

**CONNERSVILLE WASTEWATER
TREATMENT PLANT**
DOING OUR PART TO PROTECT THE ENVIRONMENT



2017 ANNUAL REPORT

“...the relationship between a river and a city is reciprocal.”

Ron E. Withers, *Nature's School*

ACKNOWLEDGMENT

To: The Board of Public Works,
The Honorable Harold Gordon, Mayor
Members of the Common Council, City of Connersville
Utility Customers and Citizens of Connersville

Please accept herewith, the Annual Report of Operations for the Connersville Wastewater Treatment Plant for the year 2017.

The Annual Report is used in conjunction with regulatory reports and compliance inspections to evaluate the effectiveness of operations. It describes the efforts and accomplishments at the Wastewater Treatment Plant over the past year. We, the staff of Connersville Utilities wish to express our appreciation to the Board of Public Works, various segments of the city government, and the community for the continued support given us.

Respectfully submitted;



Robert Shoemaker

for:

CONNERSVILLE UTILITIES

2017

REPORT OF OPERATIONS

for

CONNERSVILLE WASTEWATER TREATMENT PLANT

Class III 10.8 mgd

Connersville, Indiana

Respectfully Submitted To:

CONNERSVILLE BOARD of PUBLIC WORKS and SAFETY

Harold Gordon - Mayor

Tim Bentley

Jim Barrett

Jerry Ervin

Anette Reidman

Attorney
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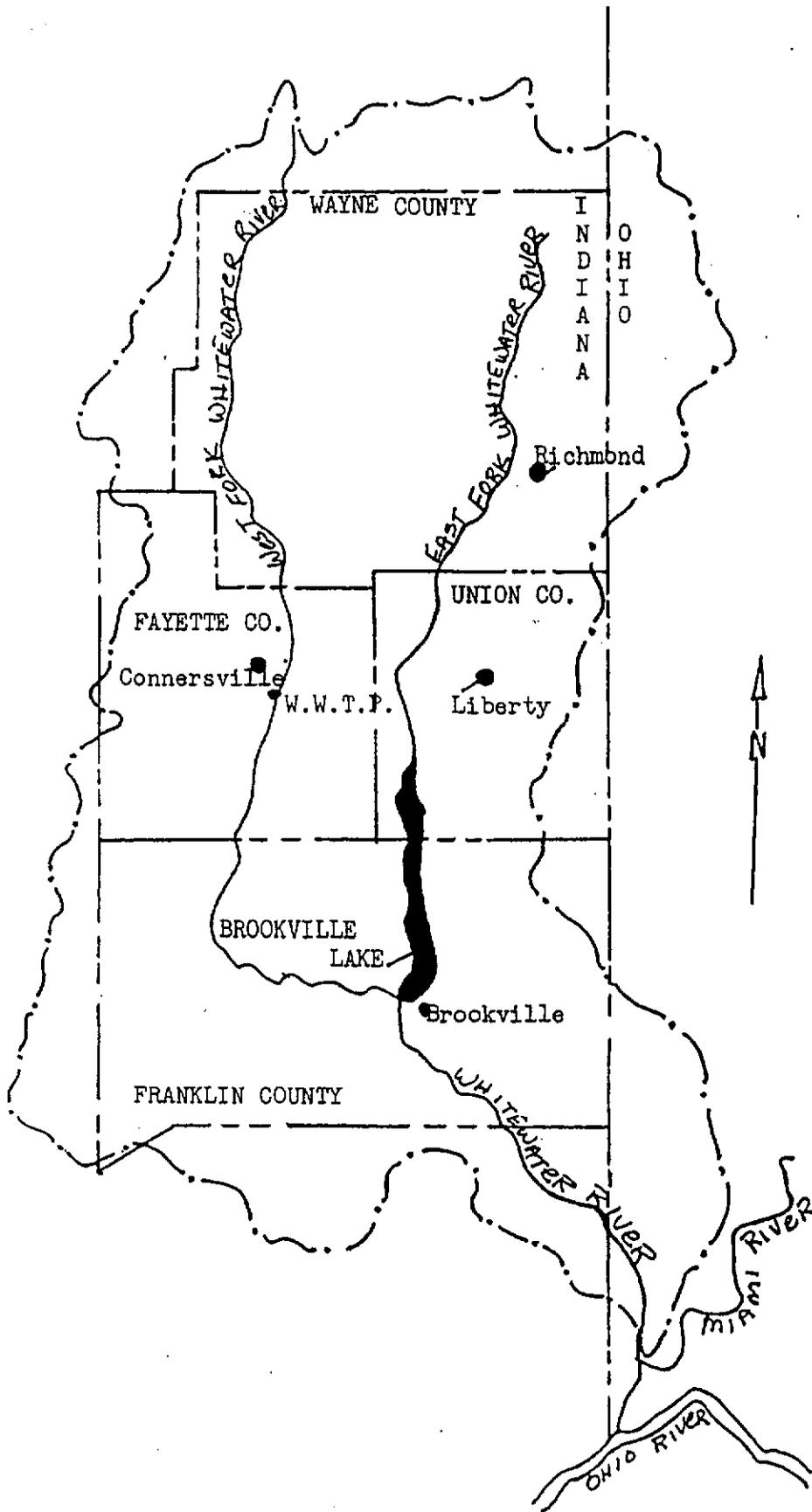


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PLANT DESCRIPTION

The Connersville Wastewater Treatment Plant is a Class III standard activated sludge type plant which consists of the following sections of treatment:

The raw sewage enters the plant by means of a combined sewer system. The sewage passes through two channel grinders which grind the large solids into small pieces. The sewage is then pumped from the wet well by three sewage pumps. Any two of the pumps will provide a transfer flow equal to 21.6 million gallons a day maximum plant hydraulic capacity. These pumps lift the wastewater from the wet well through a magnetic flow meter to the grit removal sections. From this point on, the flow is carried through each stage by the force of gravity.

In the grit separator, the large solids settle out and are removed. These solids pass through a cyclone scrubber and this washed grit is then landfilled. The flow now passes on into the pre-aeration chamber where air is added. At this point, it is also possible to chlorinate.

The first major treatment step is primary sedimentation. There are five primary settling tanks with a combined capacity 985,630 gallons and a hydraulic capacity of 10.8 MGD. In primary settling operations, the raw wastewater is provided with necessary detention time for settleable solids to settle from the waste flow. These solids are removed from the tanks as "raw sludge" twice each day and pumped to anaerobic digesters. Also, any materials such as grease and oil that float to the surface of the primary tanks are removed as "scum" and usually processed along with the raw sludge.

Secondary treatment at the Connersville WWTP consists of conventional activated sludge processes. There are four tanks called aerators with a combined capacity of 1,689,732 gallons. Effluent from the primary settling tanks, as well as the return sludge from previous aeration cycles, enters the tanks and the entire contents are mixed by the addition of air provided by a series of blowers. The addition of air aids in the biological oxidation of organic matter in the wastewater. The mixture, now called "mixed liquor", flows to the secondary settling or final clarifier tanks.

There are seven final clarifiers where the mixed liquor flows for separation of the suspended solids from the liquid. The combined capacity of these clarifiers is 1,245,271 gallons. Settled sludge is collected and pumped continuously back to the aeration tanks. Floating scum or oils that were not removed in the primary tanks as well as any created by action in the aeration tanks are collected and returned to the plant influent.

After the wastewater has been through all the stages of treatment, it is disinfected to destroy most disease producing organisms. This is accomplished by the addition of chlorine into the wastewater in the chlorine contact chambers. Immediately following the chlorine contact chambers and prior to discharge, any chlorine residual is removed by means of a de-chlorination unit utilizing sulfur dioxide as a de-chlorinating agent.

As mentioned, wastewater treatment processes produce various sludges. These sludges contain certain matter that requires further treatment to be ready for disposal. This matter is reduced by the digestion process where microorganisms in the absence of oxygen reduce the solids to liquid and gaseous form. There are three digesters at the Connersville WWTP with a combined volume of 252,690 cubic feet. 83,620 cubic feet are dedicated to primary digestion and 169,070 cubic feet to secondary digestion.

Supernatant, the clearer liquid near the top of the secondary digester, is usually removed on a daily basis to make room for additional primary sludge. The supernatant is returned to the influent of the plant. Secondary sludge that has reached a stable state can be withdrawn and disposed of. Disposal of digested sludge at the Connersville WWTP is accomplished by landfilling or sub-surface land application.

The Connersville Wastewater treatment Plant was designed for an average flow of 10.8 million gallons per day with a peak flow of 21.6 million gallons. In 2017, there was an average influent flow of 5.48 million gallons per day.

The plant performance for 2017 produced the following results:

Average overall removal of BOD = 95.5%

Average overall removal of Solids = 96.5%

Average overall removal of Ammonia Nitrogen = 92.4%

DESIGN DATA

DESIGN POPULATION		36,000
PLANT MAXIMUM HYDRAULIC CAPACITY		21.6 MGD
PLANT DESIGN FLOW		10.8 MGD
RAW WASTE SUSPENDED SOLIDS CONCENTRATION		160 MG/L
DESIGN ORGANIC LOADING		16,120 LBS CBOD5/DAY
DESIGN SUSPENDED SOLIDS LOADING		14,760 LBS S.S./DAY
DESIGN EFFICIENCY OF CBOD5 REMOVAL		85%
DESIGN EFFICIENCY OF S.S. REMOVAL		90%
NPDES EFFLUENT LIMITATIONS:		
CBOD5		25 mg/l - MONTHLY AVERAGE 40 mg/l - WEEKLY AVERAGE
TSS		30 mg/l - MONTHLY AVERAGE 45 mg/l - WEEKLY AVERAGE
NH3	SUMMER	2.5 mg/l - MONTHLY AVERAGE 3.8 mg/l - WEEKLY AVERAGE
	WINTER	3.4 mg/l - MONTHLY AVERAGE 5.1 mg/l - WEEKLY AVERAGE
pH		6.0 s.u. - DAILY MINIMUM 9.0 s.u. - DAILY MAXIMUM
D.O.		5.0 MG/L - DAILY MINIMUM
CHLORINE		0.02 mg/l - MONTHLY AVERAGE 0.04 mg/l - DAILY MAXIMUM
E. COLI.		125 col/100mls - MONTHLY AVERAGE 235 col/100mls - DAILY MAXIMUM

