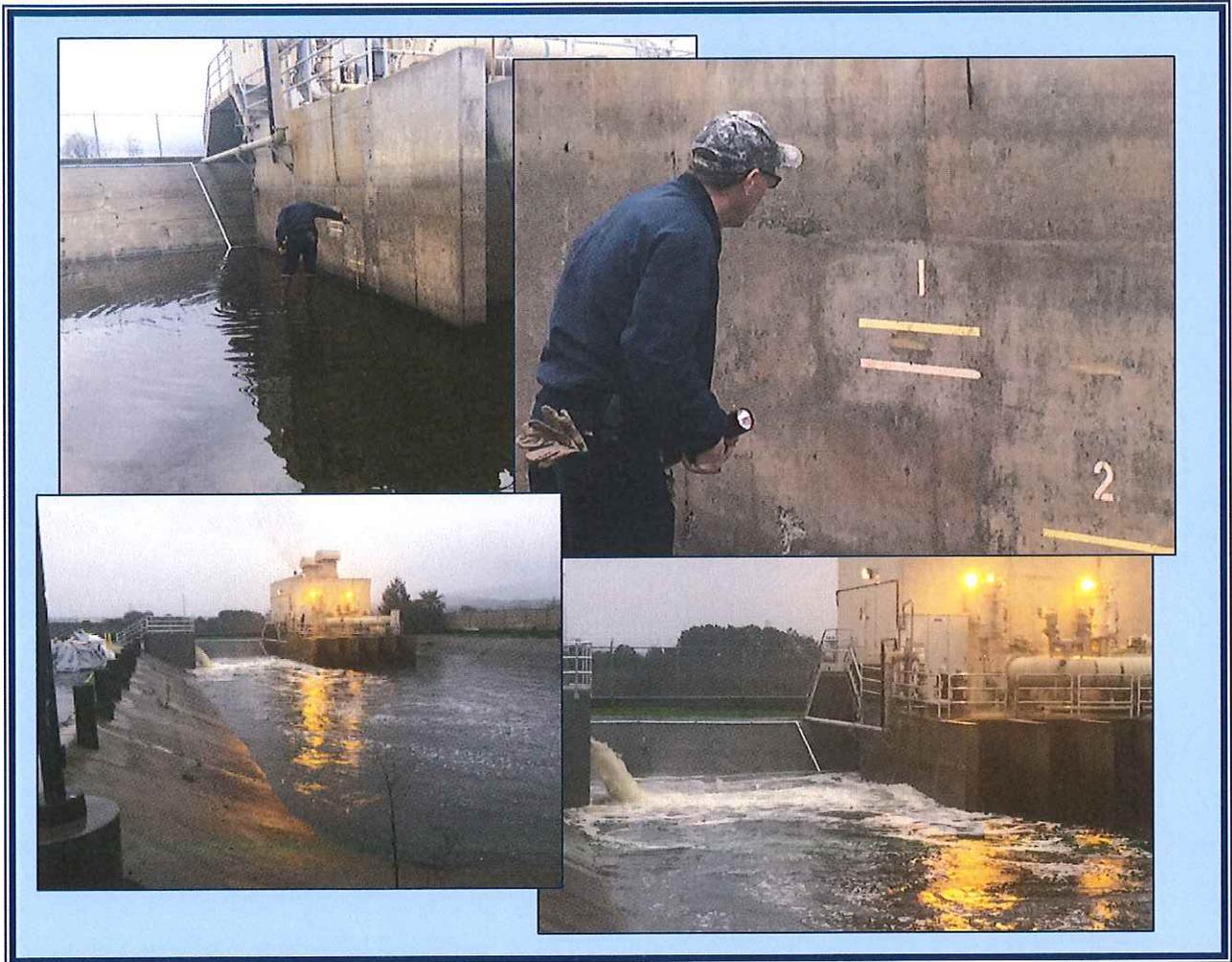
**Top Left** – December, 10<sup>th</sup> - Stormy Skies Looming

**Top Right** – Emergency Operations Center (EOC)

**Bottom Left** – Craig Deasy Tracking the Storm

**Bottom Right** – EOC Team – Craig Deasy, Sandeep Karkal, Steve Krautheim

DECEMBER 10<sup>th</sup> & 11<sup>th</sup> 2014  
WET WEATHER / HIGH FLOW - PUMPING



Top Left – Measuring Water Levels in Wet Weather Pump Wet Well  
Top Right – Preston Ingram Confirms Operating Levels Prior to Storm  
Bottom Left & Right – Flow Greater Than 24 mgd to Wet Weather Pumps

DECEMBER 2014  
STORM – HEAVY RAIN / HIGH FLOW



Top Left – Portable Pumping at Ignacio Transfer Pump Station  
Top Right – Preston Ingram, Wet Weather Pumping  
Bottom Left & Right – Setting up Portable Pump at Ignacio

DECEMBER 2014  
FLUSHING DECANT LINES



**Top Left** – Brian Exberger, removing cleanout cap, Deer Island, sludge lagoons

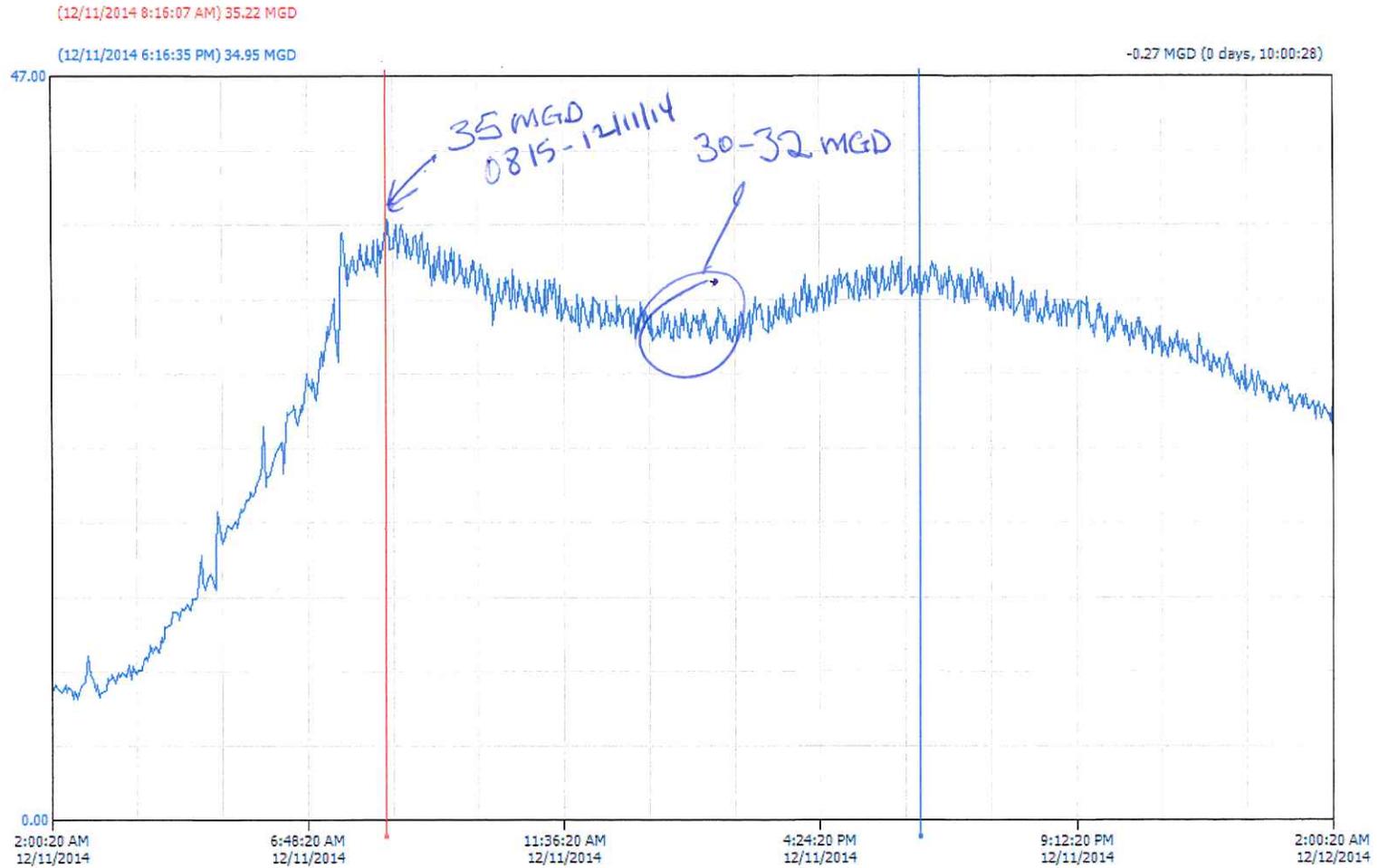
**Top Right** – Decant flushing set up at Deer Island Lane

**Bottom Left & Right** – Contractor flushing decant line at Deer Island

# Novato Influent Flow

12/11/14

Flow - Level IPS



HISTORIAN1:A184\_1070\_0000\_ME\_F\_AO [BestFit - 00 00:07:24.383]

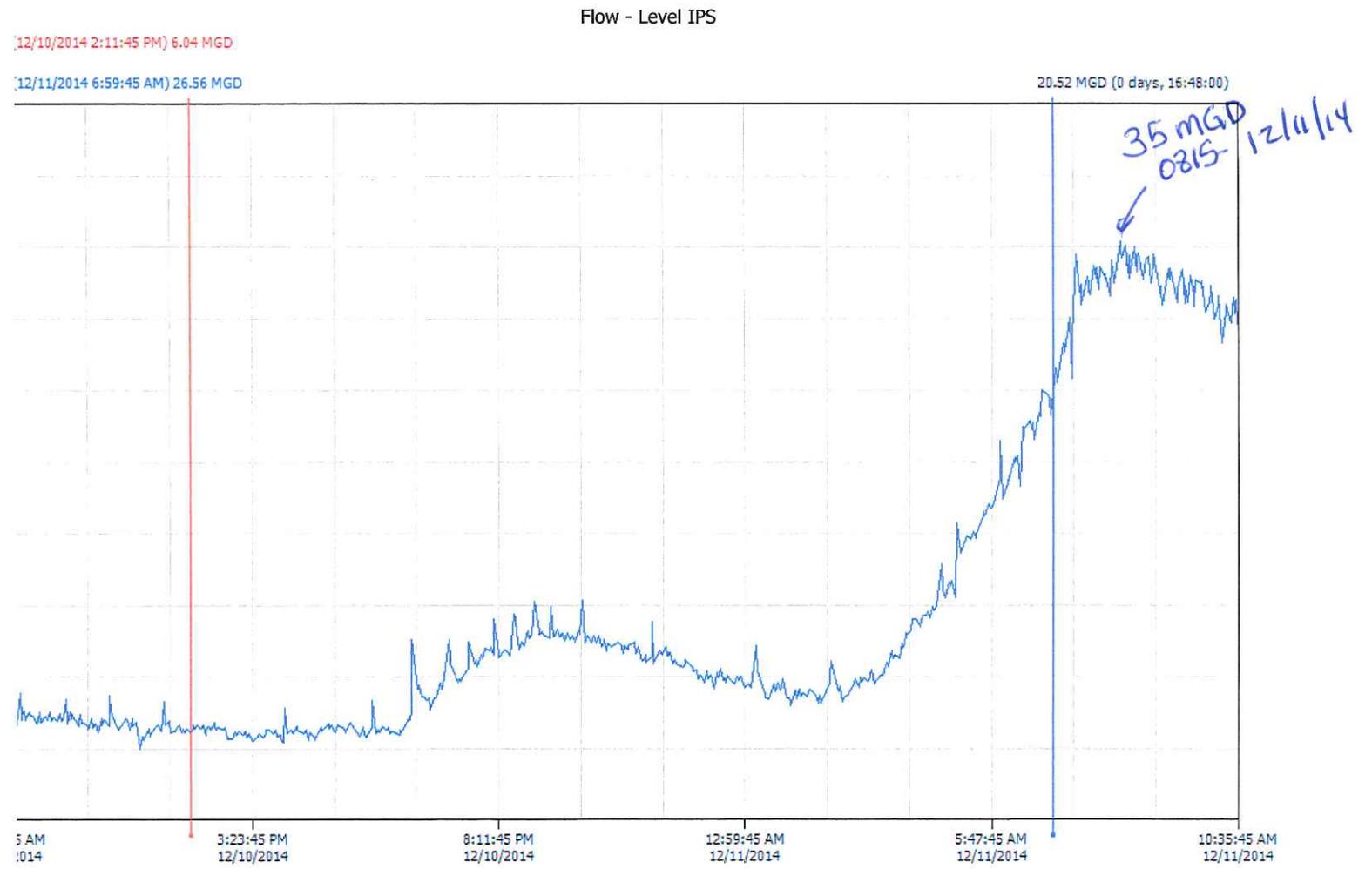
Tag Name	Description	Server	Color	Units	Minimum	Maximum	IO Address	Time Off...
<input type="checkbox"/> A181_1011...	Infl WetWell #1-Level	HISTORI...	Green	ft	0	19	\\SCADASVR1\DASMBT...	0:00:00....
<input type="checkbox"/> A181_1012...	Infl WetWell #2-Level	HISTORI...	Red	ft	0	19	\\SCADASVR1\DASMBT...	0:00:00....
<input checked="" type="checkbox"/> A184_1070...	HdWrks-Plant Flow Ana...	HISTORI...	Blue	MGD	0.00	47.00	\\SCADASVR1\DASMBT...	0:00:00....

1/13/2015 10:42:13 AM

C:\Documents and Settings\Scada\My Documents\Influent Flow & Level\Flow - Level IPS.aaTrend

# Noveto Influent Flow

12/10 & 12/11



HISTORIAN1:AI84\_1070\_0000\_ME\_F\_AO [BestFit - 00 00:09:26.725]

Description	Server	Color	Units	Minimum	Maximum	IO Address	Time Off...
1... Infl WetWell #1-Level	HISTORI...		ft	0	19	\\SCADASVR1\DASMBT...	0:00:00....
2... Infl WetWell #2-Level	HISTORI...		ft	0	19	\\SCADASVR1\DASMBT...	0:00:00....
0... HdWrks-Plant Flow Ana...	HISTORI...		MGD	0.00	47.00	\\SCADASVR1\DASMBT...	0:00:00....

12/11/2014 10:36:24 AM

Location: s and Settings\Scada\My Documents\Influent Flow & Level\Flow - Level IPS.aaTrend

Novato Sanitary District  
BOD/TSS Report



December, 2014

Date	Flow MGD	Influent				Effluent				BOD % Removal	TSS % Removal
		BOD		TSS		BOD		TSS			
		mg/l	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	lb/d	PERCENT	PERCENT
12/01/14	5.59	228	10,629	317	14,779	8	373	5	233	96.5	98.4
12/02/14	13.84										
12/03/14	17.24	135	19,411	329	47,304	12	1,725	16	2,301	91.1	95.1
12/04/14	10.92										
12/05/14	10.70	86	7,674	144	12,850	5	446	5	446	94.2	96.5
12/06/14	9.52										
12/07/14	7.62										
12/08/14	6.30										
12/09/14	5.87	160	7,833	222	10,868	<5	<245	8	392	96.9	96.4
12/10/14	11.99	198	19,799	295	29,499	<5	<500	3	300	97.5	99.0
12/11/14	28.04										
12/12/14	18.19	97	14,715	289	43,843	6	910	13	1,972	93.8	95.5
12/13/14	13.20										
12/14/14	10.76										
12/15/14	21.53	108	19,393	165	29,627	<5	<898	3	539	95.4	98.2
12/16/14	19.73										
12/17/14	15.38	54	6,927	83	10,646	<5	<641	5	641	90.7	94.0
12/18/14	12.16										
12/19/14	18.19	79	11,985	128	19,418	<5	<759	<3	<455	93.7	97.7
12/20/14	12.32										
12/21/14	10.22	96	8,183	132	11,251	<5	<426	<3	<256	94.8	97.7
12/22/14	8.61	95	6,822	133	9,550	<5	<359	<3	<215	94.7	97.7
12/23/14	7.53	144	9,043	167	10,488	<5	<314	<3	<188	96.5	98.2
12/24/14	7.46										
12/25/14	6.57										
12/26/14	6.43										
12/27/14	6.02										
12/28/14	6.05										
12/29/14	5.23	268	11,690	266	11,602	6	262	3	131	97.8	98.9
12/30/14	5.36	320	14,305	386	17,255	5	224	3	134	98.4	99.2
12/31/14	4.92	323	13,254	337	13,828	<5	<205	3	123	98.5	99.1
<b>Weekly Averages</b>											
12/06/14	Week 1	150	12,571	263	24,978	8	848	9	993		
12/13/14	Week 2	152	14,116	269	28,070	5	552	8	888		
12/20/14	Week 3	80	12,768	125	19,897	5	766	4	545		
12/27/14	Week 4	112	8,016	144	10,430	5	366	3	220		
	Week 5										
<b>Monthly</b>											
Minimum	4.92	54	6,822	83	9,550	<5	<205	<3	123	91	94
Maximum	28.04	323	19,799	386	47,304	12	1,725	16	2,301	98	99
Total	343.49										
Average	11.08	159	12,111	226	19,521	<6	<552	<5	<555	95	97

