

## NOVATO SANITARY DISTRICT

Meeting Date: July 20, 2015

The Wastewater Operations Committee of the Novato Sanitary District will hold a meeting at 2:00 PM, Monday, July 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. CONSIDER APPROVAL OF MINUTES OF THE JUNE 15, 2015 MEETING**

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

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

**6. RECLAMATION FACILITY REPORT FOR JUNE 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.***

June 15, 2015

A regular meeting of the Wastewater Operations Committee of Novato Sanitary District was held at 2:00 p.m., Monday, June 15, 2015, 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  
Brian Exberger, Assistant Project Manager, Veolia Water  
John O'Hare, Pretreatment Programs Manager, Veolia Water  
June Brown, Administrative Services Specialist

STAFF ABSENT: John Bailey, Project Manager, Veolia Water  
Tim O'Connor, Collections System Superintendent

AGENDA APPROVAL: Approved as presented.

PUBLIC COMMENT: None.

APPROVAL OF MEETING MINUTES OF MAY 18, 2015: The May 18, 2015 meeting minutes were approved as presented.

WASTEWATER TREATMENT FACILITIES OPERATIONS AND MAINTENANCE REPORT FOR MAY 2015:

- Treatment Plant Performance Report, Maintenance Report and Safety & Training:  
Manager Engineer Sandeep Karkal announced that John Bailey, Project Manager, Veolia Water, was unable to attend the meeting. Brian Exberger, Assistant Project Manager, and John O'Hare, Pretreatment Programs Manager, were in attendance to represent Veolia.

Assistant Project Manager Brian Exberger provided an overview of treatment plant operations for the month of May. 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 noted that May was a good month with all parameters well within limits and there were no NPDES violations. The Recycled Water Facility produced 16.22 MG of recycled water in May, but had six coliform excursions. Brian explained steps being taken by Veolia to investigate the cause of the coliform excursions.

The Assistant Project Manager discussed training events completed in May and stated that as of May 31<sup>st</sup>, Veolia employees have been accident free for a total of 1,832 days and will shortly be celebrating a 5-year no incident anniversary.

Jerome Meter (H2S) readings continue to be performed in the neighborhood and within the treatment plant. Committee members requested that future reports be amplified a little to include actual readings. Manager-Engineer Sandeep Karkal noted that while the readings are usually "zero", he would discuss with John Bailey as to how future reports could provide information on Jerome Meter measurements.

- Odor control and landscaping report: The Manager-Engineer reported that the District continues with additional odor control measures recommended by Mr. David McEwen of Brown and Caldwell, the District's odor consultant, during his presentation to the Board of Directors on May 11<sup>th</sup>. He described odor control related activities in May which included liquid phase sulfide sampling and analysis; use of the Aqua-Fog system on an as-needed basis to broadcast a water based non-toxic odor neutralizer in the vicinity of the aeration basins; monitoring of the media in the large odor control bed between clarifiers #1 and #2; and addition of sodium hypochlorite as an oxidizer on an as-needed basis to the influent flow, with staff monitoring performance.

#### COLLECTION SYSTEMS OPERATION AND MAINTENANCE REPORT FOR APRIL 2015:

Manager-Engineer Sandeep Karkal reported that Tim O'Connor, Collection System Superintendent, had this morning announced his intention to retire from District employment, effective June 25<sup>th</sup>.

The Collection Systems Monthly Report for May 2015 was presented by Steve Krautheim, Field Services Manager. He reported that the Collection Systems crew cleaned a total of 72,416 feet of sewer pipeline and that the department completed 449 maintenance work orders which were generated for May. He stated that the District's CCTV van (Closed Circuit TV) televised 47 line segments totaling 7,661 ft., identifying 3 line segments requiring spot repairs. Staff also televised 7 line segments totaling 1,842 ft. using the Push Cam. The Field Services Manager reported that staff also conducted 246 lift station inspections and completed maintenance inspections on 5 air relief/vacuum valves.

Collections staff attended 4 safety tailgate meetings and Heat Illness and PPE training in May. As of May 31, 2015, the Collections Department and the District have worked accident free for a total of 1,538 days.

The Field Services Manager stated that there was one minor sewer overflow in May estimated at 5 gallons or less. He stated that no new Standard Operating Procedures (SOP's) were generated in May.

#### RECLAMATION FACILITY REPORT FOR MAY 2015:

The Field Services Manager presented the Reclamation Facilities report for May. He stated that the rancher continued to harvest pasture grass in May. Repairs were made on the irrigation control system on Site 7. The leak on the Wildlife Pond Feed Line was located and repair parts ordered and received. Installation will occur in June. There were no sludge handling activities in May.

ANNUAL OPERATING BUDGET: Manager-Engineer Sandeep Karkal presented the Preliminary Operating Budget for Fiscal Year FY2015-16 for Committee review and recommendation for adoption by the full Board. The Committee suggested inclusion of an organization chart or staffing plan in the budget. The Manager-Engineer pointed out that the Personnel detail in the budget lists all District positions and there are actually two positions

less than last year because of changes in Laboratory operations. Director Miller requested that a short paragraph on staffing be included in the budget.

Director Miller enquired about the Appropriations Limit schedule. The Manager-Engineer responded that the Appropriations Limit is adopted by the Board at the second Board meeting in August, after statistical information is received from the State Department of Finance in May and from the County of Marin in July.

The Manager-Engineer noted that Account no. 61000-1 will change slightly to include an incentive allowance as provided in the contract between the District and Veolia Water. Director Peters questioned the budgeted amount for Account no. 65193 – Pump Station Telephone. The Manager-Engineer explained that this is for pump station alarms using telephone telemetry. In response to a question about the budgeted amount of \$375,260 for Account No. 66021 (Retiree Health Benefits) the Manager-Engineer explained that this is comprised of retiree health benefits for existing District retirees and the annual required contribution for active employees. The Manager-Engineer agreed to include the missing footnote for Account no. 66123 – Outside Contractual.

On motion of Director Miller, seconded by Director Peters, the Committee recommended adoption of the Preliminary Budget to the full Board.

OTHER ITEMS:

The Manager-Engineer indicated he will be out of the office for the next scheduled Wastewater Operations Committee meeting of July 20, 2015.

ADJOURNMENT: There being no further business to come before the Committee, the meeting adjourned at 3:10 p.m.

Respectfully submitted,

---

Sandeep Karkal  
Manager-Engineer

June Brown, Recording



July 15, 2015

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

**Subject: Veolia Water Operations Report – June 2015**

Dear Mr. Karkal:

I am pleased to provide the Monthly Operation report for June 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 that reads "John Bailey". The signature is stylized and cursive.

John Bailey  
Project Manager, Veolia



**MONTHLY OPERATIONS REPORT**  
**June 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	
○ Bio-Gas Flare Repair	
○ Public Education Wetlands Days	
○ Reclamation Pasture Evaluation	
○ Wildlife Pond Monitoring / Sampling	
• Laboratory Data	
• Recycled Water Report	
• Annual Performance Graphs	
• Process Control Data / Graphs	
• Customer Notifications (Odor)	

---

**TREATMENT PLANT PERFORMANCE SUMMARY: June 2015:**

Parameter	Value		Limit	
	Ave	Max	#1	#2
Flow, MGD (monthly ave/max)	3.45	3.88	N/A	N/A
Max Peak Hour, MGD – No Significant Rainfall	N/A	~ 8	N/A	N/A
<b>Influent</b>				
BOD <sub>5</sub> , lb/day (month ave/max)	8,417	9,887	N/A	N/A
TSS, lb/day (monthly ave/max)	9,432	13,192	N/A	N/A
<b>Effluent</b>				
BOD <sub>5</sub> , mg/L (monthly ave)	9	12	40	N/A
TSS, mg/L (monthly ave/weekly max)	<5	5	N/A	N/A
BOD <sub>5</sub> - % 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)	0.46	0.46	N/A	N/A
pH, su (min / max)	6.8	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 <sup>th</sup> percentile)	N/A	N/A	N/A	N/A
Total Coliform, MPN/100 ml (5 Sample Median/Max)	50	49	240	10,000
<b>Total Permit Exceedances (NPDES)</b>	0			

**Title 22 - Recycled Water Production and Quality**

Description	Units	Value	Limit
Volume Produced	Million Gallons	13.747	N/A
Average Turbidity	NTU	1.3	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	6.4	2 mg/L
Maximum Total Coliform	MPN/100 ml	4	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. – 0.15 inches, June 10, 2015.

**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 June.
- Accident Free: 6/1/10 – 6/30/15: 1,862 days
- Monthly Safety Topics and Training:
  - Good Housekeeping
  - SOP Review: Removing and Restoring Service to Primary Clarifier #1

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

Transition from Bay Discharge (NPDES) to Reclamation / Storage (WDR) occurred on June 1, 2015.

**Novato**

- Routine rounds, readings and maintenance
- Troubleshoot Dry Weather Pump #4
- Boiler Chemical Treatment Service
- Pumped out Digested Sludge Pit
- Installed new VFD for Thickened Waste Activated Sludge (TWAS) Pump #1
- Flare - Troubleshoot and replaced UV Sensor (Fire Eye)
- Repaired Polymer Pump #1

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

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

**Ignacio Transfer Pump Station**

- Routine rounds, readings and maintenance

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

- None

**Recycled Water Plant (RWP)**

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

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

- None

**Sludge Lagoons**

- Performed routine rounds and inspection

**LABORATORY ACTIVITIES SUMMARY:****Irrigation Wetwell Sampling**

Monthly sampling of the irrigation wetwell was performed in June 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.

Stephanie Larson, Sonoma County Director and Livestock Range Management Advisor at University of California Cooperative Extension toured the reclamation pastureland along with Liz Falejczyk, and Steve Krauthaim on June 8. This is a triennial inspection of the pastureland in preparation for the Irrigated Pasture Report. Dr. Larson seemed pleased with the overall health of the pastures. (Report received 7/10/15.)

**Public Education**

Kurt Hawkyard attended the Public Education Committee with Julie Swoboda.

Julie, Kurt, and Liz Falejczyk participated in Wetlands Days at Sewer Authority of Southern Marin (SASM). Julie trained Kurt on a "Bird Station", and Liz hosted "The Toilet is not a Trash Can" station. Approximately 320 3<sup>rd</sup> grade students attended the 2 day event.

**Ethics Training**

Veolia hosted a Comprehensive Ethics and Integrity Training for Environmental Laboratory Professionals presented by Diane Lawver of Quality Assurance Solutions, LLC. This training is strongly recommended by the Environmental Laboratory Accreditation Program which is the program that certifies Water and WWTP laboratories. As North Marin Water District (NMWD) lab staff performs work in the NSD laboratory and also supports us by providing services at their laboratory, the NMWD staff was invited to participate in the training. All NMWD lab staff attended the training. In addition Veolia lab staff from Richmond attended along with lab staff from SASM and Las Gallinas Valley Sanitary District. Certificates were awarded at the end of the training as well as continuing education contact hours, used for professional certifications.

**Performance Testing Results**

We received results from the proficiency testing conducted in May along with a certificate of excellence for achieving 100% acceptable data in the study.

**CERTIFICATE OF EXCELLENCE**

In recognition of the quality of your laboratory in proficiency testing for

WP-243

Novato Sanitary District

is issued this certificate of achievement by ERA. This laboratory has been recognized as a Laboratory of Excellence for achieving 100% acceptable data in this study which included 918 participating laboratories. This achievement is a demonstration of the superior quality of the laboratory in evaluation of the standards listed below.

Demand	Hardness
Minerals	pH
Simple Nutrients	Total Residual Chlorine
Turbidity	



Kristina Sanchez  
Quality Officer

2158M01

**ADMINISTRATION:**

- May Electronic Self-Monitoring Report (SMR) submitted on June 30, 2015
- May Electronic Discharge Monitoring Report (DMR) submitted on June 30, 2015

**ODORS:**

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

**MISCELLANEOUS**

- Process Control Management Plan (PCMP) meetings held weekly.
- Recruitment open for Operator III.

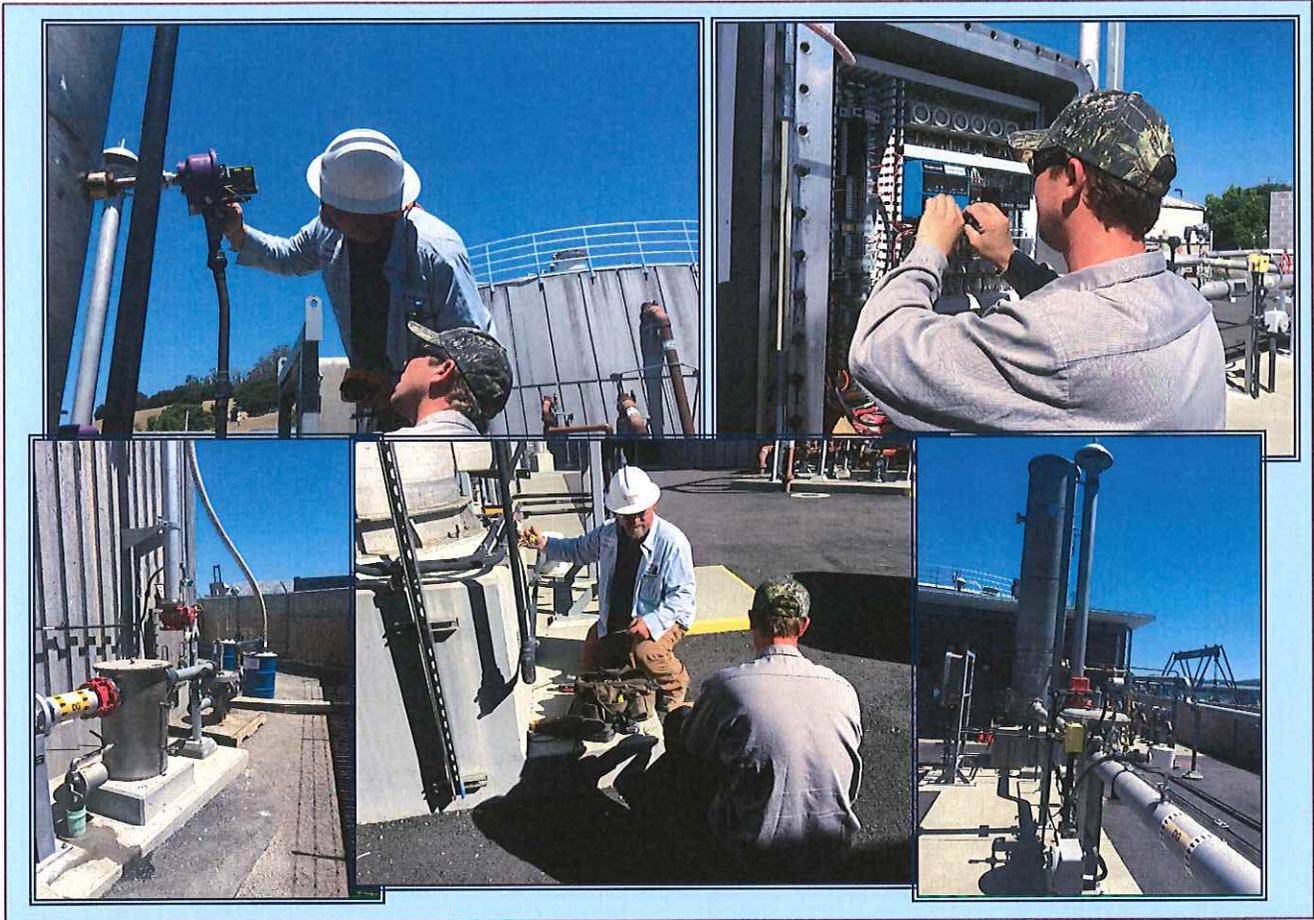
**Veolia Support Staff On/Off Site (Various Times)**

