

NOVATO SANITARY DISTRICT

Meeting Date: September 21, 2015

The Wastewater Operations Committee of the Novato Sanitary District will hold a meeting at 2:00 PM, Monday, September 21, 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. CONSIDER APPROVAL OF MINUTES OF THE AUGUST 17, 2015 MEETING

4. WASTEWATER TREATMENT FACILITIES OPERATIONS AND MAINTENANCE REPORT FOR AUGUST 2015:

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

5. COLLECTION SYSTEM OPERATIONS AND MAINTENANCE REPORT FOR AUGUST 2015:

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

6. RECLAMATION FACILITY REPORT FOR AUGUST 2015:

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

7. OTHER ITEMS:

8. 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.

August 17, 2015

A regular meeting of the Wastewater Operations Committee of Novato Sanitary District was held at 2:00 p.m., Monday, August 17, 2015, at the District Office, 500 Davidson Street, Novato.

MEMBERS PRESENT: Committee Members Jerry Peters and Brant Miller.

STAFF PRESENT: Sandeep Karkal, General Manager-Chief Engineer
Steve Krautheim, Field Services Manager
Dasse de longh, Interim Collections System Superintendent
Julie Swoboda, Administrative Secretary

STAFF ABSENT: John Bailey, Project Manager, Veolia

OTHERS PRESENT: John O'Hare, Pretreatment Programs Manager, Veolia
Lynda Farmery, Planner, Veolia

AGENDA APPROVAL: Approved as presented.

PUBLIC COMMENT: None.

APPROVAL OF MEETING MINUTES FOR JULY 20, 2015: The July 20, 2015 meeting minutes were approved as presented.

WASTEWATER TREATMENT FACILITIES OPERATIONS AND MAINTENANCE REPORT FOR JULY 2015:

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

The General Manager introduced John O'Hare, Pretreatment Programs Manager, Veolia who provided an overview of treatment plant operations for the month of July. He discussed key operations and maintenance events at the Novato facility, the Ignacio Transfer Pump Station, the Recycled Water Plant, and the Sludge Lagoons. He stated that the monthly average flow was 3.33 MGD and that the treatment plant performance was very good with no violations or excursions.

The Pretreatment Programs Manager discussed training events completed in July and stated that as of July 31st, Veolia employees have been accident free for a total of 1,893 days. He discussed the training Veolia employees participated in during July. He reviewed the operations and maintenance report and stated that 8.456 million gallons of recycled water were produced. He stated that Jerome Meter (H2S) readings continue to be performed in the neighborhood and within the treatment plant, consistent with a prior request from the Committee.

- Odor control and landscaping report: The General Manager discussed odor control related activities in July. He noted that a potential for odor breakthrough was identified in late June, and operations staff arranged for topping off of media in all odor beds. He stated that in

November staff would be considering the addition of more redwood trees in the northeast corner of the plant site.

COLLECTION SYSTEMS OPERATION AND MAINTENANCE REPORT FOR JULY 2015:

The Field Services Manager presented the Collection Systems Monthly Report for July 2015. He reported that the Collection Systems crew cleaned a total of 82,722 feet of sewer pipeline and that the department completed 405 maintenance work orders which were generated for July. He stated that the District's CCTV van (Closed Circuit TV) televised 40 line segments for 6,798 feet of production and he noted that no areas were identified as needing repairs or further evaluation. He reported on the current Collection System Projects, and outlined the specialized training that the department completed. He stated that as of July 31st, 2015, the Collections Department and the District have worked accident free for a total of 1,601 days.

The Field Services Manager stated that there were no sanitary sewer overflows in July.

RECLAMATION FACILITY REPORT FOR JULY 2015:

The Field Services Manager presented the Reclamation Facilities report for July. He stated that parcels were irrigated on all sites with no reportable issues and that approximately 91.6 MG of treated water was used for irrigation this month. He stated that the Wildlife Pond level was raised to six feet and that the sump pump in the Dedicated Land Disposal area which failed the previous month had been replaced. He noted that there were no sludge handling activities for the month.

MANAGER'S ANNOUNCEMENTS:

The General Manager stated that the District had considered changing its electricity service provider from Pacific Gas and Electric Company (PG&E) to MCE Clean Energy (MCE) and requested MCE provide a cost comparison using the District's Irrigation Pump Station (IPS) as a test case. He stated that the results indicated a potential savings of approximately 6.5% when PG&E and MCE rates were reviewed over the most recent three month billing period. He stated that staff will bring a recommendation for consideration by the entire Board to transfer electricity service providers for the IPS from PG&E to MCE.

The General Manager stated that the next Wastewater Operations Committee meeting will be held on Monday, September 21st at 2:00 p.m. at the District office.

ADJOURNMENT: There being no further business to come before the Committee, the meeting adjourned at 2:45 p.m.

Respectfully submitted,

Sandeep Karkal
General Manager-Chief Engineer

Julie Swoboda, Recording

DRAFT



September 15, 2015

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

Subject: Veolia Water Operations Report – August 2015

Dear Mr. Karkal:

I am pleased to provide the Monthly Operation report for August 2015.

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". The signature is stylized and cursive.

John Bailey
Project Manager, Veolia



**MONTHLY OPERATIONS REPORT
August 2015**

Prepared for

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

Prepared by

Veolia Water West Operating Services, Inc. (VWWOS)

TABLE OF CONTENTS

TREATMENT PLANT PERFORMANCE SUMMARY	1
SAFETY AND TRAINING	2
OPERATIONS AND MAINTENANCE STATUS / REVIEW	2-3
LABORATORY ACTIVITIES SUMMARY	3
ADMINISTRATION	4
ODORS.....	4
MISCELLANEOUS.....	4
ATTACHMENTS	
• Photos	
○ Sludge Lagoon Sampling	
○ Blood Borne Pathogen Training	
○ Flushing Decant Line	
○ Demolition Project – Aeration Basin & Odor Control Structure Removal	
○ Filling Old Influent Pump Station	
• Laboratory Data	
• Recycled Water Report	
• Annual Performance Graphs	
• Process Control Data / Graphs	
• Customer Notifications (Odor / Noise)	
• Jerome Meter Readings and Locations	

TREATMENT PLANT PERFORMANCE SUMMARY: August 2015:

Parameter	Value		Limit	
	Ave	Max	#1	#2
Flow, MGD (monthly ave/max)	3.20	3.70	N/A	N/A
Max Peak Hour, MGD – No Rainfall	N/A	~ 7	N/A	N/A
Influent				
BOD ₅ , lb/day (month ave/max)	8,172	10,909	N/A	N/A
TSS, lb/day (monthly ave/max)	9,506	12,281	N/A	N/A
Effluent				
BOD ₅ , mg/L (monthly ave/weekly max)	7	8	40	N/A
TSS, mg/L (monthly ave/weekly max)	<4	7	N/A	N/A
BOD ₅ - % Removal, Minimum	97	N/A	N/A	N/A
TSS - % Removal, Minimum	99	N/A	N/A	N/A
Ammonia, mg/L – (monthly ave/daily max)	N/A	N/A	N/A	N/A
pH, su (min / max)	6.9	7.1	6.0	9.0
Enterococcus, MPN/100 ml (30 day geo mean)	N/A	N/A	N/A	N/A
Fecal Coliform, MPN/100 ml (30 day median)	N/A	N/A	N/A	N/A
Fecal Coliform, MPN/100 ml (90 th percentile)	N/A	N/A	N/A	N/A
Total Coliform, MPN/100 ml (5 Sample Median/Max)	79	130	240	10,000
Total Permit Exceedances (NPDES)	0			

Title 22 - Recycled Water Production and Quality

Description	Units	Value	Limit
Volume Produced	Million Gallons	19.064	N/A
Average Turbidity	NTU	0.9	2.0
Turbidity > 5 NTU (in 24 hour)	Minutes	0	72
Minimum CT (disinfection)	mg-min/L	>450	450 minimum
Minimum Dissolved Oxygen (DO)	mg/L	8.0	2 mg/L minimum
Maximum Total Coliform	MPN/100 ml	<2	240
Maximum Total Coliform 2 Samples 30 d	MPN/100 ml	<2	23
Total Coliform 7 Sample Median	MPN/100 ml	<2	2.2

Discussion of Violations / Excursions:

Waste Discharge Requirements (WDR) – None

Recycled Water – None

Rainfall. – N/A

SAFETY AND TRAINING:

- Monthly plant safety inspections for Novato WWTP and Ignacio Transfer Pump Station completed
- Five Minute Tailgate training is held daily with all staff.
- No safety incidents for the month of August.
- Accident Free: 6/1/10 – 8/31/15: 1,924 days
- Monthly Safety Topics and Training:
 - Bloodborne Pathogens
 - OSHA Inspections Policy O.103

OPERATIONS & MAINTENANCE STATUS / REVIEW:

Key events for the period:

Novato

- Routine rounds, readings and maintenance
- Performed Fuel Sampling on Main Diesel Fuel Tank, UV Generator Diesel Fuel Tank & Administration Building Generator Fuel Tank
- Replaced Effluent Pump #4 VFD
- Repairs to Blower #3 (Motor Control Panel, Cooling Fan)
- Repaired Hypochlorite Tank Fill Line
- Replaced flanges and valves on High Pressure Water Pump #2
- Repaired #3 water line break near Aeration Basin #3 & 4

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

- Aeration Basin #1 & #2 (not needed at current flows)
- Secondary Clarifier #1 (not needed at current flows)
- Primary Clarifier #2 (not needed at current flows)

Ignacio Transfer Pump Station

- Routine rounds, readings and maintenance
- Repair of MSA Gas Sensors in Wet Well

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

- None

Recycled Water Plant (RWP)

- Performed plant rounds and maintenance
- Repaired Distribution Pump #1

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

- None

Sludge Lagoons

- Performed routine rounds and inspection
- Flushed decant Lines

LABORATORY ACTIVITIES SUMMARY:

Irrigation Wet Well Sampling

Monthly sampling of the irrigation wetwell was performed in July and will continue throughout reclamation / irrigation season. The data collected will be compiled and reported in the 2015 triennial Irrigated Pasture Report.

Wildlife Pond and Reclamation Activities

Samples and weekly/monthly observations at the Wildlife pond were taken according to the WDR (Order No. 92-065). See Wildlife Pond monitoring photos.

ADMINISTRATION:

- July Electronic Self-Monitoring Report (SMR) submitted on August 20, 2015
- July Electronic Discharge Monitoring Report (DMR) submitted on August 20, 2015
- July Recycled Water Report submitted on August 20, 2015

ODORS:

- Jerome meter (H2S) readings performed in neighborhood and within treatment plant.
- All readings in neighborhood were at the minimum detection threshold of the Jerome meter.
- Eight noise complaints associated with demolition project.

MISCELLANEOUS

- Process Control Management Plan (PCMP) meetings held weekly.
- Recruitment open for Maintenance Technician.

Veolia Support Staff On/Off Site (Various Times)

John O'Hare	Technical Support
Dave Coffman	Asset Management
Dennis Flosi	Electrical, Instrumentation, & Controls

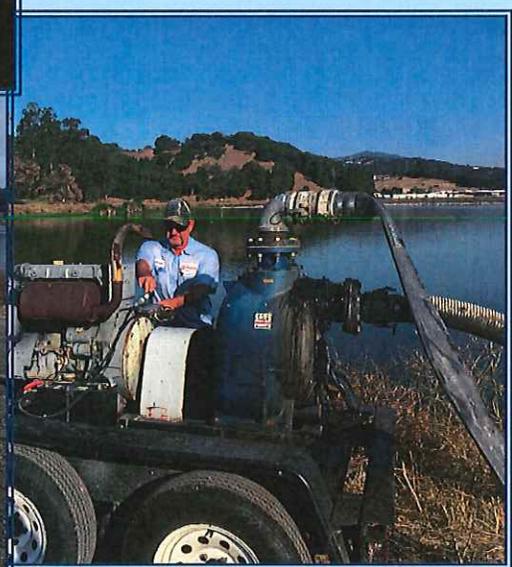
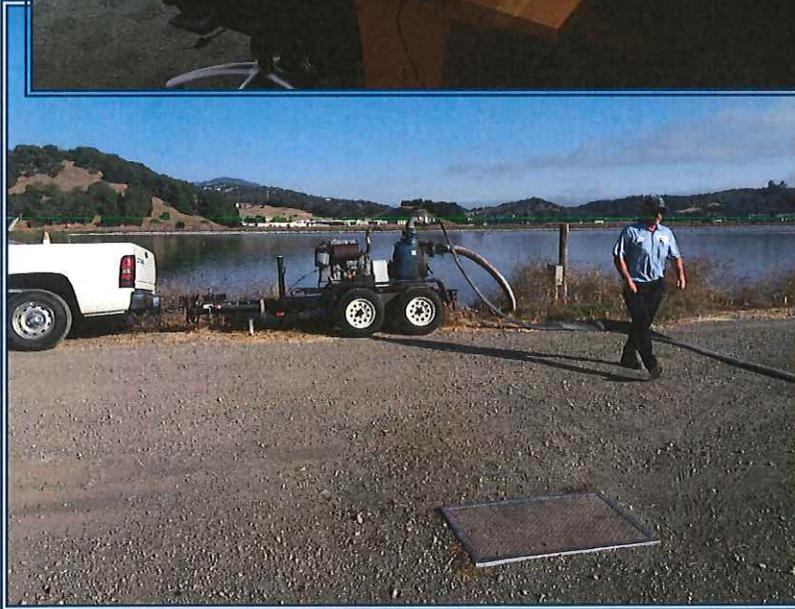