Novato Sanitary District  
Conventional Pollutants Report



December, 2014

Date	INFLUENT - A001			Effluent - E002							
	Flow	pH	Ammonia	Coliform / Bacteria			pH	Ammonia	Unionized Ammonia	Oil & Grease	Temp
	Total			Fecal	Entero	Total					
	MGD	su	mg/L	MPN/100 mL			su	mg/L	mg/L		Deg C
12/01/14	5.59	7.2		50.0	7.5		7.0				20.6
12/02/14	13.84						7.0				20.4
12/03/14	17.24			900.0	156.5		7.0				17.7
12/04/14	10.92						7.1				19.4
12/05/14	10.70	7.0		900.0	8.5		7.0				19.7
12/06/14	9.52										
12/07/14	7.62										
12/08/14	6.30	7.1		13.0			7.1				20.0
12/09/14	5.87			13.0	4.1		7.1	0.08		<1.4	20.0
12/10/14	11.99			8.0	3.1		7.1	0.08	0.00042		21.1
12/11/14	28.04			220.0			7.0	0.07			18.6
12/12/14	18.19	6.6		60.0	48.7		7.0	0.43			17.8
12/13/14	13.20			17.0							
12/14/14	10.76			8.0							
12/15/14	21.53	6.5		13.0	14.8		7.0				17.5
12/16/14	19.73			50.0			7.1				17.7
12/17/14	15.38			22.0	18.9		7.0				17.5
12/18/14	12.16			4.0			7.1				17.9
12/19/14	18.19	6.7		11.0	19.9		7.1				18.2
12/20/14	12.32			8.0							
12/21/14	10.22			13.0	13.1						
12/22/14	8.61	7.0		2.0	7.4		7.1				19.0
12/23/14	7.53			4.0	8.4		7.0				19.3
12/24/14	7.46	7.1					7.0				19.0
12/25/14	6.57						7.0				18.2
12/26/14	6.43						6.9				18.8
12/27/14	6.02										
12/28/14	6.05										
12/29/14	5.23	6.8		8.0	5.2		6.9				18.5
12/30/14	5.36			2.0	7.4		7.0				18.3
12/31/14	4.92	7.0		2.0	5.2		7.0				18.1
<b>Monthly</b>											
Minimum	4.92	6.5		2.0	3.1		6.9	0.07	0.00042	<1.4	17.5
Maximum	28.04	7.2		900.0	156.5		7.1	0.43	0.00042	<1.4	21.1
Total	343.49										
Average	11.08	6.9					7.0	0.17	0.00042	<1.4	18.8

# Novato Plant : Bacterial Results

## EFFLUENT: E-002 Station

### Dec-14

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

December 1, 2014	<b>50</b>	
December 2, 2014		
December 3, 2014	<b>900</b>	
December 4, 2014		
December 5, 2014	<b>900</b>	
December 6, 2014		
December 7, 2014		
December 8, 2014	<b>13</b>	
December 9, 2014	<b>30</b>	
December 10, 2014	<b>13</b>	
December 11, 2014	<b>220</b>	
December 12, 2014	<b>60</b>	
December 13, 2014	<b>17</b>	
December 14, 2014	<b>8</b>	
December 15, 2014	<b>13</b>	
December 16, 2014	<b>50</b>	
December 17, 2014	<b>22</b>	
December 18, 2014	<b>4</b>	
December 19, 2014	<b>11</b>	
December 20, 2014	<b>2</b>	
December 21, 2014	<b>13</b>	
December 22, 2014	<b>2</b>	
December 23, 2014	<b>4</b>	
December 24, 2014		
December 25, 2014		
December 26, 2014		
December 27, 2014		
December 28, 2014		
December 29, 2014	<b>8</b>	
December 30, 2014	<b>2</b>	
December 31, 2014		

90th Percentile Ranking		
Sample #1		<b>2</b>
Sample #2		<b>2</b>
Sample #3		<b>2</b>
Sample #4		<b>4</b>
Sample #5		<b>4</b>
Sample #6		<b>8</b>
Sample #7		<b>8</b>
Sample #8		<b>11</b>
Sample #9		<b>13</b>
Sample #10		<b>13</b>
Sample #11		<b>13</b>
Sample #12		<b>13</b>
Sample #13		<b>17</b>
Sample #14		<b>22</b>
Sample #15		<b>30</b>
Sample #16		<b>50</b>
Sample #17		<b>50</b>
Sample #18		<b>60</b>
Sample #19		<b>220</b>
Sample #20		<b>900</b>
Sample #21		<b>900</b>

December 1, 2014	<b>7.5</b>	
December 2, 2014		
December 3, 2014	<b>156.5</b>	
December 4, 2014		
December 5, 2014	<b>8.1</b>	
December 6, 2014		
December 7, 2014		
December 8, 2014		
December 9, 2014	<b>4.1</b>	
December 10, 2014	<b>3.1</b>	
December 11, 2014		
December 12, 2014	<b>48.7</b>	
December 13, 2014		
December 14, 2014		
December 15, 2014	<b>14.8</b>	
December 16, 2014		
December 17, 2014	<b>18.9</b>	
December 18, 2014		
December 19, 2014	<b>19.9</b>	
December 20, 2014		
December 21, 2014	<b>13.1</b>	
December 22, 2014	<b>7.4</b>	
December 23, 2014	<b>8.4</b>	
December 24, 2014		
December 25, 2014		
December 26, 2014		
December 27, 2014		
December 28, 2014		
December 29, 2014	<b>5.2</b>	
December 30, 2014		
December 31, 2014		

<b>Max</b>	<b>900</b>
<b>Min</b>	<b>2.0</b>
<b>Avg</b>	<b>111.52</b>
<b>30-Day Median</b>	<b>13</b>

90th Percentile Value **220**

<b>Max</b>	<b>156.5</b>
<b>Min</b>	<b>3.1</b>
<b>Avg</b>	<b>24.3</b>
<b>30 Day Geo. Mean</b>	<b>12.2</b>

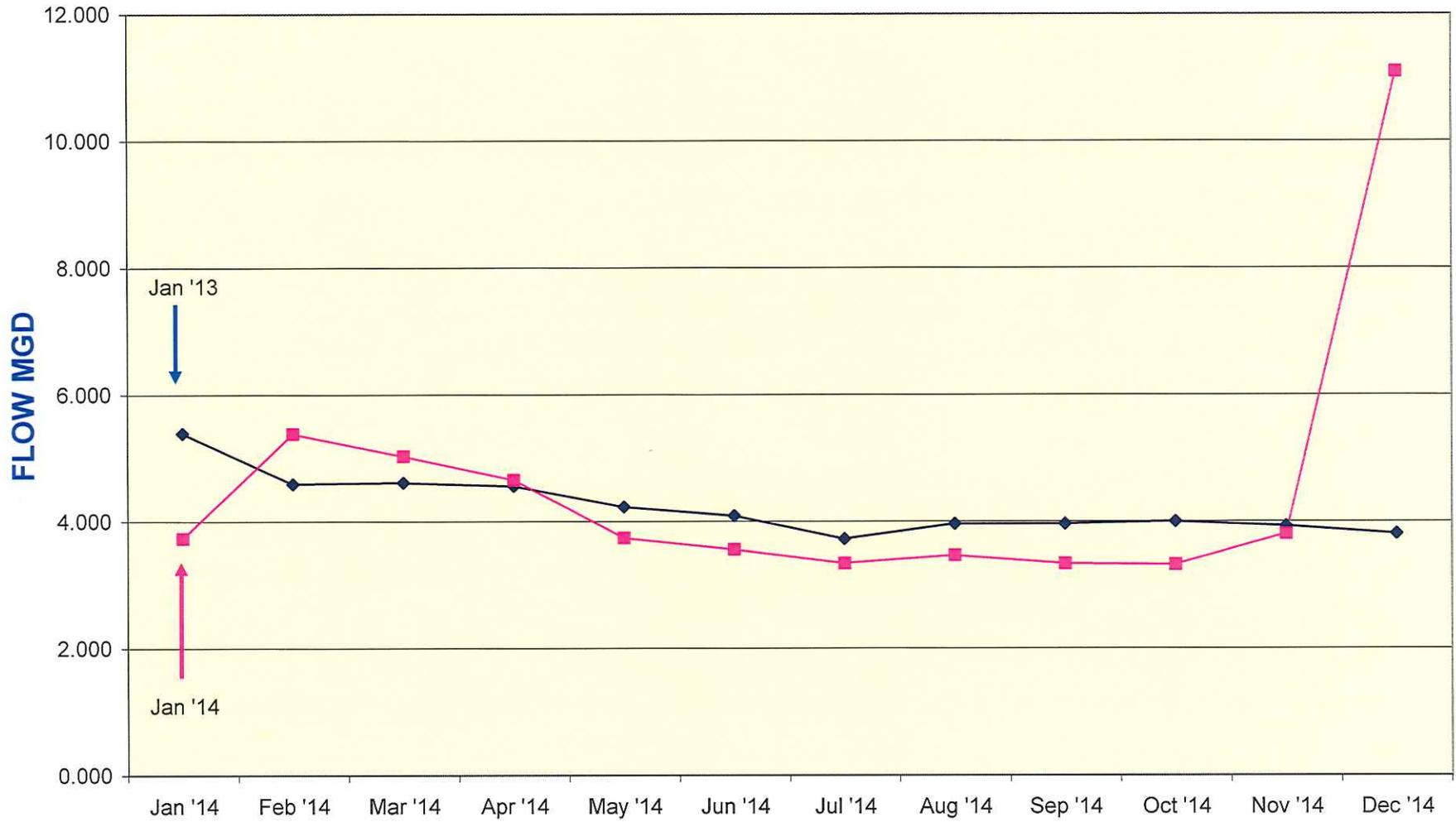
December 2014 Monthly Summary Report Station= Novato WWTP

Date	O Temp Max	O Temp Min	Press Max	Press Min	Rain Max	Speed Max
1	62	54	30.60	30.42	0.10	11
2	58	54	30.44	30.14	2.12	20
3	63	53	30.36	30.13	2.79	18
4	66	52	30.49	30.33	0.33	7
5	64	55	30.51	30.40	0.47	10
6	66	55	30.69	30.51	0.35	7
7	61	53	30.69	30.57	0.01	7
8	63	54	30.64	30.55	0.00	0
9	61	54	30.66	30.54	0.00	0
10	63	54	30.55	30.12	0.91	0
11	64	50	30.16	29.93	4.13	0
12	54	44	30.60	30.13	0.21	0
13	55	43	30.73	30.59	0.01	0
14	54	44	30.67	30.47	0.12	0
15	53	48	30.48	30.31	2.29	17
16	59	46	30.43	30.26	1.14	6
17	58	47	30.56	30.42	0.24	7
18	57	50	30.66	30.54	0.08	5
19	56	53	30.63	30.58	0.80	0
20	60	51	30.70	30.61	0.00	0
21	66	56	30.75	30.65	0.00	10
22	67	51	30.77	30.57	0.00	4
23	65	49	30.70	30.54	0.00	2
24	60	46	30.61	30.37	0.03	27
25	59	43	30.65	30.50	0.00	14
26	62	40	30.80	30.56	0.00	9
27	54	32	30.91	30.77	0.00	1
28	56	36	30.90	30.67	0.00	1
29	57	34	30.77	30.55	0.00	3
30	55	38	30.82	30.61	0.01	24
31	64	37	30.80	30.49	0.00	8
Month	67	32	30.91	29.93	16.14	27
	°F	°F	InHg	InHg	In	mph