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



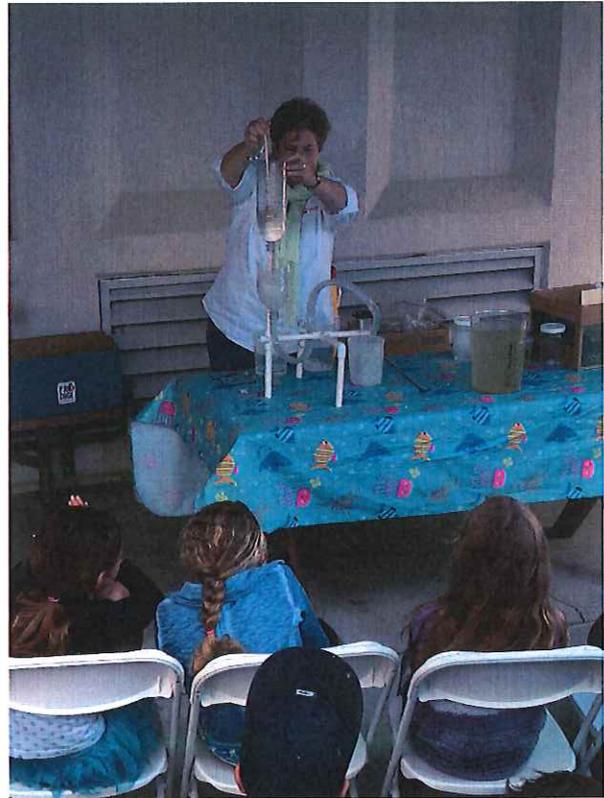
# BIOGAS FLARE REPAIR

June 2015

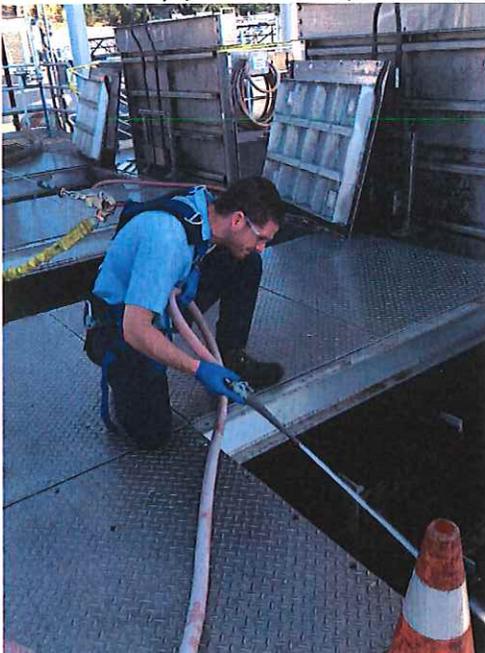




Wetlands Days June 4<sup>th</sup> & 5<sup>th</sup>, 2015

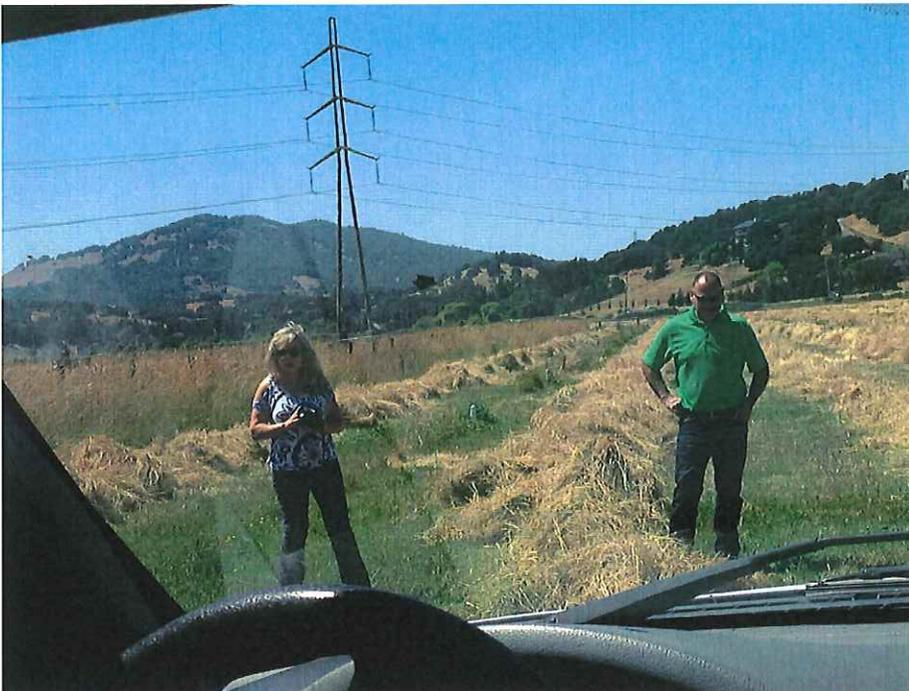
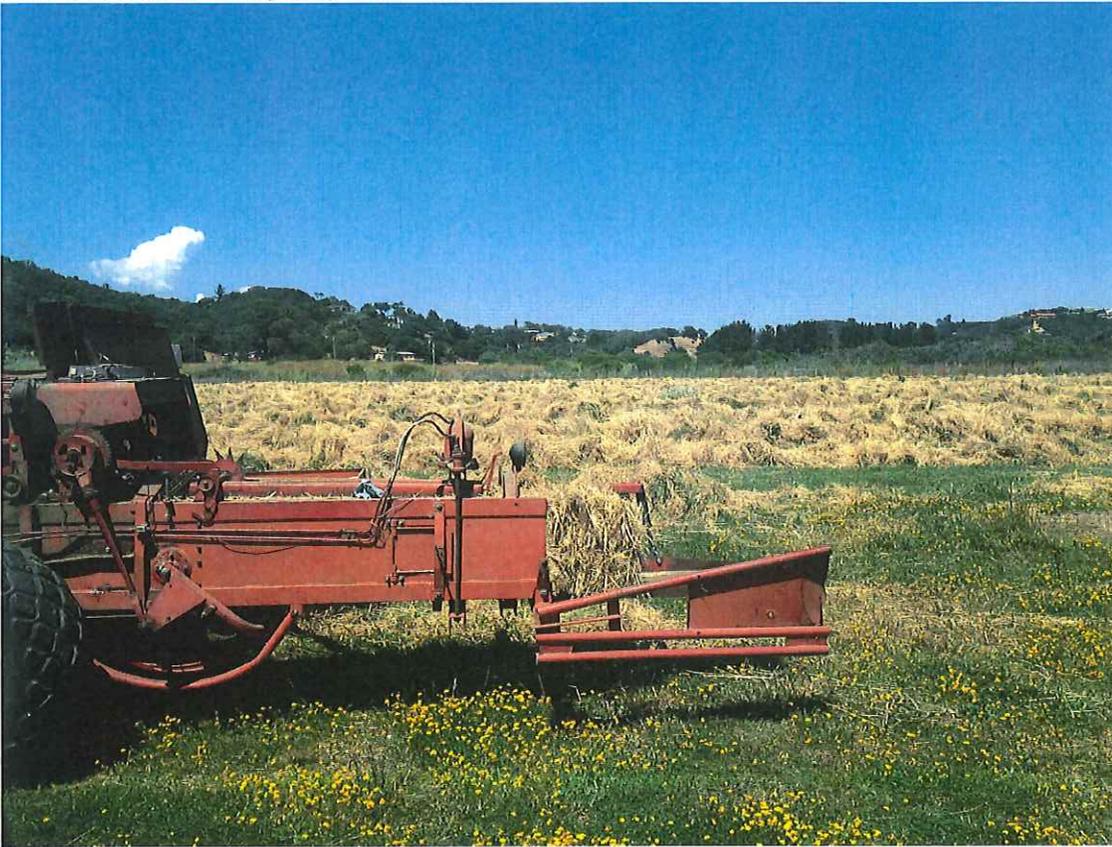


Common Bay (Effluent Box) Cleaning 6/11/15



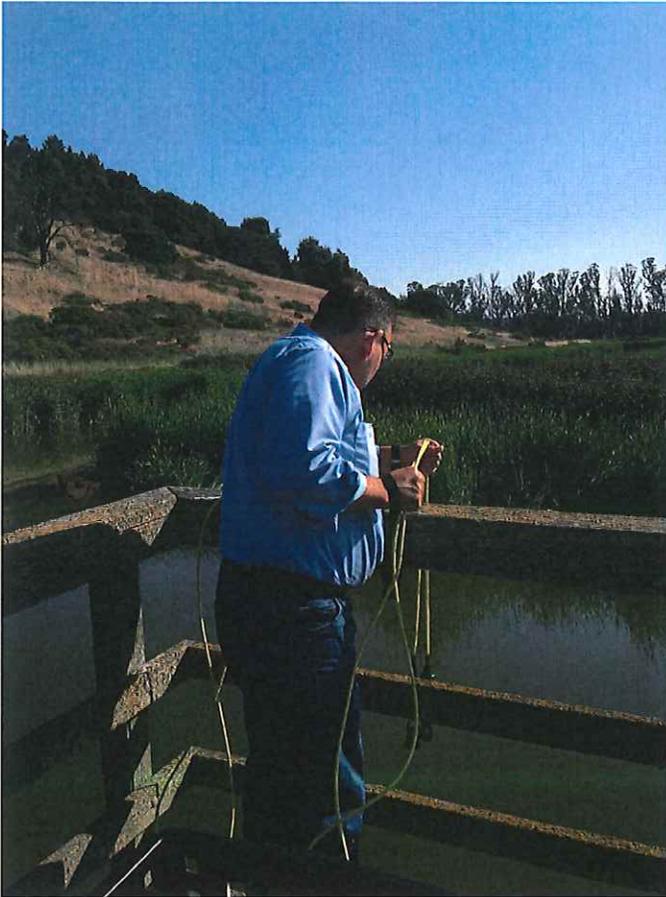


Pasture Evaluation by Stephanie Larson





Wildlife Pond Monitoring



Novato Sanitary District  
BOD/TSS Report



June, 2015

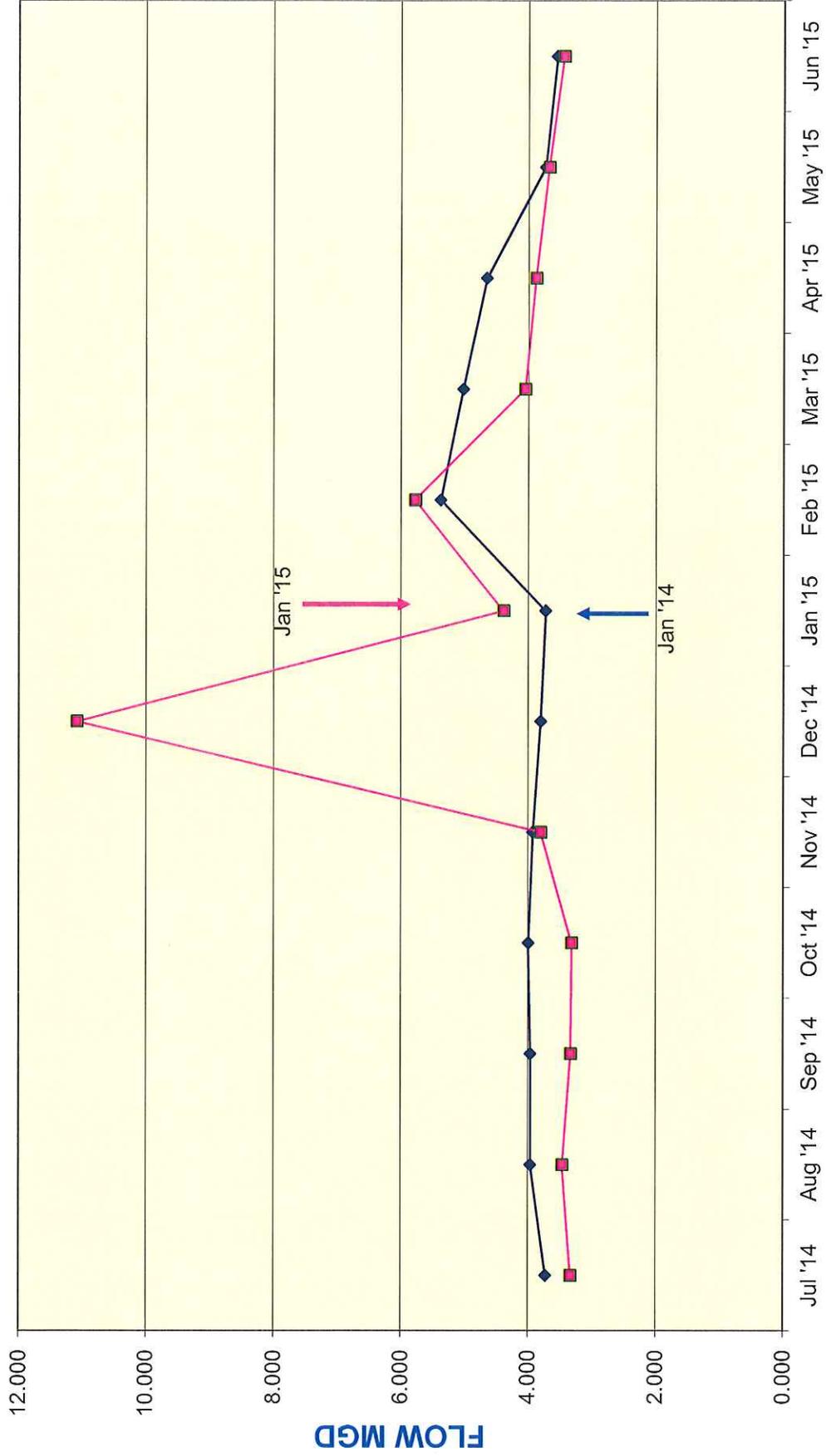
Date	Flow MGD	Influent				Effluent				BOD % Removal	TSS % Removal
		BOD		TSS		BOD		TSS			
		mg/l	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	lb/d	PERCENT	PERCENT
06/01/15	3.47	332	9,608	330	9,550	7	203	3	87	97.9	99.1
06/02/15	3.46	337	9,725	338	9,753	21	606	8	231	93.8	97.6
06/03/15	3.60	248	7,446	324	9,728	<5	<150	4	120	98.0	98.8
06/04/15	3.37										
06/05/15	3.38										
06/06/15	3.29										
06/07/15	3.73	301	9,364	344	10,701	8	249	8	249	97.3	97.7
06/08/15	3.43	241	6,894	254	7,266	<5	<143	<3	<86	97.9	98.8
06/09/15	3.48	255	7,401	322	9,345	6	174	<3	<87	97.6	99.1
06/10/15	3.88										
06/11/15	3.68										
06/12/15	3.61										
06/13/15	3.62										
06/14/15	3.67										
06/15/15	3.33	356	9,887	475	13,192	11	305	5	139	96.9	98.9
06/16/15	3.26	240	6,525	294	7,993	8	218	5	136	96.7	98.3
06/17/15	3.27										
06/18/15	3.27	292	7,963	294	8,018	6	164	<3	<82	97.9	99.0
06/19/15	3.12										
06/20/15	3.24										
06/21/15	3.38										
06/22/15	3.39										
06/23/15	3.55	331	9,800	375	11,103	16	474	5	148	95.2	98.7
06/24/15	3.49	292	8,499	363	10,566	11	320	5	146	96.2	98.6
06/25/15	3.58										
06/26/15	3.29	281	7,710	298	8,177	9	247	5	137	96.8	98.3
06/27/15	3.40										
06/28/15	3.56	311	9,234	326	9,679	5	148	4	119	98.4	98.8
06/29/15	3.36	300	8,407	296	8,295	9	252	4	112	97.0	98.6
06/30/15	3.23	289	7,785	301	8,108	11	296	5	135	96.2	98.3
<b>Weekly Averages</b>											
06/06/15	Week 1	306	8,926	331	9,677	11	320	5	146		
06/13/15	Week 2	266	7,886	307	9,104	6	189	5	141		
06/20/15	Week 3	296	8,125	354	9,734	8	229	4	119		
06/27/15	Week 4	301	8,670	345	9,948	12	347	5	144		
	Week 5										
<b>Monthly</b>											
Minimum	3.12	240	6,525	254	7,266	<5	<143	<3	<82	94	98
Maximum	3.88	356	9,887	475	13,192	21	606	8	249	98	99
Total	103.39										
Average	3.45	294	8,417	329	9,432	<9	<263	<5	<134	97	99