Environmental Services Activities
Sludge Sampling
July/August 2015



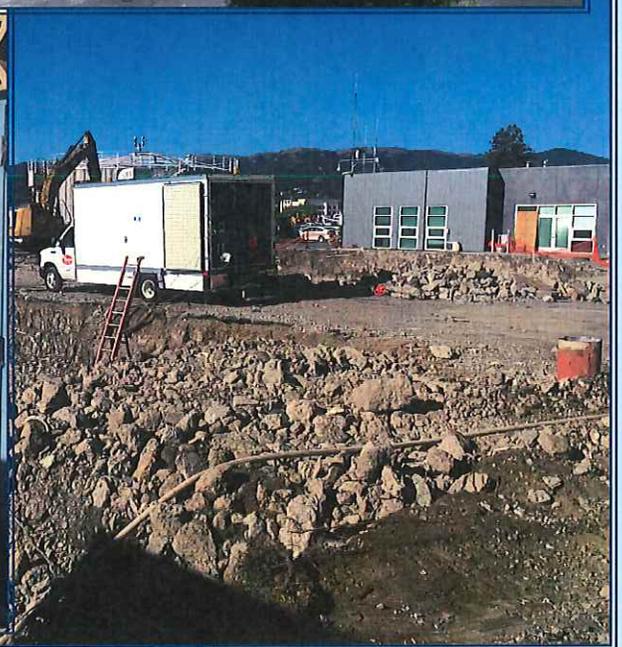


BLOOD BORNE PATHOGEN TRAINING
FLUSHING DECANT LINE
AUGUST 2015



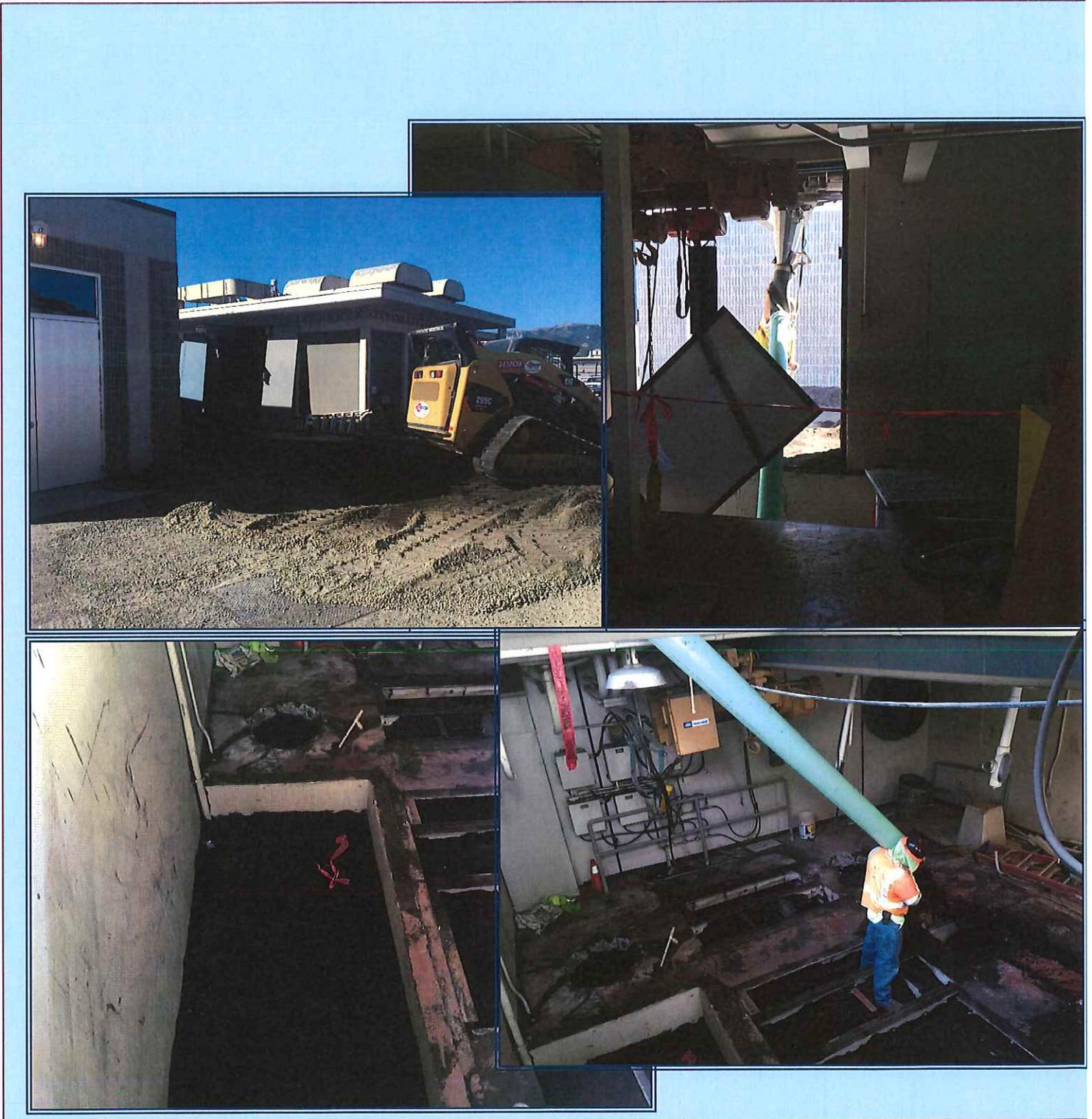


DEMOLITION PROJECT – AERATION BASINS &
ODOR CONTROL STRUCTURE
August 2015





DEMOLITION PROJECT – FILLING INFLUENT PUMP STATION
August 2015



Novato Sanitary District
BOD/TSS Report



August, 2015

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		
08/01/15	2.89										
08/02/15	2.99										
08/03/15	3.51										
08/04/15	3.45										
08/05/15	3.36	266	7,454	319	8,939	8	224	<3	<84	97.0	99.1
08/06/15	3.33	275	7,637	285	7,915	6	167	<3	<83	97.8	98.9
08/07/15	3.25	301	8,159	294	7,969	6	163	<3	<81	98.0	99.0
08/08/15	3.20										
08/09/15	3.36										
08/10/15	3.16										
08/11/15	3.02	390	9,823	349	8,790	8	201	<3	<76	97.9	99.1
08/12/15	3.02	326	8,211	360	9,067	8	201	<3	<76	97.5	99.2
08/13/15	3.05	228	5,800	288	7,326	8	203	14	356	96.5	95.1
08/14/15	3.03										
08/15/15	2.91										
08/16/15	2.98										
08/17/15	3.23										
08/18/15	3.25	298	8,077	354	9,595	6	163	5	136	98.0	98.6
08/19/15	3.39	274	7,747	338	9,556	8	226	4	113	97.1	98.8
08/20/15	3.70	282	8,702	398	12,281	7	216	<3	<93	97.5	99.2
08/21/15	3.24										
08/22/15	3.34										
08/23/15	3.64										
08/24/15	3.32	394	10,909	443	12,266	9	249	3	83	97.7	99.3
08/25/15	3.16	323	8,512	392	10,331	7	184	<3	<79	97.8	99.2
08/26/15	3.10	272	7,032	388	10,031	8	207	<3	<78	97.1	99.2
08/27/15	3.04										
08/28/15	2.89										
08/29/15	2.86										
08/30/15	3.18										
08/31/15	3.33										
Weekly Averages											
08/01/15	Week 1	300	8,060	307	8,212	5	143	3	89		
08/08/15	Week 2	281	7,750	299	8,274	7	184	3	83		
08/15/15	Week 3	315	7,944	332	8,394	8	202	7	169		
08/22/15	Week 4	285	8,175	363	10,478	7	202	4	114		
08/29/15	Week 5	330	8,818	408	10,876	8	214	3	80		
Monthly											
Minimum	2.86	228	5,800	285	7,326	6	163	<3	<76	96	95
Maximum	3.70	394	10,909	443	12,281	9	249	14	356	98	99
Total	99.18										
Average	3.20	302	8,172	351	9,506	7	200	<4	<111	97	99

Novato Sanitary District
Conventional Pollutants Report



August, 2015

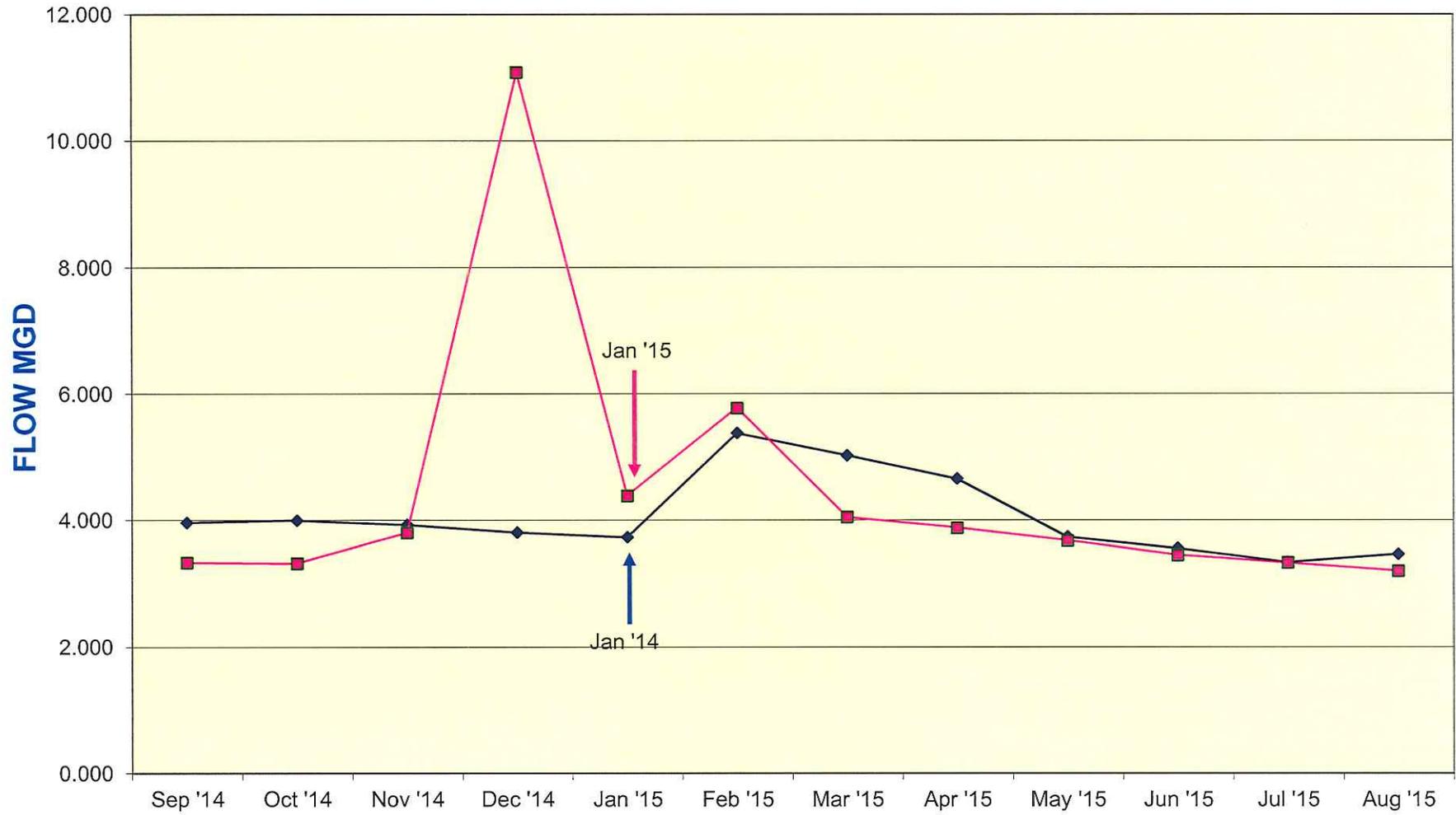
Date	INFLUENT - A001			Effluent - E002							
	Flow Total	pH	Ammonia	Coliform / Bacteria			pH	Ammonia	Unionized Ammonia	Oil & Grease	Temp
				Fecal	Entero	Total					
	MGD	su	mg/L	MPN/100 mL			su	mg/L	mg/L		Deg C
08/01/15	2.89										
08/02/15	2.99										
08/03/15	3.51						6.9				24.7
08/04/15	3.45						7.0				24.4
08/05/15	3.36					17	7.0				24.3
08/06/15	3.33					31	7.0				24.9
08/07/15	3.25					33	7.0				24.7
08/08/15	3.20										
08/09/15	3.36										
08/10/15	3.16	7.0					7.1				24.3
08/11/15	3.02					46	7.0				24.6
08/12/15	3.02	7.1				7	7.0				24.6
08/13/15	3.05					49	7.0				24.7
08/14/15	3.03						7.0				24.9
08/15/15	2.91										
08/16/15	2.98										
08/17/15	3.23						7.0				25.5
08/18/15	3.25					79	7.0				24.9
08/19/15	3.39					33	6.9				24.3
08/20/15	3.70					79	6.9				23.7
08/21/15	3.24						6.9				24.9
08/22/15	3.34										
08/23/15	3.64										
08/24/15	3.32					130	7.0				24.4
08/25/15	3.16					79	7.0				24.1
08/26/15	3.10	7.2				130	7.0				24.7
08/27/15	3.04						6.9				25.2
08/28/15	2.89						6.9				26.1
08/29/15	2.86										
08/30/15	3.18										
08/31/15	3.33						7.0				25.2
Monthly											
Minimum	2.86	7.0				7	6.9				23.7
Maximum	3.70	7.2				130	7.1				26.1
Total	99.18										
Average	3.20	7.1					7.0				24.7

NOVATO SANITARY DISTRICT RECYCLED WATER COMPLIANCE SUMMARY REPORT

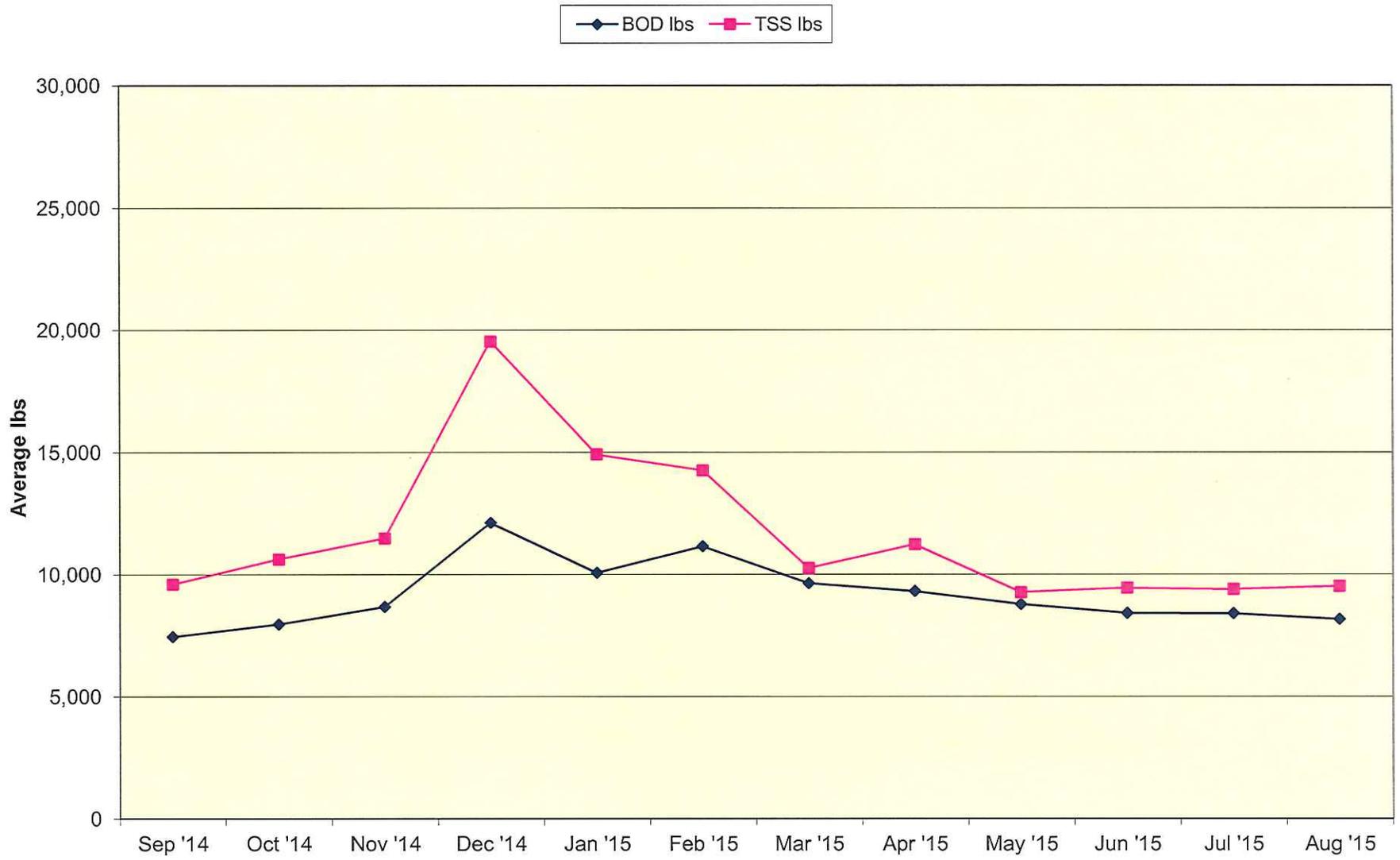
Date	Filter Influent Flow	Recycled Water Flow to Plum St.	Recycled Water Banked	Banked Water To Plum Street Tank	Potable Water To Plum St Tank	Recycled Water Influent Turbidity Max	Recycled Water Influent Turbidity Ave.	Minutes Over 5 Turbidity	Filter Effluent 24 Hr Average Turbidity	Recycled Water Inf Chlorine Dose	Filter Effluent Dissolved Oxygen	Filter Effluent Total Coliform	Chlorint Contact Time
	MGD	MGD	MG	MGD	NTU	NTU	(m)	NTU	(mg/l)	(mg/l)	MPN/100m	Minutes	
8/1/2015	0.820	0.729				2.3	0	1.1			<2	>450.000	
8/2/2015	0.910	0.826				2.4	0	1.1		8.7	<2	>450.000	
8/3/2015	0.840	0.701				1.7	0	0.9		8.0	<2	>450.000	
8/4/2015	0.800	0.687				1.8	0	0.9		8.0	<2	>450.000	
8/5/2015	0.680	0.627				1.7	0	0.9			<2	>450.000	
8/6/2015	0.680	0.592				1.8	0	0.7			<2	>450.000	
8/7/2015	0.920	0.833				2.3	0	0.9			<2	>450.000	
8/8/2015	0.710	0.646				3.0	0	1.5			<2	>450.000	
8/9/2015	0.710	0.655				2.5	0	1.3			<2	>450.000	
8/10/2015	0.790	0.702				3.2	0	1.1		8.9	<2	>450.000	
8/11/2015	0.780	0.704				3.0	0	1.1		8.4	<2	>450.000	
8/12/2015	0.760	0.688				2.2	0	1.0		8.4	<2	>450.000	
8/13/2015	0.840	0.659				2.9	0	1.0			<2	>450.000	
8/14/2015	0.830	0.750				1.6	0	0.9			<1.8	>450.000	
8/15/2015	0.740	0.648				1.6	0	0.8			<2	>450.000	
8/16/2015	0.800	0.710				1.5	0	0.8		9.2	<2	>450.000	
8/17/2015	0.820	0.643				1.2	0	0.9		8.9	<2	>450.000	
8/18/2015	0.880	0.711				1.2	0	0.9		9.0	<2	>450.000	
8/19/2015	0.710	0.388				1.8	0	1.0		8.4	<2	>450.000	
8/20/2015	0.300	0.132				1.3	0	1.1			<2	>450.000	
8/21/2015	0.820	0.641				1.8	0	0.8			<2	>450.000	
8/22/2015	0.660	0.390				0.9	0	0.7			<2	>450.000	
8/23/2015	0.630	0.432				1.0	0	0.6		8.2	<2	>450.000	
8/24/2015	0.650	0.630				1.0	0	0.9		8.0	<2	>450.000	
8/25/2015	0.640	0.432				0.6	0	0.7		8.4	<2	>450.000	
8/26/2015	0.600	0.368				1.6	0	0.7			<2	>450.000	
8/27/2015	0.660	0.479				1.4	0	0.8			<2	>450.000	
8/28/2015	0.750	0.680				1.2	0	0.7			<2	>450.000	
8/29/2015	0.720	0.642				1.1	0	0.6			<2	>450.000	
8/30/2015	0.780	0.711				1.1	0	0.7		9.0	<2	>450.000	
8/31/2015	0.700	0.628				0.8	0	0.7		8.9	<2	>450.000	
Total	22.930	19.064					53.5	0	27.8		128.2	<56	>13,950.0
Minimum	0.300	0.132					0.6	0	0.6		8.0	<2	>450.0
Maximum	0.920	0.833					3.2	0	1.5		9.2	<2	>450.0
Average	0.740	0.615					1.7	0	0.9		8.5	<2	>450.0
Average	0.740	0.615					1.7	0	0.9		8.5	<2	>450.0