PLANT UNITS

- 1 CHANNEL GRINDERS - Two @ 10.8 mgd each.
- 2 RAW SEWAGE PUMPS - Three variable speed drive units rated @7500 gpm maximum each.
- 3 GRIT REMOVAL FACILITIES
 - a. 30 ft. diameter grit collection tank to handle 21.6 mgd flow and remove 98 % or better of 100 mesh grit with a specific gravity of 2.65 or greater.
 - b. 200 gpm grit pump with 10 HP variable speed motor.
 - c. One Krebs 12" diameter cyclone grit classifier @ 12 rpm.
- 4 PREAERATION TANKS
 - a. One tank 35' x 25' x 13.5' swd.
 - b. Total Volume = 11,800 cu.ft. = 88,260 gallons.
 - c. Detention Time = 11.7 minutes.
- 5 PRIMARY SETTLING TANKS
 - a. Two tanks 76' x 21' x 12.33' swd each.
 - b. Three tanks 127.5' x 20' x 12.08' swd each.
 - c. Total Volume = 131,770 cu. Ft. = 985,630 gallons each.
 - d. Detention time @ 10.8 mgd = 2.19 hours.
 - e. Area = 10,842 sq. ft.
 - f. Surface settling rate = 996 gals/sq.ft./day.
 - g. CBOD Design Removal = 30% = 1,836 lbs CBOD/day.
 - h. Unit CBOD loading = 46 lbs/1,000 cu.ft/day.
 - i. S.S. Design Removal rate = 50% = 7,380 lbs S.S./day.
- 6 AERATION TANKS
 - a. Four tanks 125.5' x 30' x 15.12' each.
 - b. Total Volume = 227707 cu.ft. = 1,703,250 gallons.
 - c. Detention Time @ 10.8 mgd = 3.79 hours.
 - d. CBOD loading = 4,287 lbs CBOD/day (30% primary efficiency).
 - e. Unit CBOD load = 13 lbs CBOD/1,000cu.ft./day (30% primary efficiency).
- 7 AIR BLOWER EQUIPMENT
 - a. Two motor driven blowers @ 2,080 cfm each.
 - b. One Roots Blower @ 4,160 cfm.
 - c. One G.E. blower @ 1,800 cfm.
 - d. Total Capacity = (with 600 cfm required for preaeration and channels) = 9,520 cfm.

PLANT UNITS CONTINUED

8 SECONDARY SETTLING TANKS

- a. Two tanks 84' x 33' x 12.42' each.
- b. Five tanks 84' x 20' x 12.08' each.
- c. Surface Area = 13,944 sq. ft..
- d. Total Volume = 170,330 cu.ft. = 1,274,070 gallons.
- e. Detention Time @ 10.8 mgd = 2.83 hrs.
- f. Surface settling rate @ 10.8 mgd = 775 gals/sq.ft./day.
- g. Weir overflow rate = 5,875 gallons/linear ft./day @ 10.8 mgd.
- h. Scum collection system provided.

9 CHLORINE CONTACT FACILITIES

- a. One, two-pass tank = 63.5' x 11.67' x 9.25' swd 1st pass & 64.5' x 8.67' x 9.25' swd 2nd pass.
- b. Two, two-pass tanks:
 - 1 62' x 12' x 9.25' swd 1st pass & 58.33' x 8.67' x 9.25' swd 2nd pass.
 - 2 41' x 12' x 9.25' swd 1st pass & 58.33' x 8.67' x 9.25' swd 2nd pass.
- c. Total Volume = 31,130 cu.ft. = 232,870 gallons.
- d. Detention Time = 31 minutes @ 10.8 mgd or 16 minutes @ 21.6 mgd.
- e. Three chlorinators.

10 DECHLORINATION FACILITIES

- a. One chlorine residual analyzer.
- b. One multiplier box.
- c. One sulfur dioxide injection unit with a range of 0 - 200 lbs.
- d. One sulfur dioxide leak detector.
- e. One sampling pump.
- f. One, one-ton cylinder scale.
- g. One ton cylinder hoist and lifting devices.
- h. One Water Champ sulfur dioxide inductor.

11 ANAEROBIC DIGESTION TANKS

- a. Three tanks 65' diameter x 30.75' maximum width.
- b. Maximum volume primary digestion capacity = 83,620 cu.ft. = 625,490 gallons.
- c. Maximum volume secondary digestion capacity = 169,070 cu.ft. = 1,264,610 gallons.
- d. Detention time in Primary digester = 40 days.
- e. Organic Loading = 0.034 lbs VS/cu.ft./day.
- f. One sludge heat exchanger rated @ 750,000 BTU/hour.
- g. Two gas mixing systems = 75 cfm @ 12 psi each.

12 SLUDGE HANDLING PUMPS

- a. Three return Activated Sludge Pumps = 2,800 gpm @ 30' TDH, variable speed drive motors rated 30 HP @ 870 RPM.
- b. Two Raw Sludge Pumps
 - 1 350 gpm @ 56' TDH. Variable speed drive motor rated 15 HP @ 1,750 rpm.
 - 2 250 gpm @ 40' TDH. Variable speed drive motor rated 7.5 HP @ 1,150 rpm.

PLANT UNITS CONTINUED

13 SLUDGE HANDLING FACILITIES

- a. Two, 1.5 meter belt press/gravity thickener combination units.
- b. One digested sludge feed pump = 100 - 300 gpm @ 20'TDH, variable speed drive motor rated 75 - 210 rpm.
- c. One secondary sludge feed pump and two mixer pumps = 40 - 100 gpm @ 20' TDH, variable speed motor rated@ 120 - 275 rpm each.
- d. Two polymer feed units 20.04 - 8.0 gph feed and dilution water feed of 72 - 1200 gph.
- e. Two in-line sludge grinders.
- f. One belt conveyor.
One concrete sludge containment pad.

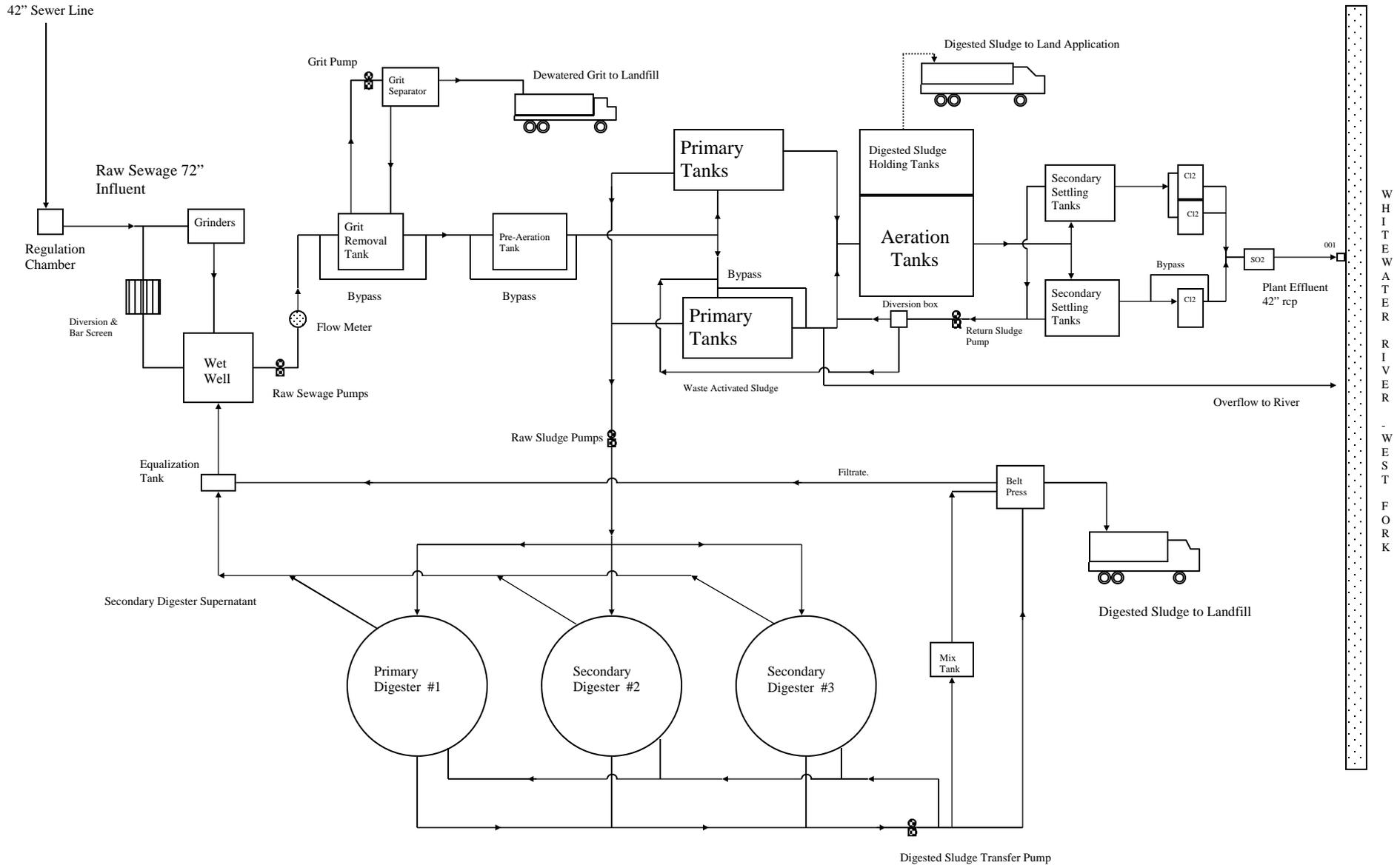
14 SLUDGE MIXING TANK.

- a. One tank 15' x 156' x 13'.
- b. Total Volume = 2,925 cu. Ft. = 22,883 gallons.
- c. One 2 HP mixer with 52" 3 blade impeller.

15 EQUALIZATION TANK

- a. One tank 30' x 60' x 12'.
- b. Total Volume = 21,000 cu.ft. = 162,000 gallons.
- c. One lift station with a 5HP/300 gpm pump and automatic controls.

PLANT SCHEMATIC



SCHEMATIC OF WASTEWATER FLOW
 CONNERSVILLE WASTEWATER TREATMENT PLANT
 CITY OF CONNERSVILLE, INDIANA
 DISCHARGE SERIAL NO. 001

ORGANIZATION AND RESPONSIBILITY

Connersville Utilities operates under the guidance and direction of the Connersville Board of Public Works and Safety led by the Mayor of Connersville.