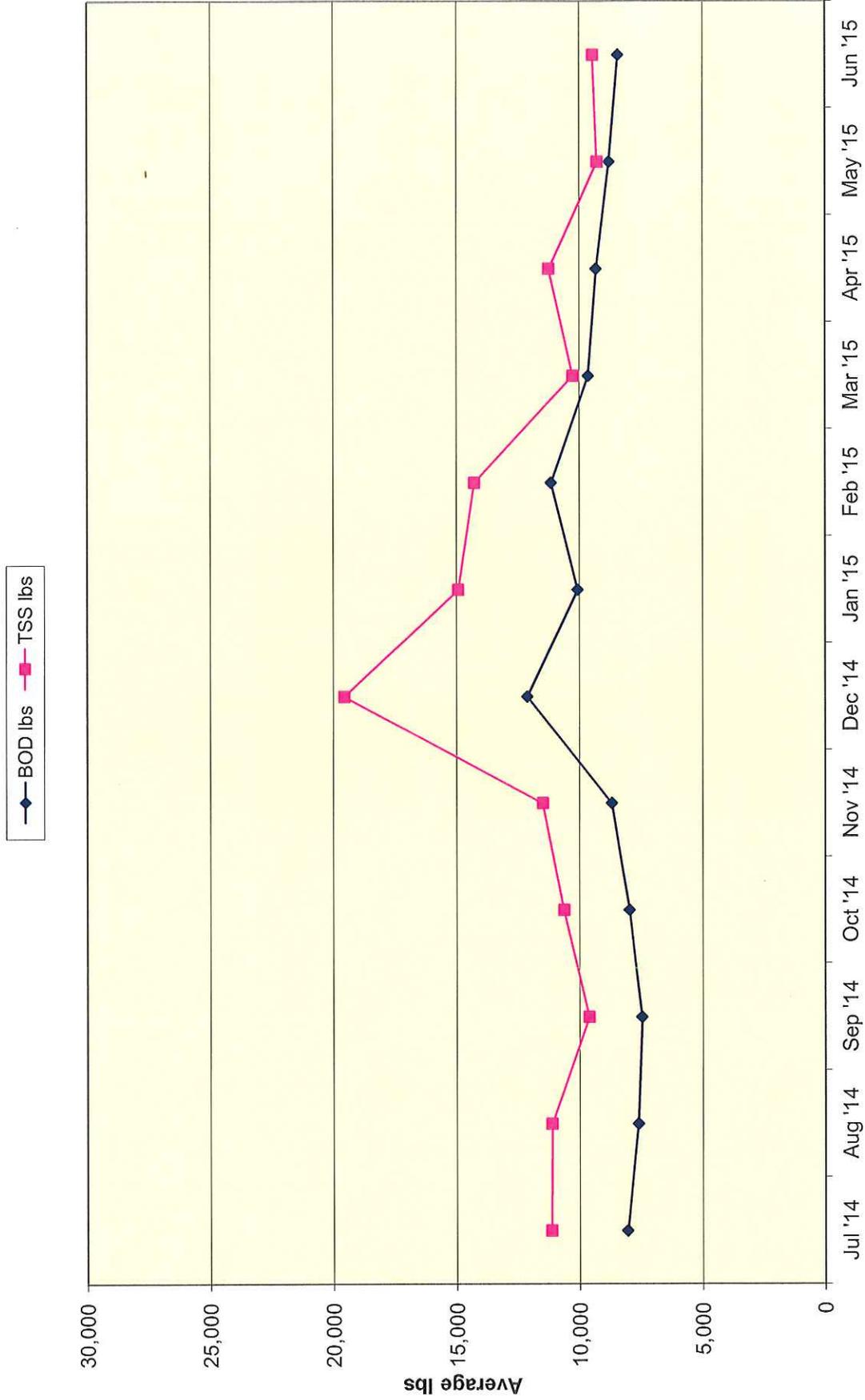
# NOVATO SANITARY DISTRICT RECYCLED WATER COMPLIANCE SUMMARY REPORT

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 NTU 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	
6/1/2015	0.890	0.584				3.4	0	1.8		8.9	<2	>450.000	
6/2/2015	1.010	0.641				3.6	0	1.9		8.5	<2	>450.000	
6/3/2015	1.010	0.044					0	1.7		8.8	<2	>450.000	
6/4/2015	0.760	0.438					0	1.6			<2		
6/5/2015	0.990						0	0.1					
6/6/2015	1.020	0.254				4.6	0	1.6			<2	>450.000	
6/7/2015	0.610	0.105				3.5	0	1.4		6.7	<2	>450.000	
6/8/2015	0.730	0.340					0	1.6		7.4	<2	>450.000	
6/9/2015	1.260	0.604					0	0.8		7.2	4	>450.000	
6/10/2015	1.290	0.920				1.8	0	1.1			<2	>450.000	
6/11/2015	0.690	0.548				2.0	0	1.0			<2	>450.000	
6/12/2015	0.810	0.682				2.4	0	1.1			<2	>450.000	
6/13/2015	0.680	0.573				2.3	0	1.1			<2	>450.000	
6/14/2015	0.740	0.642				2.4	0	1.1			<1.8	>450.000	
6/15/2015	0.760	0.617				2.6	0	1.3		6.6	<2	>450.000	
6/16/2015	0.670	0.562				3.0	0	1.5		7.0	<2	>450.000	
6/17/2015	0.780	0.661				2.7	0	1.4		6.4	<2	>450.000	
6/18/2015	0.710	0.580				2.7	0	1.1			<2	>450.000	
6/19/2015	0.840	0.735				3.0	0	1.2			<2	>450.000	
6/20/2015	0.160	0.087				2.8	0	1.0			<2	>450.000	
6/21/2015	0.480	0.129				2.3	0	1.0			<2	>450.000	
6/22/2015	0.890	0.691				2.3	0	1.0		6.7	<2	>450.000	
6/23/2015	0.860	0.422				2.7	0	1.3		7.1	<2	>450.000	
6/24/2015	0.720	0.133				2.9	0	1.8		7.8	<2	>450.000	
6/25/2015	0.810	0.200				2.6	0	2.0			<2	>450.000	
6/26/2015	0.840	0.000				2.7	0	1.8			<2	>450.000	
6/27/2015	0.870	0.664				1.4	0	1.2			<2	>450.000	
6/28/2015	0.910	0.659				1.2	0	0.8			<2	>450.000	
6/29/2015	0.800	0.594				2.1	0	1.3		7.3	<2	>450.000	
6/30/2015	0.810	0.638				2.1	0	1.8		6.8	<2	>450.000	
Total	24.400	13.747				65.1	0	39.4		103.1	<54	>12,600.0	
Minimum	0.160	0.000				1.2	0	0.1		6.4	<2	>450.0	
Maximum	1.290	0.920				4.6	0	2.0		8.9	4	>450.0	
Average	0.813	0.474				2.6	0	1.3		7.4	<2	>450.0	
Average	0.813	0.474				2.6	0	1.3		7.4	<2	>450.0	