FLOW COMPARISON

—◆— 2013 / 14 —■— 2014 / 15



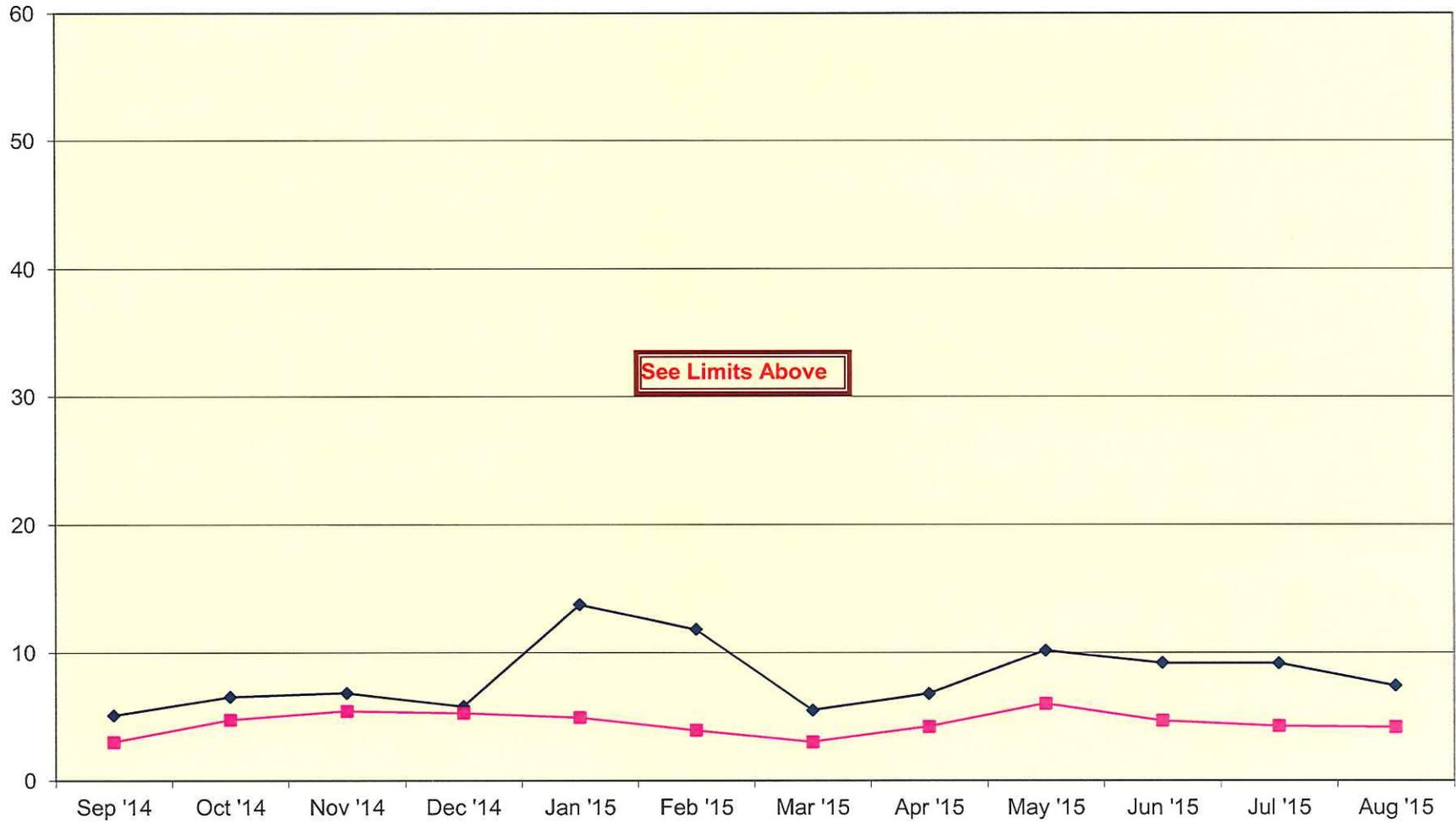
Influent Load BOD / TSS lbs



Effluent BOD / TSS Concentration

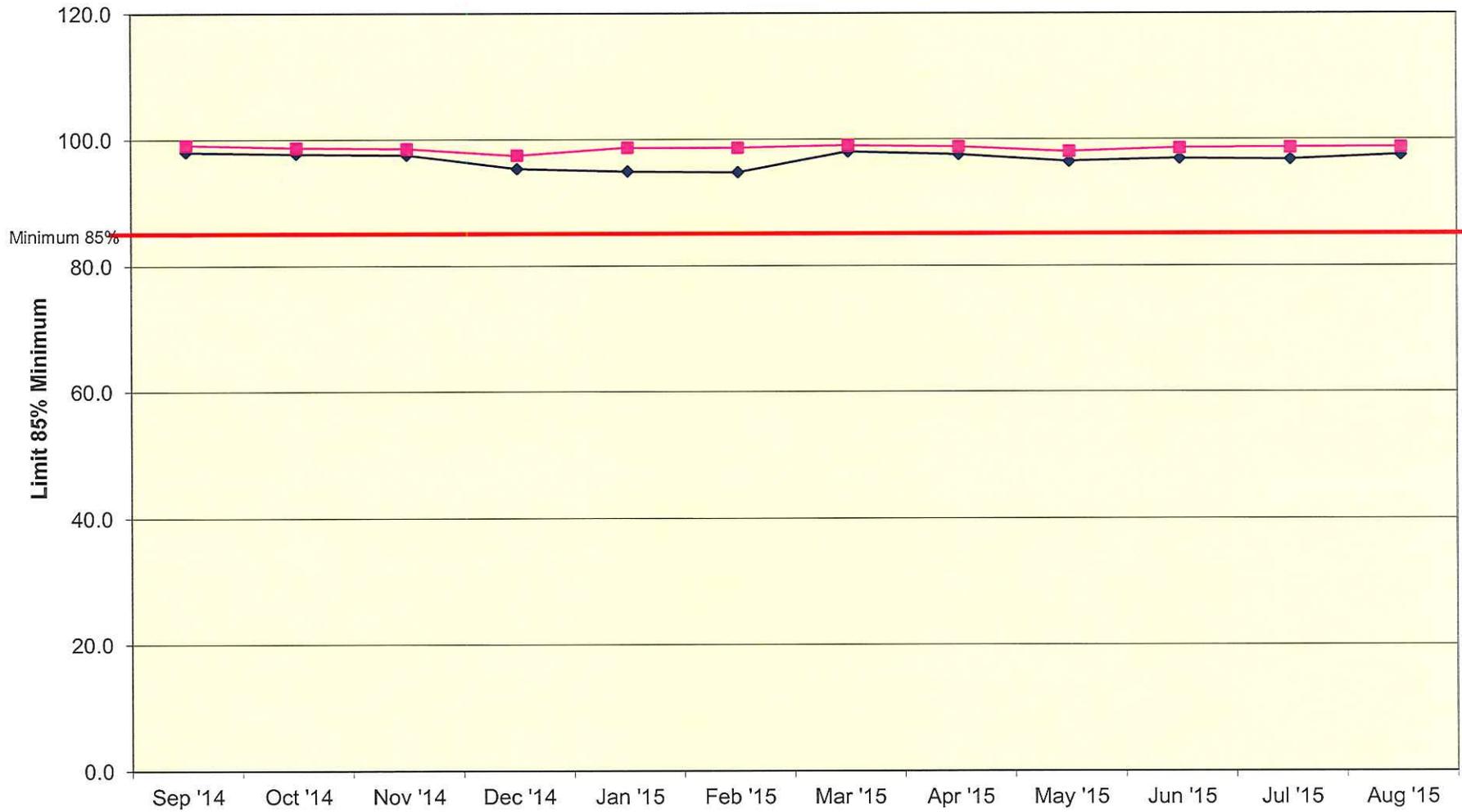
◆ BOD ■ TSS

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



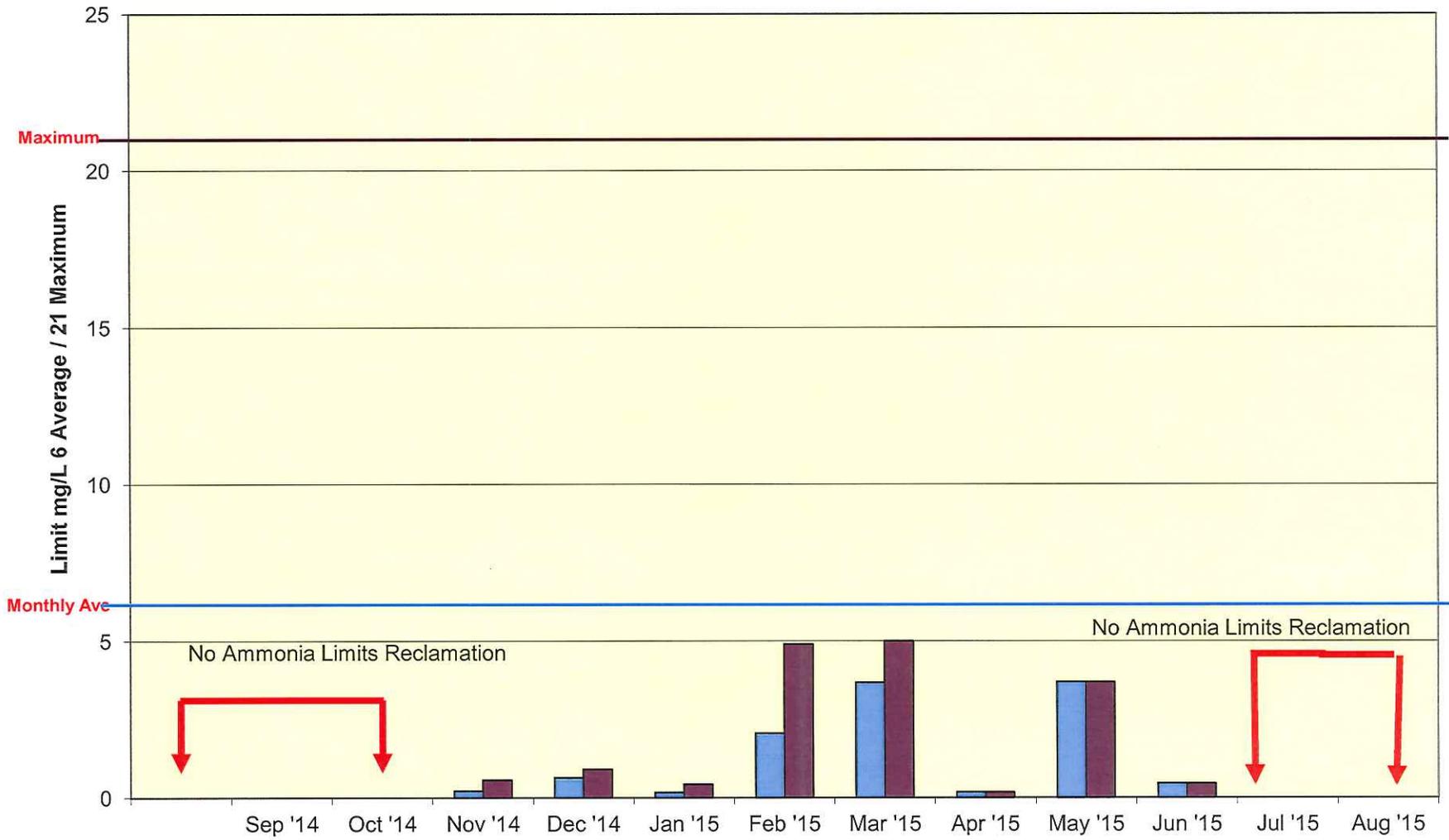
BOD / TSS Percent Removal

◆ BOD ■ TSS



Effluent Ammonia

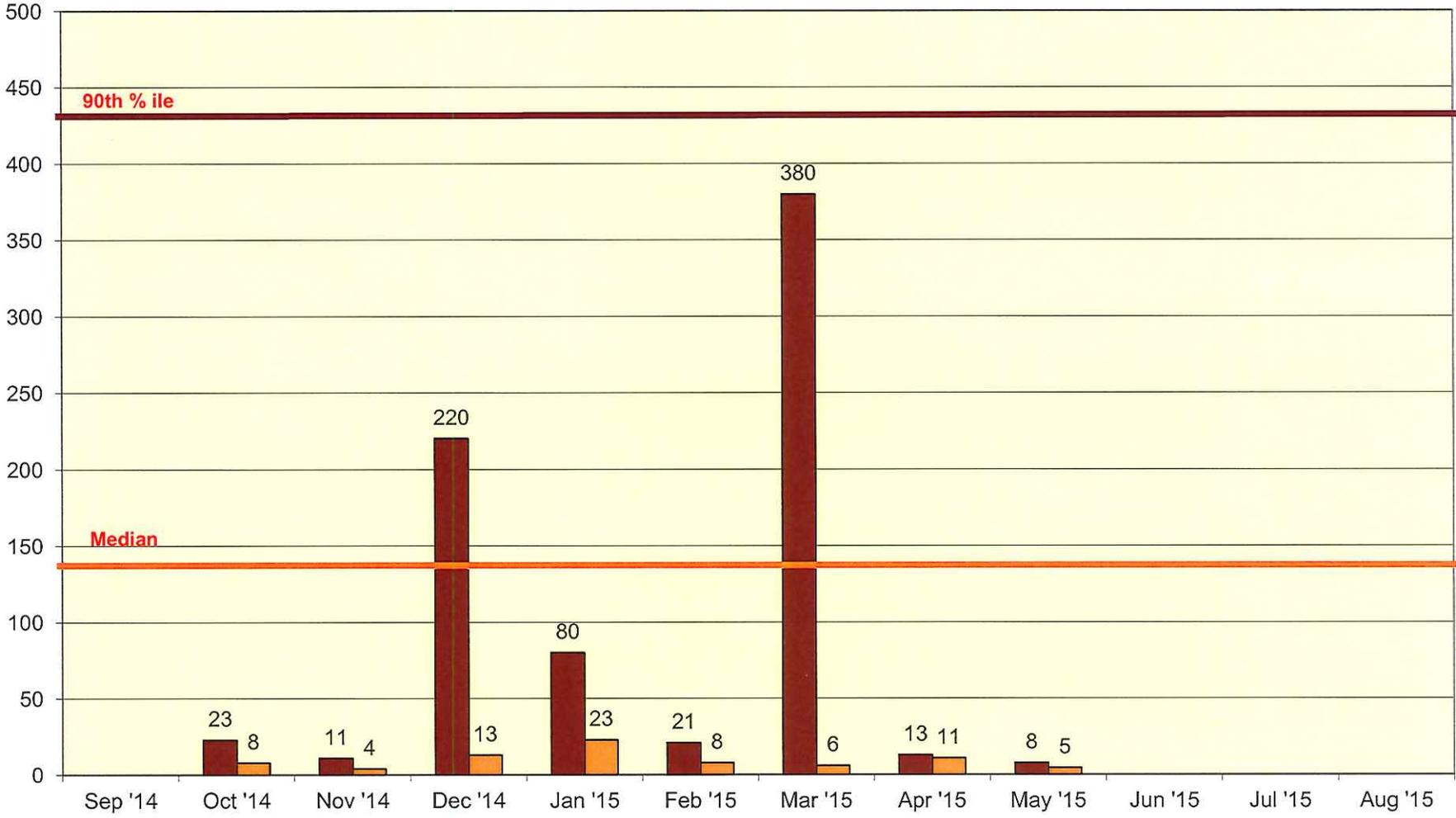
Average Maximum



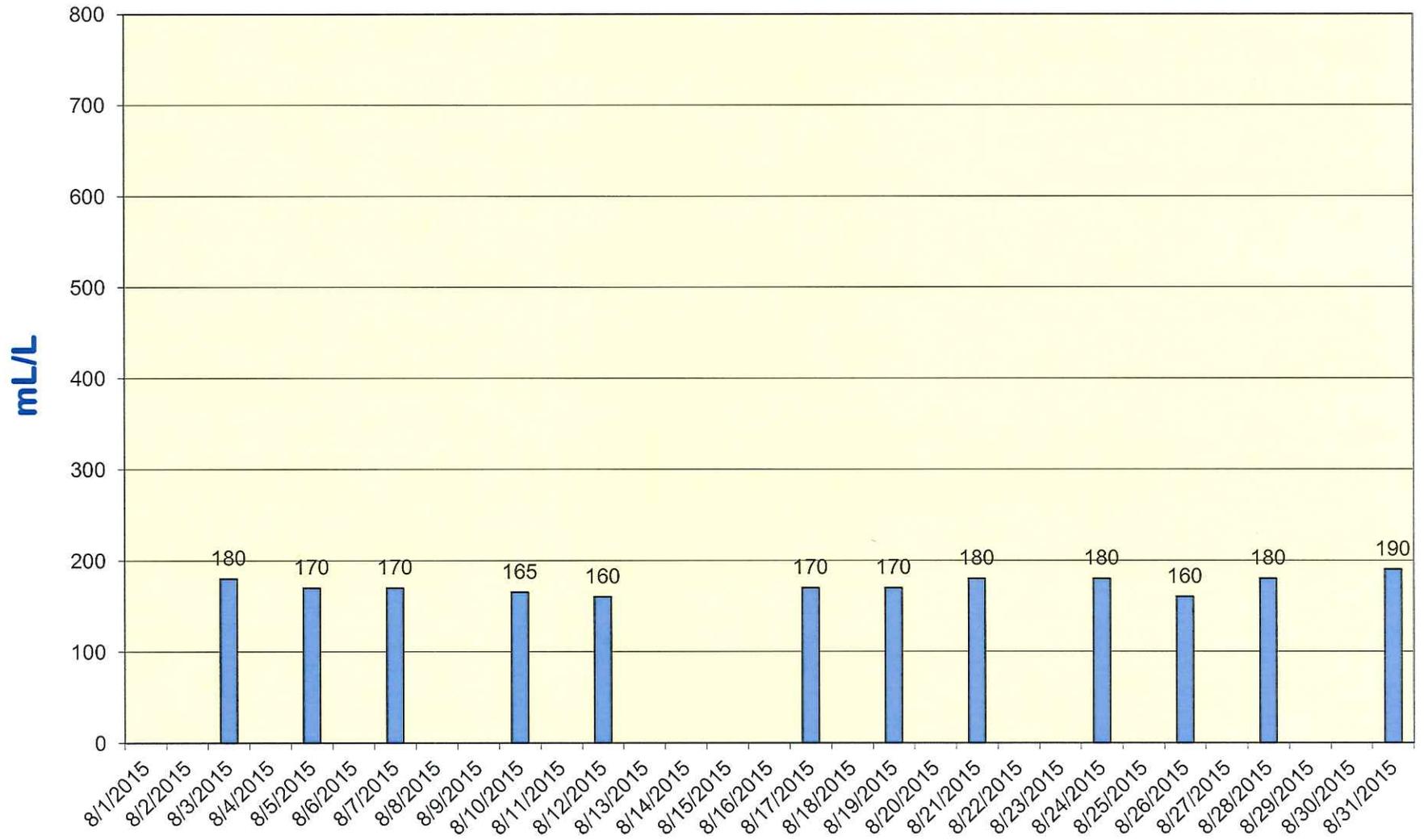
Disinfection - Fecal Coliform

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

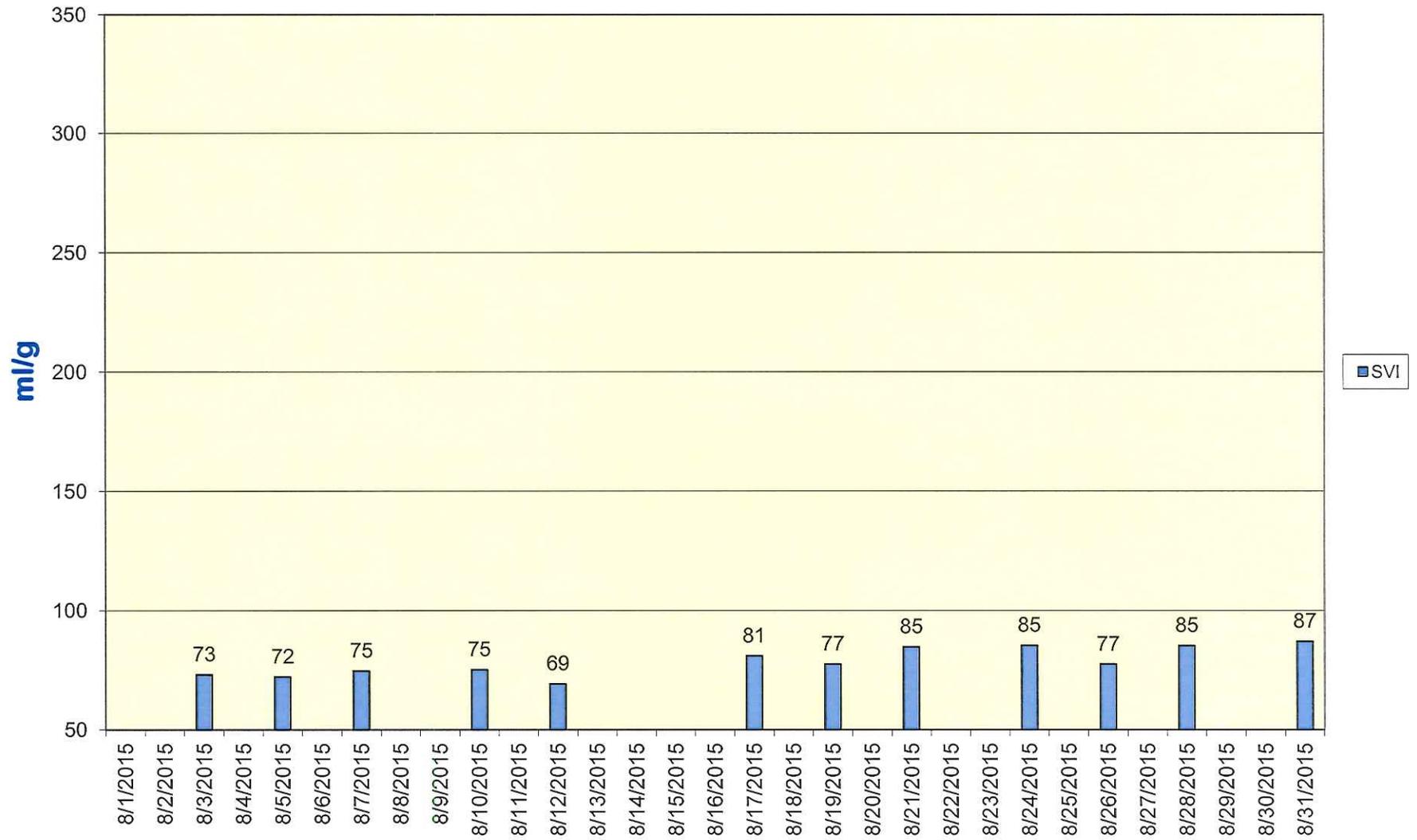
90th % ile 30 day med



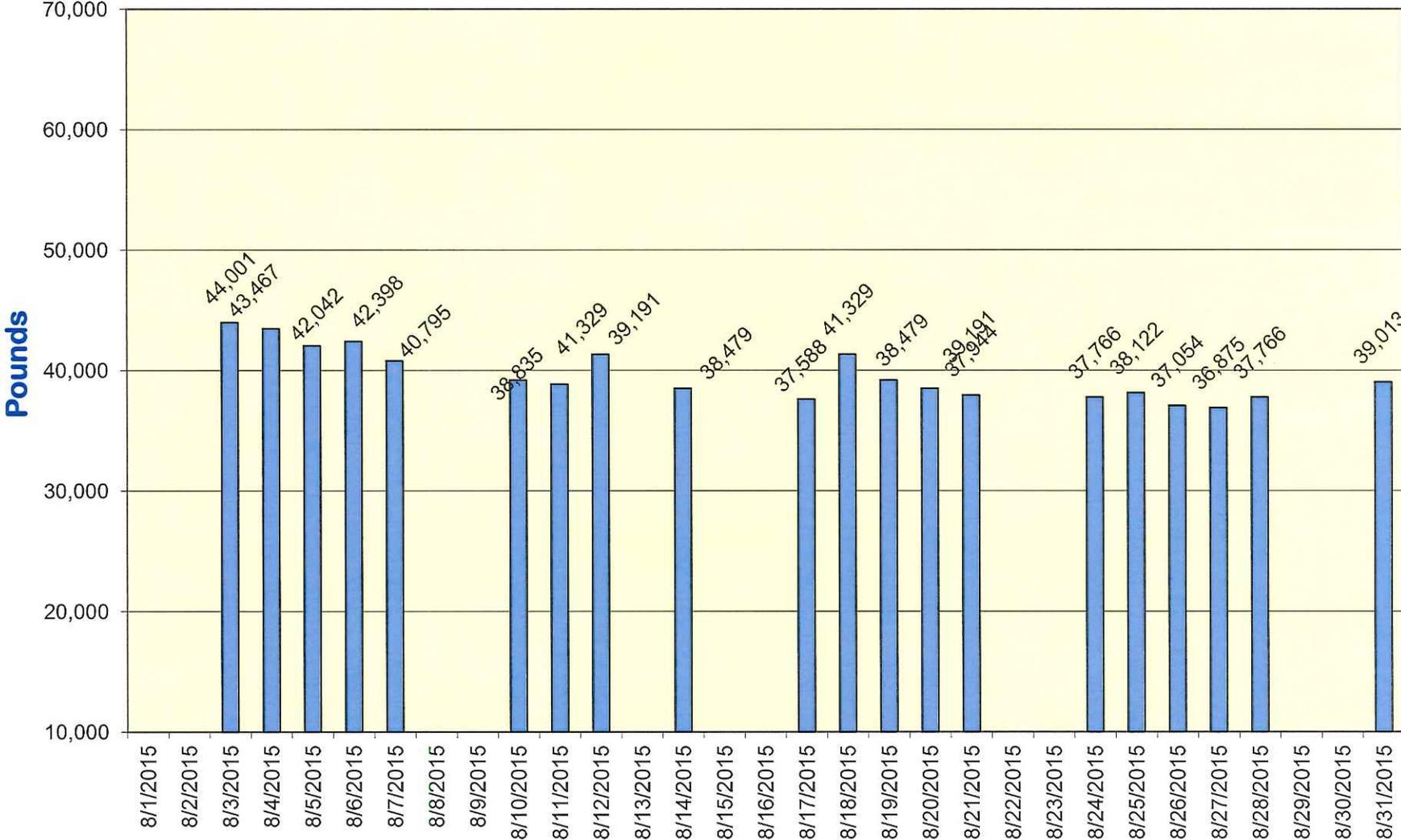
Settleability



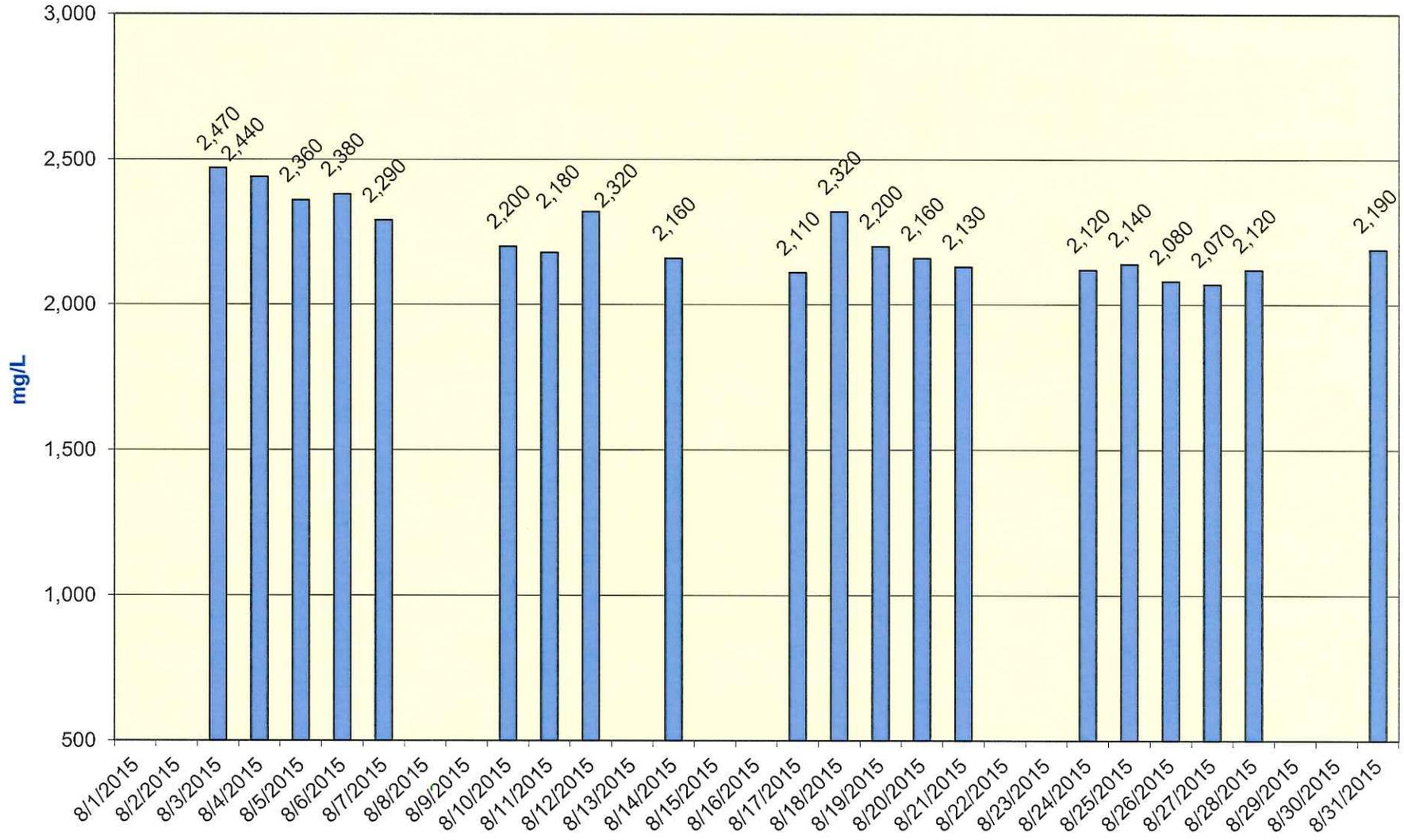
Sludge Volume Index



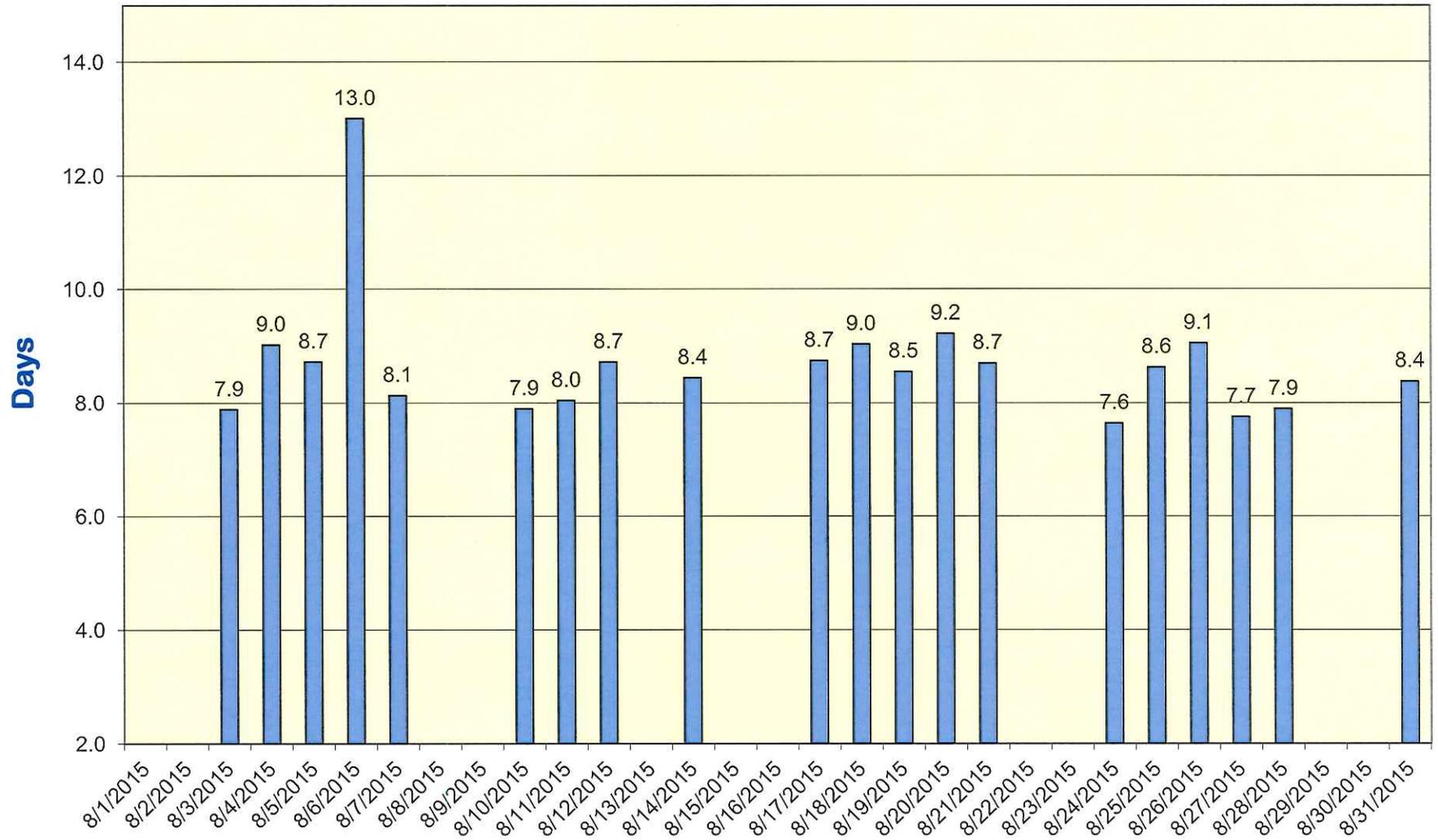
MLSS Inventory



MLSS Concentration