DD Heat=  
DD Cool=

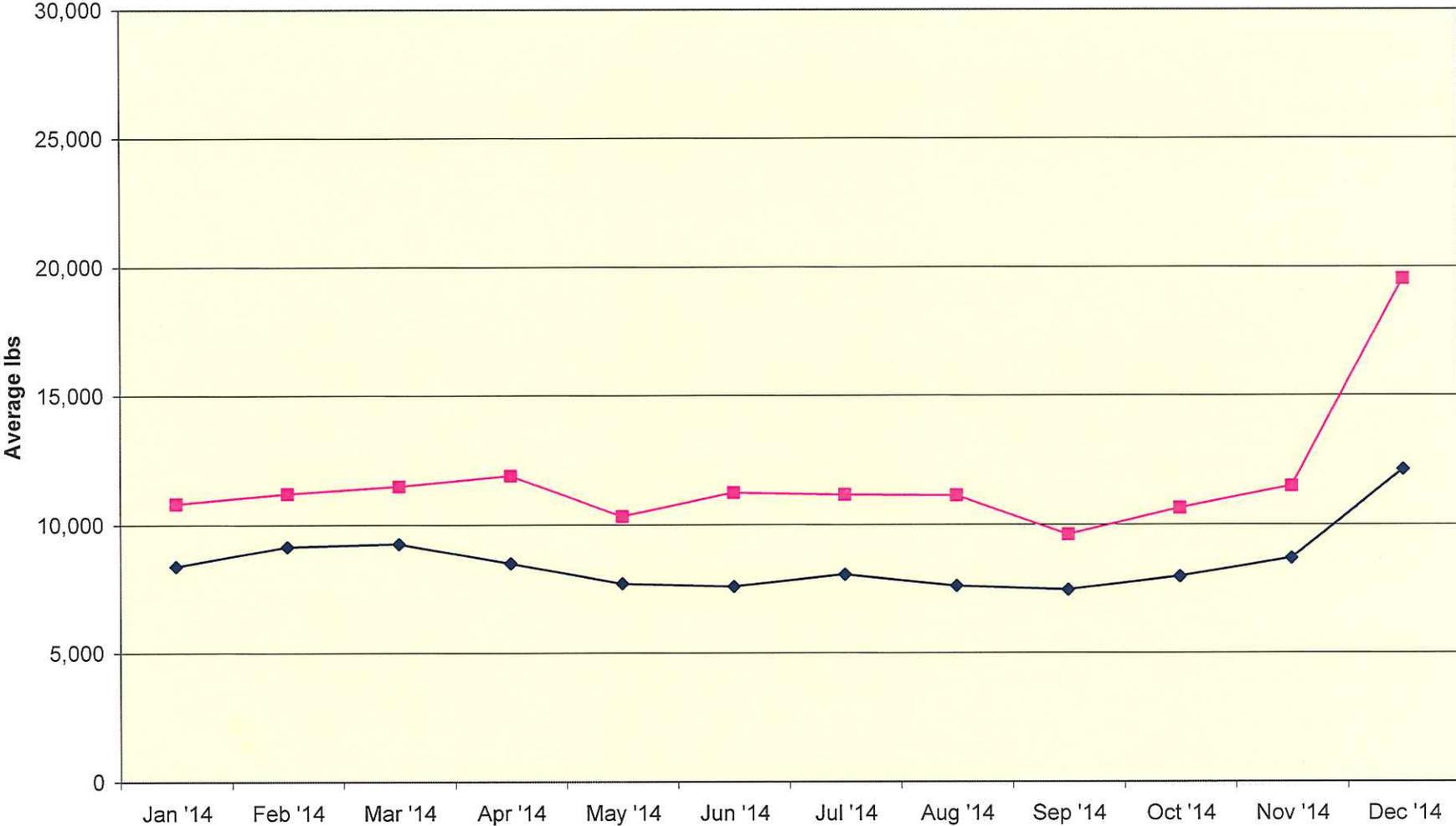
# FLOW COMPARISON

◆ 2013 ■ 2014



### Influent Load BOD / TSS lbs

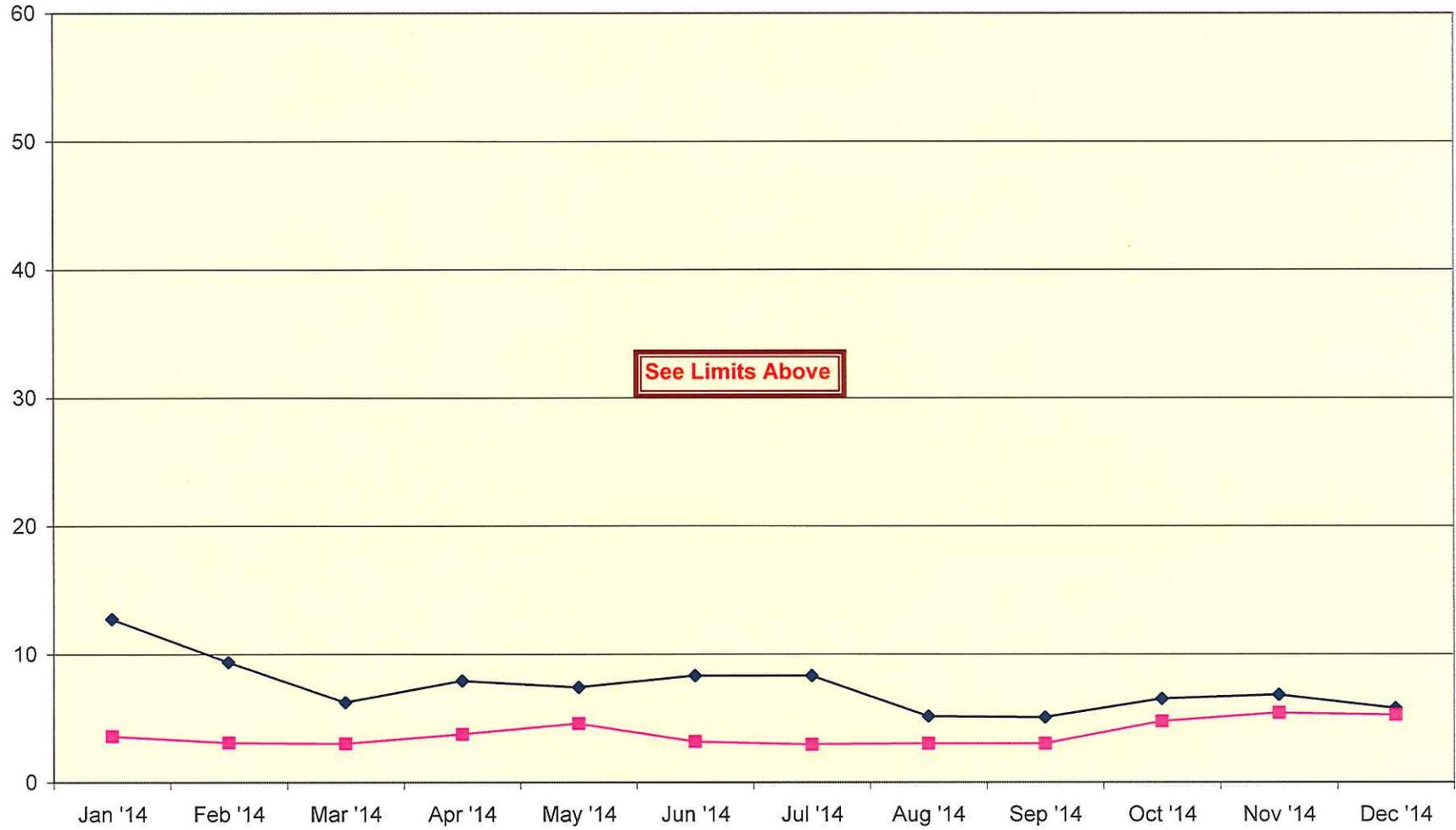
◆ BOD lbs    ■ TSS lbs



# Effluent BOD / TSS Concentration

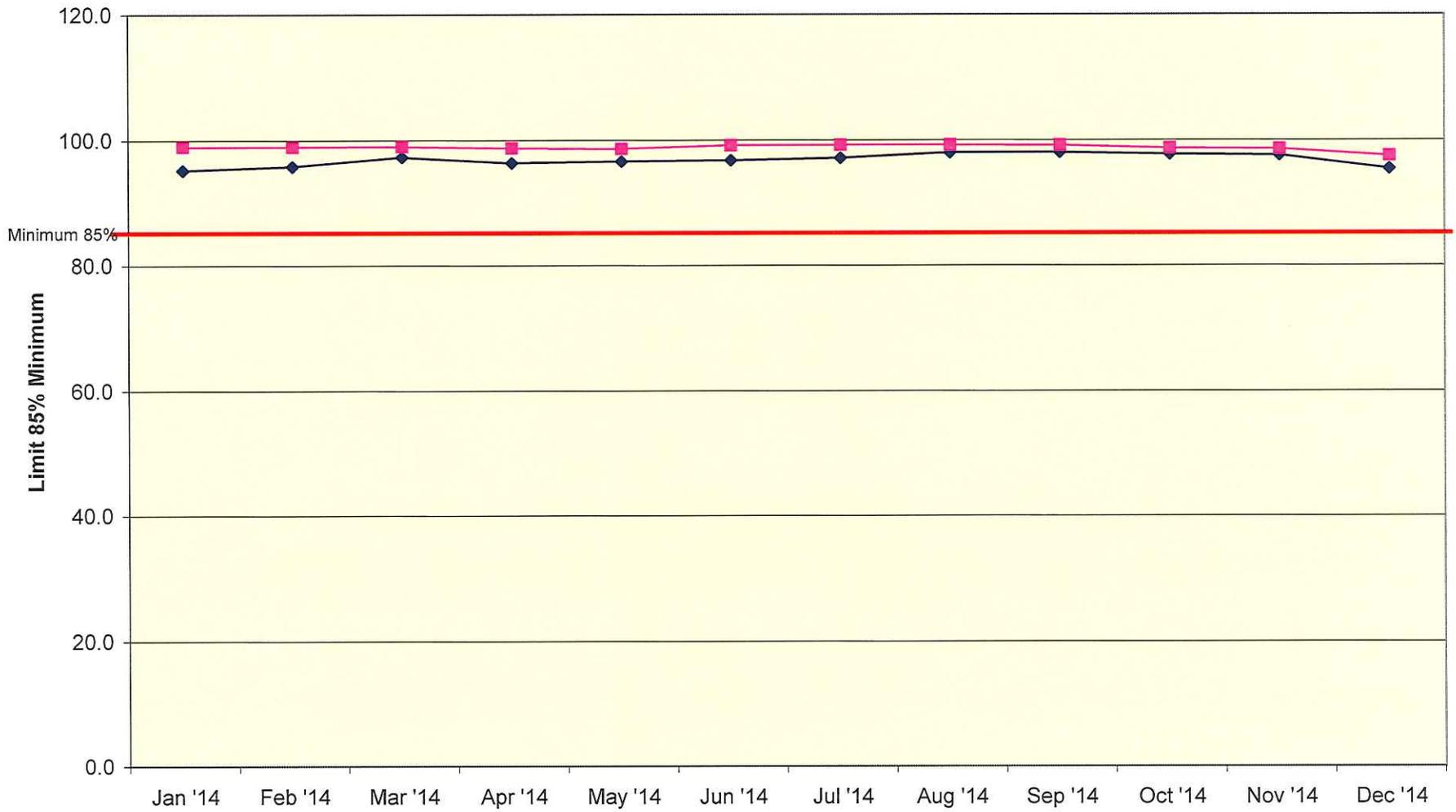
**NPDES LIMITS WET SEASON**  
BOD & TSS - 30 mg/L Monthly Ave, 45 mg/L Weekly Ave  
NPDES LIMITS DRY SEASON  
BOD - 15 mg/L Monthly Ave, 30 mg/L Weekly Ave  
TSS - 10 mg/L Monthly Ave, 20 mg/L Weekly Ave  
WDR (Waste Discharge Requirements) RECLAMATION  
BOD - 40 mg/L

—◆— BOD —■— TSS



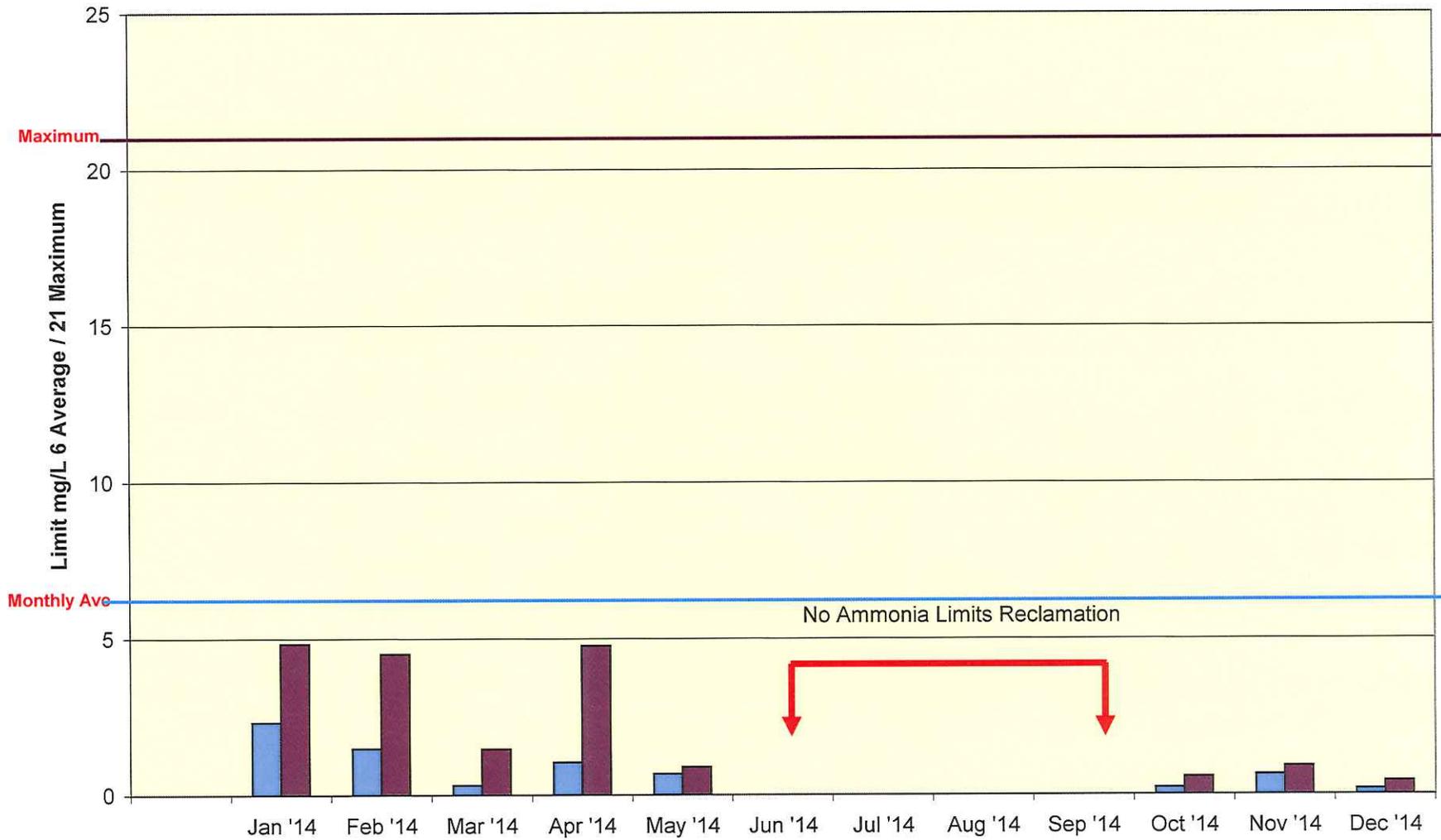
### BOD / TSS Percent Removal

—◆— BOD —■— TSS



# Effluent Ammonia

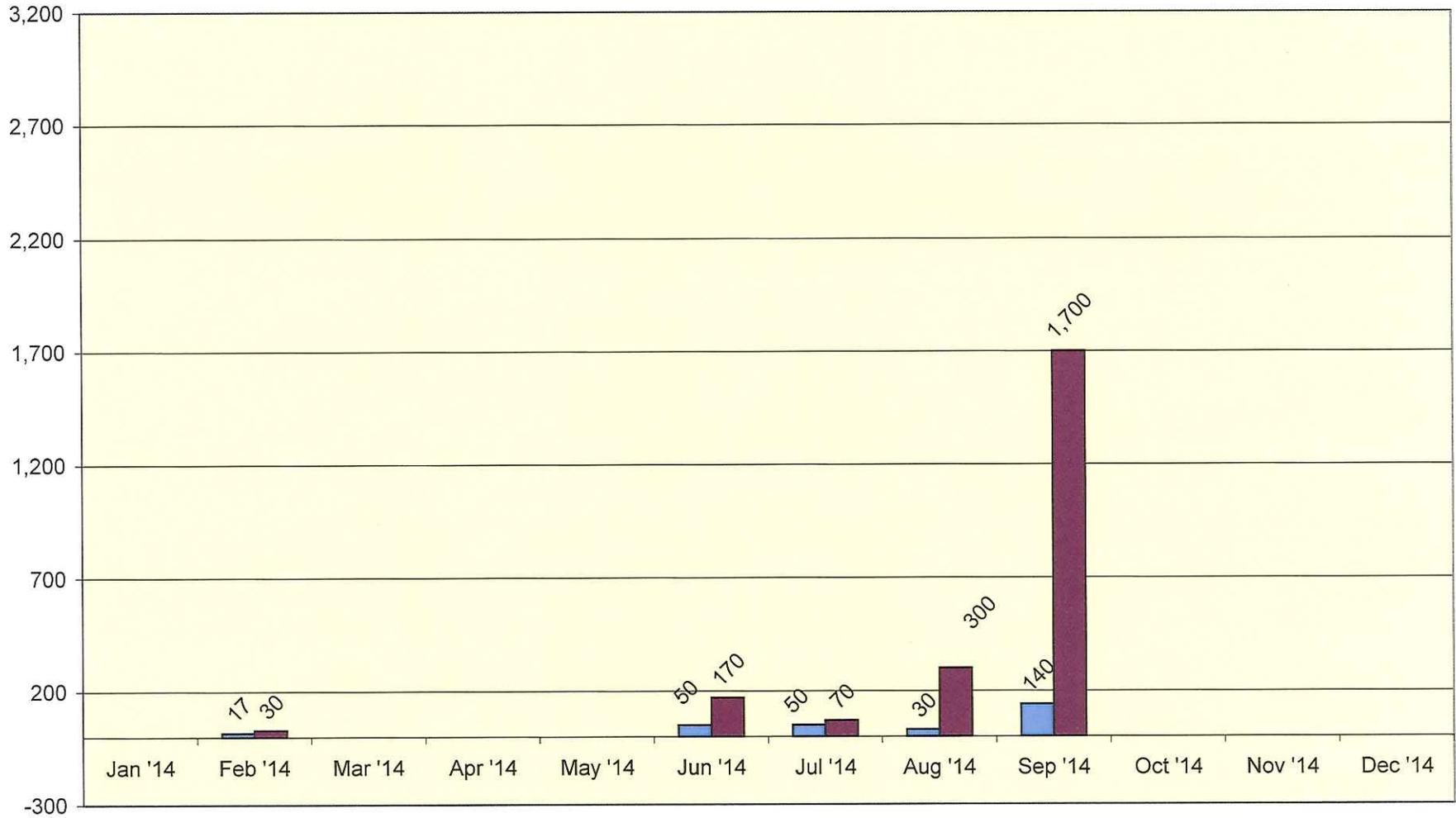
Average Maximum



# Disinfection - Total Coliform

TOTAL COLIFORM LIMITS - WDR  
5 Sample Median - 240 mpn /100 ml  
Maximum - 10,000 mpn/100 ml