# FLOW COMPARISON

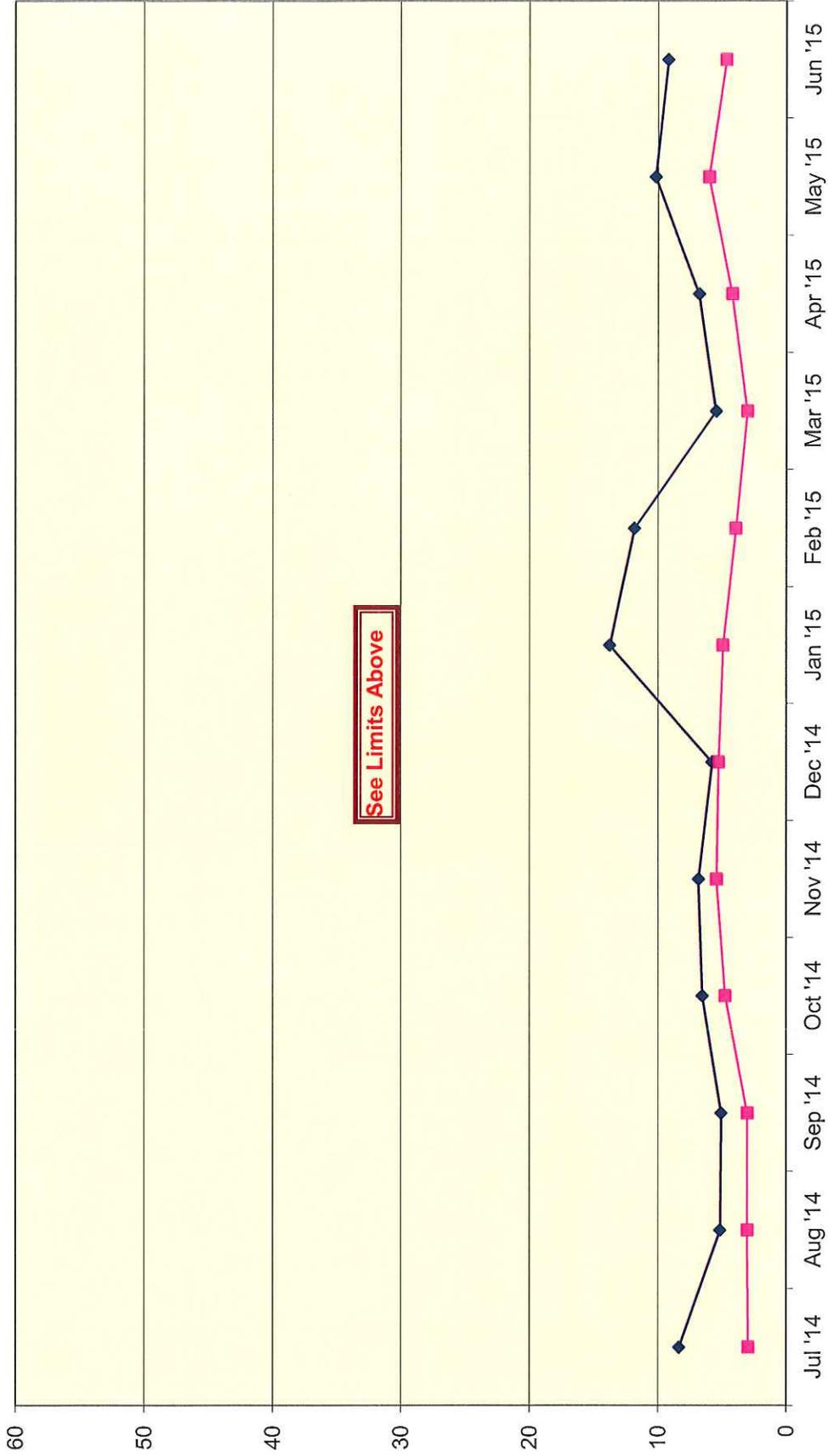


# Influent Load BOD / TSS lbs

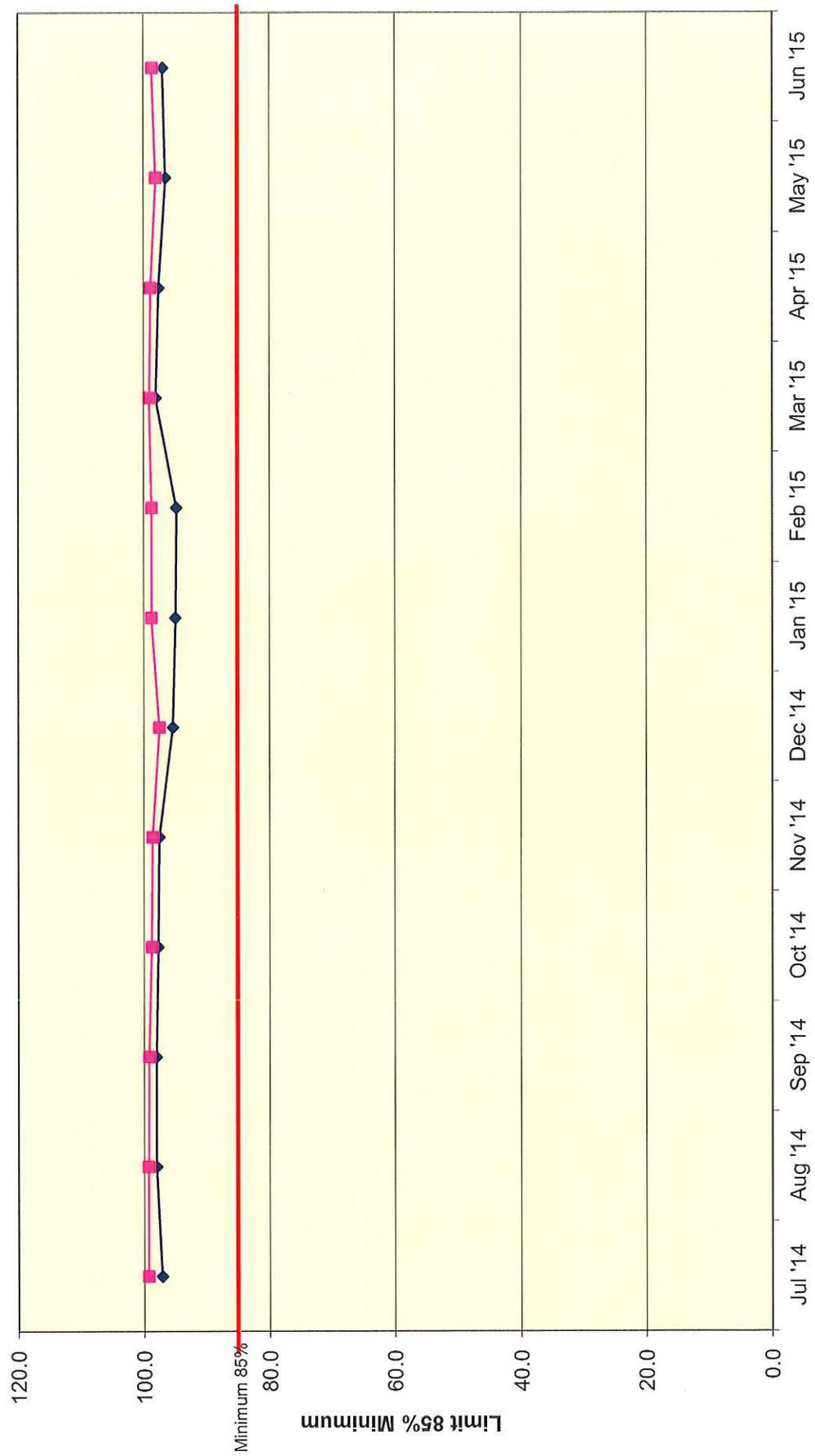


# Effluent BOD / TSS Concentration

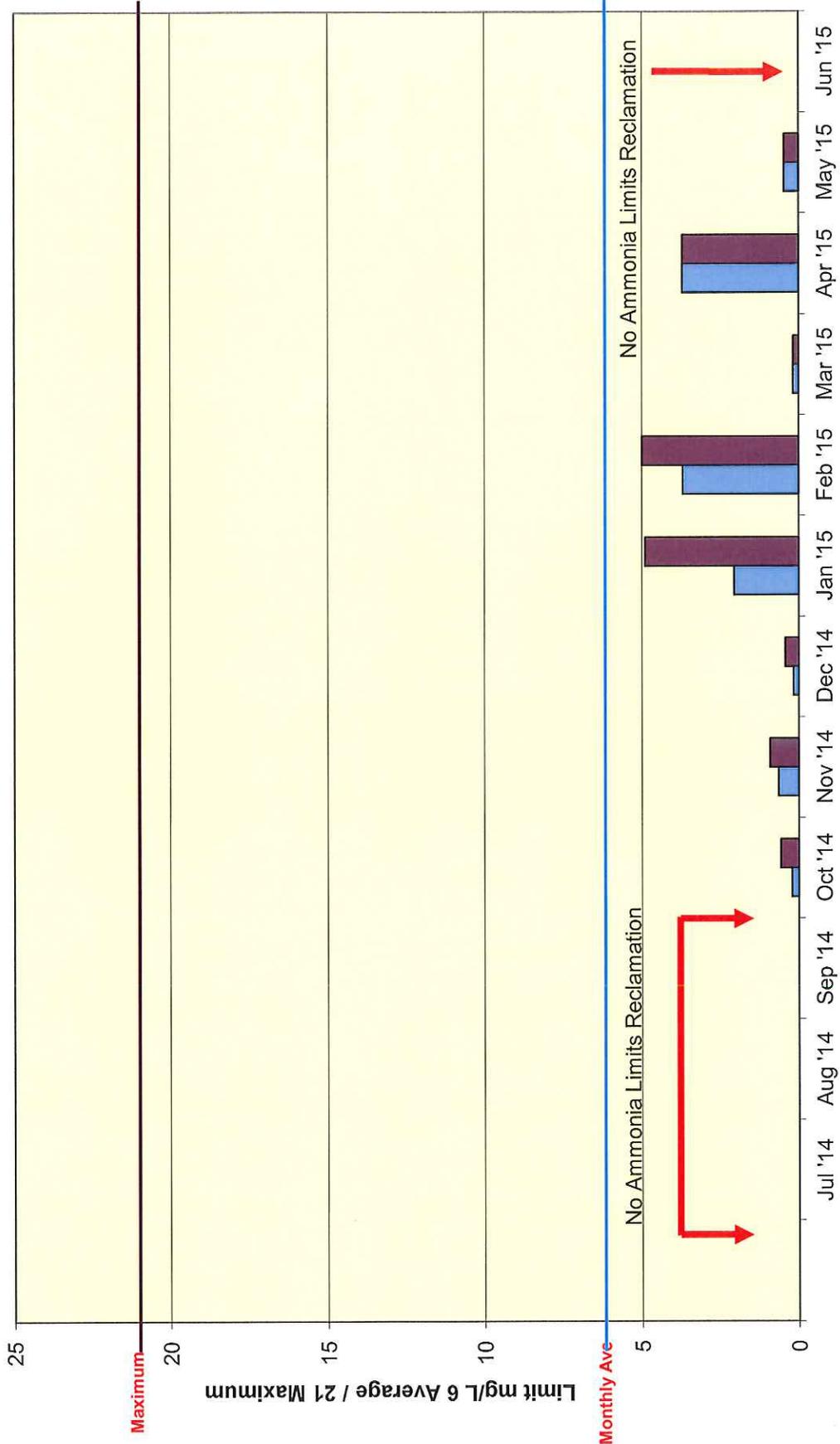
NPDES LIMITS WET SEASON  
BOD & TSS - 30 mg/L Monthly Ave, 45 mg/L Weekly Ave  
NPDES LIMITS DRY SEASON  
BOD - 15 mg/L Monthly Ave, 30 mg/L Weekly Ave  
TSS - 10 mg/L Monthly Ave, 20 mg/L Weekly Ave  
**WDR (Waste Discharge Requirements) RECLAMATION  
BOD - 40 mg/L**