Mr. Michael Bottomley serves as the Utilities Director with 18 years' experience leading a city department. He is the Principal Executive Officers Designated Representative.

Mr. Brad Colter is the Utilities Superintendent and oversees the operation of the water and wastewater departments.

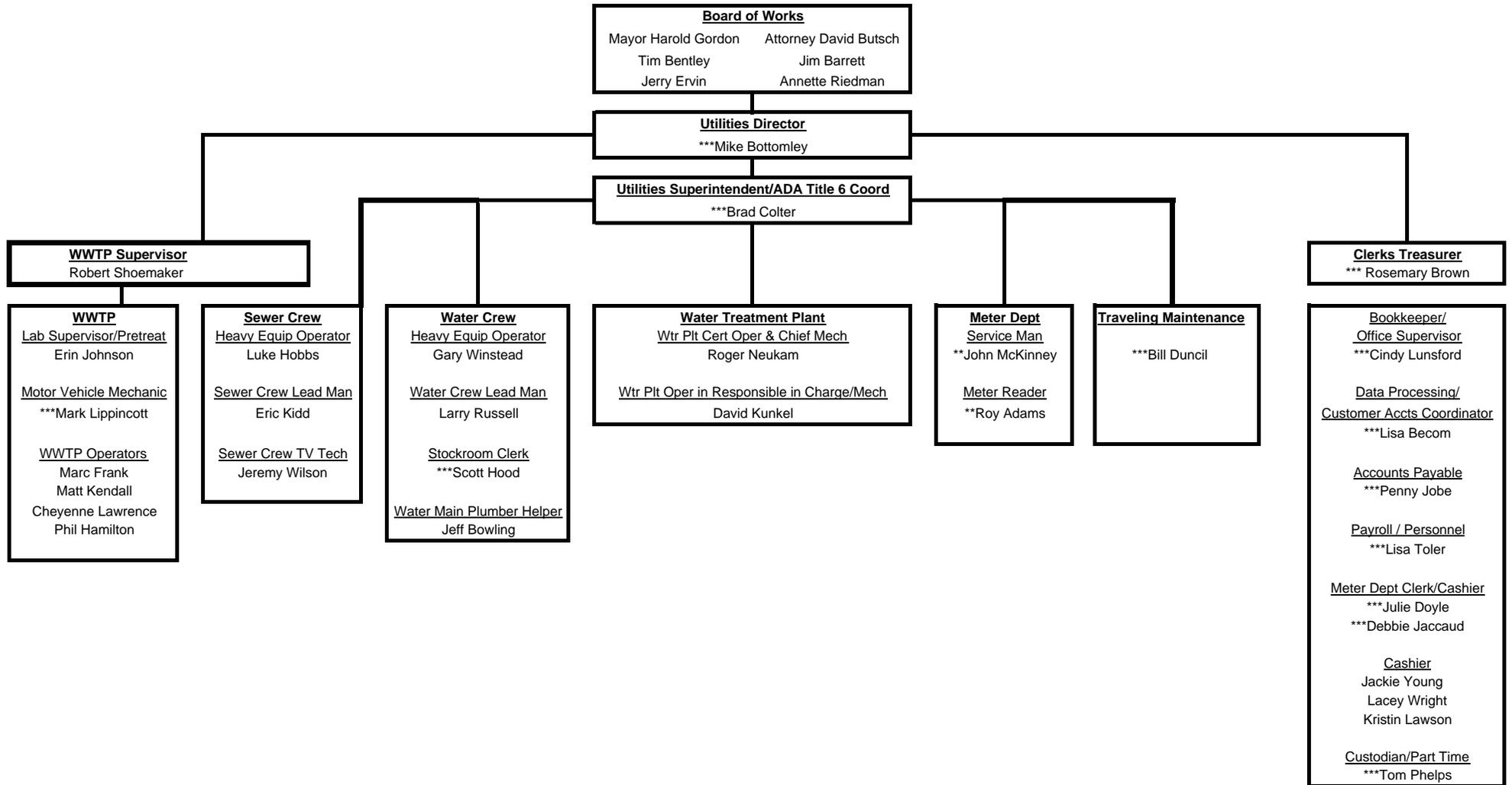
Mr. Robert Shoemaker is the Wastewater Treatment Plant Supervisor and is responsible for ensuring permit compliance and reporting at the treatment plant.

Ms. Erin Johnson is the Pretreatment Coordinator and Lab Supervisor at the WWTP and is responsible for monitoring industries and ensuring proper laboratory procedures are followed.

Mr. Mark Lippincott is the Motor Vehicle Mechanic for the Utilities and sees to the maintenance of both on and off road vehicles as well as our small power equipment.

Plant operators are Marc Frank, Matt Kendall, Cheyenne Urban and Phil Hamilton. All plant operators at Connersville Utilities are also trained to serve as Lab technicians and to perform plant maintenance.

Connersville Utilities Organizational Chart



MANHOURS

MONTH	HOURS WORKED	SICK HOURS	MISCELLANEOUS HOURS	HOURS LOST TO ACCIDENT	TOTAL HOURS
JANUARY	1,138	41	132	0	1,311
FEBRUARY	990	35	143	0	1,168
MARCH	1,232	29	29	0	1,290
APRIL	1,116	10	18	0	1,144
MAY	1,195	48	51	0	1,294
JUNE	1,091	25	172	0	1,288
JULY	1,093	30	112	0	1,235
AUGUST	1,133	91	108	0	1,332
SEPTEMBER	1,055	73	102	0	1,230
OCTOBER	969	48	144	0	1,161
NOVEMBER	907	12	306	0	1,225
DECEMBER	1,007	16	241	0	1,264
TOTAL	12926.0	458.0	1558.0	0.0	14942.0
2017 AVERAGE	1,077	38	130	0	1,245

PREVIOUS YEARLY AVERAGES

2016 AVERAGE	1,069	46	138	0	1,253
2015 AVERAGE	1,105	21	85	0	1,210
2014 AVERAGE	979	24	109	0	1,112
2013 AVERAGE	911	25	165	0	1,101
2012 AVERAGE	910	51	168	0	1,130
2011 AVERAGE	929	44	170	0	1,143
2010 AVERAGE	881	31	160	0	1,071
2009 AVERAGE	947	77	188	9	1,221
2008 AVERAGE	1,572	65	253	0	1,890
2007 AVERAGE	1,646	102	257	13	2,018
2006 AVERAGE	1,730	58	278	0	2,065
2005 AVERAGE	1,680	40	287	0	2,007
2004 AVERAGE	1,692	36	291	0	2,019
2003 AVERAGE	1,668	65	279	0	2,011

2017
SUMMARY OF OPERATION

	2017	2016
TOTAL OPERATING AND MAINTENANCE COSTS.....	\$1,900,952.85	\$1,813,265.94
TOTAL POWER COST.....	\$151,511.63	\$137,858.94
COST PER MILLION GALLONS WASTEWATER TREATED.....	\$1,024.18	\$1,047.87
COST PER CAPITA PER MONTH (2010 CENSUS).....	\$12.69	\$12.06
CITY POPULATION AND OUTLYING SUBDIVISIONS SERVED.....	13,481	13,481
EQUIVALENT POPULATION TREATED.....	19,883	20,366
MILLION GALLONS WASTEWATER TREATED.....	2,004	1,862
POUNDS OF CBOD5 REMOVED	1,408,006	1,205,230
POUNDS OF SUSPENDED SOLIDS REMOVED	2,218,459	2,159,845
METRIC TONS OF SLUDGE LANDFILLED.....	0	0
METRIC TONS OF DIGESTED SLUDGE LAND APPLIED.....	298	229
 EFFLUENT QUALITY		
SUSPENDED SOLIDS (mg/l).....	4.5	3.6
CARBONACEOUS BIOLOGICAL OXYGEN DEMAND (mg/l).....	3.8	3.5
ESCHERICA COLI (MPN/100ML).....	27.0	17.0
pH (ARITHMETIC MEAN).....	7.32	7.30

2017

YEAR END FINANCIAL STATEMENT

ASSETS

UTILTIY PLANT IN SERVICE.....	\$	15,867,462.25
LESS DEPRECIATION ALLOWANCE.....	\$	(6,991,922.49)
CONSTRUCTION IN PROGRESS.....	\$	3,644,451.00
ACCOUNTS RECEIVABLE.....	\$	296,656.92
CASH FUNDS BALANCE		
OPERATION AND MAINTENANCE.....	\$	534,612.75
DEPRECIATION.....	\$	16,397.94
SINKING - 2010 BONDS.....	\$	126,647.36
SINKING - 2009 BONDS.....	\$	247,039.65
DEBT RESERVE FUND.....	\$	780,175.86
CUSTOMER DEPOSITS.....	\$	171,465.11
CONSTRUCTION.....	\$	-
CASH ON HAND.....	\$	3.96
INVESTMENT FUNDS		
OPERATION AND MAINTENANCE.....	\$	1,989,124.27
CUSTOMER DEPOSITS.....	\$	100,000.00
CONSTRUCTION.....	\$	0.02
PREPAID INSURANCE.....	\$	6,691.50
CENTRAL STORES.....	\$	(389.49)
BOND ISSUE COST.....	\$	103,054.88
DEFINED BENEFIT DEFERRED OUTFLOWS.....	\$	201,325.16
TOTAL ASSETS	\$	17,092,796.65

LIABILITIES

CONTRIBUTIONS-IN-AID.....	\$	1,305,026.31
FEDERAL GRANTS.....	\$	1,901,600.00
STATE GRANTS.....	\$	253,549.00
LONG TERM DEBT		
2009 VISTEON REMEDIATION BONDS.....	\$	2,937,451.00
2010 REFUNDING REVENUE BONDS.....	\$	485,000.00
MATURED BONDS OUTSTANDING.....	\$	1,000.00
MATURED INTEREST OUTSTANDING.....	\$	1,682.10
PAID PREMIUM & DEFERRED AMOUNT ON REFUNDING..	\$	(2,944.68)
INTEREST ACCRUED.....	\$	75,743.89
DEFERRED CREDIT BOND PREMIUM.....	\$	380.52
ACCOUNTS PAYABLE.....	\$	36,864.88
CUSTOMER DEPOSITS PAYABLE.....	\$	271,465.11
SALARIES PAYABLE.....	\$	21,399.72
COMPENSATED ABSENCES.....	\$	115,784.08
ACCOUNTS PAYABLE TO ASSOCIATED COMPANIES.....	\$	(263.88)
RETAINED EARNINGS (LOSS).....	\$	8,238,727.54
PROFIT/(LOSS).....	\$	748,292.45
NET PENSION LIABILITY.....	\$	652,631.28
DEFINED BENEFIT DEFERRED INFLOWS.....	\$	49,407.33
TOTAL LIABILITIES	\$	17,092,796.65