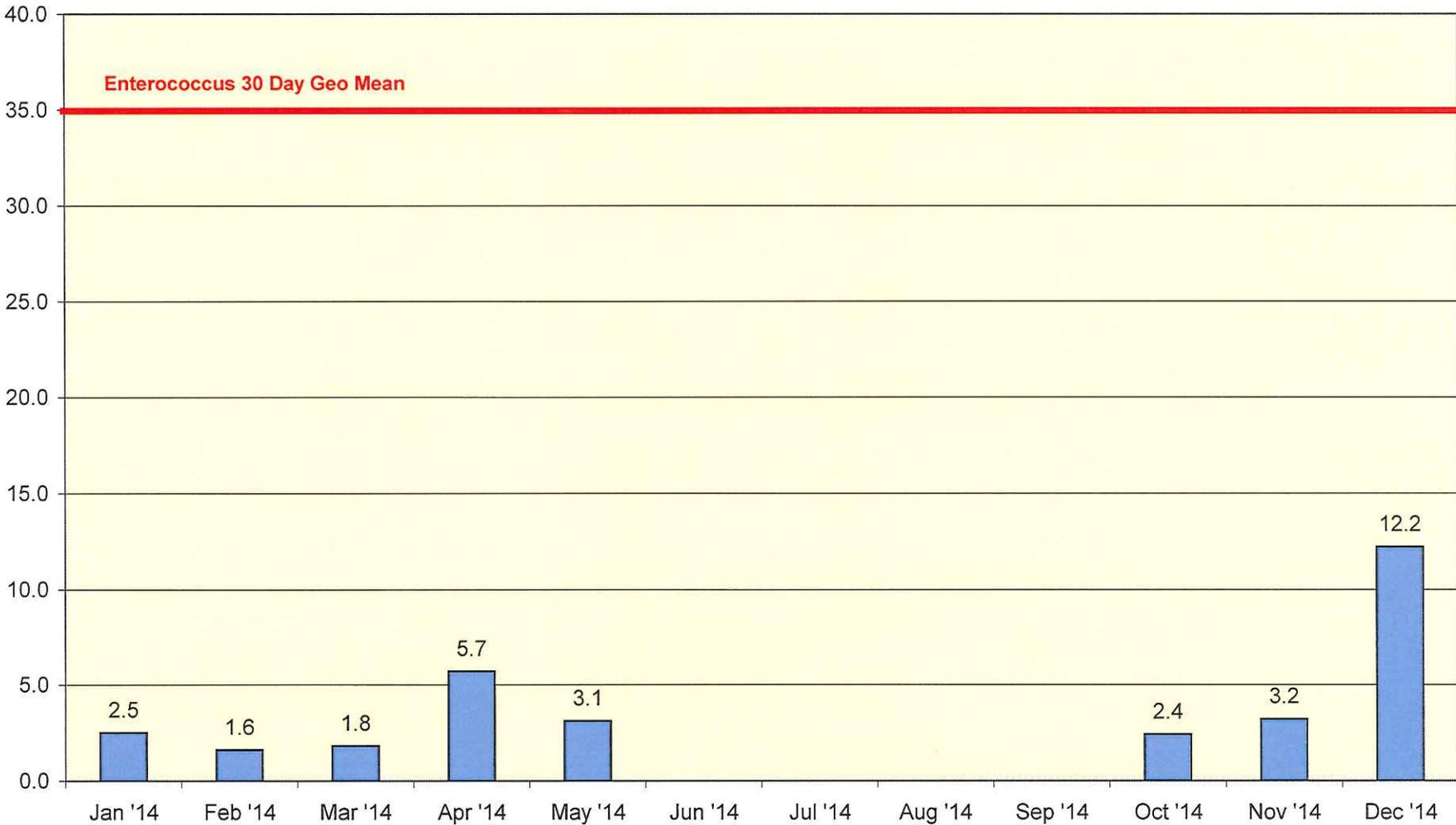
5 Sampl Med Monthly Max



# Disinfection - Enterococcus

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

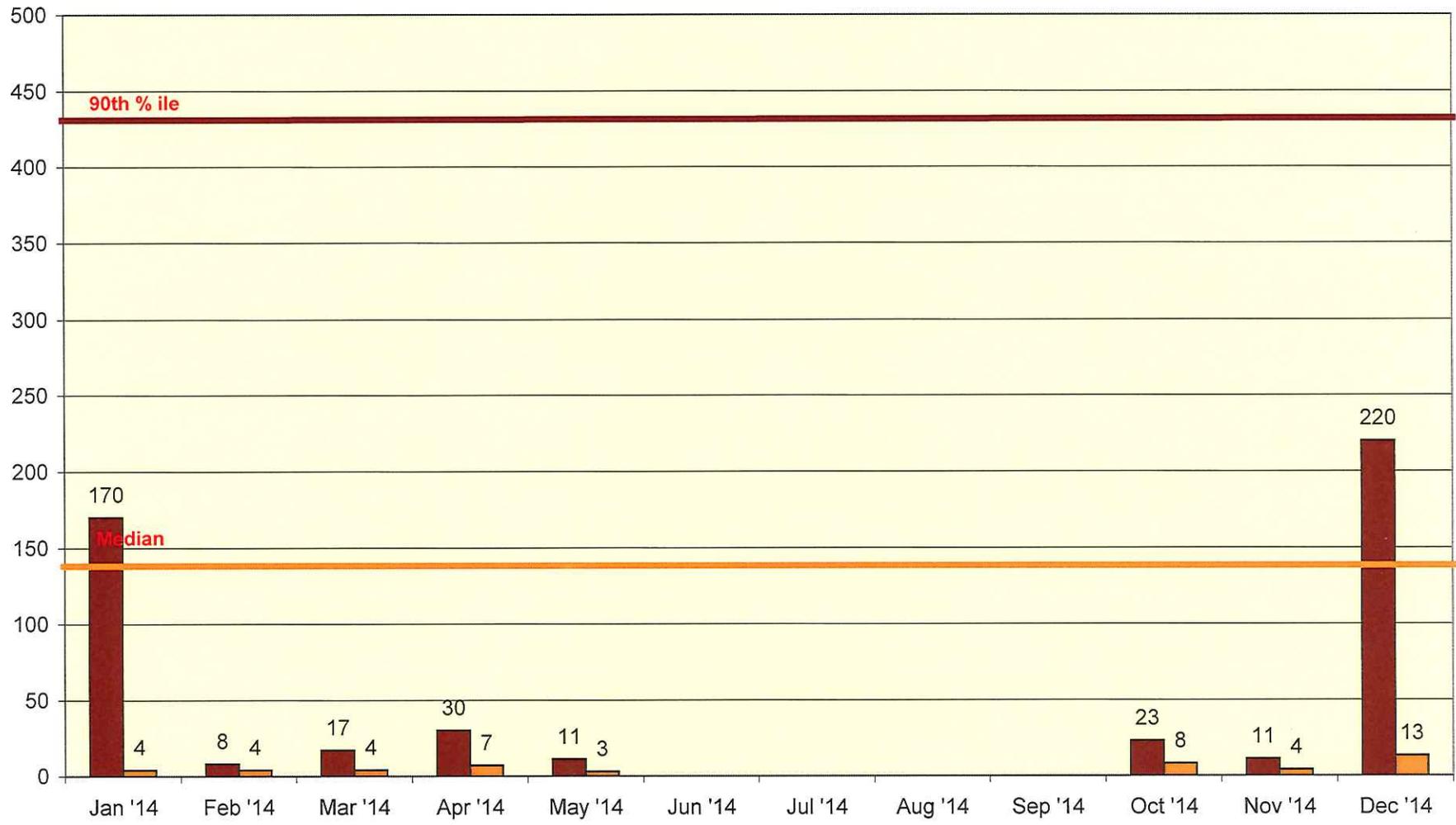
Geo Mean



# Disinfection - Fecal Coliform

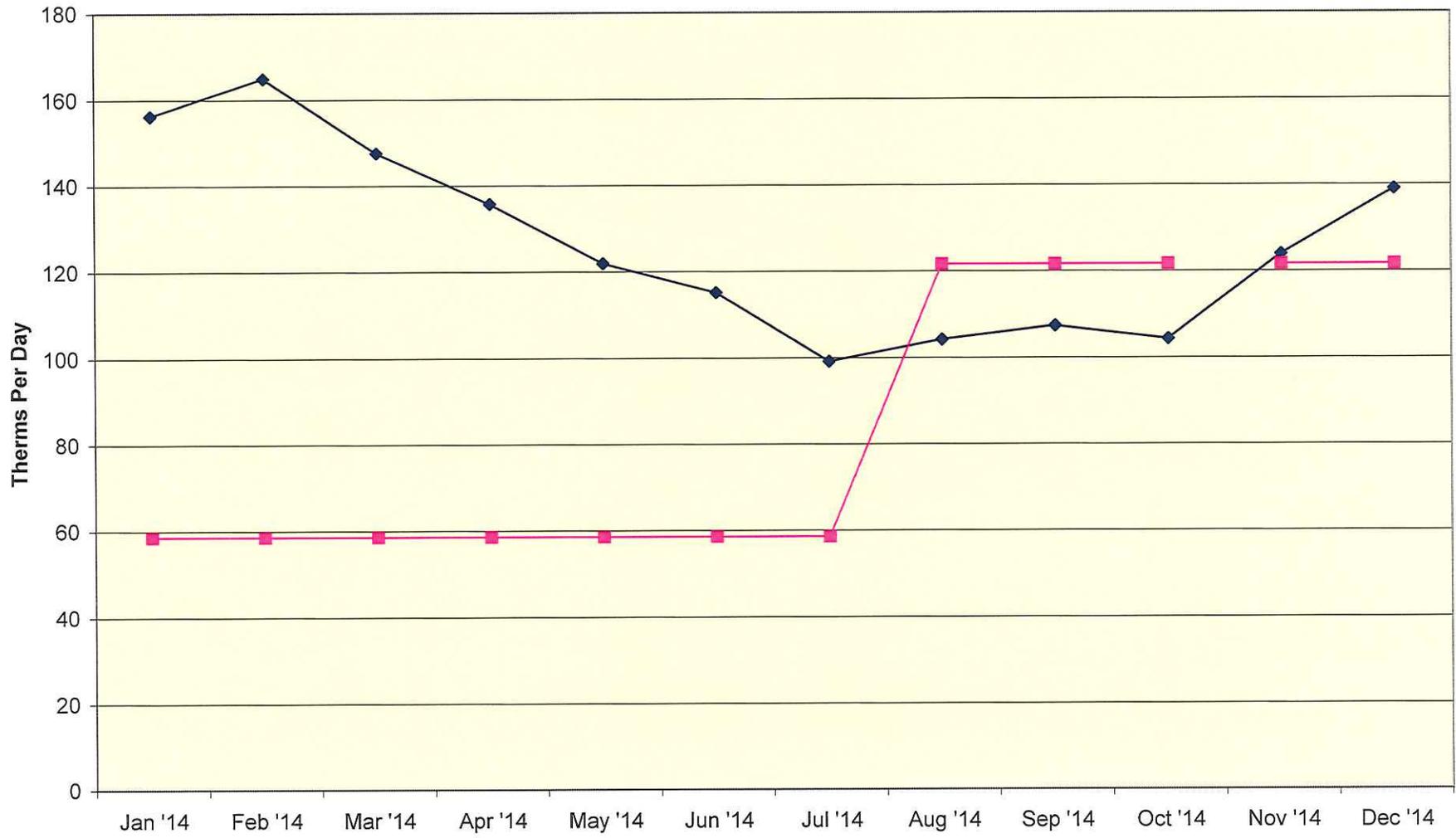
LIMITS - NPDES  
Fecal 140 mpn monthly median  
Fecal 430 mpn 90th percentile 30 day