# BOD / TSS Percent Removal



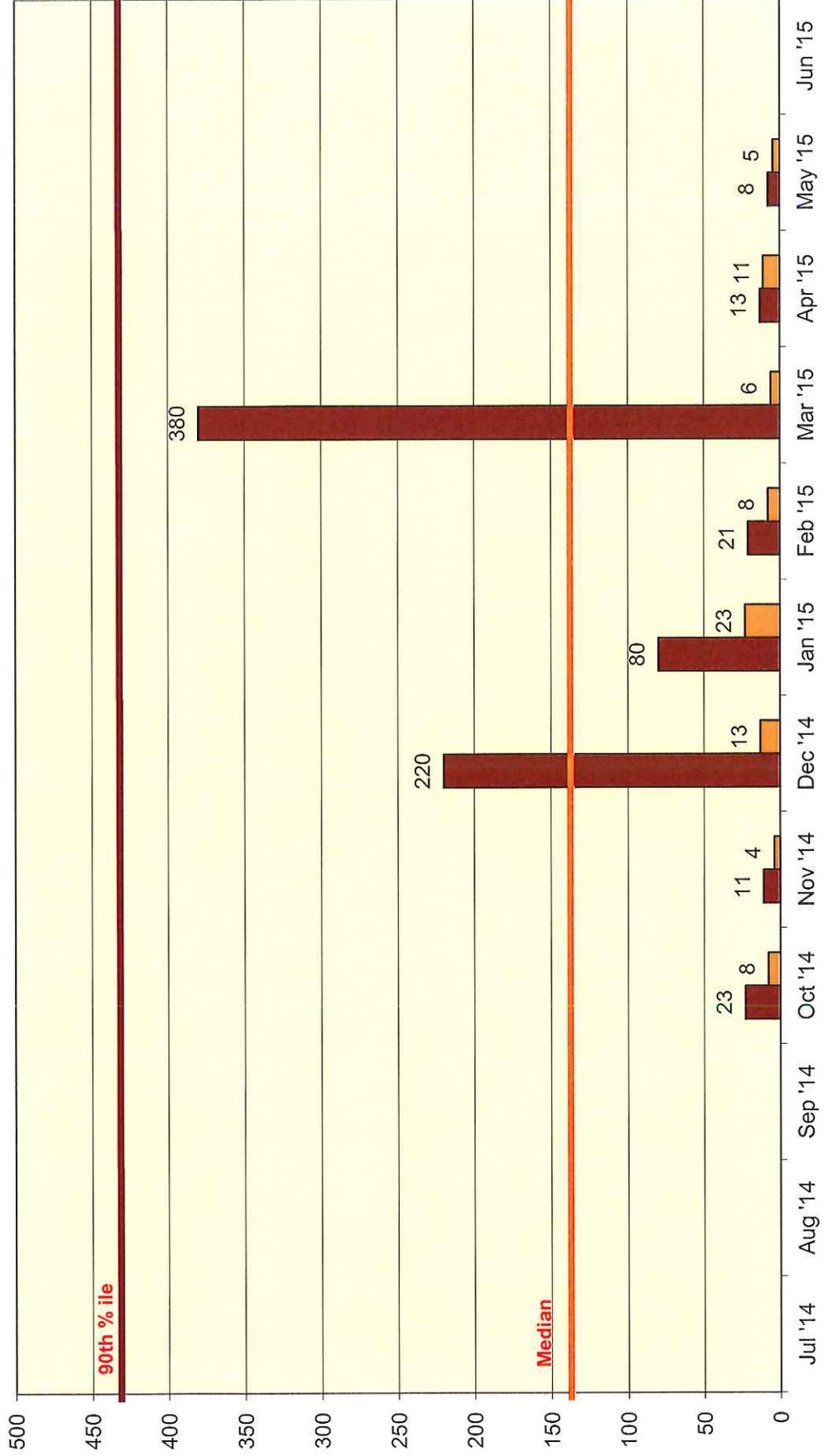
# Effluent Ammonia



# Disinfection - Fecal Coliform

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

■ 90th % ile ■ 30 day med



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

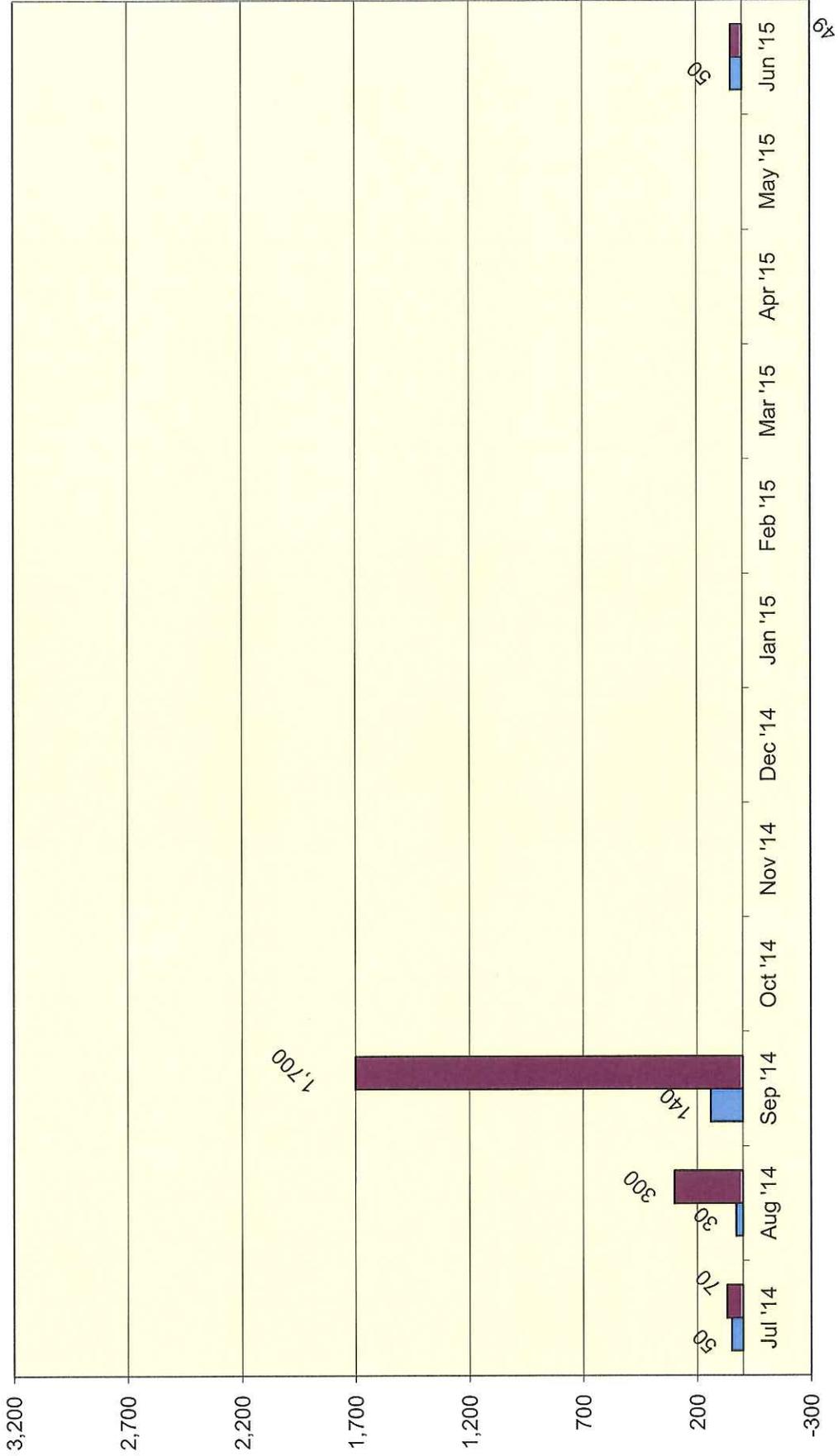
## Disinfection - Enterococcus



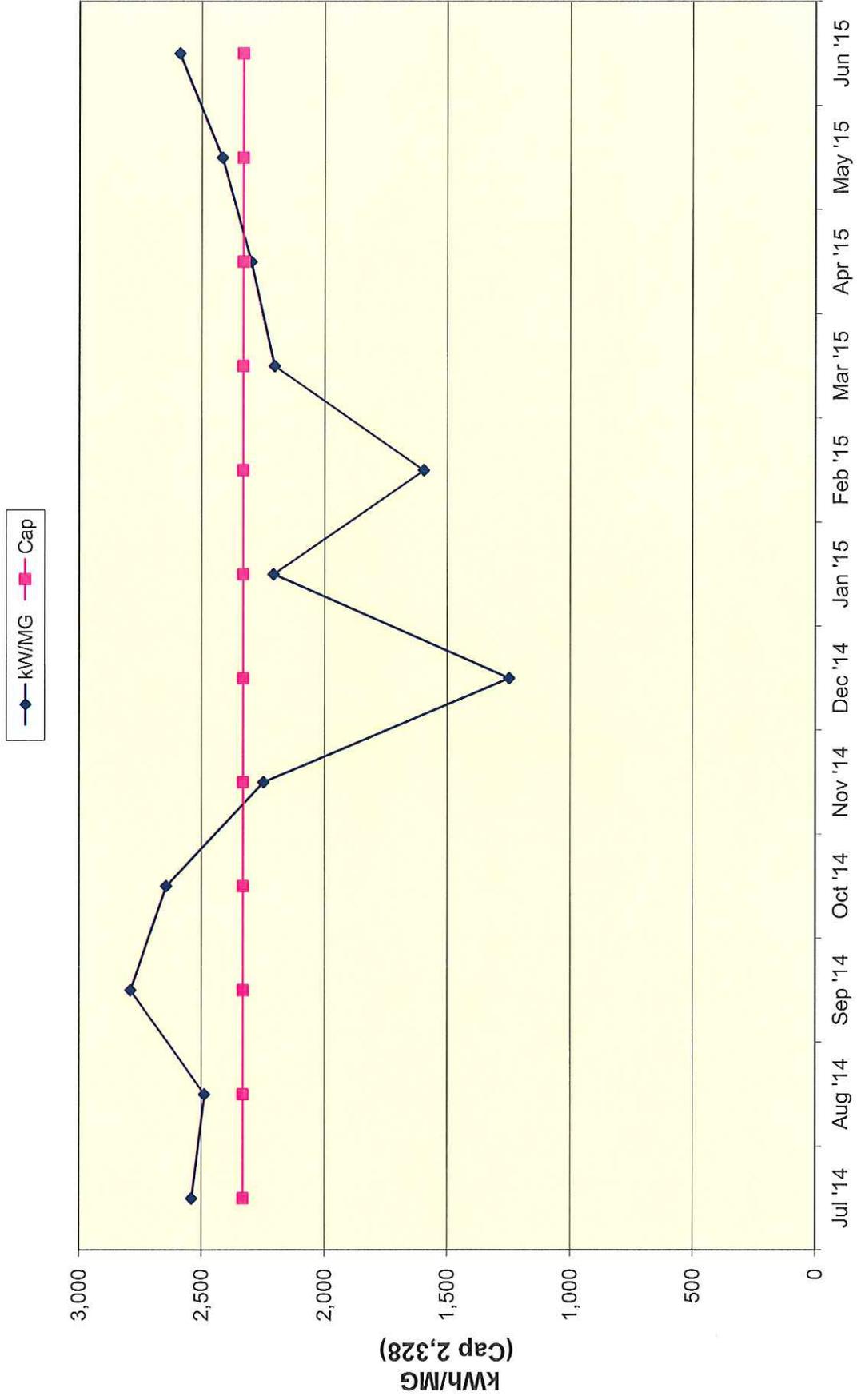
# Disinfection - Total Coliform

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

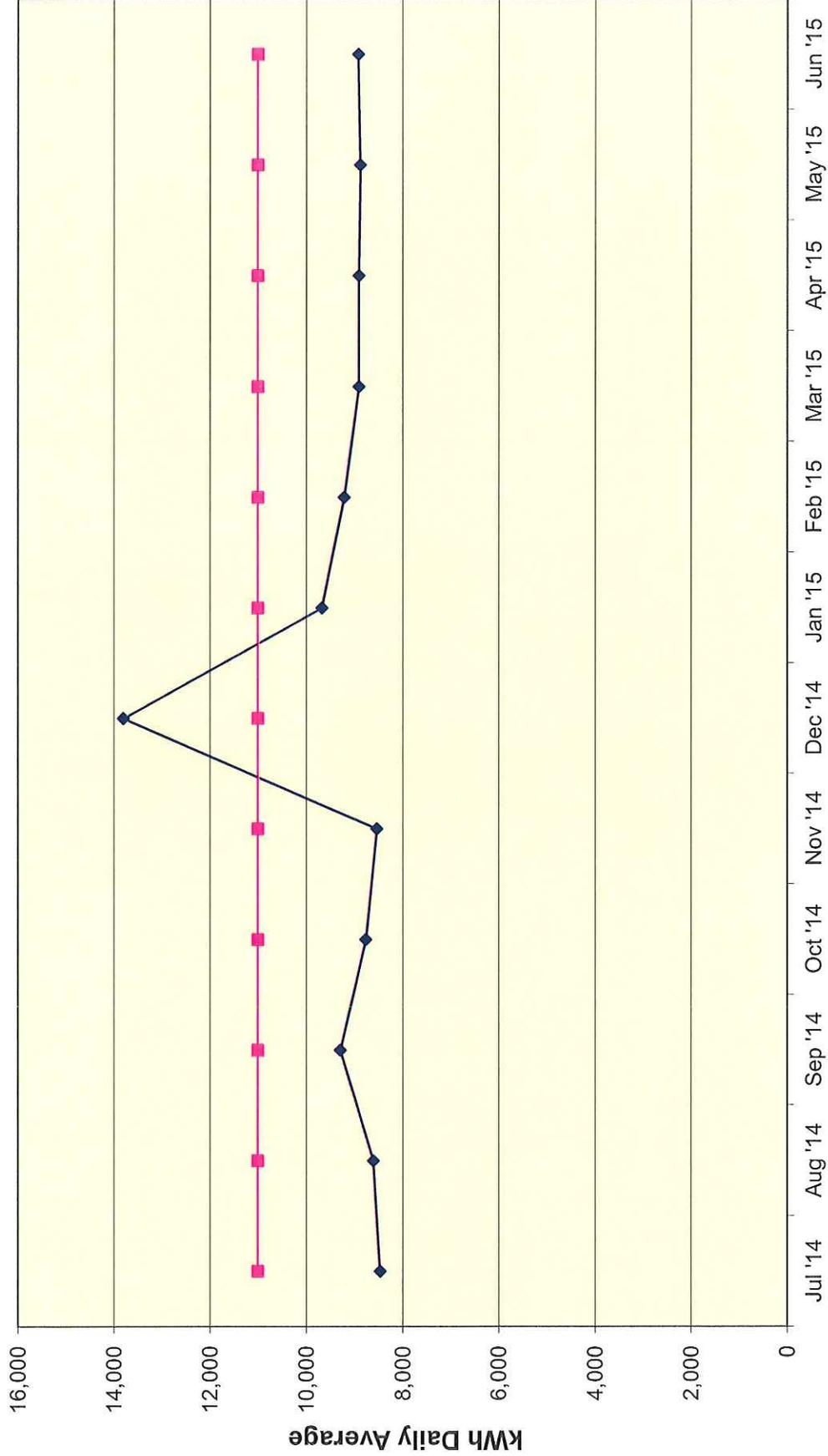
■ 5 Sampl Med ■ Monthly Max



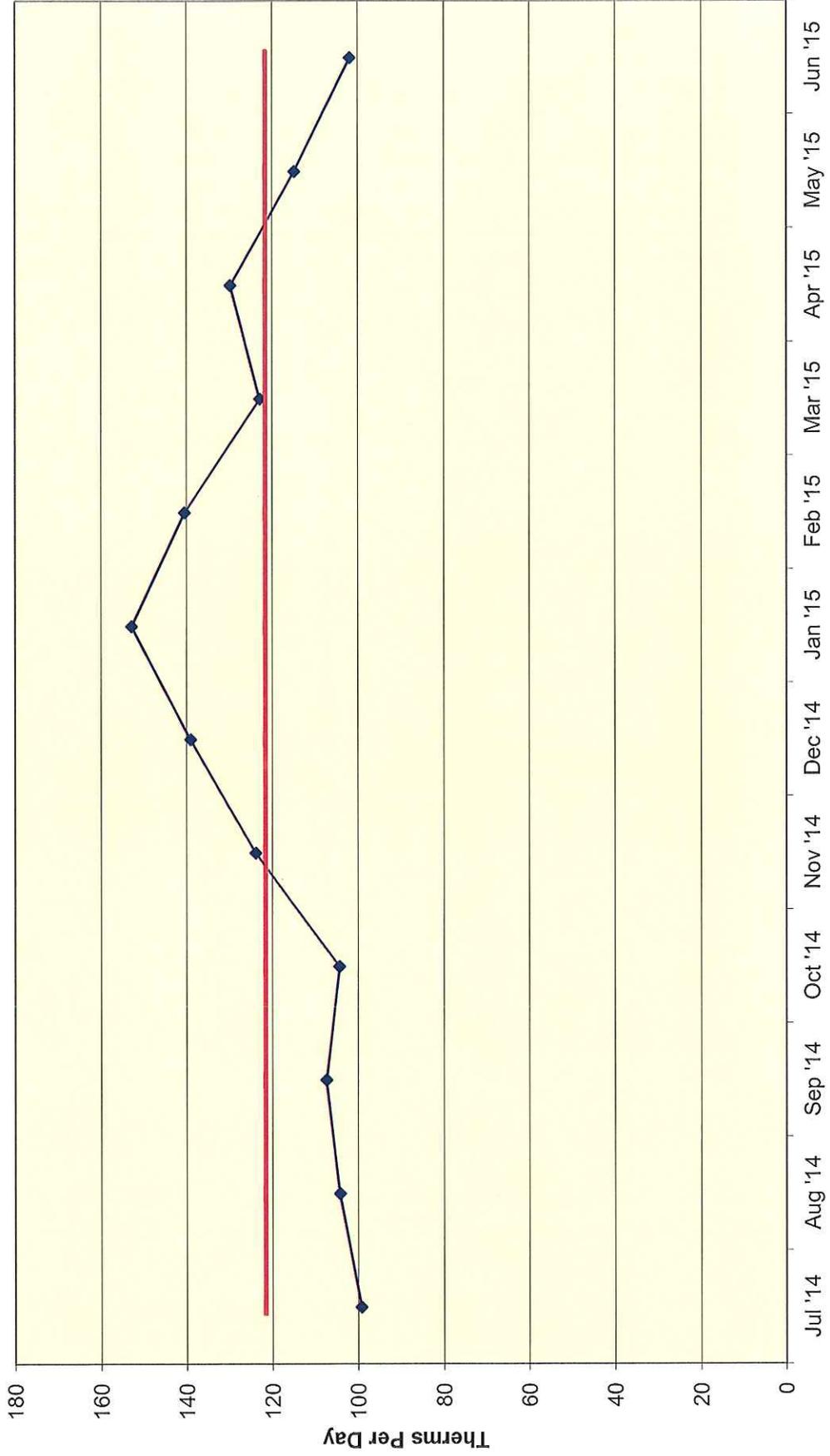
# Energy kWh/MG



# Energy kWh



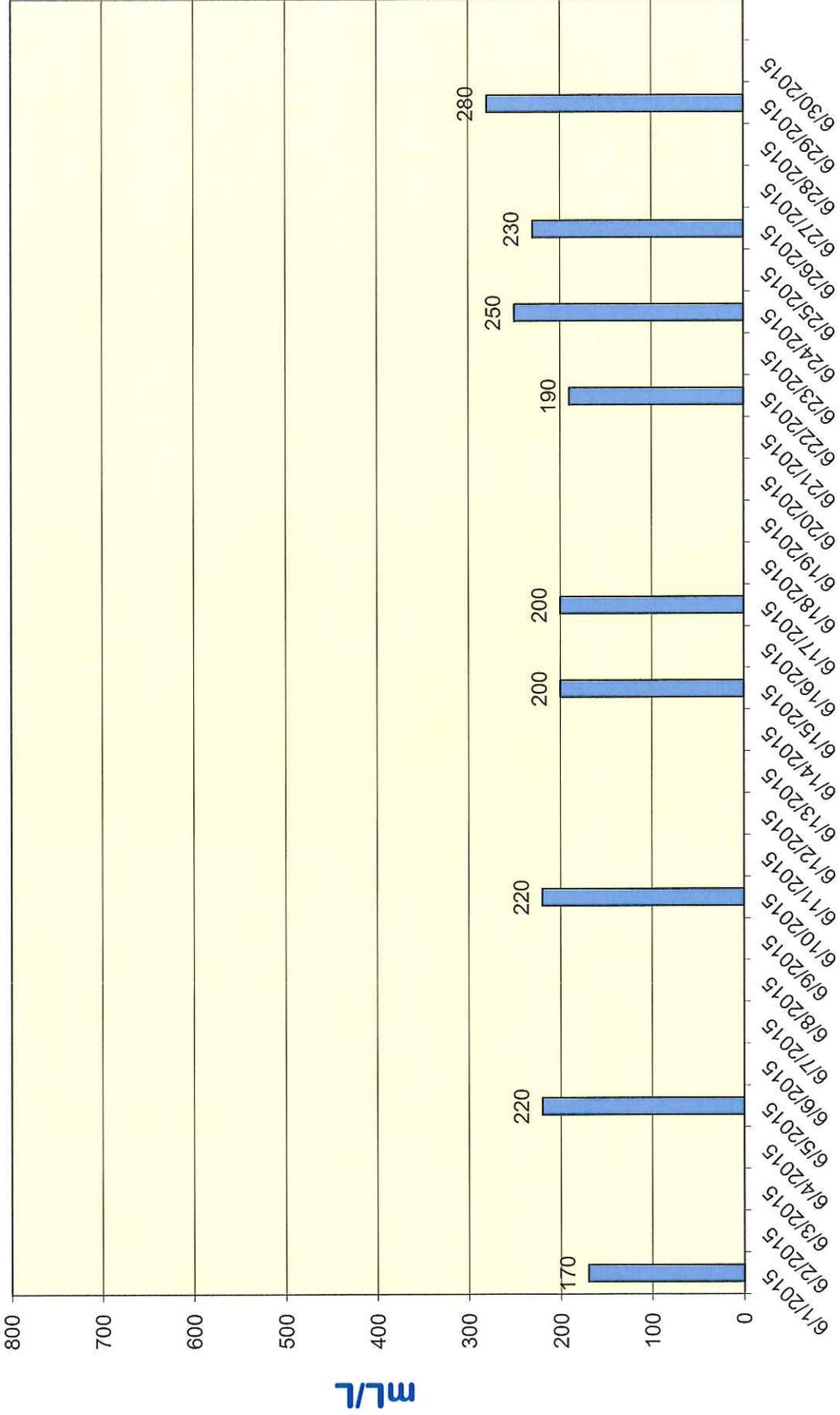
# Natural Gas Use



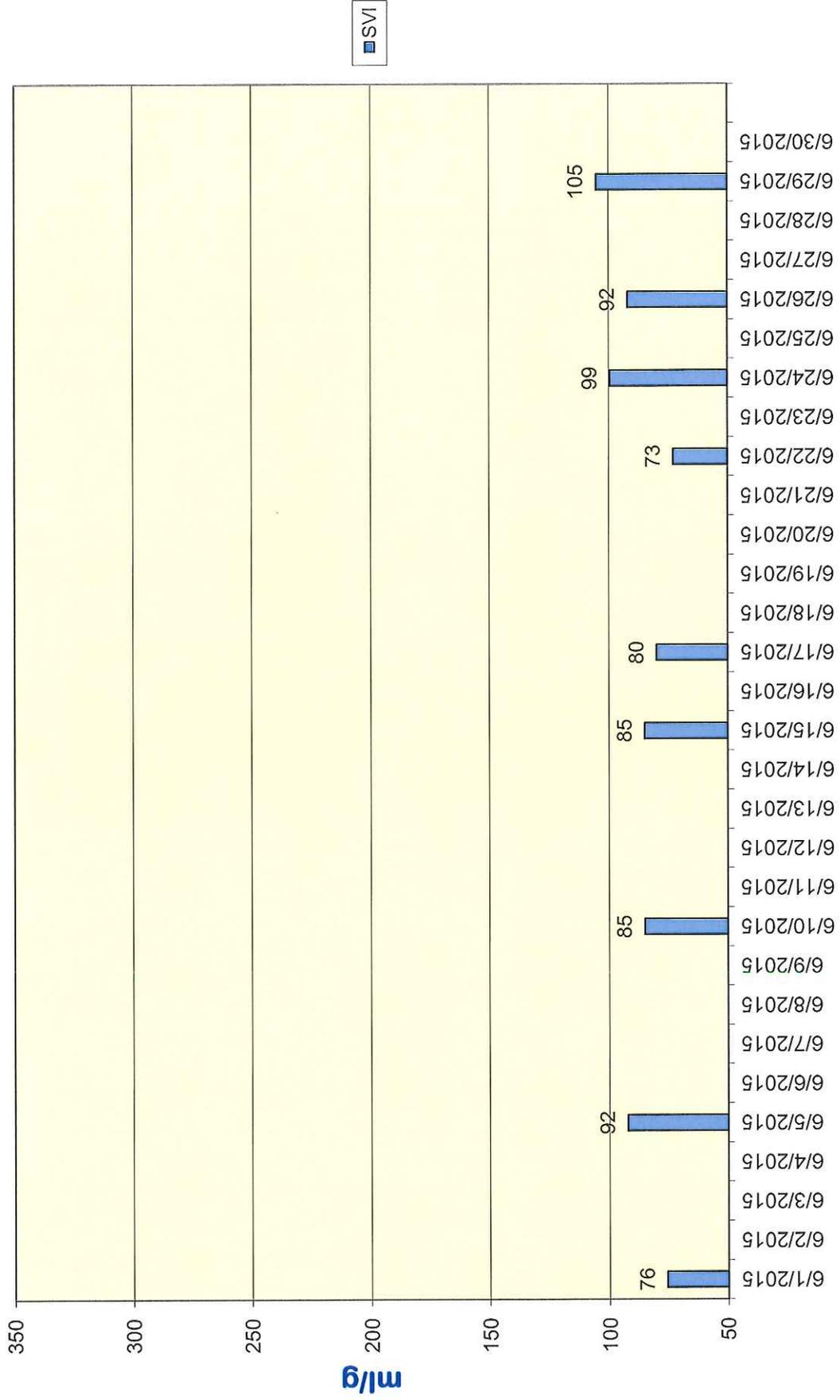
## Process Control Data

	Influent Flow	Settleability	MLSS Concentration	MLSS Inventory	F:M Ratio	MCRT	SVI
6/1/2015	3.47	170	2,250	40,082			76
6/2/2015	3.46		2,390	42,576		7.4	
6/3/2015	3.60		2,440	43,467		8.4	