2017 Work Orders

Water Work Orders	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Changed Meter								1					1
Check For Leaks	1						1	1		1			4
Check Valve		2	4	2		1	1						10
Clean Ring/Lid													0
Connect	1										1	1	3
Cust Comp/Odor/Bkup													0
Hyd Inst			1										
Hydrant Repair/Maint		2						3					5
Kill Service					1		2		1				4
Leak	3			2		3	5	5	4	2	1	1	26
Locate Lines			5	12	9	14	12	24	15	17	8	7	123
Main Break	1			2	2	2		2	1	1	2		13
Mtr Frozen/Changed/Thawed													0
Meter Pit Maintenance	7	15	18	7	1	6	3	7	6	8	7	6	91
Meter Relocate													0
New Valve							2	1					3
New Water			1		1	1	1				1		5
New Water Main			4	6									
No Water/Low Pressure	1			1						1			3
Other	1	3		2	1	10	4	10	8	3	4	3	49
Orion Transmitter													0
Reading													0
Reduce Meter						1			1				2
Remove Meter						1						1	2
Renew Service					1			1		1			3
Relocate Service													0
Replace Ring & Lid	1				1			1		2			5
Service Repair	3				2	1		1	2	4			13
Street Cut/Yd Cut	1			2	15	3	4	7	1	2	1		36
Tapped/Flush Main	1												1
Turn Off/Turn On for repairs							1				1		2
TSO Reconnection									1				1
Valve Box Raise/Lower						2	1	11			1		15
Valve Repair/Replace								2		1		1	4
Water Plant													
Totals	21	22	33	36	34	45	37	77	40	43	27	20	435
													424
Sewer Work Orders	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Catch Basin Clean	2		0										2
Clean Out Maint/New													0
Clean Out Maint/Repair	1		1		3		1		1				7
CSO						13							0

2017 Work Orders

Leak	3						4	2	2	1		1	13
Lift Station	5	6	2	11	6	8	11	4	8	6	11	5	83
Locate Lines		2		2							2		6
Main Break					1			1					2
Manhole Raised/Lower								1					0
Manhole Repair/Replace													0
Maintenance													0
Meter Pit Maintenance								1					1
Mtr Frozen/Changed/Thawed													0
No Water/Low Pressure	2		1	1									4
Other	1	1		2	2	2	2		2		1	1	14
Reconnect from Delq					1								1
Replace Ring & Lid				1			1	1	1				4
Service Repair						2							2
Sewer Problems			1									1	2
Street Cut													0
Turn Off/Turn On for repairs	2	2	1	4	1	3		4	2	3		2	24
Totals	13	14	7	23	11	17	19	15	19	10	14	11	173
													172

	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Meter Dept Work Orders													
Changed Meter	1				1		2	2	1	1	1		9
Check For Leaks	9	3	2	7	4	8	12	11	6	10	14	10	96
Check Valve													0
Clean Ring/Lid													0
Connect	26	39	37	36	46	48	46	54	47	42	36	27	484
Cust Comp/Odor/Bkup						1	1						2
Delinquent	24	48	11	31	16	24	33	26	25	17	15	13	283
Delinquent Door Tag	73	62	54	51	40	58	76	53	51	39	93	85	735
Delq/Ret Ck	5	1	2	2		1	3	1	1	2	1		19
Disconnect	32	27	22	36	38	29	33	45	33	35	38	15	383
FF Profile													
Hydrant Mtr Con/Disc			2		4	4	4	2	1	5			
Hydrant Repair/Maint													0
Kill Service													0
Leak	5	3	1	1	2			3	4	1	1		21
Locate Lines													0
Main Break													0
Maintenance	1							6	8	6	6		
Mtr Frozen/Changed/Thawed													0
Meter Pit Maintenance	2	1	1	1		3	2	1	4	1			16
Meter Relocate													0
Meter Test	4						15						4

2017 Work Orders

New Valve													0
New Water													0
No Water/Low Pressure	1		2	1	1		1	1	4	1	2	1	15
Other	32	13	36	92	42	17	28	17	14	8	29	40	368
Orion Error			1			1	1	1					
Orion Leak	24	40	23	25	25	30	29	27	53	30	92	31	429
Orion Profile	5	4	1	6	4	5	2	13	12	10	17	5	84
Orion Tamper			1				1			1	1	1	
Orion Transmitter	1			2	1		2	3		2	2	2	15
Pull Meter					2				2	2			
Raise/Low R & L		1		3				3		1			
Rd/In	14	38	24	30	34	40	39	41	53	42	27	41	423
Rd/Out	16	35	25	30	34	40	39	41	53	42	27	40	422
Reading	108	115	78	110	90	118	102	103	153	80	102	70	1229
Reconnect													0
Reconnect Fr Delq	8	20	8	18	8	18	22	10	13	9	7	8	149
Reconnect Fr Ret Item	5	1	1	1			3	1	1	1	1	1	16
Reduce Meter													0
Remove Meter						1	1	1			2		5
Renew Service													0
Relocate Service													0
Replace Ring & Lid	2	2	1	2	4	2		2	4				19
Service Repair													0
Street Cut/Yd Cut													0
Tapped/Flush Main													0
Turn Off/Turn On for repairs	4	3	12	9	16	2	12	13	2	11	12	11	107
TSO	17	12	23	15	6	4	3	3	8	12	14	15	132
Valve Box Raise/Lower													0
Valve Repair/Replace	1												1
Totals	420	468	368	509	418	454	497	484	553	411	540	416	5538
													5466

	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Office													
Connect					1				1				
Disc from Delq			18	16	7	12	9	16	13		17	3	
Disc Fire Protection												22	
Disc St Wtr Only	20	24	24	14	26	28	15	20	14	21	23	13	
Hyd Mtr Con/Disc						2		1					
Name Change	8	2	4	2	6		4	8	6		2		
Other				2	3	2		1	1		2		
Pool Allowance				22	109	82	21	8	3	1			
St Wtr Chg				1		2	1	12	1	1			
TSO Reconnect				1	2		16						

2017 Work Orders

Totals	28	26	46	58	154	128	50	66	39	23	44	38	700
													0
Summary	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Water Work Orders	21	22	33	36	34	45	37	77	40	43	27	20	435
Sewer Work Orders	13	21	18	26	24	26	36	42	33	34	23	19	315
St Water Work Orders	7	16	7	7	6	6	4	3	7	3	0	1	67
Dispatch Work Orders	13	14	7	23	11	17	19	15	19	10	14	11	173
Meter Dept Orders	420	468	368	509	418	454	497	484	553	411	540	416	5538
Office	28	26	46	58	154	128	50	66	39	23	44	38	700
Totals	502	567	479	659	647	676	643	687	691	524	648	505	7228
													7228

SEWER SERVICE RECORD

MONTH	SEWERS						
	NEW SEWER CONNECTS	LIFT STATIONS CHECKED	CSOs CHECKED	# OF FEET INSTALLED	# OF FEET RODDED DUE TO COMPLAINT	# FEET RODDED DUE TO MAINTENANCE	# FEET TELEVISED
JANUARY	0	35	12	0	1150	460	60
FEBRUARY	0	59	14	0	350	1020	0
MARCH	0	16	15	0	1212	1384	0
APRIL	0	63	12	0	200	322	0
MAY	0	31	12	0	1607	40	0
JUNE	0	16	15	0	350	90	0
JULY	0	17	12	0	1250	100	0
AUGUST	0	37	12	0	100	0	0
SEPTEMBER	0	10	12	0	1030	919	300
OCTOBER	0	7	12	0	930	525	188
NOVEMBER	1	11	15	0	800	350	400
DECEMBER	0	11	12	0	4320	246	0
TOTAL	1	313	155	0	13,299	5,456	948
2017 AVERAGE	0	26	13	0	1,108	455	79

PREVIOUS YEARLY TOTALS

2016 TOTAL	1	302	174	0	7,897	7,493	617
2015 TOTAL	4	149	196	0	5,505	10,009	1,050
2014 TOTAL	4	34	208	0	18,370	4,505	900
2013 TOTAL	7	731	194	0	30,255	4,505	1,292
2012 TOTAL	2	794	194	98	19,579	10,560	2,736
2011 TOTAL	4	401	220	575	20,043	1,312	1,725
2010 TOTAL	1	396	77	28	19,727	7,444	1,685
2009 TOTAL	2	225	40	150	30,780	7,270	1,395
2008 TOTAL	5	287	29	0	22,667	5,840	816
2007 TOTAL	6	67	50	0	14,365	1,710	2,940
2006 TOTAL	3	290	165	1,390	18,732	15,396	3,193
2005 TOTAL	5	672	50	0	21,226	20,003	4,744
2004 TOTAL	6	849	36	0	16,874	10,064	5,673
2003 TOTAL	10	596	14	0	26,601	4,060	1,343
2002 TOTAL	14	255	-	752	46,112	15,230	3,010
2001 TOTAL	11	359	-	0	3,987	18,773	4,980
2000 TOTAL	12	242	-	0	62,213	20,928	11,945

COMBINED SEWER OVERFLOWS - VOLUME

TOTAL MONTHLY VOLUME/MILLION GALLONS

MONTH	OUTFALL #002	OUTFALL #003	OUTFALL #004	OUTFALL #005	OUTFALL #006
JANUARY	0.454	1.826	3.000	-	-
FEBRUARY	0.061	0.247	0.273	-	-
MARCH	0.338	1.150	0.403	-	-
APRIL	1.054	4.821	2.021	-	-
MAY	1.917	7.847	0.925	-	-
JUNE	0.731	2.692	56.315	-	-
JULY	1.141	5.616	69.720	-	-
AUGUST	0.038	0.000	0.000	-	-
SEPTEMBER	0.000	0.000	0.413	-	-
OCTOBER	0.282	0.000	0.000	-	-
NOVEMBER	0.364	0.000	37.899	-	-
DECEMBER	0.000	0.000	0.000	-	-
TOTAL	6.381	24.199	170.969	-	-
2017 AVERAGE	0.532	2.017	14.247	-	-