Mean Cell Residence Time

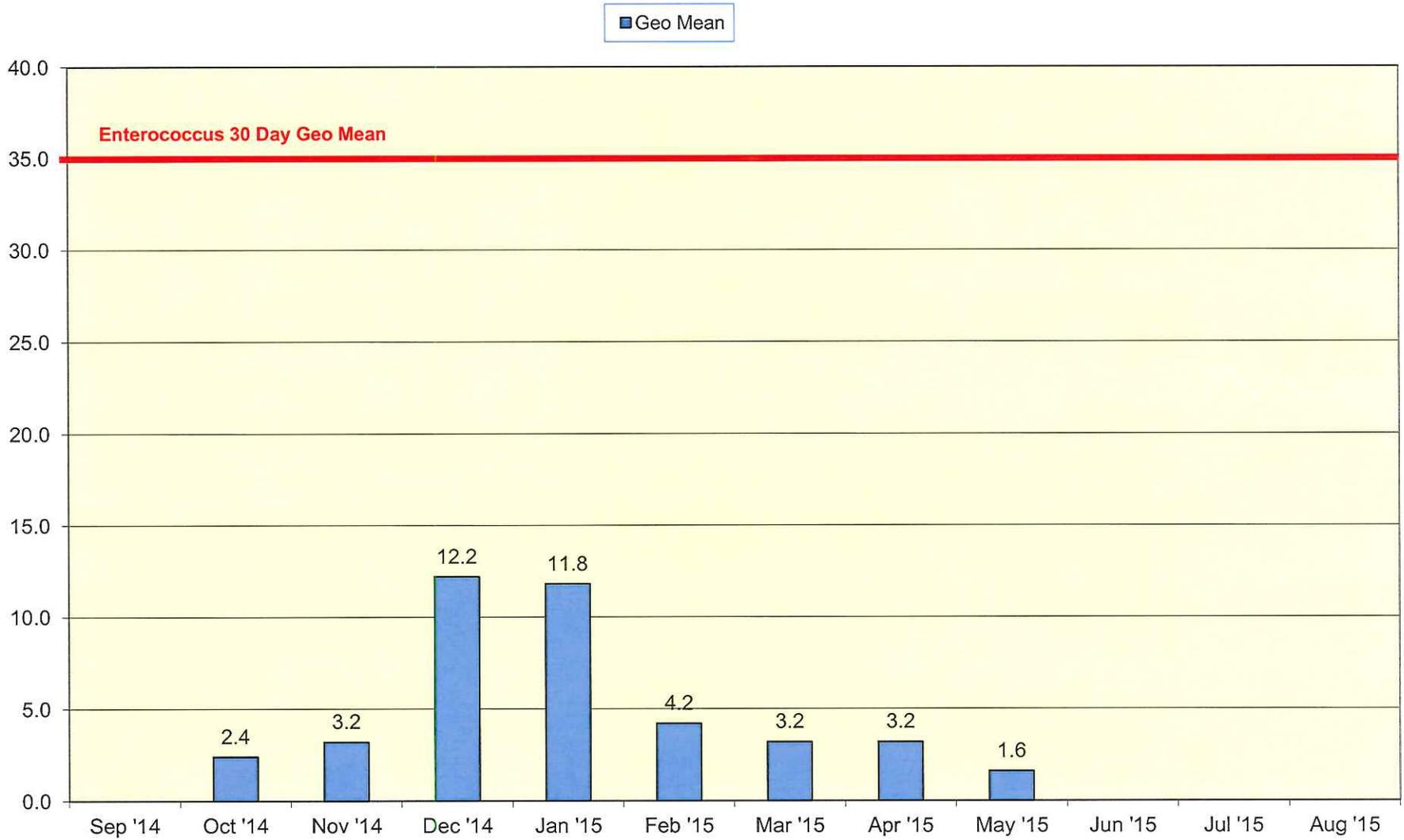


Process Control Data

	Influent Flow	Settleability	MLSS Concentration	MLSS Inventory	F:M Ratio	MCRT	SVI
8/1/2015	2.89						
8/2/2015	2.99						
8/3/2015	3.51	180	2,470	44,001		7.9	73
8/4/2015	3.45		2,440	43,467		9.0	
8/5/2015	3.36	170	2,360	42,042	0.20	8.7	72
8/6/2015	3.33		2,380	42,398		13.0	
8/7/2015	3.25	170	2,290	40,795		8.1	75
8/8/2015	3.20						
8/9/2015	3.36						
8/10/2015	3.16	165	2,200	39,191		7.9	75
8/11/2015	3.02		2,180	38,835	0.20	8.0	
8/12/2015	3.02	160	2,320	41,329		8.7	69
8/13/2015	3.05						
8/14/2015	3.03		2,160	38,479		8.4	
8/15/2015	2.91						
8/16/2015	2.98						
8/17/2015	3.23	170	2,110	37,588		8.7	81
8/18/2015	3.25		2,320	41,329		9.0	
8/19/2015	3.39	170	2,200	39,191		8.5	77
8/20/2015	3.70		2,160	38,479		9.2	