6/4/2015	3.37						
6/5/2015	3.38	220	2,390	42,576		6.3	92
6/6/2015	3.29						
6/7/2015	3.73						
6/8/2015	3.43		2,420	43,110		6.4	
6/9/2015	3.48						
6/10/2015	3.88	220	2,600	46,317		8.0	85
6/11/2015	3.68		2,600	46,317		9.7	
6/12/2015	3.61						
6/13/2015	3.62						
6/14/2015	3.67						
6/15/2015	3.33	200	2,360	42,042	0.23	7.2	85
6/16/2015	3.26						
6/17/2015	3.27	200	2,510	44,714		6.5	80
6/18/2015	3.27						
6/19/2015	3.12		2,540	45,248		7.7	
6/20/2015	3.24						
6/21/2015	3.38						
6/22/2015	3.39	190	2,630	46,851			73
6/23/2015	3.55						
6/24/2015	3.49	250	2,520	44,892			99
6/25/2015	3.58						
6/26/2015	3.29	230	2,500	44,536			92
6/27/2015	3.40						
6/28/2015	3.56						
6/29/2015	3.36	280	2,670	47,564	0.20	8.8	105
6/30/2015	3.23						
Minimum	3.12	170.00	2,250.00	40,082	0.20	6.3	73
Maximum	3.88	280	2,670	47,564	0.23	9.7	105
Total	100.16	1,960	34,820	620,292	0.43	76.4	787
Average	3.45	218	2,487	44,307	0.21	7.6	87