90th % ile 30 day med



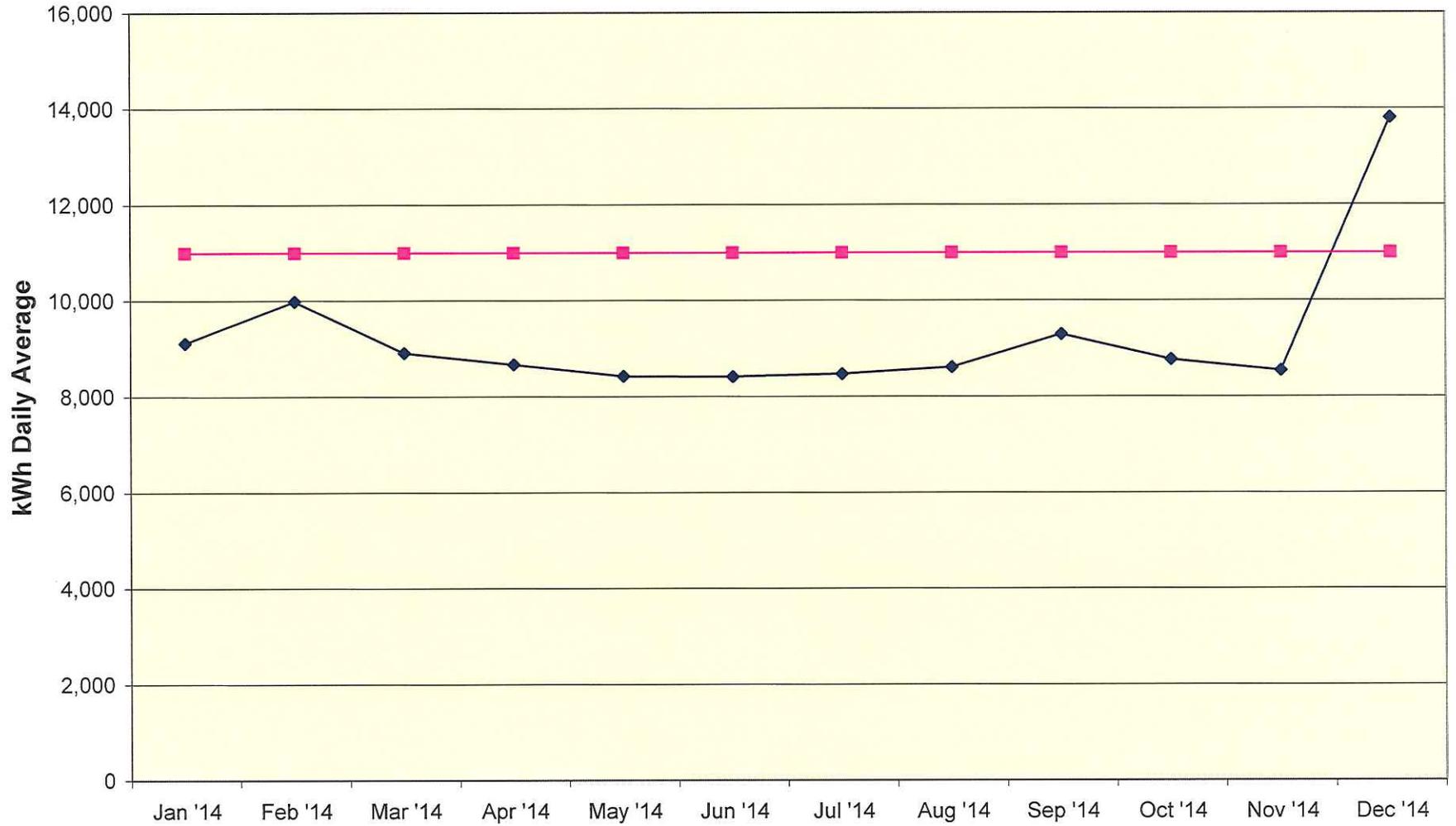
### Natural Gas Use

◆ Natural Gas    ■ Cap



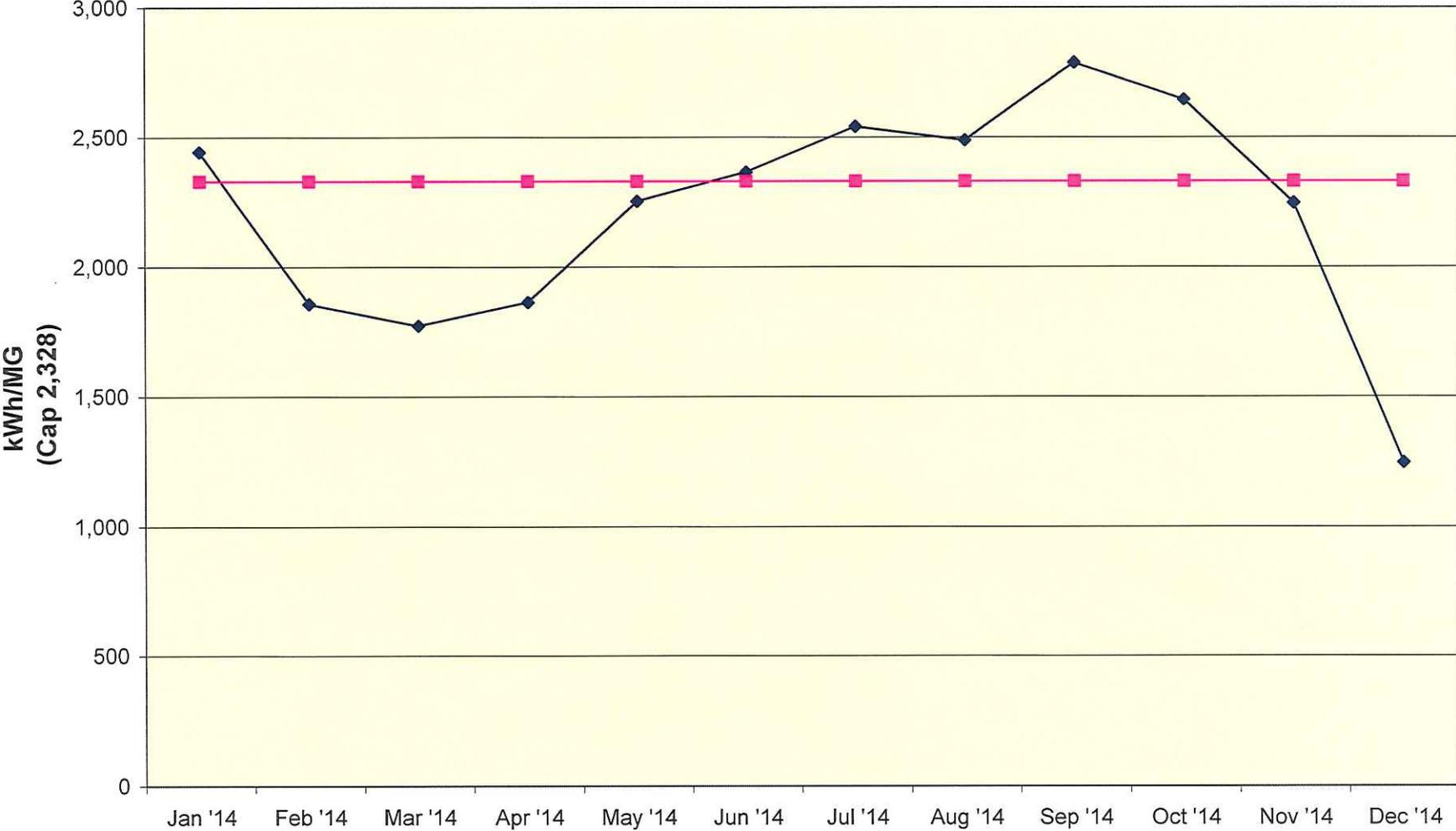
# Energy kWh

◆ kWh ■ Cap

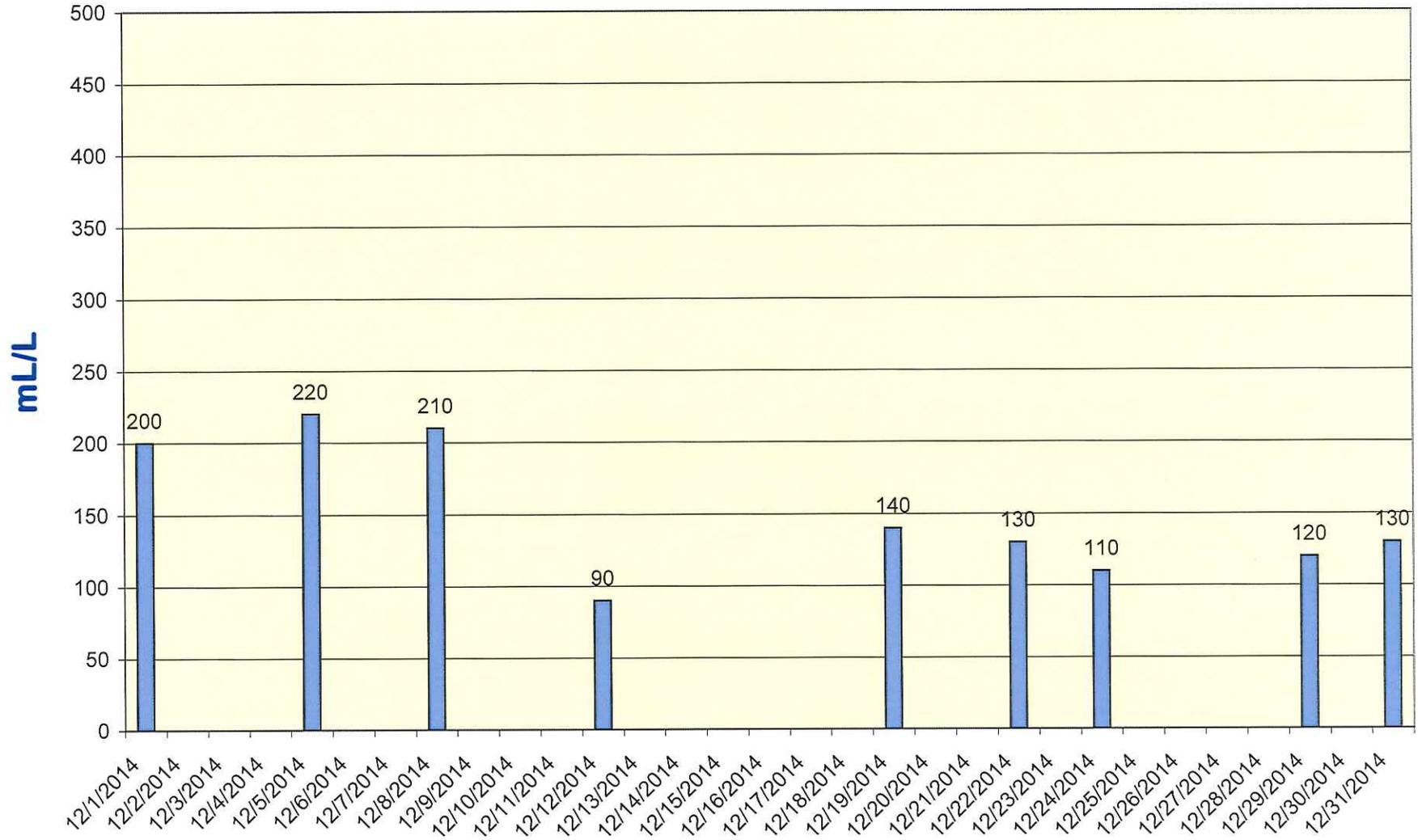


# Energy kWh/MG

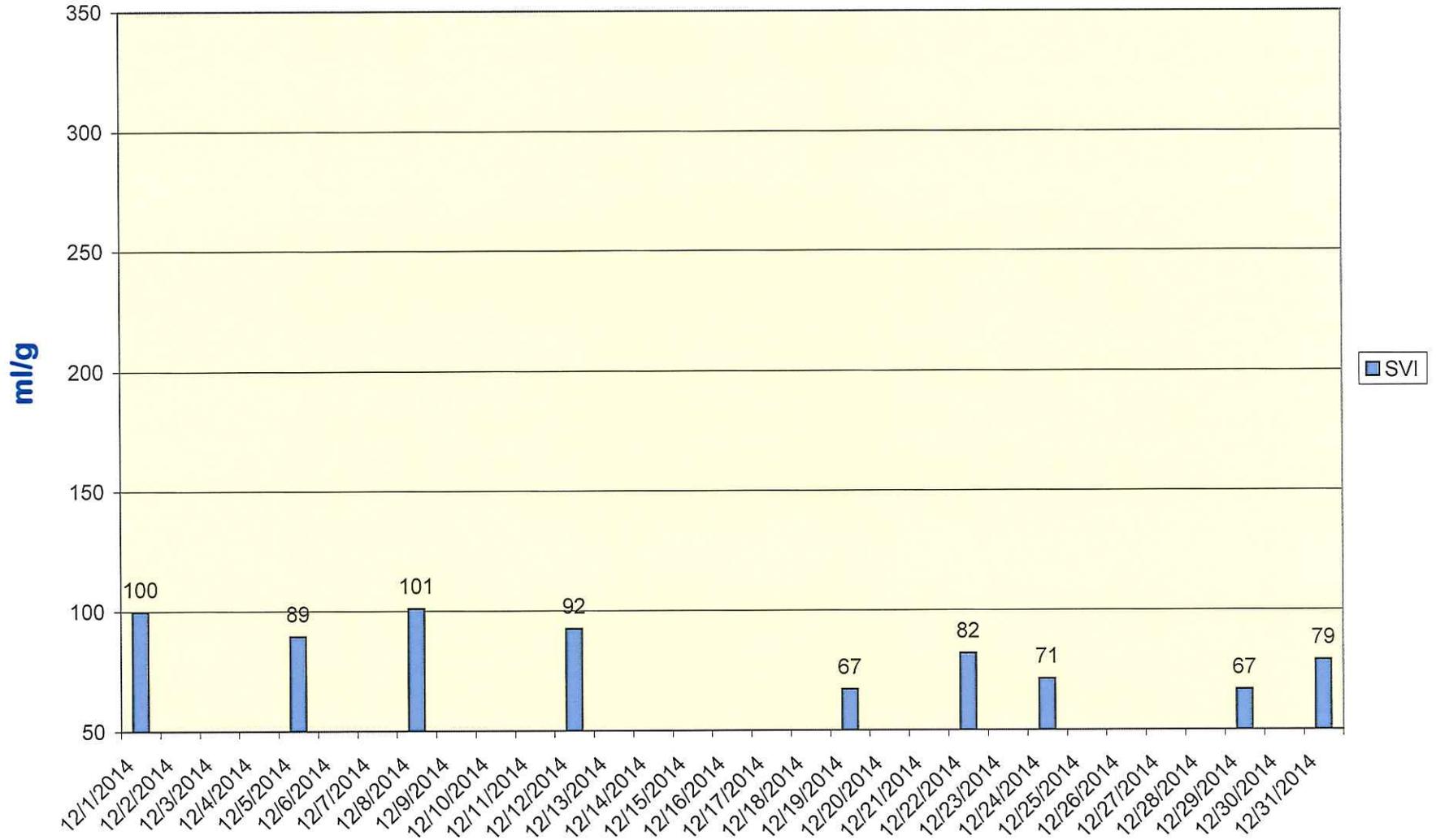
—◆— kWh/MG    —■— Cap



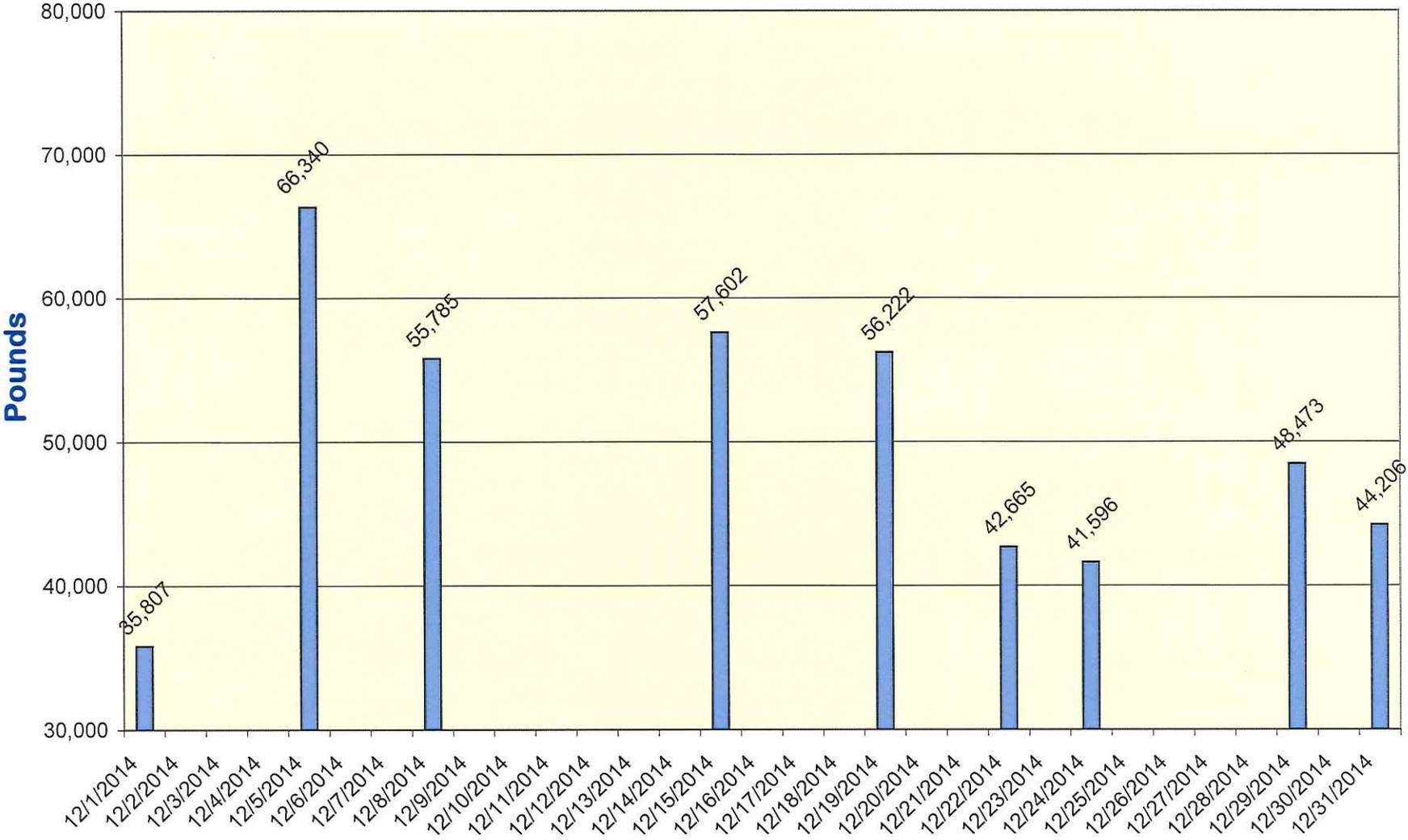
# Settleability



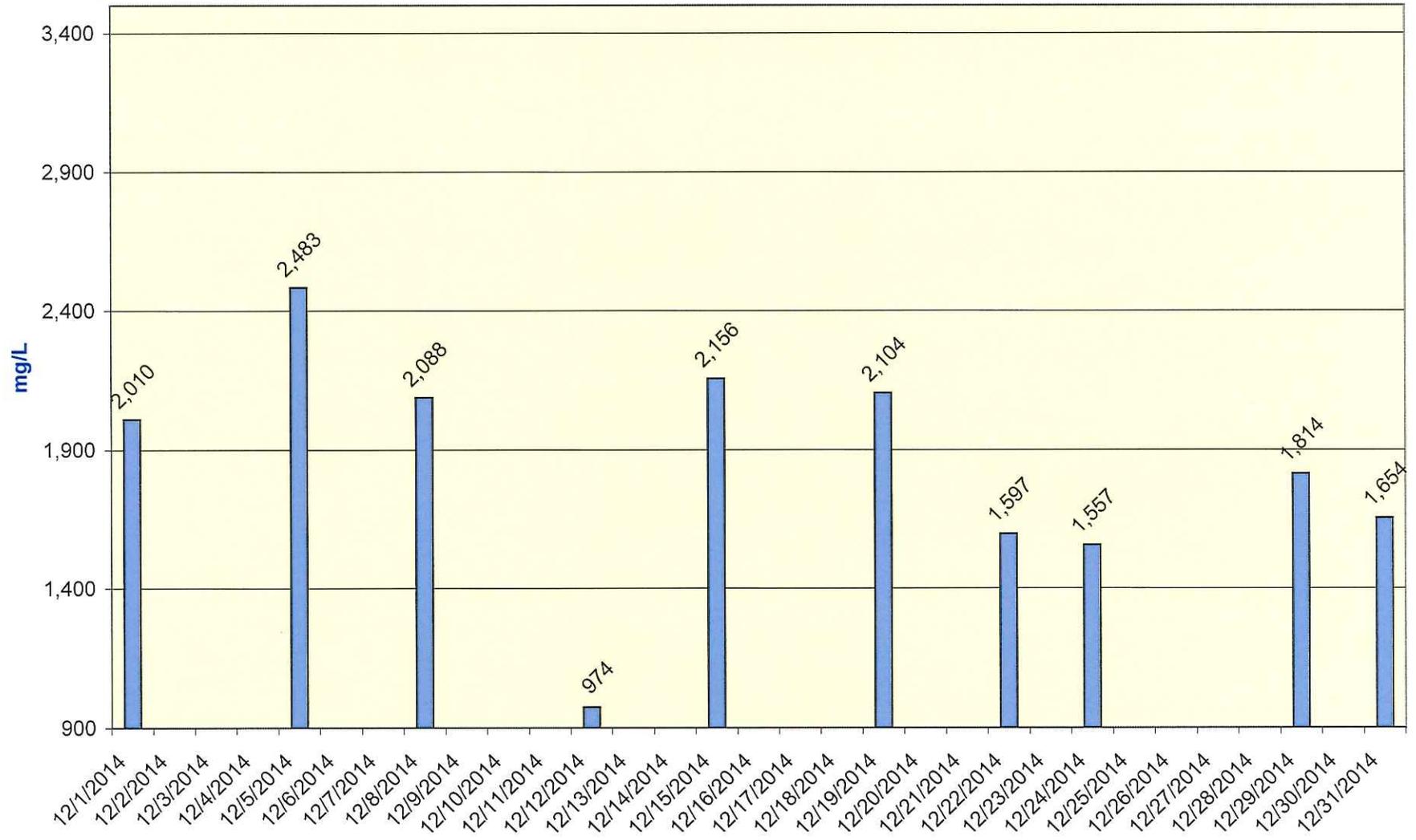
# Sludge Volume Index



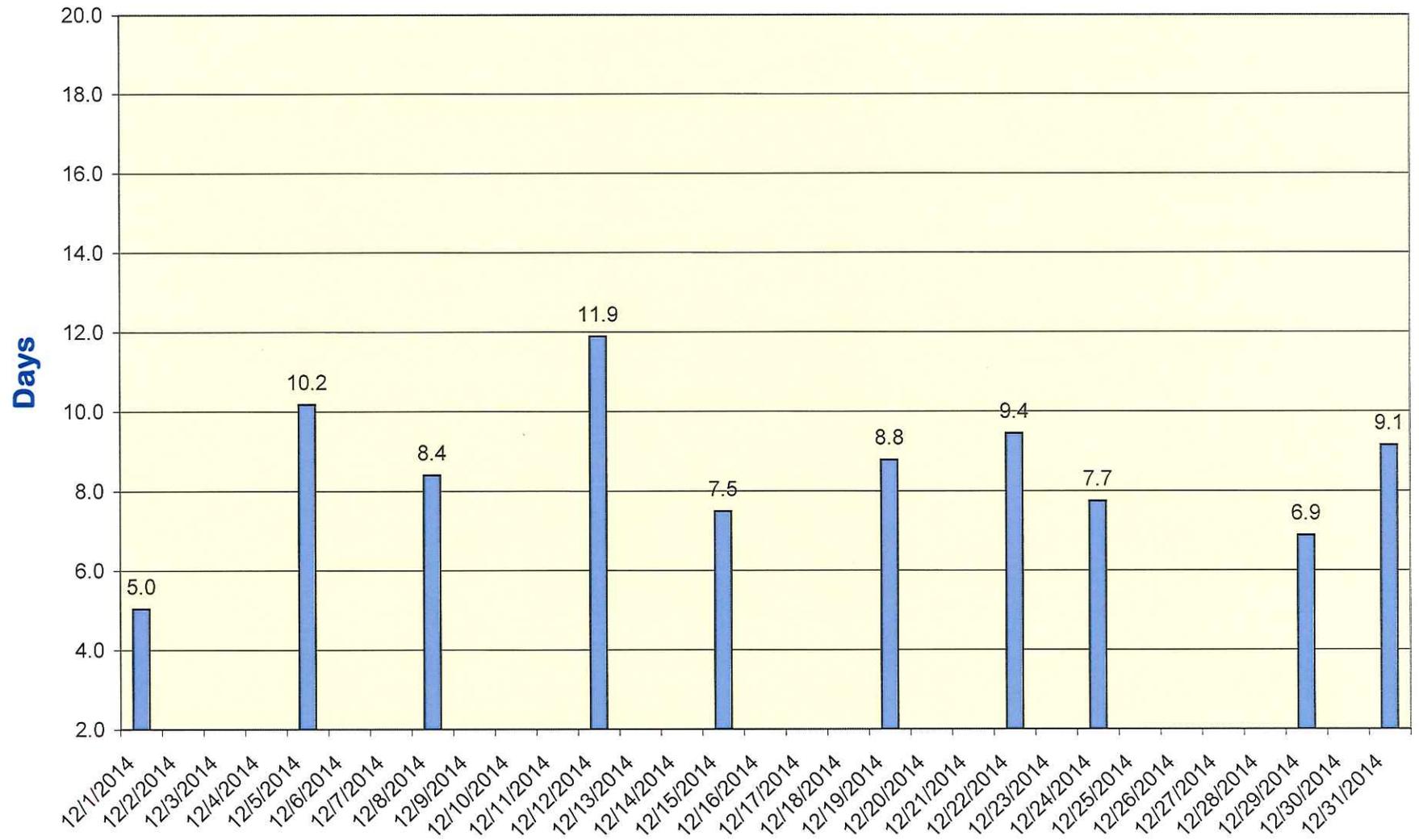
# MLSS Inventory



### MLSS Concentration



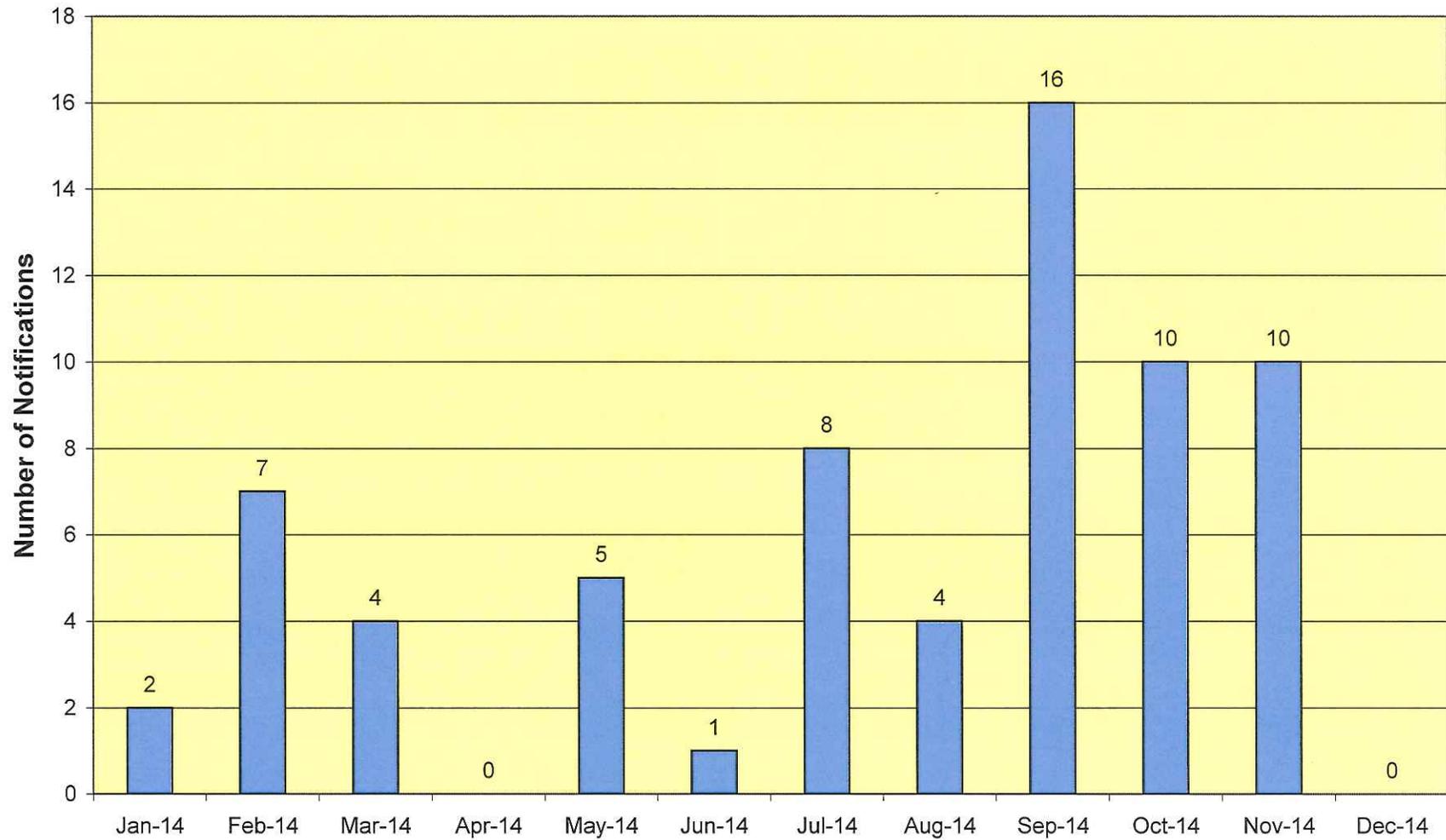
## Mean Cell Residence Time

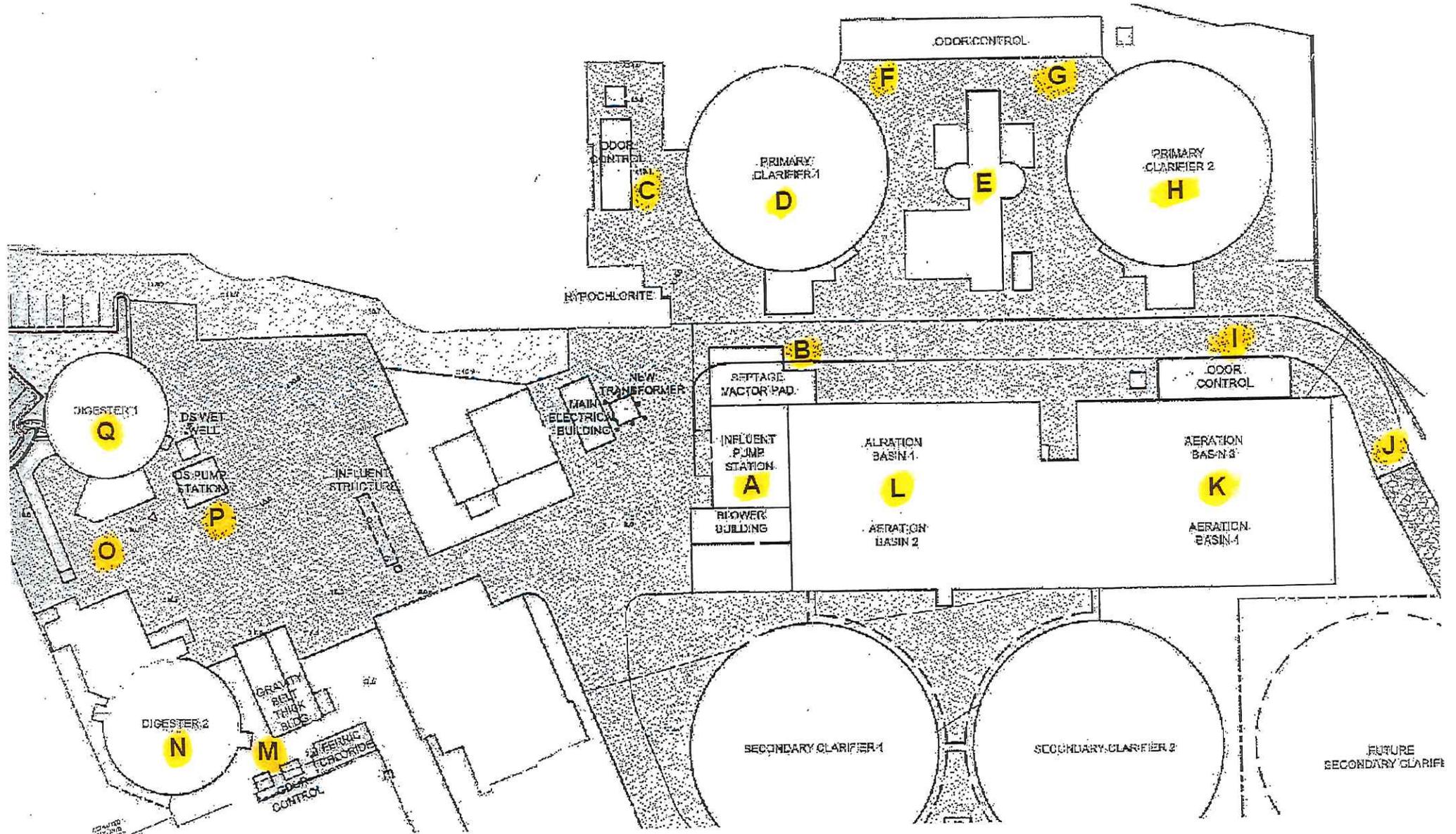


## Process Control Data

	Influent Flow	Settleability	MLSS Concentration	MLSS Inventory	F:M Ratio	MCRT	SVI
12/1/2014	5.59	200	2,010	35,807		5.0	100
12/2/2014	13.84						
12/3/2014	17.24						
12/4/2014	10.92						
12/5/2014	10.70	220	2,483	66,340	0.14	10.2	89
12/6/2014	9.52						
12/7/2014	7.62						
12/8/2014	6.30	210	2,088	55,785		8.4	101
12/9/2014	5.87						
12/10/2014	11.99						
12/11/2014	28.04						
12/12/2014	18.19	90	974	26,027		11.9	92
12/13/2014	13.20						
12/14/2014	10.76						
12/15/2014	21.53		2,156	57,602		7.5	
12/16/2014	19.73						
12/17/2014	15.38						
12/18/2014	12.16						
12/19/2014	18.19	140	2,104	56,222		8.8	67
12/20/2014	12.32						
12/21/2014	10.22						
12/22/2014	8.61	130	1,597	42,665		9.4	82
12/23/2014	7.53						
12/24/2014	7.46	110	1,557	41,596		7.7	71
12/25/2014	6.57						
12/26/2014	6.43						
12/27/2014	6.02						
12/28/2014	6.05						
12/29/2014	5.23	120	1,814	48,473		6.9	67
12/30/2014	5.36						
12/31/2014	4.92	130	1,654	44,206		9.1	79
Minimum	4.92	90.00	974.00	26,027	0.14	5.0	67
Maximum	28.04	220	2,483	66,340	0.14	11.9	101
Total	333.21	1,220	16,781	430,517	0.14	75.8	670
Average	11.49	153	1,865	47,835	0.14	8.4	84

## Complaints / Contacts Received







8963

McClelland Dr

Lea Dr

R

S

T

U

W

V

© 2011 Google

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35°06'06" 80" N 122°33'07" 68" W elev 28 ft

Eye all 980 ft

Location	Time	Wind		Temp F°	H <sup>2</sup> S PPM	Notes
		MPH	Direction			
A: Influent Pump Station						
B: Septage Dumpster						
C: Primary Clarifier #1 Odor Bed						
D: Primary Clarifier #1						
E: Headworks						
F: Primary Clarifier #2 Odor Bed West						
G: Primary Clarifier #2 Odor Bed East						
H: Primary Clarifier #2						
I: Influent Odor Bed						
J: Behind Aeration Basins						
K: Between Aeration Basins #3 & #4						
L: Between Aeration basins #1 & #2						
M: Digester Odor Bed						
N: Digester #2						
O: Flare Stack						
P: Digested Sludge Transfer Pit						
Q: Digester #1						
R: McClelland						
S: Lea 1						
T: Lea 2						
U: Lea 3						
V: Lea 4						
W: Lea 5						
Other						
Primary Clarifier #1 Headspace						
Primary Clarifier #2 Headspace						

**These steps must be followed prior to using the Jerome meter:**

1. Zero the Jerome Meter. Press and hold the ZERO button. If a 0 appears on the screen, proceed to step 2. If an L appears on the screen, use the trim tool to turn the Zero Adjust knob clockwise until a 0 appears. If an H appears on the screen, use the trim tool to turn the Zero Adjust knob counter clockwise until a 0 appears.
2. Attach the Zero Air Filter to the Jerome Meter and press the SAMPLE button. The meter will take an air sample. The result of this sample should be below 0.003\* ppm.
3. Check this box to confirm that the Jerome Meter has been zeroed and that the result was below 0.003 ppm
4. The Jerome Meter can now be used by pressing the SAMPLE button to take H<sup>2</sup>S readings

**These steps must be followed at the end of the day when the Jerome Meter is no longer to be used:**

1. Plug the power cord into the back of the Jerome Meter. Make sure the power cord is plugged into an outlet.
2. If the small black sample tube is not already installed, install it now.
3. Press the REGEN button. The Jerome Meter will flash .H.H.H during the 10 minute regen cycle. **DO NOT INTERRUPT THIS PROCESS.** If the regen is successful, the display will read .0.0.0 when complete. If any error message is displayed, refer to page 24 - 26 of the manual.
4. Wait at least 30 minutes before zeroing and using the Jerome Meter after regen is complete.
3. Check this box to confirm that the regen has been performed.

\* Readings between 0.000 and 0.003 are considered 0.