8/21/2015	3.24	180	2,130	37,944		8.7	85
8/22/2015	3.34						
8/23/2015	3.64						
8/24/2015	3.32	180	2,120	37,766		7.6	85
8/25/2015	3.16		2,140	38,122		8.6	
8/26/2015	3.10	160	2,080	37,054		9.1	77
8/27/2015	3.04		2,070	36,875		7.7	
8/28/2015	2.89	180	2,120	37,766		7.9	85
8/29/2015	2.86						
8/30/2015	3.18						
8/31/2015	3.33	190	2,190	39,013		8.4	87
Minimum	2.86	160.00	2,070.00	36,875	0.20	7.6	69
Maximum	3.70	180	2,470	44,001	0.20	13.0	85
Total	92.67	1,885	42,250	752,652	0.40	165.1	855
Average	3.20	171	2,224	39,613	0.20	8.7	78

Disinfection - Enterococcus

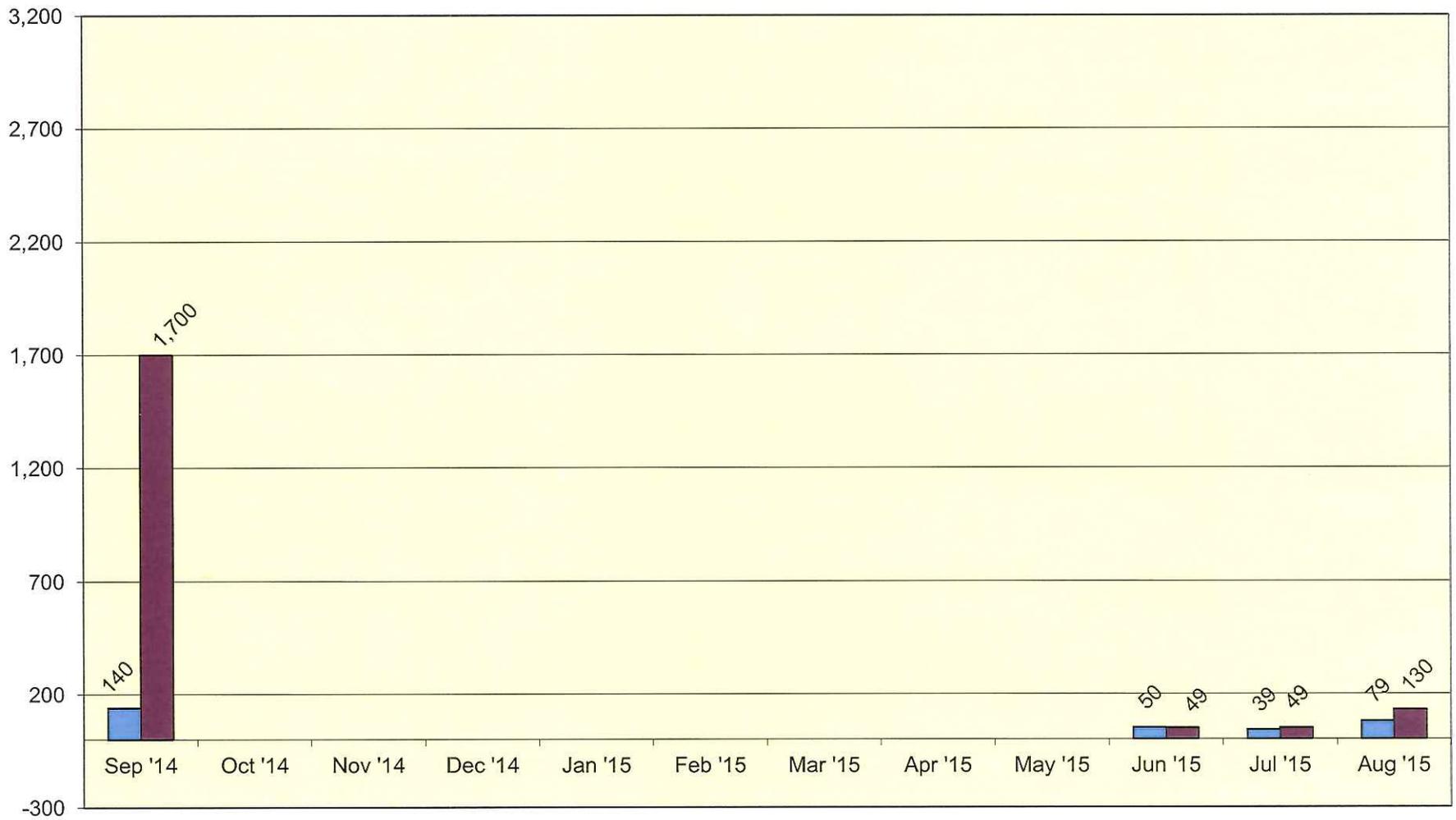
LIMITS - NPDES
Enterococcus 30 day geo mean 35 mpn /100ml



Disinfection - Total Coliform

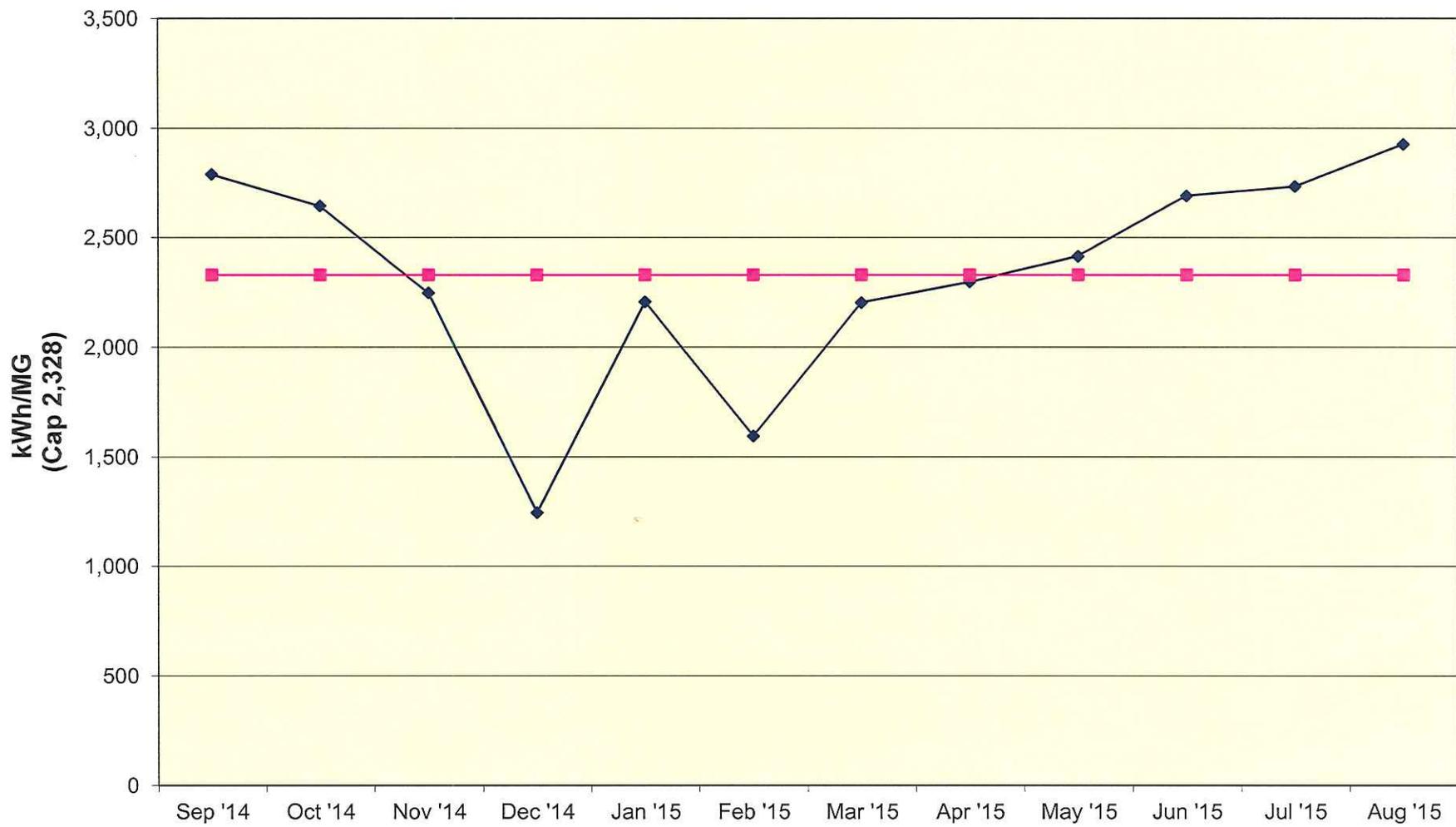
TOTAL COLIFORM LIMITS - WDR
5 Sample Median - 240 mpn /100 ml
Maximum - 10,000 mpn/100 ml