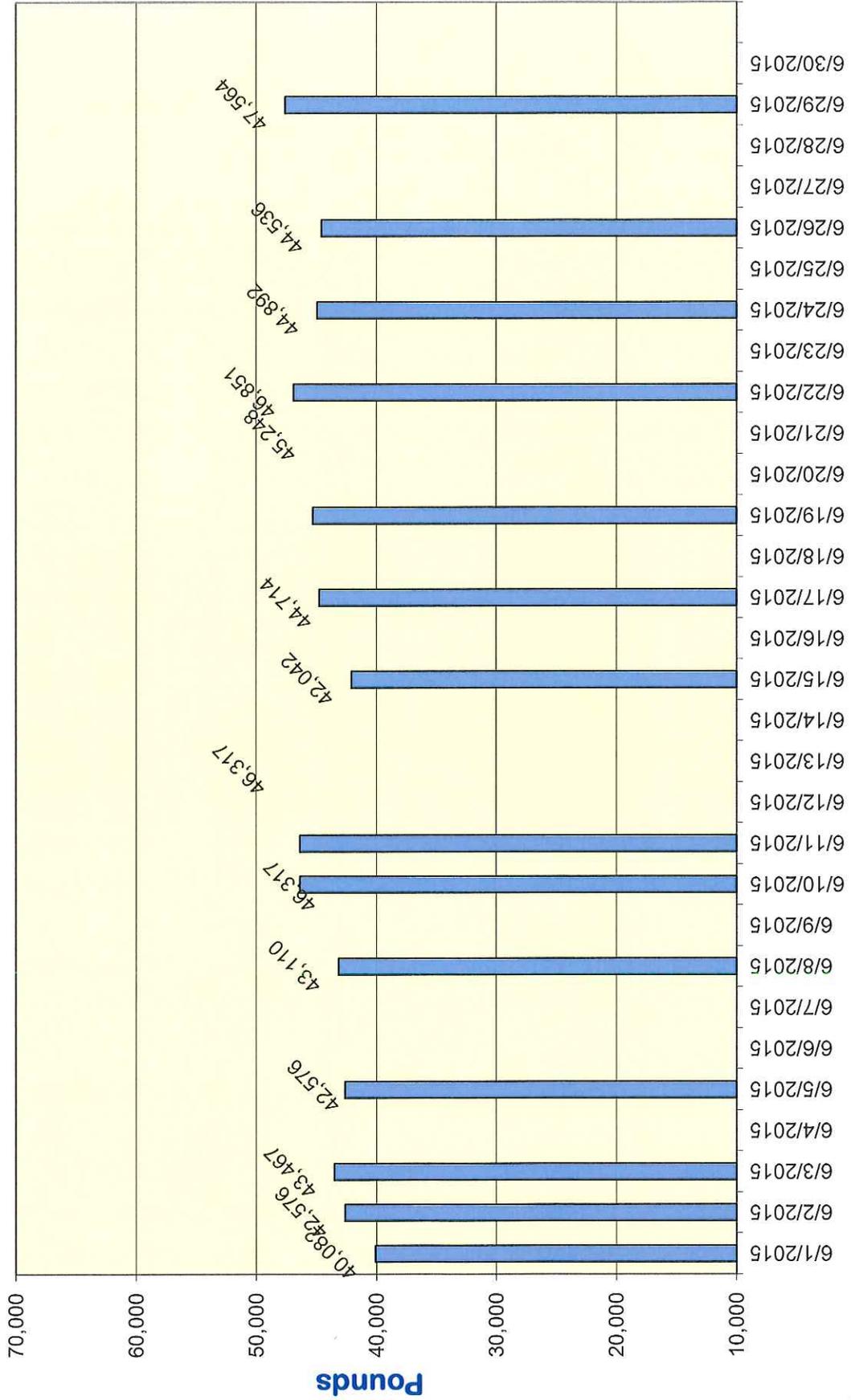
# Settleability



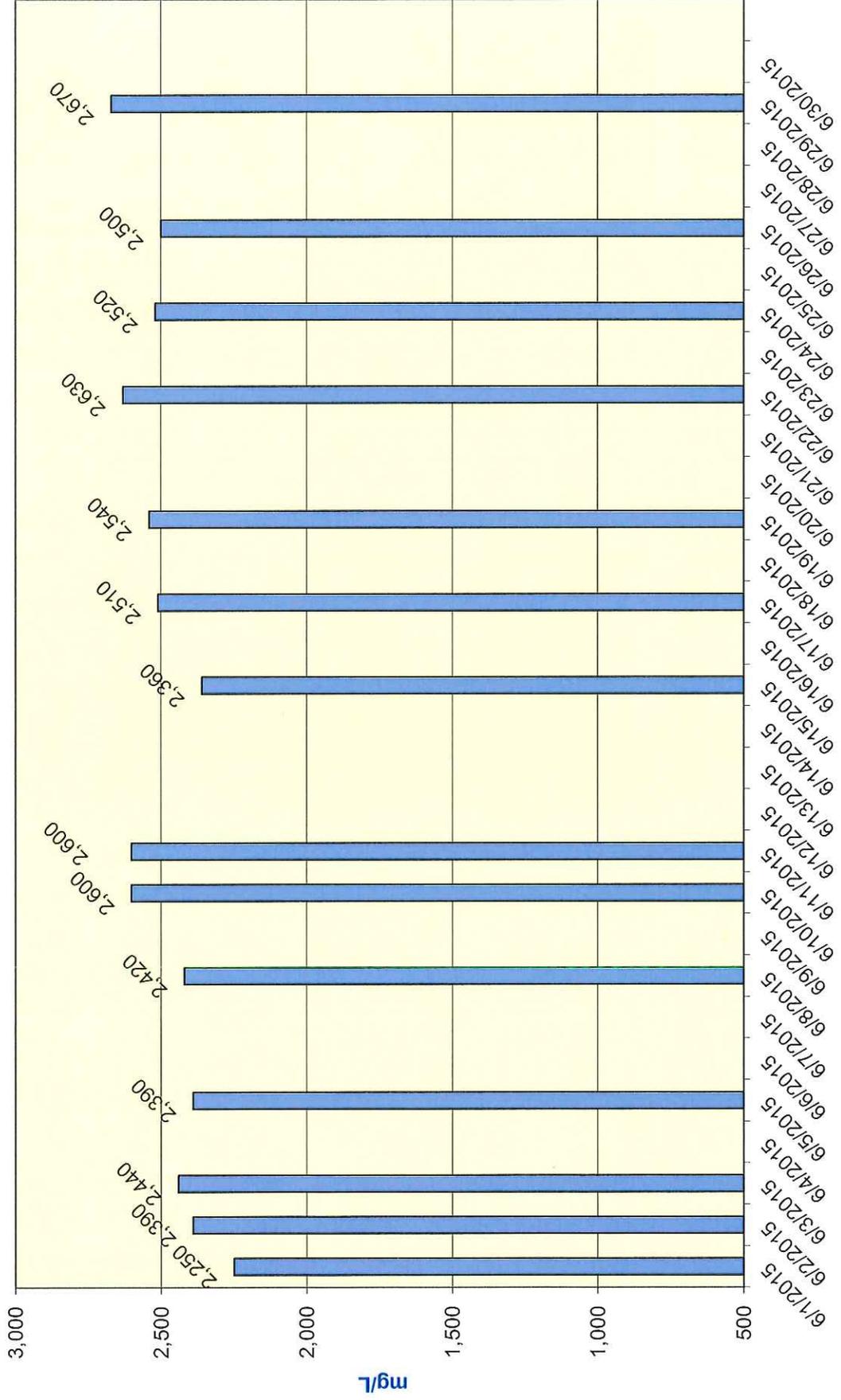
# Sludge Volume Index



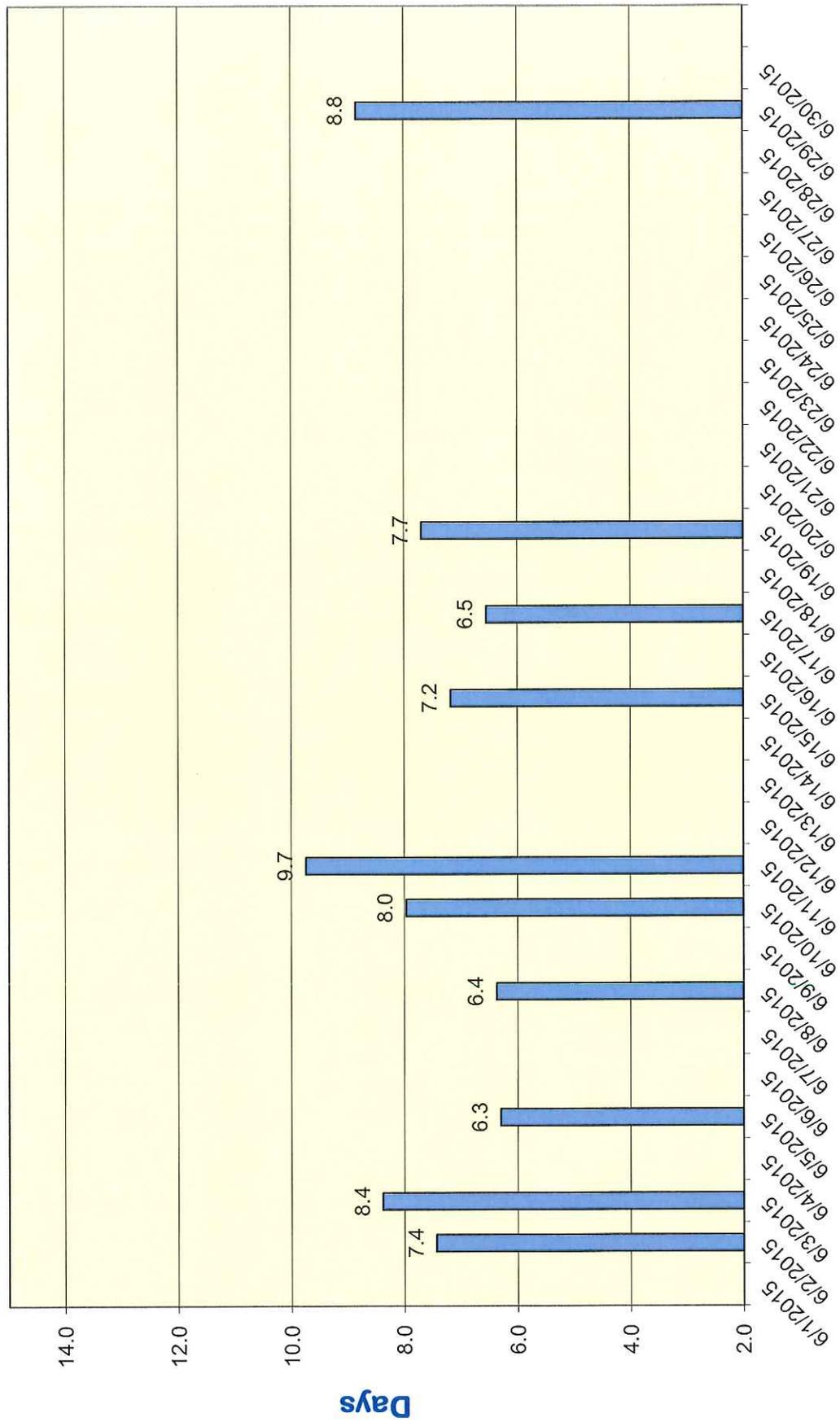
# MLSS Inventory



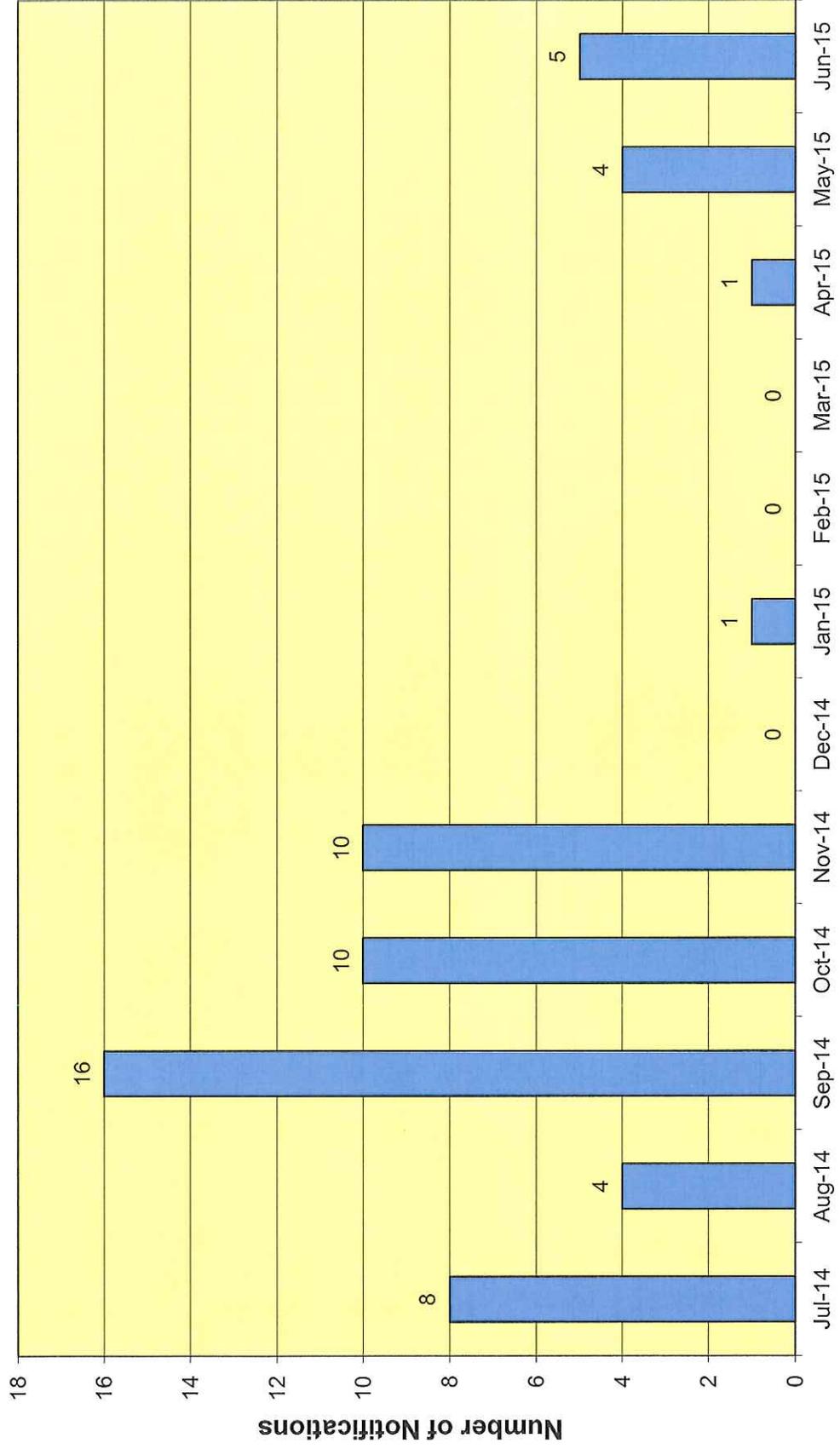
# MLSS Concentration



# Mean Cell Residence Time



# Complaints / Contacts Received



JEROME METER READINGS - JUNE 2015

Sample Location	Min	Max	Ave	NOTES / COMMENTS
A: Influent Pump Station	0.000	0.006	0.003	
B: Septage Dumpster	0.000	0.003	0.001	
C: Primary Clarifier #1 Odor Bed	0.000	0.007	0.002	
D: Primary Clarifier #1	0.000	0.042	0.011	
E: Headworks	0.002	0.260	0.061	
F: Primary Clarifier #2 Odor Bed West	0.001	0.006	0.004	
G: Primary Clarifier #2 Odor Bed East	0.000	0.002	0.001	
H: Primary Clarifier #2	0.000	0.002	0.001	
I: Influent Odor Bed	0.001	0.002	0.001	
J: Behind Aeration Basins	0.000	0.002	0.001	
K: Between Aeration Basins 3 & 4	0.000	0.014	0.003	
L: Between Aeration Basins 1 & 2	0.000	0.016	0.005	
M: Digester Odor Bed	0.000	0.001	0.000	
N: Digester #2	0.000	0.001	0.000	
O: Flare Stack	0.000	0.001	0.000	
P: Digested Sludge Transfer Pit	0.000	0.002	0.001	
Q: Digester #1	0.000	0.003	0.001	
R: McLelland	0.001	0.001	0.001	Only one sample taken
S: Lea 1	0.000	0.000	0.000	Only one sample taken
T: Lea 2	0.001	0.001	0.001	Only one sample taken
U: Lea 3	0.001	0.001	0.001	Only one sample taken
V: Lea 4				
W: Lea 5				
Primary Clarifier #1 Headspace	6.700	9.000	7.900	Scrubbed Space
Primary Clarifier #2 Headspace	0.003	0.057	0.025	Scrubbed Space



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

**1.0 Background**

Efforts continue to maintain: (a) the operation of the odor control facilities and (b) 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 June included:

- Monitoring the media in the large odor control bed between primary clarifiers #1 & #2 which continued to perform satisfactorily. However, the potential for odor breakthrough was identified in late June, and operations staff will be evaluating additional topping off of the media in July.
- Liquid phase sulfide sampling and analysis continues and the operations staff continued to provide data the District's odor consultant Dave McEwen of Brown and Caldwell.
- The Aqua-Fog system which utilizes an odor counteractant technique to broadcast a water based non-toxic odor neutralizer in the vicinity of the aeration basins continues to be used as needed (another recommendation by Mr. McEwen).
- 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 (also a recommendation by Mr. McEwen).

**3.0 Landscaping**

The District's landscaping contractor Cagwin and Dorward (C&D) continues to work on an as directed basis on vegetation at the District's fence-line on Lea Drive, and at the northeast corner area of the NTP. The redwood trees replanted to the northeast corner of the plant site in late February/early March, are being irrigated with recycled water and seem to be doing well. Overall, the vegetation seems to be responding to well to the drought conditions, largely likely due to the irrigation by recycled water.

\*\*\*\*\*

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

**1.0 General:**

An equivalent of about seven (7) full time employees (FTE) worked in the Collection System Department during the month of June, 2015. The breakdown of staff time for the month in terms of equivalent full-time employee hours utilized, works out approximately as follows:

- 1.9 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
- 2.1 FTE field workers for time spent on data input, training, service calls, overflow response, or any other activity that does not directly relate to main line cleaning, CCTV work or pump station maintenance, and
- An equivalent of 1.3 FTE field workers were on vacation, sick leave or on 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 442 work orders were generated for June by the ICOM3 Computerized Maintenance Management System (CMMS). Staff completed 413 work orders leaving 29 work orders outstanding. The 442 maintenance work orders completed in June resulted in 80,131 feet of sewer pipelines cleaned by staff. Of the 29 outstanding work orders, 22 of the work orders for hydro-flushing and 7 of the work orders are for rodding, all of which will be completed in July.



Root Treatment:

With the assistance of District staff, an outside vendor foam-treated 209 line segments totaling 41,512 feet to inhibit root growth in the sewer mains and manholes.

CCTV Performance:

The District's CCTV van was in the field for seven (7) working days inspecting 56 line segments totaling 6,965 feet. Staff also televised 29 line segments totaling 5,303 using the Push Cam. The CCTV equipment was also used to televise a 12" water main for the North Marin Water District on South Novato Blvd prior to a pipe bursting project.

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

CCTV Findings:

- Infrastructure related: The June CCTV work found three line segments that will require spot repairs.
- O&M related: The June 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 302 lift station inspections this month. 182 of the inspection visits were generated through the District's JobsCal Plus CMMS system. There are 22 outstanding work orders for the month that will be completed in July. A Collection Systems (Pump Stations) Work Order Statistics summary is attached.

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

- Assisted an outside vendor who performed infra-red camera scanning of electrical equipment at all of the District's pump stations.
- Removed the driveshaft for Pump No. 2 at East Hamilton Pump Station for repair after the pillow block bearing failed. Staff reinstalled a new pillow block bearing after the driveshaft was repaired and balanced by an outside vendor (damaged pillow block in photo at right).
- Pulled Pump No. 1 at Hamilton Meadows Pump Station for repair by an outside vendor and reinstalled after repair was complete.
- Pulled Pump 1 at Bahia 1 Pump Station for repair by an outside vendor and reinstalled after repair was complete.
- Pulled Pumps No. 1 & 2 at Bel Marin Keys Pump Station No. 3 to replace wear plates and impellers.
- Cleaned out the wet well at Vintage Oaks Pump Station No. 1 after the pumps became clogged with grit.
- Responded to a planned power outage in the Bahia neighborhood.



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

Staff completed maintenance inspections on two (2) air relief/vacuum valves.

**5.0 Safety and Training:**

General:

Collection System staff attended six safety tailgate meetings.

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

Specialized training:

Collection System staff attended Confined Space Training (class room) in June. A follow up field training will be completed in July.

Safety performance:

There were no lost time accidents this month for a total of 1,570 accident free days since the last lost time accident.

**6.0 Minor Projects:**

The District replaced twenty feet of 6" sewer main at the intersection of South Novato Blvd. & Midway Drive (see photo at right) under the informal contract provisions of the Uniform Public Construction Cost Accounting Act (UPCCAA) this month.

In addition to the sewer main repair, a manhole cover was replaced on San Marin Drive when staff found the cover broken during routine maintenance. The North Marin Water District assisted staff by placing a steel plate over the manhole opening until a replacement cover could be located.



**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 June. 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 were zero (0) SSO's in June.