PREVIOUS YEARLY TOTALS

				eliminated in 2008	eliminated in 2016
2016 AVERAGE	0.536	0.235	2.286	-	-
2015 AVERAGE	1.835	0.640	24.260	-	0.001
2014 AVERAGE	0.723	0.675	15.349	-	0.049
2013 AVERAGE	1.681	8.396	20.801	-	0.018
2012 AVERAGE	0.317	19.612	7.130	-	0.276
2011 AVERAGE	0.288	10.204	4.543	-	0.089
2010 AVERAGE	0.044	5.531	2.789	-	0.046
2009 AVERAGE	0.065	6.173	3.208	-	0.044
2008 AVERAGE	0.069	4.878	3.323	-	0.050
2007 AVERAGE	0.074	2.846	1.713	0.030	0.024
2006 AVERAGE	0.178	6.261	3.601	0.023	0.054
2005 AVERAGE	0.058	5.849	3.753	0.011	0.025
2004 AVERAGE	0.197	5.810	3.501	0.021	0.082
2003 AVERAGE	0.139	4.266	1.295	0.042	0.058

COMBINED SEWER OVERFLOWS - INCIDENT VOLUME

AVERAGE VOLUME/INCIDENT (GALLONS)

MONTH	OUTFALL #002	OUTFALL #003	OUTFALL #004	OUTFALL #005	OUTFALL #006
JANUARY	75,700	456,450	3,000,000	ELIMINATED	ELIMINATED
FEBRUARY	20,167	123,500	136,500	-	-
MARCH	112,767	383,333	201,500	-	-
APRIL	263,500	1,205,250	505,250	-	-
MAY	213,000	980,875	231,250	-	-
JUNE	146,200	538,400	14,078,750	-	-
JULY	142,650	935,983	13,944,000	-	-
AUGUST	19,000	0	0	-	-
SEPTEMBER	0	0	413,000	-	-
OCTOBER	94,000	0	0	-	-
NOVEMBER	121,333	0	18,949,500	-	-
DECEMBER	0	0	0	-	-
TOTAL	1,208,317	4,623,791	51,459,750	-	-
2017 AVERAGE	100,693	385,316	4,288,313	-	-

PREVIOUS YEARLY AVERAGES

				eliminated in 2008	eliminated in 2015
2016 AVERAGE	140,617	135,789	545,000	-	-
2015 AVERAGE	322,336	149,110	4,950,576	-	2,121
2014 AVERAGE	180,805	241,506	3,132,246	-	1,563
2013 AVERAGE	1,835,313	1,296,158	3,570,400	-	7,163
2012 AVERAGE	85,860	432,651	237,222	-	9,250
2011 AVERAGE	66,446	1,502,700	1,526,007	-	13,667
2010 AVERAGE	11,689	942,548	431,213	-	7,174
2009 AVERAGE	10,349	1,212,605	1,091,310	-	9,103
2008 AVERAGE	18,650	1,342,033	989,008	-	16,433
2007 AVERAGE	31,391	1,016,250	471,583	11,889	11,261
2006 AVERAGE	44,398	2,052,052	1,151,121	10,056	17,751
2005 AVERAGE	46,198	1,960,519	1,519,665	8,039	12,987
2004 AVERAGE	56,561	1,741,218	1,296,732	10,576	19,144
2003 AVERAGE	47,629	1,462,543	457,582	42,000	20,500

COMBINED SEWER OVERFLOWS - DURATION

AVERAGE DURATION/HOURS PER EVENT

MONTH	OUTFALL	OUTFALL	OUTFALL	OUTFALL	OUTFALL
	#002	#003	#004	#005	#006
JANUARY	9.11	8.33	9.00	-	-
FEBRUARY	2.33	1.81	2.87	-	-
MARCH	5.99	7.88	6.52	-	-
APRIL	14.26	12.94	4.08	-	-
MAY	32.10	27.37	4.69	-	-
JUNE	8.78	7.27	20.34	-	-
JULY	10.56	13.71	21.61	-	-
AUGUST	1.45	0.00	0.00	-	-
SEPTEMBER	0.00	0.00	0.42	-	-
OCTOBER	5.42	0.00	0.00	-	-
NOVEMBER	3.39	0.00	8.88	-	-
DECEMBER	0.00	0.00	0.00	-	-
TOTAL	93.390	79.310	78.410	-	-
2017 AVERAGE	7.783	6.609	6.534	-	-

PREVIOUS YEARLY AVERAGES

				eliminated in 2008	eliminated in 2015
2016 AVERAGE	1.96	0.57	1.38	-	-
2015 AVERAGE	2.87	1.01	3.17	-	0.05
2014 AVERAGE	14.36	3.72	13.68	-	1.21
2013 AVERAGE	3.61	2.40	2.11	-	1.55
2012 AVERAGE	1.92	1.70	1.31	-	2.17
2011 AVERAGE	5.00	4.66	5.71	-	4.70
2010 AVERAGE	17.33	15.13	9.88	-	15.13
2009 AVERAGE	2.64	2.74	2.84	-	2.66
2008 AVERAGE	2.81	2.86	3.22	-	2.81
2007 AVERAGE	1.66	1.66	1.68	5.61	1.69
2006 AVERAGE	10.08	10.08	7.70	8.44	10.08
2005 AVERAGE	2.21	2.21	2.63	2.47	2.34
2004 AVERAGE	2.15	2.15	2.44	2.87	2.15
2003 AVERAGE	2.06	2.06	1.92	2.26	2.11

COMBINED SEWER OVERFLOWS - FREQUENCY

of Overflows / Month

MONTH	OUTFALL	OUTFALL	OUTFALL	OUTFALL	OUTFALL
	#002	#003	#004	#005	#006
JANUARY	6	4	4	-	-
FEBRUARY	3	2	2	-	-
MARCH	3	3	2	-	-
APRIL	4	4	4	-	-
MAY	9	8	4	-	-
JUNE	5	5	4	-	-
JULY	8	6	5	-	-
AUGUST	2	0	0	-	-
SEPTEMBER	0	0	1	-	-
OCTOBER	3	0	0	-	-
NOVEMBER	3	0	2	-	-
DECEMBER	0	0	0	-	-
TOTAL	46	32	28	-	-
2016 AVERAGE	3.8	2.7	2.3	-	-

PREVIOUS YEARLY AVERAGES

				eliminated in 2008	eliminated in 2015
2016 AVERAGE	3.8	1.1	2.2	-	-
2015 AVERAGE	4.2	3.0	1.5	-	0.3
2014 AVERAGE	3.7	2.3	2.3	-	0.2
2013 AVERAGE	2.8	2.7	2.2	-	1.8
2012 AVERAGE	2.8	2.8	1.5	-	1.8
2011 AVERAGE	5.6	5.9	2.4	-	5.8
2010 AVERAGE	4.3	4.2	1.8	-	4.2
2009 AVERAGE	4.0	4.3	2.4	-	4.3
2008 AVERAGE	2.9	2.9	2.8	-	2.9
2007 AVERAGE	1.8	1.8	1.6	2.3	1.8
2006 AVERAGE	3.4	3.4	2.4	2.2	3.4
2005 AVERAGE	2.6	2.6	1.9	1.4	2.3
2004 AVERAGE	3.2	3.4	2.7	1.7	3.4
2003 AVERAGE	2.9	2.9	2.3	1.0	2.8

PHYSICAL DATA

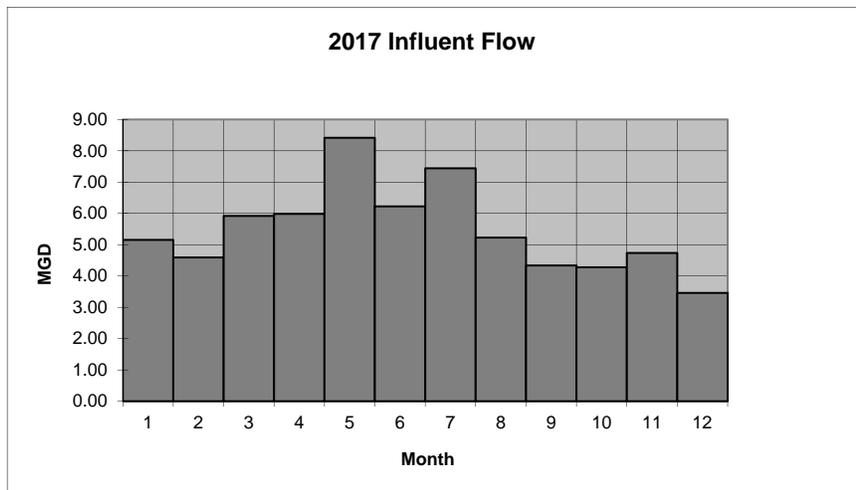
MONTH	AVERAGE HIGH TEMPERATURE °F	AVERAGE LOW TEMPERATURE °F	INCHES OF PRECIPITATION
JANUARY	44	31	3.85
FEBRUARY	51	34	1.97
MARCH	53	36	4.59
APRIL	73	50	4.65
MAY	77	54	8.13
JUNE	83	62	5.04
JULY	86	69	6.54
AUGUST	84	68	1.5
SEPTEMBER	81	63	2.6
OCTOBER	70	54	3.91
NOVEMBER	51	36	4.68
DECEMBER	38	24	1.12
TOTAL	791.0	581.0	48.58
2017 AVERAGE	65.9	48.4	4.05

PREVIOUS YEARS AVERAGES

2016 AVERAGE	66	49	4.31
2015 AVERAGE	64	47	3.58
2014 AVERAGE	61	45	3.42
2013 AVERAGE	63	48	2.90
2012 AVERAGE	66	50	2.42
2011 AVERAGE	64	48	4.51
2010 AVERAGE	63	47	2.26
2009 AVERAGE	62	46	3.69
2008 AVERAGE	59	43	4.27
2007 AVERAGE	61	48	3.40
2006 AVERAGE	61	45	4.74
2005 AVERAGE	61	44	3.86
2004 AVERAGE	60	44	2.53
2003 AVERAGE	60	44	3.75
2002 AVERAGE	62	46	3.66
2001 AVERAGE	63	46	4.20
2000 AVERAGE	60	44	3.24
1999 AVERAGE	62	44	2.66
1998 AVERAGE	64	43	3.72
1997 AVERAGE	59	43	3.14