■ 5 Sampl Med ■ Monthly Max



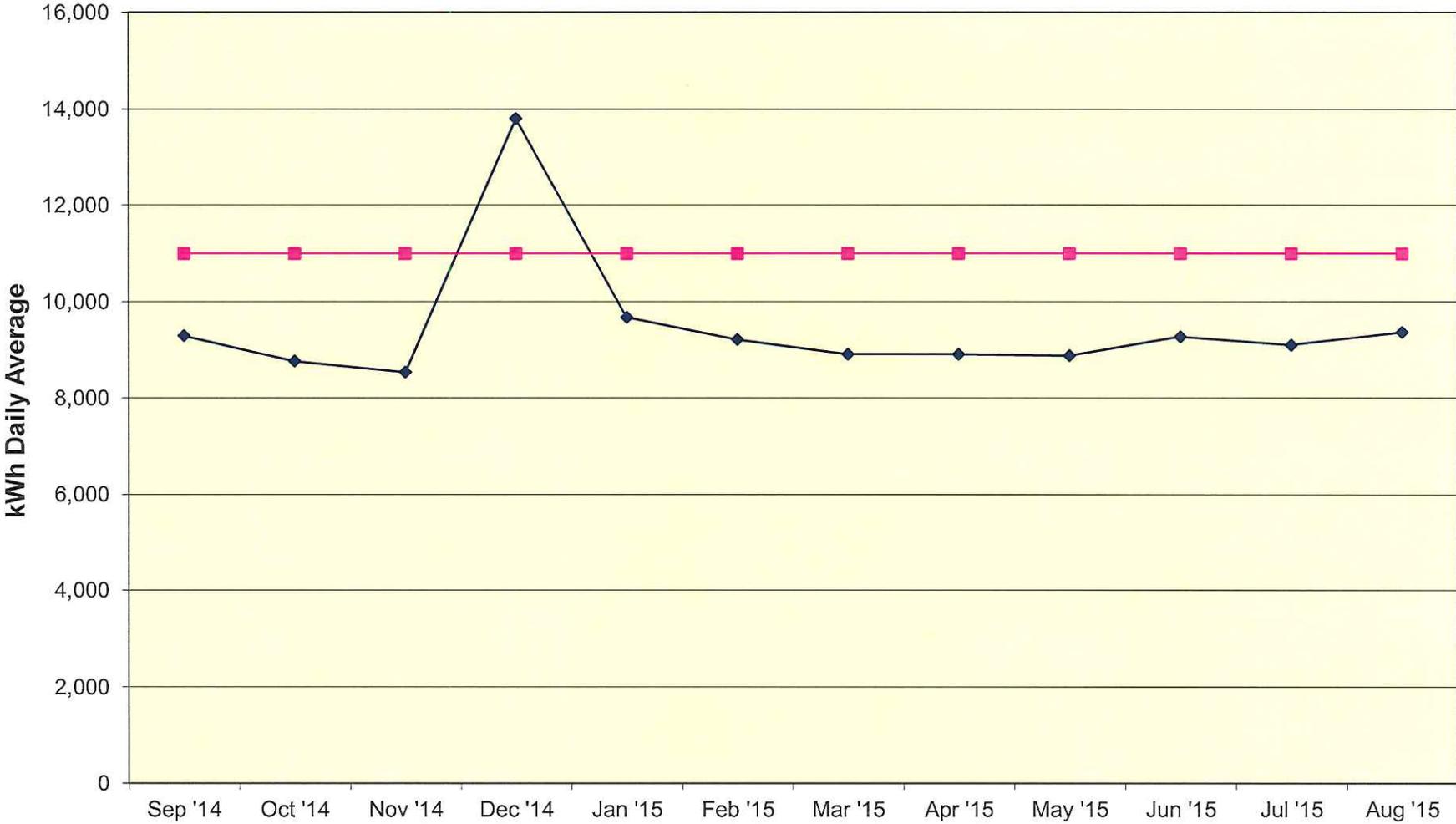
Energy kWh/MG

◆ kW/MG ■ Cap



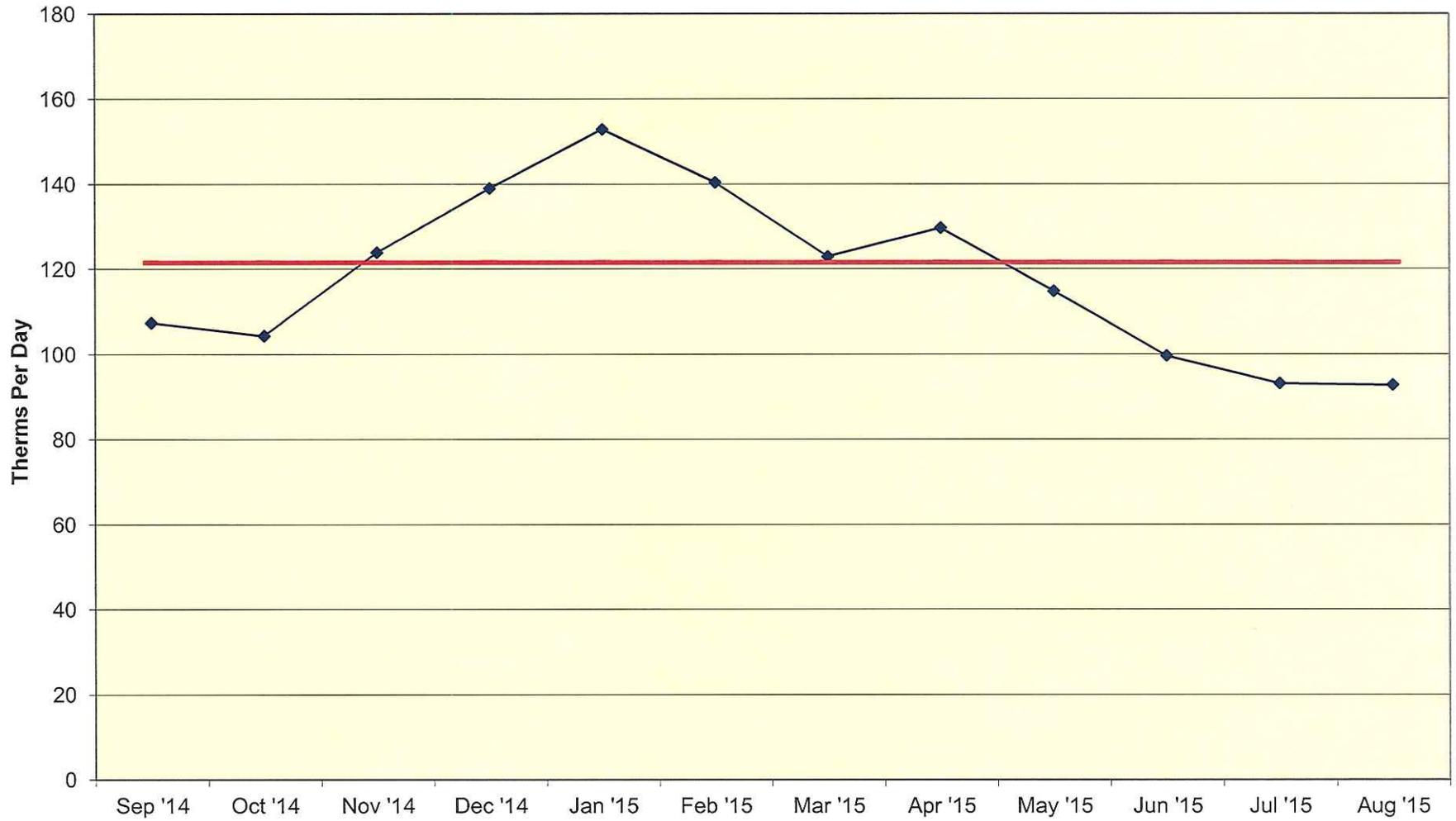
Energy kWh

—◆— kWh —■— Cap

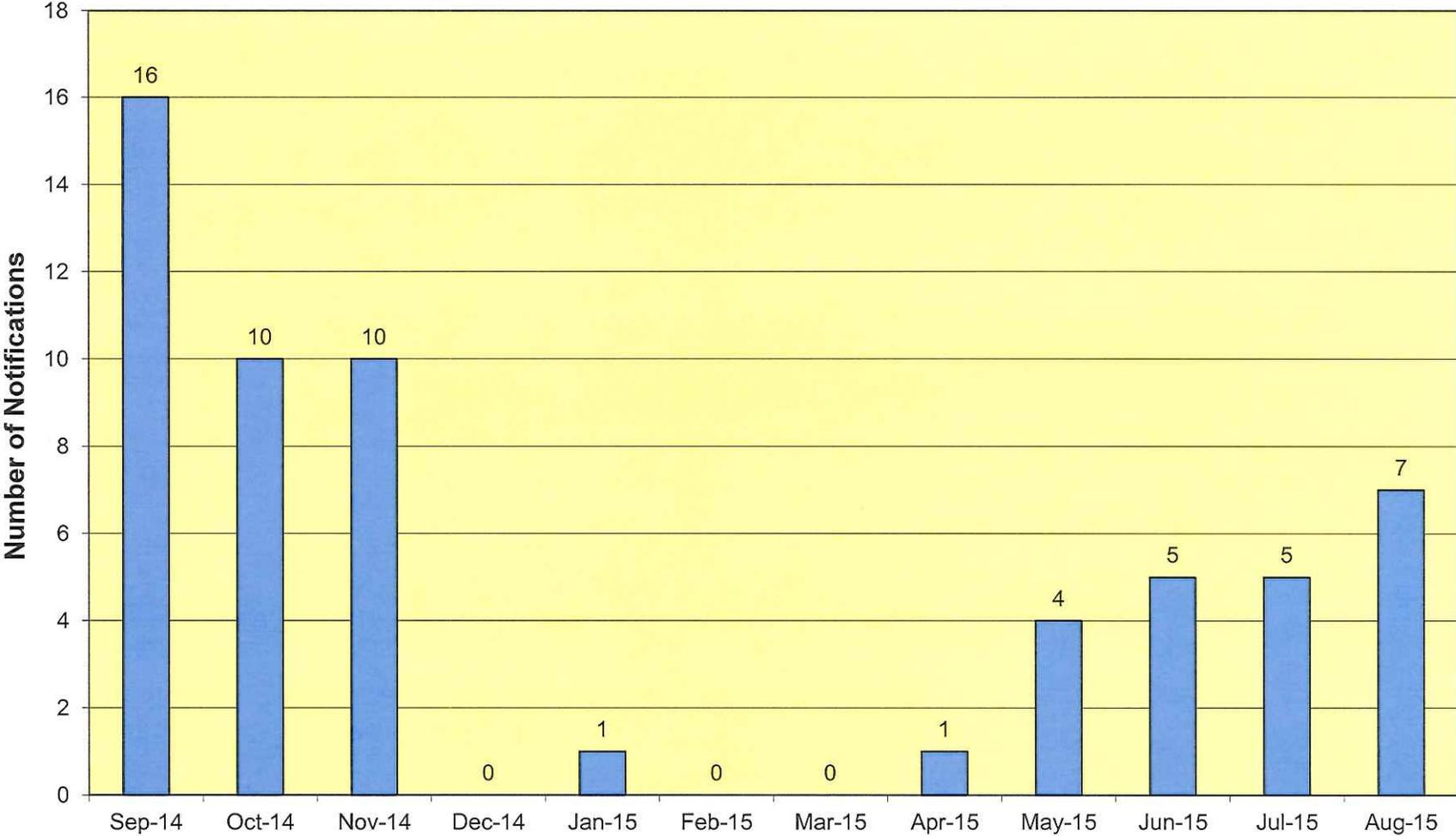


Natural Gas Use

◆ Natural Gas — Cap



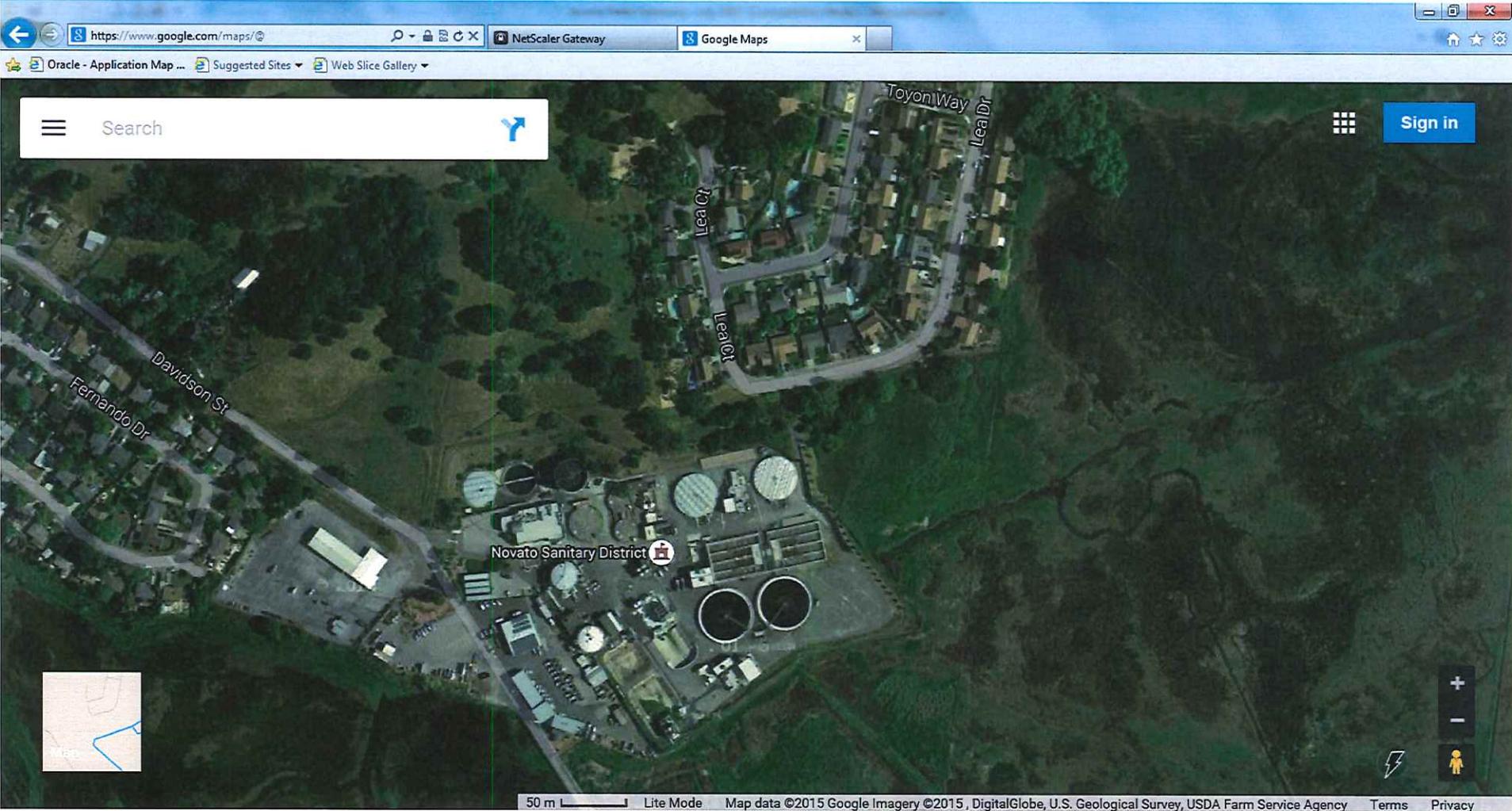
Complaints / Contacts Received



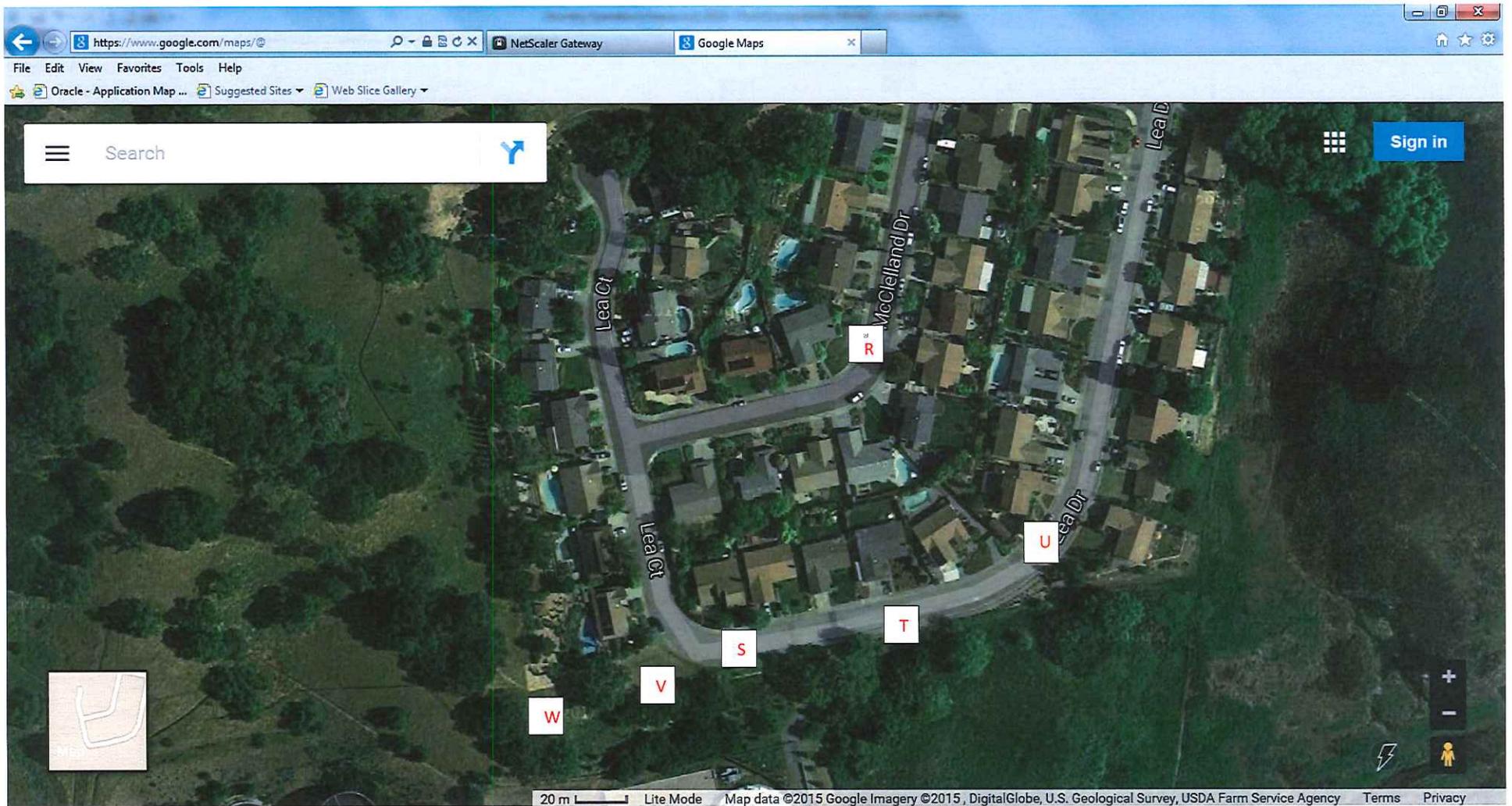
JEROME METER READINGS - JULY 2015

Sample Location	Min	Max	Ave	NOTES / COMMENTS
A: Influent Pump Station	0.000	0.000	0.000	
B: Septage Dumpster	0.000	0.001	0.001	
C: Primary Clarifier #1 Odor Bed	0.004	0.005	0.005	
D: Primary Clarifier #1	0.013	0.032	0.023	
E: Headworks	0.005	0.009	0.007	
F: Primary Clarifier #2 Odor Bed West	0.005	0.008	0.007	
G: Primary Clarifier #2 Odor Bed East	0.003	0.003	0.003	
H: Primary Clarifier #2	0.002	0.003	0.003	
I: Influent Odor Bed	0.002	0.003	0.003	
J: Behind Aeration Basins	0.000	0.003	0.002	
K: Between Aeration Basins 3 & 4	0.003	0.007	0.005	
L: Between Aeration Basins 1 & 2	0.001	0.004	0.003	
M: Digester Odor Bed	0.001	0.002	0.002	
N: Digester #2	0.000	0.001	0.001	
O: Flare Stack	0.001	0.001	0.001	
P: Digested Sludge Transfer Pit	0.001	0.002	0.002	
Q: Digester #1	0.001	0.780	0.391	
R: McLelland	0.001	0.001	0.001	Neighborhood
S: Lea 1	0.001	0.001	0.001	Neighborhood
T: Lea 2	0.000	0.000	0.000	Neighborhood
U: Lea 3	0.000	0.000	0.000	Neighborhood
V: Lea 4	0.000	0.002	0.001	Neighborhood
W: Lea 5	0.000	0.001	0.001	Neighborhood
Primary Clarifier #1 Headspace	45.000	49.000	47.000	Scrubbed Space
Primary Clarifier #2 Headspace	0.005	0.006	0.006	Scrubbed Space

AERIAL OF NSD AND NEIGHBORHOOD



NEIGHBORHOOD JEROME METER LOCATIONS – LEA AND McCLELLAND.



NOVATO SANITARY DISTRICT
Wastewater Operations Committee Meeting
Odor Control and Landscaping Report
August 2015

1.0 Background

Staff continues to maintain the on-going operation of the odor control facilities; and the landscaping, especially 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 initial 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

Activities related to maintenance of the odor control facilities in August included:

- Operations staff continued to monitor media in the large odor control bed between primary clarifiers #1 & #2. The media for this bed, as well as all of the other odor beds, was topped off in July, and all seem to be functioning well.
- Additional Jerome meter readings in the neighborhood continued at the Committee's request from earlier in the summer.
- The Aqua-Fog system continues to be used as needed (from a recommendation by the District's odor consultant Mr. David McEwen of Brown and Caldwell).
- Pre-chlorination: Sodium hypochlorite continues to be added as an oxidizer on an as-needed basis to the influent flow, with operations staff monitoring performance (in accordance with another recommendation by Mr. McEwen).

3.0 Landscaping

The District's landscaping contractor Cagwin and Dorward (C&D) continues to work on an as-needed/as-directed basis on landscaping and vegetation at the District's fence-line on Lea Drive, and at the northeast corner area of the NTP. The redwood trees in the northeast corner of the plant site, and the site vegetation continues to be irrigated with recycled water and seems to be responding to well to the drought conditions. The oleander along the northeast fence-line especially seems to be thriving despite suffering frost damage in previous winters.

**Novato Sanitary District
Wastewater Operations Committee meeting
Collection System Operations Report
August 2015**

1.0 General:

An equivalent of about six (6) full time employees (FTE) worked in the Collection System Department during the month of August. The breakdown of staff time for the month in terms of equivalent full-time employee hours utilized, works out approximately as follows:

- 2.0 FTE field workers for Sewer Maintenance (main line cleaning)
- 1.2 FTE field workers for Pump Station Maintenance
- 0.4 FTE field workers for Closed Circuit Television (CCTV) work
- 2.3 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, or special activities (for e.g. smoke testing of mainlines), and
- An equivalent of 1.1 FTE field workers for vacation, holiday or sick leave.

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 367 work orders were generated for August by the ICOM3 Computerized Maintenance Management System (CMMS). Staff completed 367 work orders leaving zero (0) work orders outstanding. The 367 maintenance work orders completed in August resulted in 53,112 feet of sewer pipelines cleaned by staff. In addition, outside contractors cleaned 8,990 feet of large diameter sewer mains this month.

Line cleaning efficiency dropped this month due to a significant amount of “short shots” in the neighborhoods around Randolph Drive & Bolling Circle in the southwest area of Hamilton. In addition, the cleaning crew pre-cleaned sewer mains in preparation for CCTV work which is spread throughout Novato as staff finishes up the 5-year CCTV program.

Smoke Testing

In addition to line cleaning, Collection System Department staff completed smoke testing of the neighborhood west of Simmons Lane between Feliz Road and Leese Lane. Approximately 10,649 feet of sewer main was smoke tested. The smoke testing identified several areas of missing cleanout caps on resident laterals as well as a damaged lateral under a utility box (see Photo 1). Staff will be contacting residents to and notifying them to repair the deficiencies.

**Novato Sanitary District
Wastewater Operations Committee meeting
Collection System Operations Report
August 2015**

CCTV Performance:

The District's CCTV van was in the field for nine (9) working days inspecting 30 line segments totaling 3,396 feet. Staff also televised 31 line segments totaling 5,161ft using the Push Cam. The push cam work was performed in lieu of hand rod work. Visual inspection of a sewer main is much more efficient than hand rod, and the crew can also determine if hand rodding is actually necessary.

CCTV Findings:

- **Infrastructure related:** The August CCTV identified one line segment that will require spot repairs, which will be appropriately prioritized under the District's Annual Collection System Repairs Project, Account No. 72805.
- **O&M related:** The July CCTV work did not identify any areas that require a change in sewer line operations.



Photo 1 – Smoke testing; smoke in Utility Box

3.0 Pump Station Maintenance:

The Collection System Department conducted 274 lift station inspections this month. 150 of the inspection visits were generated through the District's JobsCal Plus CMMS system. There are 15 outstanding work orders for the month, 7 corrective and 8 preventive. 4 of the outstanding preventive work orders are not pump station related. A Collection Systems (Pump Stations) Work Order Statistics summary is attached.

In addition to normal maintenance activities, District staff performed the following:

- Assisted a CCTV contractor by shutting down Olive Street Pump Station multiple times during the day so pre-cleaning and CCTV work could be performed downstream of the force main discharge point.
- Manually operated Bel Marin Keys Pump Station No. 5 throughout the night after the pump station controller failed.

4.0 Air Relief/Vacuum Valves (ARVs):

Staff completed maintenance inspections on four (4) air relief/vacuum valves.

5.0 Safety and Training:

General:

Collection System staff attended four (4) safety tailgate meetings.

**Novato Sanitary District
Wastewater Operations Committee meeting
Collection System Operations Report
August 2015**

Specialized training:

- Completed training on smoke testing of sanitary sewers.
- Attended training on blood borne pathogens.
- Conducted a drill on portable generator hookup at a pump station in case of a power failure (see Photo 2).



Photo 2 - Javier Vega training Joe Moreno & Aaron Hendricks on Standby Generator hookup at Redwood Pump Station.

Safety performance:

There were no lost time accidents this month for a total of 1,632 accident free days since the last lost time accident.

6.0 Minor Projects:

A tap for a gage on the suction line for Pump No. 3 at the East Hamilton Pump Station was repaired by an outside contractor.

Staff assisted Veolia in cleaning out the discharge line at the Decant Pump Station. Staff also responded to a report of a broken vent line on the Outfall in the pasture just north of the old Dechlorination Station near Novato Creek.

7.0 Standard Operating Procedures (SOPs):

No new core SOPs were identified, and as development of lower priority SOPs is being balanced against workload priorities, department staff did not generate any new SOPs in August. Also, the recently completed draft Core Competency Checklist continues to be used to track the initial training of a recently hired employee, and lessons learned will be incorporated in the final version, which will be used track the training of all department employees. Staff will also develop a similar draft checklist to use for tracking annual checks of Collections Department employees to determine where annual training is necessary.

8.0 Sanitary Sewer Overflows (SSOs):

There was one (1) SSO in August.

No.	Date	Location	Amount, gal	Cause/Probable Cause
1.	8/5/2015	857 DeLong Ave.	<15	Root Intrusion/Debris

On Wednesday, August 5, 2015, at approximately 2:15pm, Aaron Hendricks (CSW I), PJ Siragusa (CSW 1), and Bob Stiles (CSW I), were performing routine mechanical

**Novato Sanitary District
Wastewater Operations Committee meeting
Collection System Operations Report
August 2015**

rodder maintenance in an easement on a hillside above Delong Avenue across from Machin Avenue, and discovered a “weeping” manhole (G16070). Aaron immediately called Interim Collection System Superintendent Dasse de longh, and notified him. Dasse notified Steve Krauthem, Field Services Manager, and proceeded to the site.

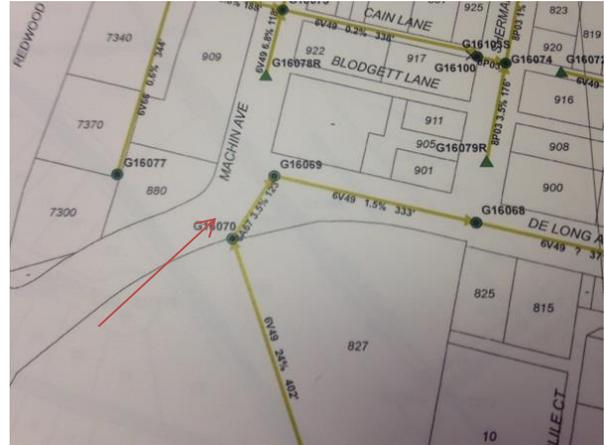


Photo 3 - Location of SSO, 857 DeLong

Aaron and Bob called the hydro-flusher crew for assistance and proceeded to take photos of the site. Dasse arrived on site at 2:30pm. PJ Siragusa, CSW I, was closing off a lane of Delong Avenue in preparation for the hydro-flusher’s arrival. Dasse went up the hill to inspect the overflow manhole and take pictures. The overflow site is in an area of heavy brush and poison oak with barbed wire fencing, and is not normally accessed by the public.

The hydro-flusher crew, Larry Foged (CSW II), and Joe Moreno (CSW I), arrived at 2:40pm and set up at the downstream manhole (G16069) to clear the stoppage. A small amount of flow was noticed in the downstream manhole prior to clearing the stoppage indicating a partial stoppage. At 2:50pm the stoppage was broken at a distance approximately 121 feet upstream from Manhole G16069. District records indicate that the line segment is 123 feet long. The hydro-flusher crew reported seeing roots and some rags in the flow when the stoppage was relieved.



Photo 4 - SSO, 857 DeLong

The initial determination was that this was a Category III event because the overflow soaked into the ground around the manhole, was very low in volume, and did not reach a storm drain or waterway. The low volume was attributed to there being only one house connected to that line segment and the observation that it was a partial stoppage. The saturated area around the manhole was measured to be two feet by four feet. A small amount of rags and debris were removed from the site. Based on the small saturated area measured at the manhole, staff estimated a discharge of no more than 15 gallons.

This line segment was last cleaned on schedule on March 4, 2014 using a hydro-flusher and was on a thirty-six (36) month cleaning frequency. CCTV inspection following the discharge event showed the line segment to be clear and without any signs of root

**Novato Sanitary District
Wastewater Operations Committee meeting
Collection System Operations Report
August 2015**

intrusion, structural defects or other problems. All previous work order history shows no sign of root intrusion on this line segment. For this reason along with the fact that the stoppage was at the downstream side of manhole G16070, we strongly suspect the cause of the overflow to be lateral roots blocking the manhole outlet.

During the performance of the CCTV work, the upstream line segment was also inspected. The inspection revealed that this line segment has root intrusion in many of the joints. Because of this, the upstream line segment's cleaning frequency will be increased from 36 months to 12 months, and it will be added to the Chemical Root Abatement Program for 2016.

This event was reported into the State's CIWQS database on August 5, 2015 as a Category III event, SSO Event ID # 817176 and was certified in CIWQS on August 14, 2015, Certification ID # 742924.