**NOVATO SANITARY DISTRICT**  
**Wastewater Operations Committee Meeting**  
**Odor Control and Landscaping Report**  
**December 2014**

**1.0 Background**

The District continues to work on odor control and landscaping, specifically at the fence-line area next to the Lea Drive neighborhood, and at the northeast portion of the Novato Treatment Plant (NTP) site. As mentioned in prior reports, the District has already invested significant amounts beyond the substantial investment for odor control and landscaping from the original WWTP Upgrade Project. These additional costs have included operational changes, measures related to further odor control measures, noise abatement, visual screening, wind shielding, and daily monitoring.

**2.0 Odor control**

Odor control activities in December were limited primarily due to the weather, with heavy storms hitting the area. As mentioned in last month's report, the media in the large odor control bed between primary clarifiers #1 & #2 was topped off in November and appears to be performing satisfactorily.

Operations staff continues to work on tweaking the air flow input to the converted anoxic zones in the aeration basins, based on the prior testing by Dave McEwen of Brown and Caldwell (B&C), the District's odor consultant. The concept is to achieve optimum operating range(s) where odor causing compounds can be oxidized.

Also, another of Mr. McEwen's odor control recommendations, i.e. adding an oxidizing agent, sodium hypochlorite, to the influent flow continues as needed. While the results are good anecdotally, staff continues to monitor performance.

**3.0 Landscaping**

Landscaping activity was light in December, primarily due to the heavy storms that hit the area. Staff continues to work with the District's landscaping contractor Cagwin and Dorward (C&D) on vegetation at the District's fence-line on Lea Drive and at the northeast corner area of the NTP. Staff solicited bids to relocate the redwood trees in planter boxes along the eastern fence line of the plant site to the northeast corner of the plant site. Depending on weather, the redwood re-plantings will occur in January or early February.

\*\*\*\*\*

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

**1.0 General:**

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

- 1.6 FTE field workers for Sewer Maintenance (main line cleaning)
- 1.1 FTE field workers for Pump Station Maintenance
- 0.1 FTE field workers for Closed Circuit Television (CCTV) work
- 2.0 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
- 2.2 FTE field workers Vacation/Sick Leave/Holiday

**2.0 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 357 work orders were generated for December by the ICOM3 Computerized Maintenance Management System (CMMS). Staff completed 330 work orders leaving 27 work orders outstanding. The 330 maintenance work orders completed in December resulted in 64,110 feet of sewer pipelines cleaned by staff. Of the 27 outstanding work orders, 23 are work orders for rodding. Outside contractors also cleaned 1,088 feet of trunk sewer main line during the month.

For rodding work orders in easement areas, the crew inspected 19 line segments (2,759 feet) using the push camera in lieu of hand rodding, a more efficient, effective and less labor intensive method to insure that the sewer main is clear. The new rodding machine was out of service because of minor mechanical and electrical issues. The outstanding rodding work orders will be completed in January.

CCTV Performance:

The District's CCTV van was in the field for 2 working days, inspecting 12 line segments totaling 2,329 feet. Staff also televised 2,759 feet using the Push Cam. Outside contractors televised 1,088 feet of trunk sewer main line during the month.

CCTV production was low this month due to two major storm events impacting the Novato area during December, necessitating a significant time commitment of District staff to respond to storm related issues, as well as staff availability for this maintenance activity.

**Novato Sanitary District  
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Collection System Operations Report  
December 2014**

CCTV Findings:

- Infrastructure related: The December CCTV work found one area (at 397 Midway Blvd) that will require repair; the inspection found an offset joint impacted with roots. This location was inspected by CCTV in response to an overflow on December 25<sup>th</sup>.
- O&M related: The December CCTV work did not identify any areas that require a change in sewer line operations.