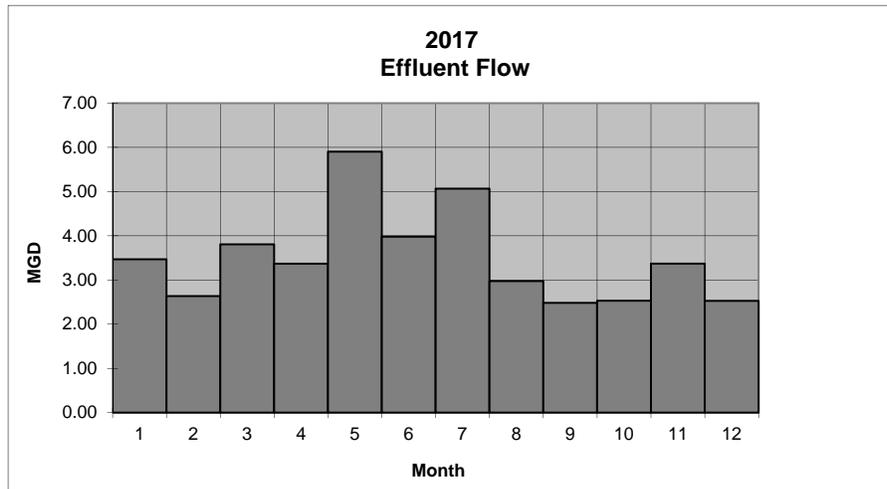
INFLUENT WASTEWATER FLOW MILLION GALLONS DAILY

2017												
Day of Month	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1	3.69	4.49	12.90	5.29	6.71	6.66	6.70	5.67	4.58	4.19	6.46	3.79
2	4.13	4.54	5.61	5.73	5.89	6.45	5.18	6.29	4.99	4.48	3.94	3.54
3	5.44	4.50	5.57	5.96	5.66	6.70	5.20	6.10	4.12	4.24	3.77	3.59
4	4.09	4.43	5.02	5.71	14.75	6.07	7.52	6.05	4.93	4.19	3.77	3.93
5	3.94	3.96	4.56	7.22	17.02	6.56	5.70	5.24	8.09	7.52	6.82	5.51
6	3.90	4.24	8.41	6.55	10.68	5.61	11.20	5.26	4.54	3.46	8.92	3.70
7	3.72	7.16	7.62	5.16	8.21	5.44	9.61	5.51	4.44	5.72	7.06	3.32
8	3.71	4.62	5.53	5.07	7.34	5.54	8.50	5.26	4.12	7.65	4.66	3.50
9	3.86	4.48	5.40	5.41	10.89	5.73	7.25	5.19	4.28	4.47	5.03	3.30
10	5.22	4.42	5.28	5.37	8.02	5.82	6.75	5.56	4.27	3.75	4.40	3.48
11	4.72	4.16	4.99	5.41	8.46	6.09	14.77	5.22	4.13	4.50	4.50	3.61
12	7.73	4.71	5.01	5.39	6.97	6.53	9.14	5.60	4.13	3.83	4.43	3.63
13	5.19	4.21	5.00	5.25	6.52	7.06	8.58	5.25	4.55	3.96	3.76	3.40
14	5.93	4.50	5.13	5.37	6.33	5.78	7.26	5.26	3.88	4.18	3.78	3.56
15	4.80	4.17	4.55	5.29	6.62	9.55	6.89	5.58	4.12	4.29	4.78	3.41
16	4.97	4.07	4.49	5.29	6.19	5.27	6.53	5.87	4.39	3.81	2.81	3.20
17	8.00	4.49	5.41	5.60	5.70	5.31	10.15	6.76	3.99	3.85	2.95	3.07
18	5.18	4.33	4.47	5.48	5.72	8.44	7.43	4.58	4.15	3.83	7.38	3.44
19	5.33	4.47	4.45	5.39	7.03	5.21	7.03	4.77	4.53	3.91	6.42	3.58
20	13.00	4.96	8.83	8.46	6.14	5.07	7.16	4.53	3.92	3.59	4.59	3.74
21	6.51	4.50	5.73	6.10	6.23	5.11	8.22	4.68	3.77	4.00	4.88	3.29
22	5.66	4.39	4.90	4.96	5.22	5.29	7.60	6.09	3.60	3.58	4.51	3.14
23	5.66	4.43	5.16	4.60	5.41	10.81	7.19	4.20	4.19	4.73	4.16	6.12
24	5.46	5.93	4.61	4.67	13.16	6.88	6.39	4.59	3.97	4.30	3.85	2.94
25	4.64	4.00	4.41	4.46	17.71	4.76	6.30	4.59	4.33	3.95	4.05	2.54
26	4.76	3.75	8.83	4.88	10.60	5.33	6.11	4.55	4.18	3.54	3.83	2.51
27	3.94	4.39	6.19	5.09	10.12	5.69	7.75	4.66	4.07	5.55	4.05	2.92
28	3.67	6.31	6.76	8.29	9.33	5.18	5.96	4.52	4.02	3.88	4.20	3.27
29	3.91		5.92	14.80	8.15	5.28	5.59	6.01	3.90	3.23	4.05	2.29
30	4.61		6.35	7.24	7.22	7.49	5.31	4.36	3.91	3.48	4.27	3.16
31	4.40		6.40		6.86		5.70	4.24		2.98		2.76
TOTAL	159.77	128.61	183.49	179.49	260.86	186.71	230.67	162.04	130.09	132.64	142.08	107.24
AVERAGE FLOW	5.15	4.59	5.92	5.98	8.41	6.22	7.44	5.23	4.34	4.28	4.74	3.46



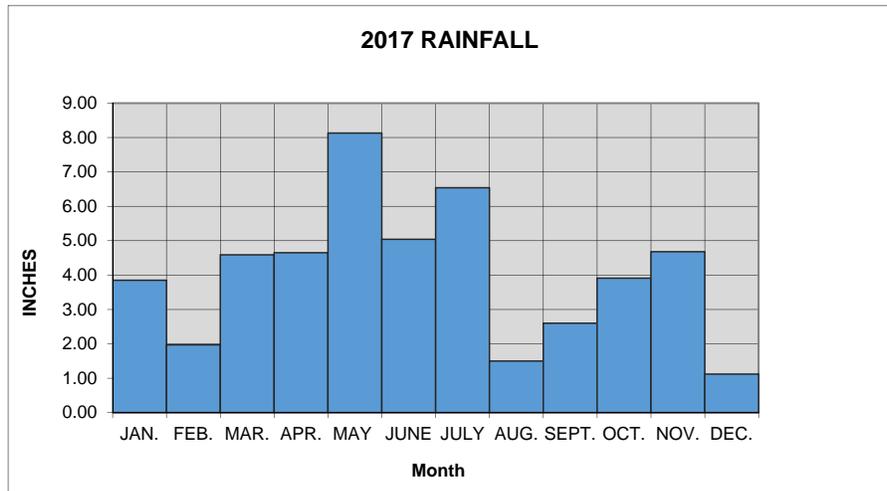
EFFLUENT WASTEWATER FLOW MILLION GALLONS DAILY

2017												
Day of Month	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1	2.17	2.73	8.66	3.04	4.51	4.39	4.70	3.43	2.75	1.92	4.66	2.42
2	2.40	2.52	3.71	2.88	3.92	4.04	3.44	3.36	2.96	2.11	3.00	2.45
3	3.73	2.50	3.05	3.19	3.55	3.91	3.25	3.24	2.08	2.06	2.49	2.42
4	2.33	2.45	3.16	2.93	10.73	3.87	4.92	4.54	2.47	2.14	2.36	2.54
5	2.29	2.49	2.84	4.33	13.41	4.61	3.69	2.97	5.63	4.98	4.60	3.91
6	2.12	2.52	5.72	3.79	8.02	3.62	8.25	3.15	2.65	2.57	7.16	2.54
7	2.08	4.89	5.45	2.99	5.83	3.58	7.13	3.44	2.43	3.55	5.01	2.47
8	2.08	2.75	3.62	2.75	5.23	3.39	5.93	3.03	2.31	5.28	3.03	2.36
9	2.29	2.51	3.12	2.92	7.63	3.44	5.26	2.87	2.30	3.35	3.10	2.44
10	3.41	2.58	3.77	2.86	5.36	3.35	4.49	2.90	2.30	2.41	2.82	2.48
11	3.28	2.63	2.83	2.99	5.97	3.26	10.75	2.94	2.38	2.52	2.70	2.47
12	5.62	2.83	2.81	2.53	4.66	3.39	6.58	2.99	2.41	2.13	2.88	2.34
13	3.34	2.39	2.98	2.61	4.13	4.38	6.25	2.77	2.65	2.24	2.79	2.41
14	3.89	2.51	2.71	2.50	4.22	3.79	5.14	2.87	2.60	2.13	2.61	2.29
15	2.99	2.32	2.67	2.60	3.80	6.77	4.35	2.79	3.05	2.75	4.11	2.39
16	3.49	2.38	2.53	2.62	3.81	3.35	4.57	2.87	2.22	2.12	2.61	2.37
17	5.83	2.39	3.17	2.52	3.66	3.29	6.69	4.25	2.19	2.04	2.50	2.38
18	3.48	2.38	2.77	2.39	3.76	6.05	4.98	2.69	2.47	2.22	5.80	2.47
19	3.24	2.40	2.59	2.57	4.81	3.43	4.43	2.61	2.95	2.01	4.69	2.39
20	10.68	2.39	6.07	4.87	4.30	3.38	4.85	2.56	2.34	1.93	3.86	2.27
21	5.14	2.34	3.57	3.90	4.53	3.07	5.84	2.60	2.51	1.97	3.35	2.25
22	4.03	2.36	2.99	2.85	3.37	3.08	5.28	3.89	2.16	1.97	3.04	2.46
23	3.68	2.30	2.94	2.57	3.17	7.46	5.30	2.49	2.16	2.96	2.96	4.90
24	3.41	3.34	2.98	2.91	9.58	4.81	4.11	2.38	2.10	2.80	2.83	2.50
25	3.27	2.31	2.85	2.42	14.04	3.14	3.81	2.41	2.25	2.00	2.80	2.29
26	3.08	2.16	9.30	2.46	7.77	3.77	3.67	2.38	2.22	1.94	2.68	2.23
27	3.06	2.32	3.98	2.56	7.45	3.40	5.03	2.37	2.10	3.11	2.76	2.21
28	2.84	4.11	4.50	4.97	6.74	3.32	4.04	2.58	1.98	2.53	2.72	2.27
29	2.75		3.31	11.34	5.72	3.29	3.50	3.97	1.96	2.09	2.53	3.09
30	2.74		3.62	5.21	4.77	4.75	3.35	2.43	1.90	2.55	2.64	2.24
31	2.77		3.70		4.53		3.48	2.43		2.07		2.10
TOTAL	107.51	73.80	117.97	101.07	182.98	119.38	157.06	92.20	74.48	78.45	101.09	78.35
AVERAGE FLOW	3.47	2.64	3.81	3.37	5.90	3.98	5.07	2.97	2.48	2.53	3.37	2.53