**Novato Sanitary District
Collection System Monthly Report For August 2015 (as of August 31, 2015)**

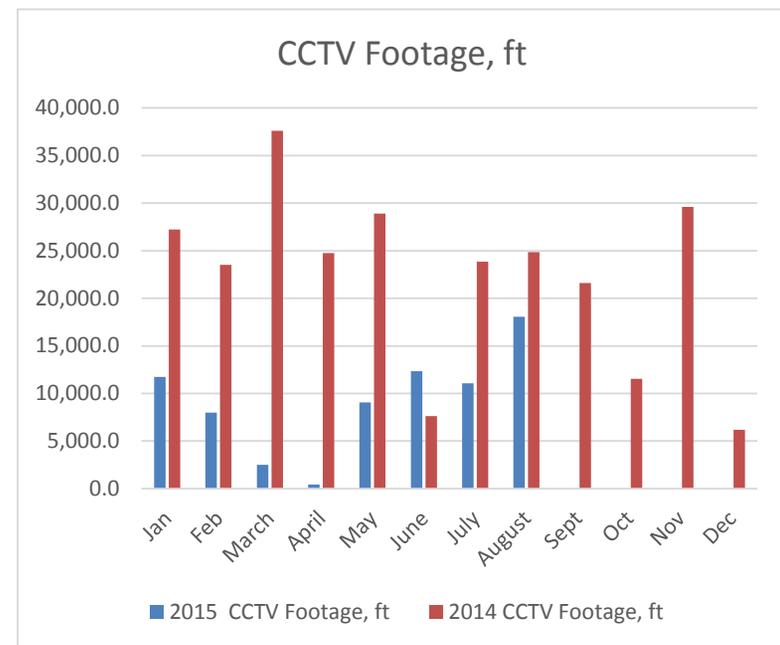
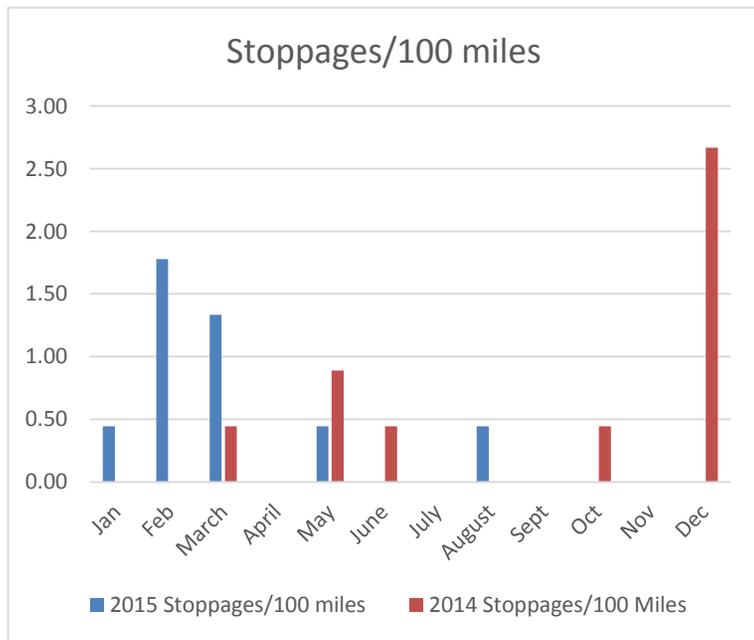
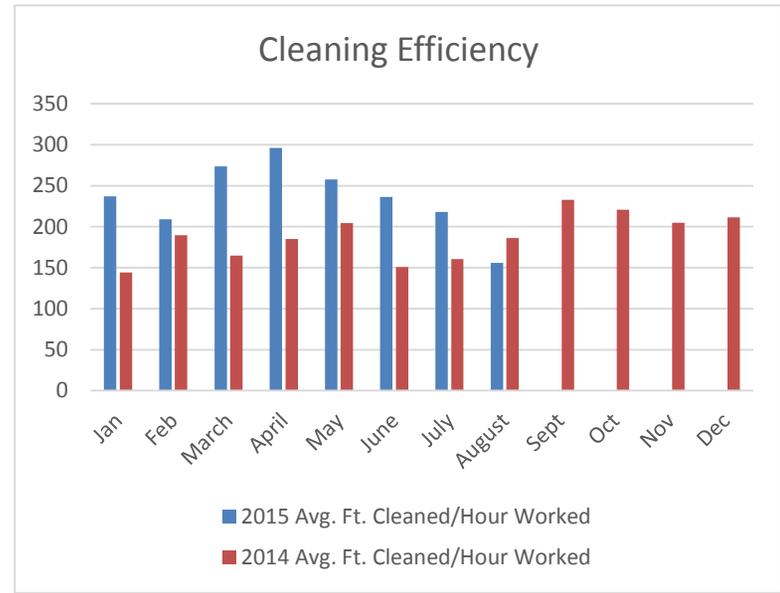
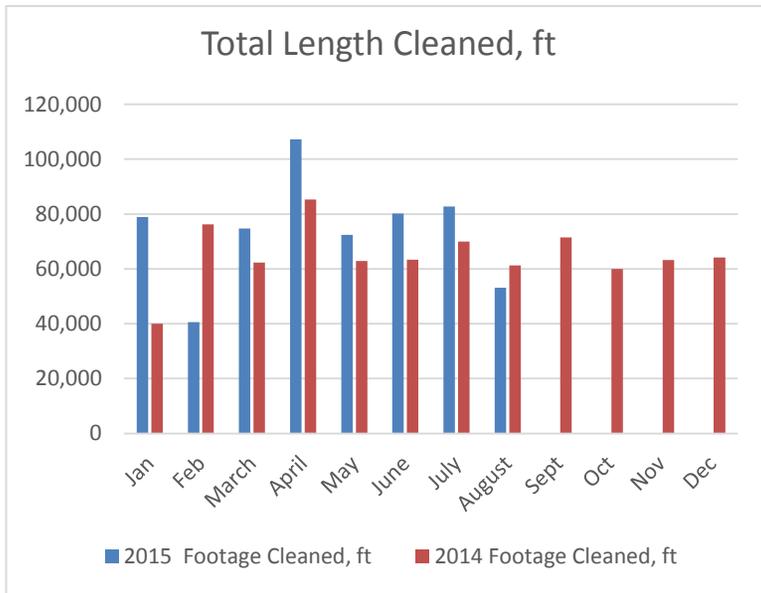
	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Total Year to Date	Average Year to Date
A. Employee Hours Worked														
Number of FTEs (main line cleaning), hrs.	1.9	1.2	1.5	2.2	1.7	1.9	2.1	2.0	0.0	0.0	0.0	0.0	NA	1.2
Number of FTEs (other)	1.6	2.1	1.8	2.0	1.9	2.1	2.4	2.3	0.0	0.0	0.0	0.0	NA	1.4
Number of FTEs (CCTV)	0.1	0.2	0.0	0.0	0.4	0.4	0.2	0.4	0.0	0.0	0.0	0.0	NA	0.2
Total, FTEs	3.6	3.5	3.4	4.2	4.0	4.5	4.7	4.7	0.0	0.0	0.0	0.0	NA	2.7
Regular Time Worked, (main line cleaning), hrs	333	194	273	363	281	339	380	341						
Regular Time Worked on Other, hrs (1)	281	329	320	341	312	382	433	392						
Regular Time Worked on CCTV (2)	15	36	4	0	71	72	45	67						
Total Regular time, worked, hrs	628	559	597	703	663	793	857	800	0	0	0	0	5,598	466
Total Vacation/Sick Leave/Holiday, hrs	403	356	271	277	307	239	181	180					2,211	276
Vacation/Sick Leave/Holiday, FTEs	2.3	2.2	1.5	1.6	1.8	1.3	1.0	1.1	0.0	0.0	0.0	0.0	12.9	1.1
Overtime Worked on Coll. Sys., hrs	3	0	16	3	7	4	6	9					47	6
Overtime Worked on Other, hrs (1)	14	45	31	19	15	29	39	31					222	28
Overtime Worked on CCTV (2)	0	0	0	0	4	0	0	3					7	1
Total Overtime, hrs	17	45	46	22	25	33	45	43	NA	NA	NA	NA	275	34
B. Productivity														
1. Line Cleaning														
Rodder Work Orders generated	90	31	42	23	11	46	69	43					355	44
Rodder 3208 ft. cleaned	15,611	6,776	7,657	3,885	2,857	8,033	12,373	7,451					64,643	8,080
Rodder - outside services, ft cleaned	0	0	0	0	0	0	0	0					0	0
Flusher Work Orders generated	340	183	388	543	455	396	351	324					2,980	373
Truck 3205V ft. cleaned	107	4,165	2,352	22,584	18,806	1,100	4,618	0					53,732	6,717
Truck 3206V ft. cleaned	63,145	29,612	64,665	80,792	50,753	70,998	65,731	45,661					471,357	58,920
Flusher - outside services, ft. cleaned	1,349	553	0	127	0	0	0	8,990					11,019	
Total Footage cleaned(3)	78,863	40,553	74,674	107,261	72,416	80,131	82,722	53,112	NA	NA	NA	NA	589,732	73,717
Work Orders completed	416	198	397	551	449	413	405	367					3,196	400
Work Orders backlog	14	16	33	15	17	29	15	0	NA	NA	NA	NA	139	17
2. Closed Circuit Television (CCTV)														
Camera Work Orders generated	0	0	0	0	0	0	0	0					0	
CCTV Truck 3126T, ft. videoed	3,998	6,622	1,795	303	7,211	7,037	6,793	3,396					37,155	4,644
CCTV (hand cam), ft. videoed	6,378	806	706	0	1,842	5,303	4,279	5,161					24,475	
CCTV Inspection - outside services, ft. videoed	1,349	553	0	127	0	0	0	9,496					11,525	
Total CCTV footage(3)	11,725	7,981	2,501	430	9,053	12,340	11,072	18,053	NA	NA	NA	NA	73,155	
C. Sanitary Sewer Overflows (SSOs)														
Minor (Category III)	1	4	3	0	1	0	0	1					10	NA
Major (Category II)	0	0	0	0	0	0	0	0					5	NA
Major (Category I)	0	3	2	0	0	0	0	0					0	NA
Overflow Gallons	126	2,419	1,603	0	5	0	0	15					4,168	NA
Volume Recovered	0	0	98	0	0	0	0	0					98	NA
Percent Recovered	0%	0%	6%	NA	0%	NA	NA	0%	NA	NA	NA	NA	2%	NA
D. Service Calls (non-SSO related)														
Service calls, normal hours, #	10	11	7	2	5	6	6	4					51	6
Normal hours S.C. response time, mins (avg.)	22	20	15	10	25	45	24	30					191	24
Service Callouts, after hours, #	1	1	1	1	1	1	0	1					7	1
After Hours S.C. response time, mins (avg.)	33	35	40	7	40	45	0	45					245	31
E. Benchmarks														
Average Ft. Cleaned/Hour Worked	237	209	274	296	258	236	218	156	NA	NA	NA	NA	NA	235
Total Stoppages/100 Miles	0.4	1.8	1.3	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	4.3	NA
Average spill response time (mins)	28	5	22	0	55	0	0	0					NA	14
Callouts/100 Miles	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.4	0.0	0.0	0.0	0.0	3.0	0.3
Overtime hours/100 Miles	1	0	7	1	3	2	3	4	0	0	0	0	20.67	2
Overflow Gallons/100 Miles	55	1052	697	0	2	0	0	7	0	0	0	-	1,812	151

(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 2014-15 Graphs



**COLLECTION SYSTEM (Pump Stations)
WORK ORDER STATISTICS
August 1, 2015 - August 31, 2015**

	Open Work Orders Due Prior to 8/1/2015	Open Work Orders 8/1/2015 - 8/31/2015	Total Open Work Orders
Preventive	2	156	158
Corrective	7	0	7
Total	9	156	165

	Closed Work Orders 8/1/2015 - 8/31/2015
Preventive	150
Corrective	0
Total	150

Total Outstanding Work Orders as of 7/31/2015	15
--	-----------

**NOVATO SANITARY DISTRICT
Wastewater Operations Committee Meeting
Reclamation Facilities Report
August 2015**

1.0 Summary:

The rancher tended to his cattle this month as well as working on weed management and sprinkler repairs in the irrigated parcels. Parcels were irrigated on all Sites without any reportable issues. Work began to clean out the Sludge Lagoons.

2.0 Ranch Operations:

The rancher spent most of his time tending to the cattle, weed management and sprinkler head repair & replacement.

3.0 Irrigation Parcels:

District staff continued to check the control system at each site to make sure they are functioning as expected.

Staff requested and received proposals to replace 70 feet of 24" culvert beneath the Pond 1 Access Road near the entry to Site 2 at Highway 37. This culvert failed last winter and caused the drainage ditch to back up and flood across another access road and onto Parcel 21 (Photo at right). This work is expected to be completed in September.



4.0 Irrigation Pump Station:

Approximately 62.45 MG of treated water was used for irrigation this month.

5.0 Sludge Handling & Disposal:

An Agreement was executed between the District and Custom Tractor Service (CTS) of Petaluma to pump sludge out of the sludge lagoons and into the Dedicated Land Disposal (DLD) area, in addition to dredging the lagoons. Approximately 0.48 MG of sludge was pumped out of Lagoon 1 by the end of the month.



NOVATO SANITARY DISTRICT
Reclamation Facility - Monthly Statistics for Calendar Year 2015, as of August, 2015

	January	February	March	April	May	June	July	August	September	October	November	December	Total Year to Date	Annualized Monthly Average
Irrigation Pump Station														
Plant flow to ponds (MG)		0	0	0	0	90.64	88.64	80.12					259.4	21.62
Irrigation (MG)		0	0	0.0	0.09	7.86	59.2	91.59	62.45				221.2	18.43
Irrigation Pump 1 Hours				0.3	17.2	100.2	125.6	88.6					331.9	27.66
Irrigation Pump 2 Hours				0.1	16.7	102.4	121.1	96.7					337.0	28.08
Irrigation Pump 3 Hours				0.1	15.2	99.6	127.9	88.5					331.3	27.61
Washdown Water Pump Hours				0	0	0	0						-	0.00
Wildlife Feed Pump Hours			331.5	51.6	0	626.8	740.5	743.4					2,493.8	207.82
Water Circulated through Wildlife Pond (MG)	0	0	20.88	3.25	0	39	47	47	0	0	0	0	157.1	13.09
Strainer No. 1 Hours				0.2	6.3	38	45.9	33.7					124.1	10.34
Strainer No. 2 Hours				0	6.3	39.8	45.9	33.7					125.7	10.48
Pond 1 Gauge @ Beginning of Month	5.4	5.4	5.6	5.4	5.4	4.9	5.3	3.6						
Pond 1 Gauge @ End of Month	5.4	5.6	5.4	5.4	4.9	5.3	3.6	3.8						
Pond 1 Gallons Stored @ End of Month(MG)	39.2	41	39.2	39.2	35.2	38.4	24.8	26.4						
Pond 2 Gauge @ Beginning of Month	5.5	5.5	5.7	5.5	5.5	5	5.5	3.7						
Pond 2 Gauge @ End of Month	5.5	5.7	5.5	5.5	5	5.5	3.7	3.9						
Pond 2 Gallons Stored @ End of Month(MG)	52	54	52	52	47	52	33	35						
Total Irrigation Water Stored	91.2	95	91.2	91.2	82.2	90.4	57.8	61.4	0	0	0	0		
Drainage Pump Station No. 3														
Drainage Pump No. 1 Hours	0	133.1	2.4	1.2	0	0	0	0						
Drainage Pump No. 2 Hours	0	0	2.1	0.1	0	0	0	0						
Drainage Pump No. 3 Hours	100.3	127.1	0.6	2.7	0	0	0	0						
Total Gallons Stormwater Pumped (MG)	30.09	78.06	1.53	1.2	0	0	0	0	0	0	0	0	110.88	9.24
Drainage Pump Station No. 7														
Drainage Pump No. 1 Hours	331.6	46.2	13.3	0.2	0.1	0	0	0						
Drainage Pump No. 2 Hours	0	0	0	0	0	0	0	0						
Drainage Pump No. 3 Hours	0	1.5	2.7	7.5	0.1	0	0	0						
Total Gallons Stormwater Pumped (MG)	149.22	21	7	3.47	0.09	0	0	0	0	0	0	0	181.44	15.12