**3.0 Pump Station Maintenance:**

The Collection System Department conducted 289 lift station inspections this month. 134 of the inspection visits were generated through the District's JobsCal Plus CMMS system. There are 7 outstanding work orders for the month that will be completed in January.

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

**4.0 Air Relief/Vacuum Valves (ARVs):**

Staff completed maintenance inspections on 5 air relief/vacuum valves.

**5.0 Safety and Training:**

General: Collection System staff attended five safety tailgate meetings.

Specialized training: There was no specialized training conducted during the month of December

Safety performance: There were no lost time accidents this month for a total of 1,387 accident free days since the last lost time accident.

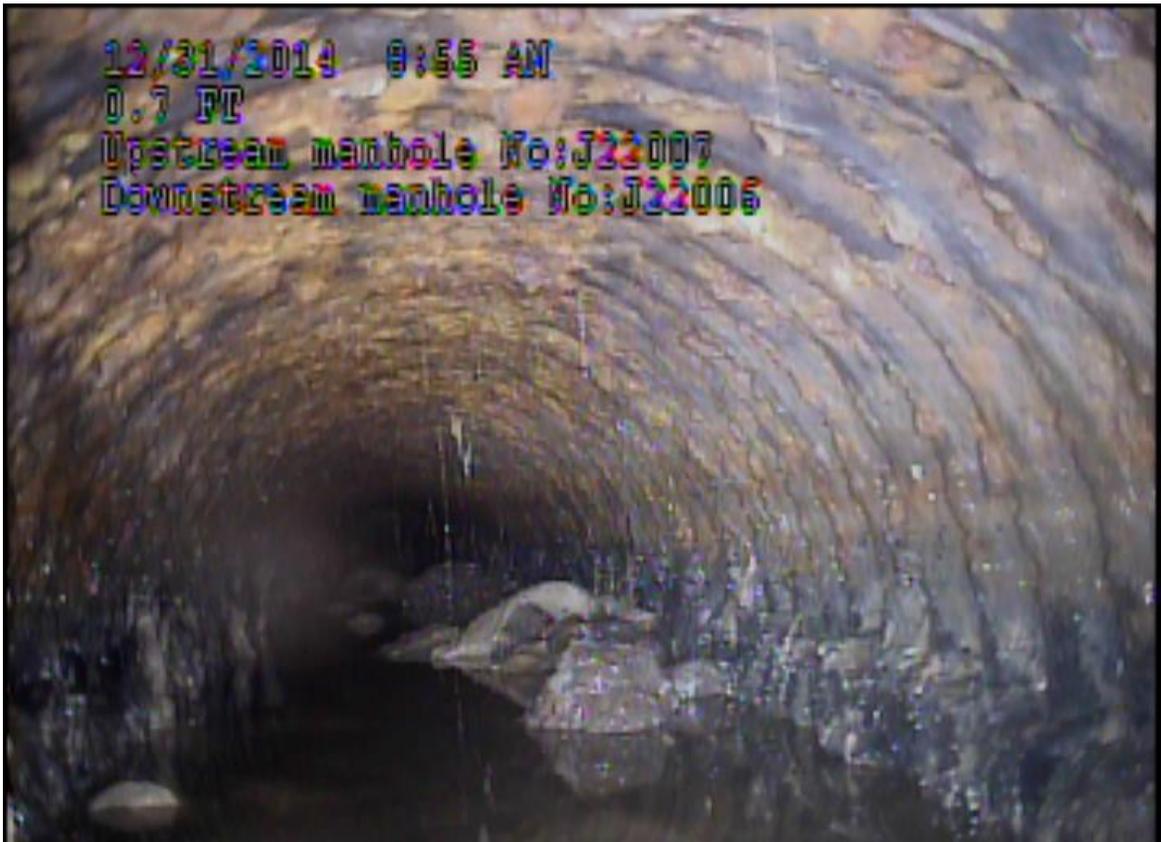
**6.0 Collection System Minor Projects:**

The District completed several repair projects under the informal contract provisions of the Uniform Public Construction Cost Accounting Act (UPCCAA), as follows:

- Replaced 199 ft of 6-inch sewer main across Redwood Blvd. at Hill Road.
- Replaced a manhole cover at 24 San Luis Ct.
- Replaced rod inlet casting & cover at 7530 Redwood Blvd.
- Replaced concrete collar around manhole frame at 6 Paradise Ct.
- Replaced concrete collar around manhole frame at 1636 Ignacio Blvd.
- Raised manhole along Vineyard Creek near 829 Wilmac Ave.

**Novato Sanitary District  
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On December 26<sup>th</sup> the District received a call reporting a sinkhole at the rear of 55 Frosty Lane. District staff inspected the site and determined that it was in close proximity to the District's 21" trunk sewer serving the Ignacio area to the south. Staff also discovered that the trunk sewer was constructed of corrugated metal pipe (CMP). The District contracted with Roy's Sewer Service to inspect the line by video camera without cleaning the line because cleaning may damage the CMP. The initial attempt to inspect the line by video camera was unsuccessful because the trunk sewer was full of rock and other debris (Figure 1), probably from the sinkhole. Due to the fact the sinkhole was in close proximity to the trunk sewer and the trunk sewer was full of rock and debris staff scheduled an exploratory excavation and repair, if necessary, of the trunk sewer during the first week of January. More details will be forthcoming in the January Collection System Report.



**Figure 1 - Debris in Trunk Sewer, rear of 55 Frosty Lane**

**7.0 Standard Operating Procedures (SOPs):**

Department staff did not generate any SOPs during the month of December.

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

**8.0 Sanitary Sewer Overflows (SSOs):**

In December, there were six (6) SSO's:

<b>No.</b>	<b>Date</b>	<b>Location</b>	<b>Amount, gal</b>	<b>Cause/Probable Cause</b>
1.	12/3/2014	Center Rd and Celeste Ct	5,330	Combined effect of storm event, and NMWD discharge from Stafford Lake Water Plant
2.	12/3/2014	2013-2015 Feliz Rd.	26,250	Root/wipes ball blockage, exacerbated by storm event
3.	12/3/2014	3000 Topaz Dr.	560	Loss of pumping capability from a battery backup unit failure.
4.	12/11/2014	2013-2015 Feliz Rd.	1,832	Storm event ("Decadal" storm)
5.	12/11/2014	294 Sunset Pkwy.	355	Storm event ("Decadal" storm)
6.	12/25/2014	397 Midway Dr.	528	Roots/wipes blockage

1. SSO at Center Rd. and Celeste Ct: This SSO was deemed to be a Category I event with the estimated discharge volume of approximately 5,330 gallons going into the gutter pan, into a storm drain system, and potentially to Novato Creek. There was partial recovery (28%) for this discharge as District staff vacuumed up discharge water from the gutter pan during the course of the overflow.

The likely cause of this discharge was infiltration/Inflow (I&I) caused by severe storm conditions, and exacerbated by process waste discharge from the North Marin Water District (NMWD) Stafford Lake Water Treatment Plant into the Center Road sewer. Subsequent to the event, the District was informed that NMWD had discharged approximately 39,000 gallons over a seven hour period from 12 midnight to 7:00am of December 3, 2015.

In summary, staff estimates that 5,330 gallons discharged from five manholes (from about 5:50 AM to 8:20 AM), of which 1,500 gallons was recovered on site, for a total of 3,830 gallons lost.

CalEMA was notified of this event on December 3, 2014 at 8:22 AM (Control No. 14-6853) and Marin County Environmental Health Services (EHS) was notified at 8:39 AM, meeting the two hour reporting requirements for this event.

As part of the standard protocol for overflow events, staff checked the records of the ICOMM CMMS Program to determine when the last time the sewer mains were cleaned and the frequency of the cleaning. These line segments were last cleaned on February 2, 2014 and are on a 12 month schedule. These line segments were also root treated in June 2013. Staff determined that no change in cleaning frequency was necessary. The protocol for NMWD discharge into this main line, specifically prior to known storm events, will be reviewed with NMWD.

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This event was reported into the CIWQS database on December 3, 2014 as a Category I event, SSO Event ID # 811176 and was certified in CIWQS on December 16, 2014, Certification ID # 828425.

2. SSO at 2013-2015 Feliz Rd: This SSO was deemed to be a Category I event with an estimated discharge volume of approximately 26,250 gallons going into the gutter pan, the ground, the storm drain system, and potentially to Novato Creek from three discharge points: two lateral cleanouts and one manhole. Due to the severe storm event, no recovery was possible.

The likely cause of this overflow was a major root/wipes ball blockage downstream from the discharge location, exacerbated by I&I due to areal flooding from a severe storm event. Photos of the root/wipe ball are provided below for illustrative purposes.



Figure 2: Manhole outlet blocked by Root/Wipes ball



Figure 3: Root/Wipes ball removed from Manhole.



Figure 4: Root ball.

**Novato Sanitary District  
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CalEMA was notified of this event on December 3, 2014 at 10:01 and Marin County Environmental Health Services (EHS) was notified at approximately the same time, meeting the two hour reporting requirements for this event.

Armando Alegria, EHS, directed District staff to place Public Notification signs around the affected area on Novato Creek, but no water quality sampling was required. The signs were posted along Novato Creek on December 3, 2014 in the afternoon.

This event was reported into the CIWQS database on December 5, 2014 as a Category I event, SSO Event ID # 811248 and was certified in CIWQS on December 17, 2014, Certification ID # 470292.

3. SSO at 3000 Topaz Dr.: This SSO was deemed to be a Category I event with the estimated discharge volume of approximately 560 gallons going to open ground and potentially the Bahia Marsh area from two manholes. Due to the severe storm event, no recovery was possible.

This discharge was caused by the failure of a battery backup unit in the Bahia Pump Station No. 4 Control Panel, which resulted in a loss of pumping capability. This issue has been subsequently addressed, initially by replacing the battery unit with a new unit, and then reconfiguring the control system to preclude this type of failure.

CalEMA was notified of this event on December 3, 2014 at 11:59 and Marin County Environmental Health Services (EHS) was notified at approximately the same time, meeting the two hour reporting requirements for this event.

Armando Alegria, EHS, directed District staff to place Public Notification signs around the affected area but no water quality sampling was required.

This event was conservatively deemed to be a Category I event due to the potential for the discharge to have reached the Bahia Marsh area from the ongoing severe storm event.

This event was reported into the CIWQS database on December 5, 2014 as a Category I event, SSO Event ID # 811253 and was certified in CIWQS on December 16, 2014, Certification ID # 560170.

4. SSO at 2013-2015 Feliz Rd: This SSO was deemed to be a Category I event with the estimated discharge volume of approximately 1,832 gallons going into the gutter pan, the storm drain system, and potentially to Novato Creek from three discharge points; two lateral cleanouts and one manhole. Approximately 500 gallons of discharge waters were recovered during the course of the response to this event.

**Novato Sanitary District  
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The cause of this overflow was likely the result of I&I from areal flooding caused by the severe storm event (“Decadal” storm event) of 12/11/14). Regardless, staff will be reviewing the tributary area to this sub-system for potential improvements.

CalEMA was notified of this event on December 11, 2014 at 08:19 and Marin County Environmental Health Services (EHS) was notified at approximately the same time, meeting the two hour reporting requirements for this event.

Armando Alegria of EHS directed District staff to place Public Notification signs around the affected area on Novato Creek, but no water quality sampling was required. The signs posted from the December 3, 2014 event were left in place along Novato Creek in response to his request.

This event was deemed to be a Category I event since the discharge exceeded 1,000 gallons and reached a separate storm drain that eventually drains into Novato Creek. Further investigation during the event found the downstream main lines surcharged from Simmons Rd. and Feliz Rd., down Virginia Ave. to Novato Blvd from I&I in the system due to areal flooding and heavy, continuous rain from the “decadal” storm event. Therefore, it was concluded that by-pass pumping would not be an effective option to mitigate this discharge.

This event was reported into the CIWQS database on December 16, 2014 as a Category I event, SSO Event ID # 811500 and was certified in CIWQS on December 20, 2014, Certification ID # 969085.

5. SSO at 294 Sunset Pkwy: This SSO was deemed to be a Category I event with the estimated discharge volume of approximately 355 gallons going into a drainage ditch and then potentially into Lynnwood Slough. Due to the severe storm event (“decadal” event) and location of this discharge, no recovery was possible.

CAL EMA was notified of this event on December 11, 2014 at 09:09 and Marin County Environmental Health Services (EHS) was notified at approximately 08:30, meeting the two hour reporting requirements for this event.

Staff concluded that the likely cause of this overflow was I&I from areal flooding due to the severe storm (“decadal” storm event) of 12/11/14.

The line segments tributary to this lateral were last cleaned on schedule in November, 2014 using a hydro-flusher and these line segments are on a three (3) month cleaning frequency. No change in scheduled maintenance will be made as a result of this discharge.

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

This event was reported into the CIWQS database on December 16, 2014 as a Category I event, SSO Event ID # 811498 and was certified in CIWQS on December 20, 2014, Certification ID # 103081.

6. SSO at 397 Midway Blvd: This SSO was deemed to be a Category I event with the estimated discharge volume of approximately 528 gallons going into the gutter pan, storm drain system, and potentially Lynnwood Slough. Approximately 22 gallons of discharge waters were recovered during the course of this response.

This event was deemed to be a Category I event as the initial overflow amount calculated exceeded 1,000 gallons and the overflow potentially reached Lynnwood Slough.

CalEMA was notified of this event on December 25, 2014 at 1:58 PM (Control No. 14-7396) and Rebecca Ng of the Marin County Environmental Health Services (EHS) was notified at 2:04 PM, meeting the two hour reporting requirements for this event. Ms. Ng directed staff to post the location where the storm drain enters Lynnwood Slough and no sampling will be required.

As part of the standard protocol for overflow events, staff checked the records of the ICOMM CMMS Program to determine when the last time the sewer main was cleaned and the frequency of the cleaning. This line segment was last cleaned on June 17, 2014 and the segment is on a 12 month schedule. This line segment has been moved to a six month cleaning schedule.

This line segment was inspected by CCTV on December 29, 2014 and the inspection showed medium roots at a joint 89 feet upstream from the downstream manhole. The camera could not get beyond 90 feet due to an offset joint in the sewer main. The offset joint has been prioritized and will be scheduled for repair in the near future.

This event was reported into the CIWQS database on December 25, 2014 as a Category I event, SSO Event ID # 811763 and was certified in CIWQS on January 6, 2015, Certification ID # 711135.