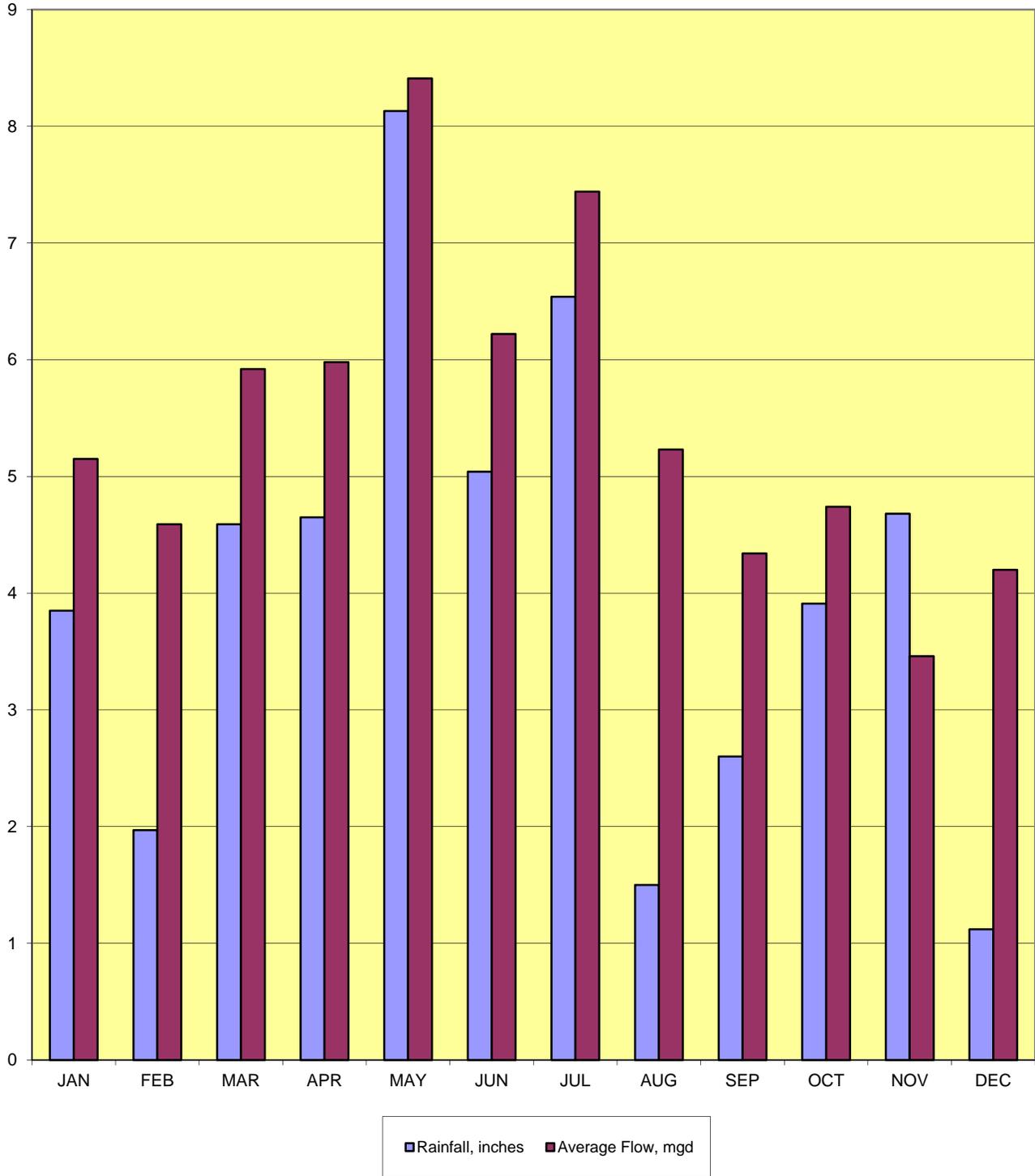


RAINFALL INCHES DAILY

2017												
Day of Month	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1		0.17	1.00						0.24		0.82	
2	0.20				0.02				0.15		0.01	
3	0.34		0.03	0.04	0.19			0.04			0.04	
4			0.10		1.32		0.56	0.01	1.26	0.03		0.02
5				0.44	0.89	0.33			0.52	0.82	1.57	0.31
6	0.01	0.09	0.50	0.21	0.01			1.11	0.01		0.33	
7	0.01	0.51	0.26				0.69	0.19	0.01	0.71	0.28	
8			0.01							0.89		
9		0.07	0.12		0.69					0.01		
10	0.30	0.01	0.01		0.04					0.02		
11	0.12	0.01		0.13	0.20		1.33			0.08		
12	0.73	0.26							0.03	0.01	0.12	
13			0.04			0.43	0.23		0.22		0.01	
14	0.25		0.01			0.32					0.32	
15						0.66				0.18		
16	0.36						0.30					
17	0.21		0.20				0.77	0.53				0.04
18	0.02				0.11	0.77					1.07	0.01
19	0.40			0.02	0.37	0.01			0.16		0.04	
20	0.79		0.71	1.18	0.25		0.16					0.01
21		0.01		0.03	0.19	0.02	0.40				0.02	
22				0.04			0.25	0.29			0.01	0.04
23	0.02					1.43	0.21	0.02		0.37		0.60
24		0.25			2.47	0.01	0.01			0.15		
25	0.01	0.01	0.05		0.66					0.02		
26	0.01		0.92		0.40	0.01						
27	0.03		0.19	0.08	0.01		0.51			0.47		
28		0.58	0.13	1.48	0.29		0.01	0.05		0.02		
29				0.97	0.02			0.37				
30	0.03		0.23	0.03		1.05				0.13	0.04	0.01
31	0.01		0.08									0.08
INCHES FOR MONTH	3.85	1.97	4.59	4.65	8.13	5.04	6.54	1.50	2.60	3.91	4.68	1.12
INCHES PER DAY	0.124	0.068	0.148	0.155	0.262	0.168	0.211	0.048	0.087	0.126	0.156	0.036
INCHES PER EVENT	0.20	0.18	0.26	0.39	0.45	0.46	0.47	0.19	0.29	0.26	0.33	0.12



2016 Influent Plant Flow/Rainfall Comparison



SUMMARY FLOW DATA

MONTH	INFLUENT DAILY FLOW MILLION GALLONS			INFLUENT HOURLY FLOW GALLONS		
	LOW	AVERAGE	HIGH	LOW	AVERAGE	HIGH
JANUARY	3.67	5.15	13.00	152,917	214,583	541,667
FEBRUARY	3.75	4.59	7.16	156,250	191,250	298,333
MARCH	4.41	5.92	12.90	183,750	246,667	537,500
APRIL	2.39	5.98	14.80	99,583	249,167	616,667
MAY	5.22	8.41	14.04	217,500	350,417	585,000
JUNE	4.76	6.22	10.81	198,333	259,167	450,417
JULY	5.18	7.44	14.77	215,833	310,000	615,417
AUGUST	4.20	5.23	6.76	175,000	217,917	281,667
SEPTEMBER	3.60	4.34	8.09	150,000	180,833	337,083
OCTOBER	2.98	4.28	7.65	124,167	178,333	318,750
NOVEMBER	2.81	4.74	8.92	117,083	197,500	371,667
DECEMBER	2.29	3.46	6.12	95,417	144,167	255,000
TOTAL	45.26	65.76	125.02	1,885,833	2,740,000	5,209,167
2017 AVERAGE	3.77	5.48	10.42	157,153	228,333	434,097

PREVIOUS YEARS AVERAGES

2015 AVERAGE	3.23	4.409	9.94	134,722	183,715	414,063
2015 AVERAGE	3.23	4.409	9.94	134,722	183,715	414,063
2014 AVERAGE	3.34	4.59	9.89	139,236	191,250	411,910
2013 AVERAGE	2.58	3.72	9.23	107,535	154,792	384,687
2012 AVERAGE	2.88	3.89	7.15	123,333	158,681	297,882
2011 AVERAGE	3.87	5.94	12.28	161,111	247,431	511,840
2010 AVERAGE	3.85	5.32	9.93	160,556	221,632	413,715
2009 AVERAGE	3.32	4.60	9.06	138,438	191,840	377,361
2008 AVERAGE	3.30	4.52	9.75	137,396	188,507	406,250
2007 AVERAGE	4.47	5.66	10.14	186,250	235,799	422,361
2006 AVERAGE	5.15	6.65	11.93	214,549	277,257	497,188
2005 AVERAGE	4.87	5.85	10.18	194,688	243,785	424,340
2004 AVERAGE	4.53	5.74	10.30	188,715	239,236	429,201