\*\*\*\*\*

Novato Sanitary District  
Collection System Monthly Report For June 2015 (as of June 30, 2015)

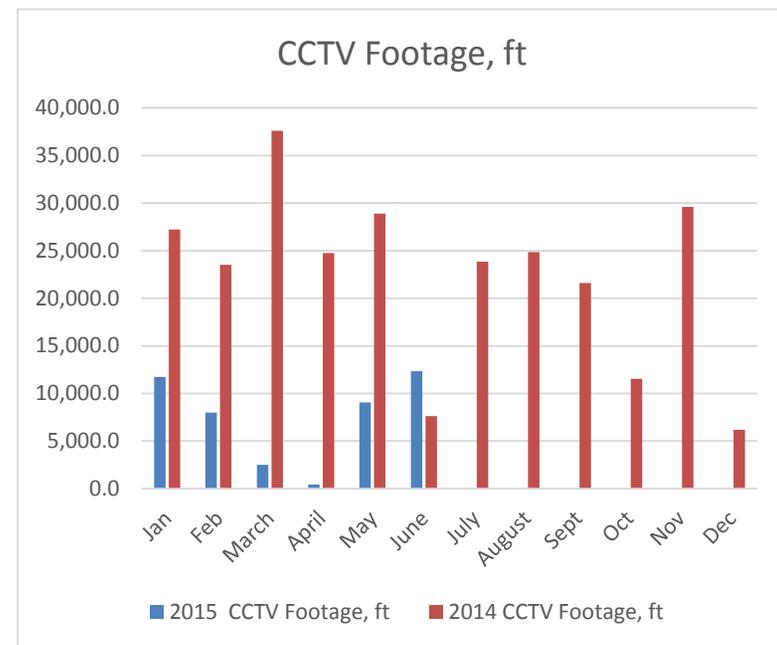
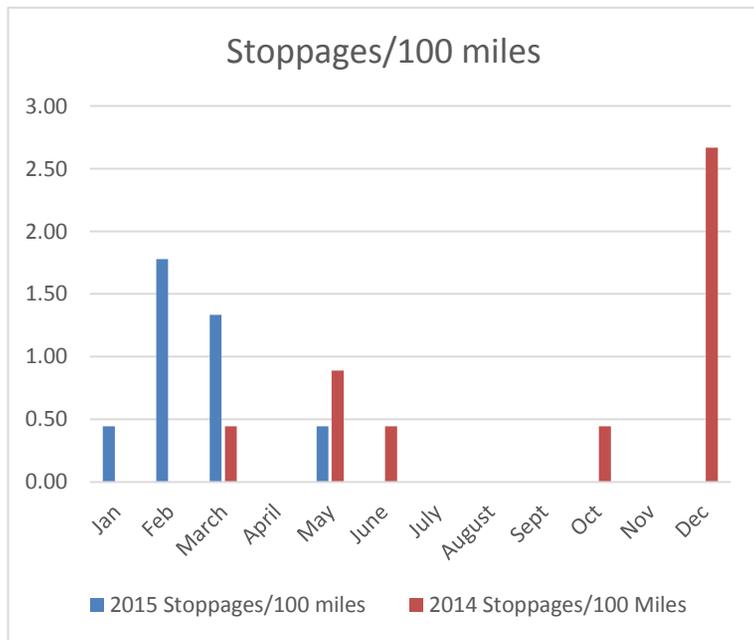
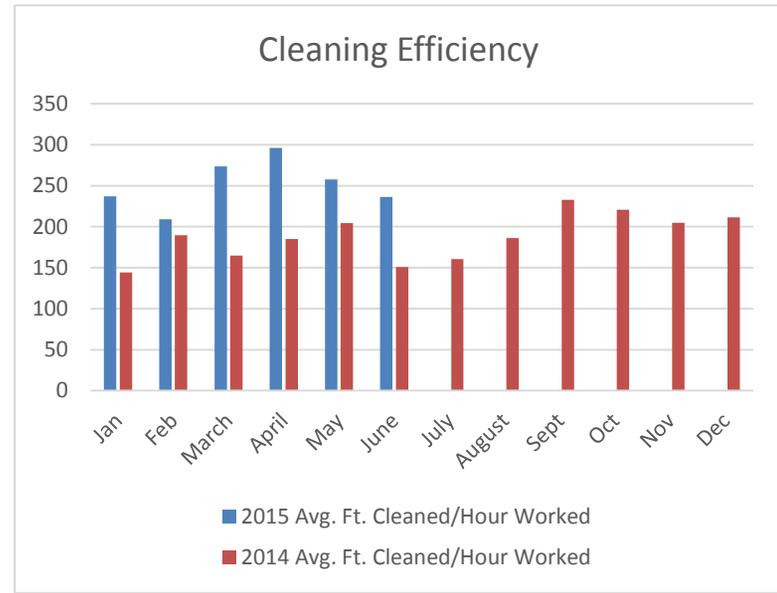
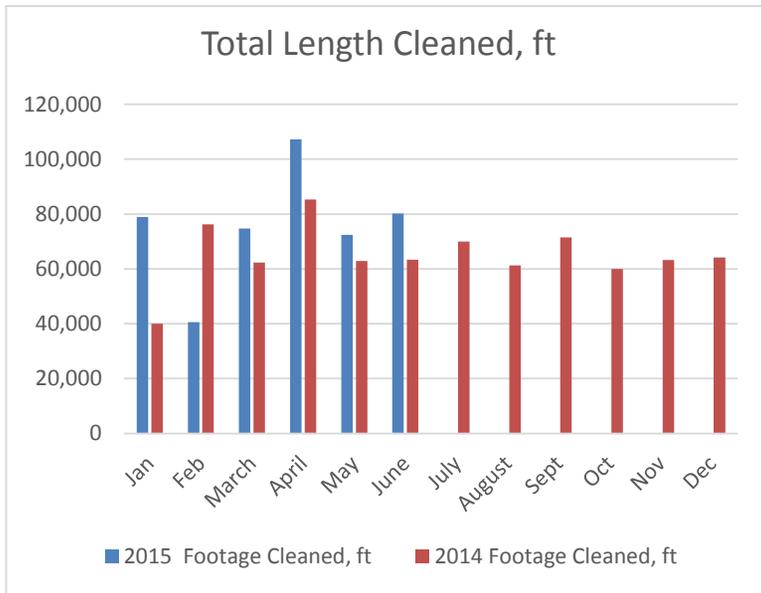
	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Total Year to Date	Average Year to Date
<b>A. Employee Hours Worked</b>														
Number of FTEs (main line cleaning), hrs.	1.9	1.2	1.5	2.2	1.7	1.9	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.9
Number of FTEs (other)	1.6	2.1	1.8	2.0	1.9	2.1	0.0	0.0	0.0	0.0	0.0	0.0	NA	1.0
Number of FTEs (CCTV)	0.1	0.2	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.1
Total, FTEs	3.6	3.5	3.4	4.2	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	NA	1.9
Regular Time Worked, (main line cleaning), hrs	333	194	273	363	281	339								
Regular Time Worked on Other, hrs (1)	281	329	320	341	312	382								
Regular Time Worked on CCTV (2)	15	36	4	0	71	72								
Total Regular time, worked, hrs	628	559	597	703	663	793	0	0	0	0	0	0	3,941	328
Total Vacation/Sick Leave/Holiday, hrs	403	356	271	277	307	239							1,851	308
Vacation/Sick Leave/Holiday, FTEs	2.3	2.2	1.5	1.6	1.8	1.3	0.0	0.0	0.0	0.0	0.0	0.0	10.8	0.9
Overtime Worked on Coll. Sys., hrs	3	0	16	3	7	4							32	5
Overtime Worked on Other, hrs (1)	14	45	31	19	15	29							152	25
Overtime Worked on CCTV (2)	0	0	0	0	4	0							4	1
Total Overtime, hrs	17	45	46	22	25	33	NA	NA	NA	NA	NA	NA	188	31
<b>B. Productivity</b>														
<b>1. Line Cleaning</b>														
Rodder Work Orders generated	90	31	42	23	11	46							243	41
Rodder 3208 ft. cleaned	15,611	6,776	7,657	3,885	2,857	8,033							44,819	7,470
Rodder - outside services, ft cleaned	0	0	0	0	0	0							0	0
Flusher Work Orders generated	340	183	388	543	455	396							2,305	384
Truck 3205V ft. cleaned	107	4,165	2,352	22,584	18,806	1,100							49,114	8,186
Truck 3206V ft. cleaned	63,145	29,612	64,665	80,792	50,753	70,998							359,965	59,994
Flusher - outside services, ft. cleaned	1,349	553	0	127	0	0							2,029	
Total Footage cleaned(3)	78,863	40,553	74,674	107,261	72,416	80,131	NA	NA	NA	NA	NA	NA	453,898	75,650
Work Orders completed	416	198	397	551	449	413							2,424	404
Work Orders backlog	14	16	33	15	17	29	NA	NA	NA	NA	NA	NA	124	21
<b>2. Closed Circuit Television (CCTV)</b>														
Camera Work Orders generated	0	0	0	0	0	0							0	
CCTV Truck 3126T, ft. videoed	3,998	6,622	1,795	303	7,211	7,037							26,966	4,494
CCTV (hand cam), ft. videoed	6,378	806	706	0	1,842	5,303							15,035	
CCTV Inspection - outside services, ft. videoed	1,349	553	0	127	0	0							2,029	
Total CCTV footage(3)	11,725	7,981	2,501	430	9,053	12,340	NA	NA	NA	NA	NA	NA	44,030	
<b>C. Sanitary Sewer Overflows (SSOs)</b>														
Minor (Category III)	1	4	3	0	1	0							9	NA
Major (Category II)	1	1	1	0	1	0							4	NA
Major (Category I)	0	0	0	0	0	0							0	NA
Major (Category I)	0	3	2	0	0	0							5	NA
Overflow Gallons	126	2,419	1,603	0	5	0							4,153	NA
Volume Recovered	0	0	98	0	0	0							98	NA
Percent Recovered	0%	0%	6%	NA	0%	NA	NA	NA	NA	NA	NA	NA	2%	NA
<b>D. Service Calls (non-SSO related)</b>														
Service calls, normal hours, #	10	11	7	2	5	6							41	7
Normal hours S.C. response time, mins (avg.)	22	20	15	10	25	45							137	23
Service Callouts, after hours, #	1	1	1	1	1	1							6	1
After Hours S.C. response time, mins (avg.)	33	35	40	7	40	45							200	33
<b>E. Benchmarks</b>														
Average Ft. Cleaned/Hour Worked	237	209	274	296	258	236	NA	NA	NA	NA	NA	NA	NA	252
Total Stoppages/100 Miles	0.4	1.8	1.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	NA
Average spill response time (mins)	28	5	22	0	55								NA	22
Callouts/100 Miles	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.2
Overtime hours/100 Miles	1	0	7	1	3	2	0	0	0	0	0	0	14.00	1
Overflow Gallons/100 Miles	55	1052	697	0	2	0	0	0	0	0	0	-	1,806	150

(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  
June 1, 2015 - June 30, 2015**

	<b>Open Work Orders Due Prior to 6/1/2015</b>	<b>Open Work Orders 6/1/2015 - 6/30/2015</b>	<b>Total Open Work Orders</b>
Preventive	2	182	184
Corrective	7	0	7
Total	9	182	191

	<b>Closed Work Orders 6/1/2015 - 6/30/2015</b>
Preventive	169
Corrective	0
Total	169

<b>Total Outstanding Work Orders as of 6/30/2015</b>	<b>22</b>
--	-----------

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

---

**1.0 Summary:**

The rancher completed harvesting hay this month and began moving cattle into the pastures. Troubleshooting and repairs are continuing on the control systems at each Site. The leak on the Wildlife Pond Feed Line was repaired and the line put back into service. The sump pump in the Dedicated Land Disposal Area failed and is being replaced.

**2.0 Ranch Operations:**

The rancher's hay farmer completed harvesting operations on all Sites by the end of the month. The rancher moved cattle into Sites 3 & 7 (see photo at right).



The rancher repaired a fresh water leak in Site 7. The leak was detected by District staff through daily water meter monitoring. Staff began daily monitoring this season to try to limit fresh water loss as requested by the North Marin Water District during the drought.

The rancher completed replacing sprinkler heads in Parcels 76 & 77 as well as Parcel 73 after staff flushed the system as requested by the rancher.

**3.0 Irrigation Parcels:**

District staff continued to troubleshoot the control system on Site 7 this month. After the new control wires were installed in Parcel 74 and hay was removed from Parcels 71, 72 & 73, additional problems were found. Staff eventually found a disconnected wire in Parcel 73 as well as a "short" in a control board in Parcel 72 (Zone 723, see photo at left). Staff also found a failed control board in Parcel 74 (Zone 743).



Staff tested and evaluated the control system in Site 3. Parcels 31, 32 & 33 were not activated due to control issues in one Zone in each Parcel. These issues will be further evaluated in the coming months.

Staff began evaluating the control system in Site 2. Control timer relays were replaced in the control box for Zone 271. Staff also found control board issues in the control box for Zone 251 and was not put into service.

Two new valves and actuators were received this month to be installed in Parcels 28 & 31. This brand of actuator is supposed to handle the severe voltage drop experienced in these parcels when the actuators are called to open or close. The current replacement used elsewhere in Reclamation will not tolerate the voltage drop.

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

---

The new protective corral fencing panels for the new enclosures around the exposed pull boxes in Site 7 were received. One enclosure consisting of four panels was installed around the cathodic protection system splice box in Parcel 78. The rancher will install one additional enclosure around the exposed control wire pull box in Parcel 78 soon.

Full time irrigation began this month as parcels became available on all Sites. Some parcels have not been activated due to control board issues, as mentioned above, but there are an adequate amount of Parcels available to handle the daily flow into the storage ponds from the treatment plant.

**4.0 Irrigation Pump Station:**

Work was completed on fixing the leak on the Wildlife Pond Feed line. The cracked 90 degree bend found late last month was excavated, replaced and backfilled (see photo at right). The line was placed back into service after the work was complete.

Approximately 59.20 MG of treated water was used for irrigation this month.



**5.0 Sludge Handling & Disposal:**

There was no sludge handling activity this month, however, staff discovered late in the month that the sump pump in the Dedicated Land Disposal Area (DLD) had failed. This pump is used to pump accumulated rainwater out of the DLD. A replacement pump was ordered and will be installed after it is received.

\*\*\*\*

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

	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	0	0	0	0	90.64						90.6	7.55
Irrigation (MG)		0	0	0.0	0.09	7.86	59.2						67.2	5.60
Irrigation Pump 1 Hours				0.3	17.2	100.2							117.7	9.81
Irrigation Pump 2 Hours				0.1	16.7	102.4							119.2	9.93
Irrigation Pump 3 Hours				0.1	15.2	99.6							114.9	9.58
Washdown Water Pump Hours				0	0	0							-	0.00
Wildlife Feed Pump Hours			331.5	51.6	0	626.8							1,009.9	84.16
Water Circulated through Wildlife Pond (MG)	0	0	20.88	3.25	0	39	0	0	0	0	0	0	63.6	5.30
Strainer No. 1 Hours				0.2	6.3	38							44.5	3.71
Strainer No. 2 Hours				0	6.3	39.8							46.1	3.84
Pond 1 Gauge @ Beginning of Month	5.4	5.4	5.6	5.4	5.4	4.9								
Pond 1 Gauge @ End of Month	5.4	5.6	5.4	5.4	4.9	5.3								
Pond 1 Gallons Stored @ End of Month(MG)	39.2	41	39.2	39.2	35.2	38.4								
Pond 2 Gauge @ Beginning of Month	5.5	5.5	5.7	5.5	5.5	5								
Pond 2 Gauge @ End of Month	5.5	5.7	5.5	5.5	5	5.5								
Pond 2 Gallons Stored @ End of Month(MG)	52	54	52	52	47	52								
Total Irrigation Water Stored	91.2	95	91.2	91.2	82.2	90.4	0	0	0	0	0	0		
<b>Drainage Pump Station No. 3</b>														
Drainage Pump No. 1 Hours	0	133.1	2.4	1.2	0	0								
Drainage Pump No. 2 Hours	0	0	2.1	0.1	0	0								
Drainage Pump No. 3 Hours	100.3	127.1	0.6	2.7	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
<b>Drainage Pump Station No. 7</b>														
Drainage Pump No. 1 Hours	331.6	46.2	13.3	0.2	0.1	0								
Drainage Pump No. 2 Hours	0	0	0	0	0	0								
Drainage Pump No. 3 Hours	0	1.5	2.7	7.5	0.1	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