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

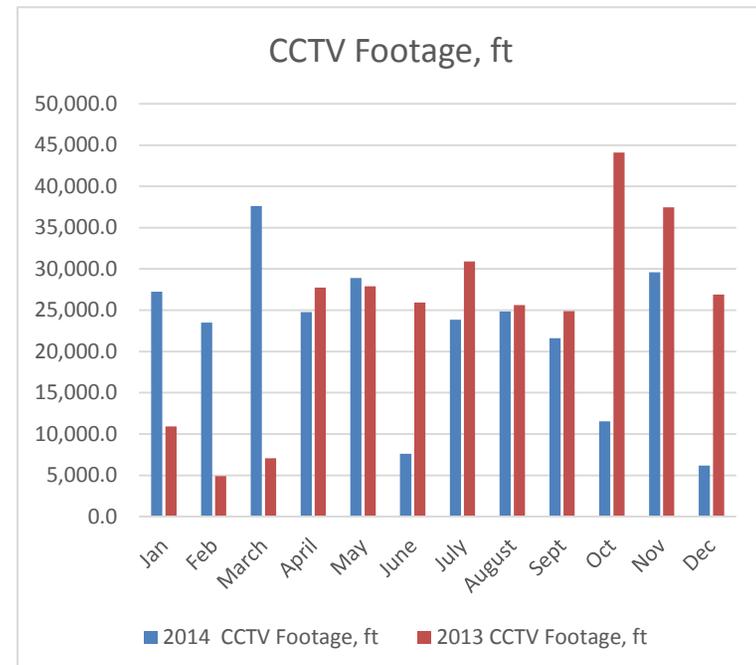
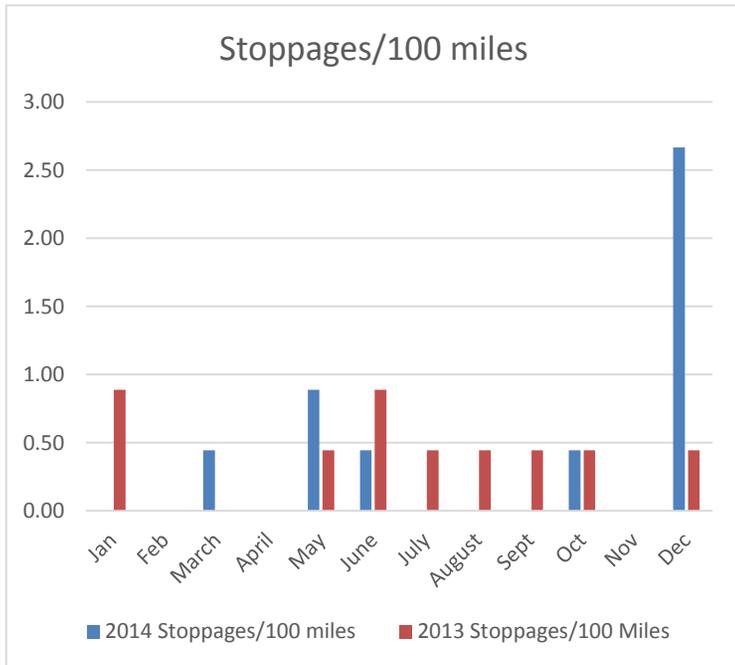
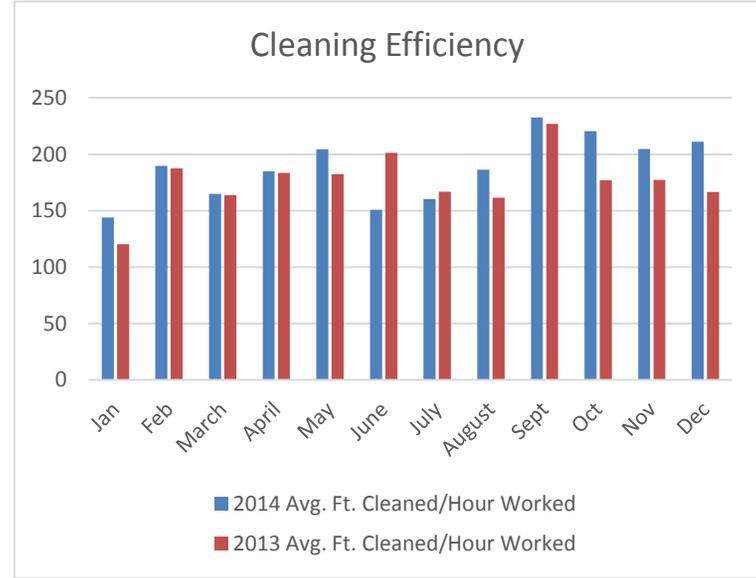
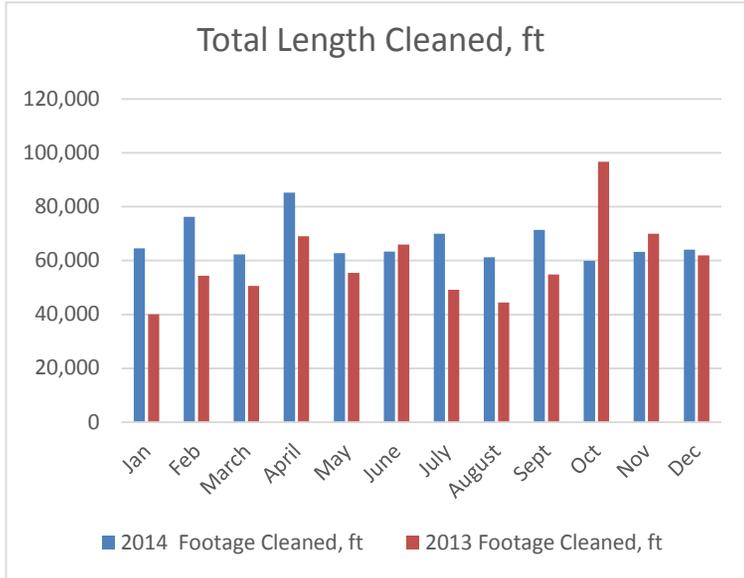
	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Total Year to Date	Average Year to Date
<b>A. Employee Hours Worked</b>														
Number of FTEs (main line cleaning), hrs.	2.6	2.5	2.2	2.6	1.8	2.5	2.3	2.0	1.7	1.5	1.9	1.6	NA	2.1
Number of FTEs (other)	1.7	1.6	2.1	1.8	1.7	2.1	1.9	1.8	1.7	2.1	1.6	2.0	NA	1.9
Number of FTEs (CCTV)	0.9	0.8	1.0	0.8	0.9	0.2	0.3	0.9	0.6	0.6	0.3	0.1	NA	0.6
Total, FTEs	5.2	4.9	5.3	5.1	4.4	4.8	4.6	4.7	4.0	4.2	3.8	3.7	NA	4.6
Regular Time Worked, (main line cleaning), hrs	448	402	378	461	308	420	436	329	307	272	309	304		
Regular Time Worked on Other, hrs (1)	294	262	350	313	297	362	358	298	303	391	258	379		
Regular Time Worked on CCTV (2)	158	125	172	136	164	38	63	145	110	103	48	13		
Total Regular time, worked, hrs	900	789	900	909	768	820	857	772	720	766	615	696	9,510	793
Total Vacation/Sick Leave/Holiday, hrs	285	151	101	143	220	195	198	126	294	284	389	415	2,801	233
Vacation/Sick Leave/Holiday, FTEs	1.6	0.9	0.6	0.8	1.3	1.2	1.1	0.8	1.7	1.6	2.4	2.2	16.1	1.3
Overtime Worked on Coll. Sys., hrs	2	8	3	15	0	3	17	1	5	7	10	1	72	6
Overtime Worked on Other, hrs (1)	22	17	16	31	35	26	15	17	27	17	30	86	338	28
Overtime Worked on CCTV (2)	0	0	0	3	0	0	4	0	0	1	0	0	8	1
Total Overtime , hrs	24	25	19	49	35	29	36	18	32	25	39	87	417	35
<b>B. Productivity</b>														
<b>1. Line Cleaning</b>														
Rodder Work Orders generated	57	30	24	78	20	72	73	68	29	69	100	84	704	59
Rodder 3203 ft. cleaned	10,989	3,337	6,378	11,933	1,388	12,770	9,286	6,005	289	461	3,989	10,736	77,561	6,463
Rodder - outside services, ft cleaned	0	0	0	0	0	0	0	0	3,494	3,720	0	0	7,214	601
Flusher Work Orders generated	351	352	369	532	313	308	333	288	450	525	375	273	4,469	372
Truck 3205V ft. cleaned	16,187	16,552	18,158	802	13,575	9,410	17,136	3,441	16,834	205	2,262	1,948	116,510	9,709
Truck 3206V ft. cleaned	37,342	56,332	37,781	72,511	47,863	41,143	43,561	51,825	54,306	59,316	57,028	51,426	610,434	50,870
Flusher - outside services, ft. cleaned	2,301	1,570	6,492	11,155	0	0	7,216	1,717	8,585	0	22,606	1,088	62,730	
Total Footage cleaned(3)	64,518	76,221	62,317	85,246	62,826	63,323	69,983	61,271	71,429	59,982	63,279	64,110	804,505	67,042
Work Orders completed	408	361	393	580	313	348	371	292	431	382	383	330	4,592	383
Work Orders backlog	66	21	0	30	20	32	35	64	48	212	92	27	647	54
<b>2. Closed Circuit Television (CCTV)</b>														
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	19,331	27,555	5,560	11,827	19,137	12,090	11,282	5,636	2,329	192,281	16,023
CCTV (hand cam), ft. videoed	449	0	0	5,428	1,340	2,056	4,802	3,983	946	268	1,368	2,759	23,399	
CCTV Inspection - outside services, ft. videoed	2,301	1,570	6,492	0	0	0	7,216	1,717	8,585	0	22,606	1,088	51,575	
Total CCTV footage(3)	27,237	23,501	37,608	24,759	28,895	7,616	23,845	24,837	21,621	11,550	29,610	6,176	267,255	
<b>C. Sanitary Sewer Overflows (SSOs)</b>														
Minor (Category III)	0	0	0	0	2	1	0	0	0	1	0	6	11	NA
Major (Category II)	0	0	0	0	0	0	0	0	0	0	0	0	4	NA
Major (Category I)	0	0	1	0	0	0	0	0	0	0	0	6	0	NA
Overflow Gallons	0	0	180	0	50	235	0	0	0	5	0	34,855	35,325	NA
Volume Recovered	0	0	0	0	50	235	0	0	0	5	0	2,022	2,312	NA
Percent Recovered	NA	NA	0%	NA	100%	100%	NA	NA	NA	100%	NA	6%	7%	NA
<b>D. Service Calls (non-SSO related)</b>														
Service calls, normal hours, #	8	3	5	4	4	3	6	9	5	7	7	11	72	6
Normal hours S.C. response time, mins (avg.)	38	19	25	18	14	16	15	16	20	20	23	24	248	21
Service Callouts, after hours, #	0	1	1	1	1	1	3	1	0	0	0	1	10	1
After Hours S.C. response time, mins (avg.)	0	15	40	42	13	25	34	10	0	0	0	45	224	19
<b>E. Benchmarks</b>														
Average Ft. Cleaned/Hour Worked	144	190	165	185	204	151	161	186	233	221	205	211	NA	188
Total Stoppages/100 Miles	0.0	0.0	0.4	0.0	0.9	0.4	0.0	0.0	0.0	0.4	0.0	2.7	4.8	NA
Average spill response time (mins)	0	0	18	0	39	14	0	0	0	0	0	23	NA	8
Callouts/100 Miles	0.0	0.4	0.4	0.4	0.4	0.4	1.3	0.4	0.0	0.0	0.0	0.4	4.3	0.4
Overtime hours/100 Miles	1	4	1	7	0	1	8	0	2	3	4	0	31.78	3
Overflow Gallons/100 Miles	0	0	78	0	22	102	0	0	0	2	0	15,154	15,359	1280

(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



Novato Sanitary District

Pump Station Monthly Report For December 2014 (as of December 31, 2014)

	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Total Year to Date	Average Year to Date
<b>Employee Hours Worked</b>	248	212	205	226	251	190	334	304	258	255	163	240	2,885	
Number of Employees (FTEs)	1.4	1.1	1.1	1.1	1.3	1.0	1.4	1.5	1.3	1.3	0.7	1.1		1.2
Regular Time Worked on Pump Sta	231	181	183	194	229	169	255	250	232	230	117	199	2,469	
Overtime Worked on Pump Sta	17	31	22	32	22	22	79	54	26	26	46	41	416	
After Hours Callouts	1	5	1	5	6	1	11	7	6	4	4	9	60	
Average Callout response time (mins)	30	26	25	33	13	22	39	27	26	28	35	24	328	27
<b>Work Orders</b>														
Number generated in month	124	115	147	116	130	143	150	122	153	136	140	141	1617	135
Number closed in month	121	110	142	109	128	139	127	112	147	127	133	134	1529	127
Backlog	3	5	5	7	2	4	23	10	6	9	7	7	88	7

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

	<b>Open Work Orders Due Prior to 12/1/2014</b>	<b>Open Work Orders 12/1/2014 - 12/31/2014</b>	<b>Total Open Work Orders</b>
Preventive	7	134	141
Corrective	0	0	0
<b>Total</b>	<b>7</b>	<b>134</b>	<b>141</b>

	<b>Closed Work Orders 12/1/2014 - 12/31/2014</b>
Preventive	134
Corrective	0
<b>Total</b>	<b>134</b>

<b>Total Outstanding Work Orders as of 12/31/2014</b>	<b>7</b>
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# NOVATO SANITARY DISTRICT

## Wastewater Operations Committee Meeting

### Reclamation Facilities Report

#### December 2014

### 1.0 Summary:

The rancher completed moving all cattle off of Site 7 for the season. Two significant rain storms early this month affected all areas of the Reclamation Facilities. There were no irrigation or sludge handling activities this month

### 2.0 Ranch Operations:

All cattle were removed off of the Reclamation Facility during the first week of December. The rancher mowed thistles in a few parcels on Site 3.

### 3.0 Irrigation Parcels:

During the first two weeks of December Novato received heavy rains from two



significant storm events. Most of the parcels on all three Reclamation Sites were covered with rainwater (Figure 1). Sites 3 & 7 were mostly drained by the end of the month but Site 2 was still holding water due to poor drainage conditions in the ditches and culverts in the Caltrans right-of-way along Highway 37. Staff will inspect the ditches and culverts after the water subsides to see if there are any obvious problems. Flood Control areas to the east and west of Site 2 were also still flooded at the end of the

month. The Drainage Pump Stations pumped approximately 511 MG of rainwater in December and were still pumping at the end of the month.

In November, the District entered into an Agreement with Custom Tractor Service to complete the Phase 2 rehabilitation work on Site 2 on Parcels 2, 3, 6 & 7. Due to the extensive flooding on Site 2 it is highly unlikely this work will be completed this off-season. The contractor did not expend any efforts on the work before the rains.

As reported in November, Pump No. 2 at Drainage Pump Station No. 7 was pulled by an outside vendor for inspection and repair as necessary. The pump is ready to return to the site but the storm events and flooding prevented installation of the pump. As a result of the pump being out of the pump station, staff had to rent and install a large plug in the discharge piping because several king tides were high enough for tide water to enter the pump station through the discharge pipe (Figure 2).



**NOVATO SANITARY DISTRICT  
Wastewater Operations Committee Meeting  
Reclamation Facilities Report  
December 2014**

The contractor for the Drainage Pump Station Improvement Project, has received the majority of materials for the improvement work (including tide gates for the ends of the discharge lines) and is waiting for conditions to dry out around the Drainage Pump Stations so the materials can be installed.

**4.0 Irrigation Pump Station:**

There was no irrigation activity this month. The irrigation ponds received approximately 41 MG of rainwater this month.

**5.0 Sludge Handling & Disposal:**

There was no sludge handling activity this month. Approximately 24 inches of rainwater accumulated in the Dedicated Land Disposal Area this month due to the heavy rains.

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**Reclamation Facility - Monthly Statistics for Calendar Year 2014, as of December 2014**

	January	February	March	April	May	June	July	August	September	October	November	December	Total Year to Date	Annualized Monthly Average
<b>Irrigation Pump Station</b>														
Plant flow to ponds (MG)	0	59.39	0	0	0	90.36	103.36	89.67	89.11	0	0	0	431.9	35.99
Irrigation (MG)	17.87	0	7.0	0	15.57	65.36	63.45	88.19	37.77	59.7	0	0	354.9	29.58
Irrigation Pump 1 Hours	29.3	0	13.5	0	27.5	107.8	106.8	127.4	77.2	158.7	0	0	648.2	54.02
Irrigation Pump 2 Hours	0	0	2.9	0	35.3	106.6	103.8	126.7	84.4	561.1	0	0	1,020.8	85.07
Irrigation Pump 3 Hours	31.4	0	14.4	0	25.9	133.1	103.2	120.3	0.3	0	0	0	428.6	35.72
Washdown Water Pump Hours	0	0	0	0	0	0	0	0	0	0	0	0	-	0.00
Wildlife Feed Pump Hours	0	0	0	0	352.9	747.6	212.4	0	0	0	0	0	1,312.9	109.41
Water Circulated through Wildlife Pond (MG)	0	0	0	0	22.23	47.10	13.38	0	0	0	0	0	82.7	6.89
Strainer No. 1 Hours	-	-	0.9	0	10.9	44.1	37.2	43.5	23.6	36.8	0	0	197.0	16.42
Strainer No. 2 Hours	-	-	1	0	10.8	43.9	38.2	47.7	20.9	37.3	0	0	199.8	16.65
Pond 1 Gauge @ Beginning of Month	3.3	2.4	6.1	5.2	5.2	3.9	4.4	5.3	4.2	7	3.2	3.2		
Pond 1 Gauge @ End of Month	2.4	6.1	5.2	5.2	3.9	4.4	5.3	4.2	7	3.2	3.2	5.4		
Pond 1 Gallons Stored @ End of Month(MG)	15.2	45.8	37.6	37.6	27.2	31.2	38.4	29.6	53	21.6	21.6	39.2		
Pond 2 Gauge @ Beginning of Month	3.3	2.2	6.1	5.2	5.2	4	4.4	5.4	4.3	7	3.3	3.3		
Pond 2 Gauge @ End of Month	2.2	6.1	5.2	5.2	4	4.4	5.4	4.3	7	3.3	3.3	5.5		
Pond 2 Gallons Stored @ End of Month(MG)	17	58	49	49	36	40	51	39	68	28.6	28.6	52		
Total Irrigation Water Stored	32.2	103.8	86.6	86.6	63.2	71.2	89.4	68.6	121	50.2	50.2	91.2		
<b>Drainage Pump Station No. 3</b>														
Drainage Pump No. 1 Hours	0	0	0	0	0	0	0	0	16.9	0	38.2	326.4		
Drainage Pump No. 2 Hours	0	0	14	0	0	0	0	0	0	2.9	0.4	0		
Drainage Pump No. 3 Hours	0.7	134.5	0	31.1	0.8	0	0	0	0	0	5.6	559.1		
Total Gallons Stormwater Pumped (MG)	0.21	40.35	4.2	9.33	0.24	0	0	0	5.07	0.87	13.26	265.65	339.18	28.27
<b>Drainage Pump Station No. 7</b>														
Drainage Pump No. 1 Hours	0	24.2	13.2	3.9	0	0	0	0	0.6	4	1.4	670.1		
Drainage Pump No. 2 Hours	0	106.6	48.8	9.5	0	0	0	0	0.4	0.1	0	0.1		
Drainage Pump No. 3 Hours	0	1.7	0.9	0	0	0	0	0	0.3	1.1	38.6	465.4		
Total Gallons Stormwater Pumped (MG)	0	59.63	28.31	6.03	0	0	0	0	0.585	2.34	18	511.02	625.905	52.16