SURFACE FLOW RATE

PRIMARY GALLONS/DAY/SQ. FT. Design: 300 - 1200 GPD/sq. ft.	FINAL GALLONS/DAY/SQ.FT. Design: 300 - 1200 GPD/sq. ft.
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MONTH	LOW	AVERAGE	HIGH	LOW	AVERAGE	HIGH
JANUARY	339	475	1,199	299	420	1,060
FEBRUARY	346	423	660	306	374	584
MARCH	407	546	1190	360	483	1,052
APRIL	364	552	1365	364	488	1,207
MAY	482	776	1633	426	686	1,444
JUNE	439	574	997	388	507	881
JULY	478	686	1362	422	607	1,204
AUGUST	387	482	624	342	426	551
SEPTEMBER	332	400	746	294	354	660
OCTOBER	275	395	706	243	349	624
NOVEMBER	259	437	823	229	387	727
DECEMBER	211	319	564	187	282	499
TOTAL	4319	6065	11,869	3,860	5,363	10,493
2017 AVERAGE	360	505	989	322	447	874

PREVIOUS YEARS AVERAGES

2016 AVERAGE	385	517	1041	308	415	843
2015 AVERAGE	279	425	917	247	376	810
2014 AVERAGE	309	424	867	231	320	664
2013 AVERAGE	280	404	1,039	271	388	931
2012 AVERAGE	375	513	966	272	367	675
2011 AVERAGE	444	684	1,425	381	585	1,155
2010 AVERAGE	387	533	987	364	503	938
2009 AVERAGE	407	563	1,107	297	410	808
2008 AVERAGE	426	583	1,243	341	441	864
2007 AVERAGE	539	683	1,222	512	609	974
2006 AVERAGE	621	803	1,439	420	543	973
2005 AVERAGE	564	706	1,228	381	477	831
2004 AVERAGE	546	692	1,242	369	468	840

WEIR OVERFLOW RATE

MONTH	PRIMARY GPD/Lineal ft. Recommended: 10,000 - 20,000			FINAL GPD/Lineal ft. Recommended: 5,000 - 15,000		
	LOW	AVERAGE	HIGH	LOW	AVERAGE	HIGH
	JANUARY	7,112	9,981	25,194	2,243	3,148
FEBRUARY	7,267	8,895	13,876	2,292	2,806	4,377
MARCH	8,547	11,473	25,000	2,696	3,619	7,885
APRIL	8,643	11,589	28,682	2,726	3,655	9,046
MAY	10,116	16,298	34,322	3,191	5,141	10,825
JUNE	9,225	12,054	20,950	2,910	3,802	6,608
JULY	10,039	14,419	28,624	3,166	4,548	8,028
AUGUST	8,140	10,136	13,101	2,567	3,197	4,132
SEPTEMBER	6,977	8,411	15,678	2,200	2,653	4,945
OCTOBER	5,775	8,295	14,826	1,822	2,614	4,676
NOVEMBER	5,446	9,186	17,287	1,718	2,897	5,452
DECEMBER	4,438	6,705	11,860	1,400	2,115	3,741
TOTAL	91,725	127,442	249,400	28,931	40,195	77,661
2017 AVERAGE	7,644	10,620	20,783	2,411	3,350	6,472

PREVIOUS YEARS AVERAGES

2016 AVERAGE	8,435	11,313	22,729	2,307	3,445	5,984
2015 AVERAGE	5,862	8,924	19,258	1,849	2,815	6,072
2014 AVERAGE	7,705	10,502	22,286	2,146	3,027	6,582
2013 AVERAGE	5,920	8,640	22,610	2,152	3,079	7,448
2012 AVERAGE	6,276	8,562	15,930	1,833	2,490	4,643
2011 AVERAGE	9,384	14,466	30,306	2,662	4,069	8,396
2010 AVERAGE	7,120	9,859	18,635	2,506	3,470	6,598
2009 AVERAGE	7,337	10,226	19,874	2,034	2,812	5,514
2008 AVERAGE	10,099	13,785	28,970	1,801	2,491	5,323
2007 AVERAGE	12,556	15,896	28,534	2,732	3,459	6,296
2006 AVERAGE	14,918	18,691	33,518	3,146	4,067	7,294
2005 AVERAGE	13,125	16,435	28,551	2,774	3,578	6,229
2004 AVERAGE	12,657	16,128	28,935	2,769	3,509	6,296

DISTRIBUTION OF COMPRESSED AIR

MONTH	MILLION CUBIC FEET					TOTAL AIR	CUBIC FEET	CUBIC FEET	LBS BOD/
	CHANNEL		AERATION TANKS				AIR/GAL	LBS BOD	100 CU FT
	PRE-AIR	AIR	1 & 2	3 & 4	5 & 6		RAW SEWAGE	REMOVED	AER CAP.
JANUARY	0.44	0.16	0.53	0.39	0.00	1.52	0.30	1,676	9.8
FEBRUARY	0.44	0.16	0.54	0.36	0.00	1.50	0.33	1,737	10.2
MARCH	0.44	0.21	0.62	0.38	0.00	1.65	0.28	1,824	10.7
APRIL	0.44	0.16	0.59	0.41	0.00	1.60	0.27	1,796	10.5
MAY	0.45	0.16	0.53	0.38	0.00	1.52	0.18	1,690	9.9
JUNE	0.45	0.16	0.51	0.34	0.00	1.46	0.23	2,021	11.8
JULY	0.45	0.16	0.50	0.26	0.00	1.37	0.18	2,307	13.5
AUGUST	0.45	0.16	0.53	0.24	0.00	1.38	0.26	1,983	11.6
SEPTEMBER	0.45	0.16	0.55	0.24	0.00	1.40	0.32	2,191	12.8
OCTOBER	0.44	0.16	0.53	0.27	0.00	1.40	0.33	1,798	10.5
NOVEMBER	0.45	0.16	0.52	0.35	0.00	1.48	0.31	2,201	12.9
DECEMBER	0.44	0.17	0.50	0.36	0.00	1.47	0.42	2,002	11.7
TOTAL	5.34	1.98	6.45	3.98	0.00	17.75	3.42	23,226	136.0
2017 AVERAGE	0.45	0.17	0.54	0.33	0.00	1.48	0.28	1,935	11.3

PREVIOUS YEARLY AVERAGES

2016 AVERAGE	0.44	0.14	0.62	0.33	0.00	1.53	0.31	1,738	10.2
2015 AVERAGE	0.41	0.14	0.73	0.34	0.00	1.61	0.36	1,348	14.5
2014 AVERAGE	0.33	0.17	0.89	0.47	0.00	1.85	0.22	1,348	14.5
2013 AVERAGE	0.44	0.39	0.88	0.47	0.00	2.18	0.3	1,378	15.6
2012 AVERAGE	0.44	0.43	0.87	0.46	0.00	2.20	0.29	1,428	15.2
2011 AVERAGE	0.44	0.50	0.86	0.44	0.00	2.24	0.24	1,134	15.5
2010 AVERAGE	0.45	0.51	0.86	0.45	0.00	2.27	0.26	1,185	15.0
2009 AVERAGE	0.44	0.58	0.84	0.47	0.00	2.33	0.28	1,097	19.2
2008 AVERAGE	0.45	0.94	0.85	0.86	0.00	3.10	0.32	1,194	26.4
2007 AVERAGE	0.45	0.93	0.82	0.87	0.00	3.07	0.28	1,036	28.1
2006 AVERAGE	0.45	0.95	0.91	0.95	0.00	3.26	0.29	1,016	26.6
2005 AVERAGE	0.44	1.11	0.83	0.90	0.00	3.28	0.31	1,007	28.8
2004 AVERAGE	0.90	0.00	0.44	1.26	0.87	3.47	0.32	1,107	25.9
2003 AVERAGE	0.97	0.00	0.40	1.34	0.96	3.67	0.34	619	27.1
2002 AVERAGE	0.99	0.52	0.67	1.41	1.06	4.65	0.37	732	26.6
2001 AVERAGE	0.37	0.28	1.92	2.53	1.11	6.21	0.59	1,148	25.9
2000 AVERAGE	0.37	0.31	1.93	2.51	1.11	6.23	0.72	1,387	20.8
1999 AVERAGE	0.37	0.33	1.93	2.52	1.11	6.26	0.62	979	32.7
1998 AVERAGE	0.37	0.37	1.90	2.56	1.11	6.31	0.62	1,112	29.0
1997 AVERAGE	0.37	0.37	1.84	2.56	1.21	6.35	0.64	1,166	27.1

POWER AND FUEL USAGE

MONTH	CUBIC FEET UTILITY GAS USED X 1000	KILLOWATTS ELECTRICITY USED
JANUARY	383.9	135,680
FEBRUARY	290.7	112,640
MARCH	326.1	127,360
APRIL	185.6	112,000
MAY	153.9	119,960
JUNE	112.8	111,360
JULY	110.8	118,400
AUGUST	112.7	110,080
SEPTEMBER	102.0	104,960
OCTOBER	154.2	112,640
NOVEMBER	207.1	119,040
DECEMBER	304.5	124,160
TOTAL	2444.3	1,408,280
2017 AVERAGE	203.7	117,357
PREVIOUS YEARS TOTALS		
2016 AVERAGE	181.9	117,600
2015 AVERAGE	236.0	115,678
2014 AVERAGE	249.4	116,210
2013 AVERAGE	239.8	125,120
2012 AVERAGE	182.1	128,257
2011 AVERAGE	204.5	140,225
2010 AVERAGE	236.3	137,480
2009 AVERAGE	319.3	139,026
2008 AVERAGE	448.8	187,933
2007 AVERAGE	469.9	193,144
2006 AVERAGE	411.8	195,365
2005 AVERAGE	402.9	198,453
2004 AVERAGE	425.7	199,520
2003 AVERAGE	522.3	193,230
2002 AVERAGE	462.9	198,925
2001 AVERAGE	398.4	189,975
2000 AVERAGE	349.8	178,391
1999 AVERAGE	411.0	162,558
1998 AVERAGE	458.9	191,440
1997 AVERAGE	430.6	192,406

BLOWERS - HOURS OF OPERATION

MONTH	#1	#2	#3	#4 Turbo Blower
JANUARY	0	0	0	741
FEBRUARY	0	3	0	672
MARCH	0	0	0	743
APRIL	0	0	0	720
MAY	0	0	0	744
JUNE	0	0	0	720
JULY	0	0	0	742
AUGUST	0	0	0	744
SEPTEMBER	0	0	0	720
OCTOBER	0	0	0	744
NOVEMBER	0	0	0	721
DECEMBER	0	0	0	744
TOTAL	0.0	3	0	8,755
2017 AVERAGE	0.0	0	0	730

P Previous Years Monthly Averages

2016 AVERAGE	0	178	0	732
2015 AVERAGE	0	178	0	552
2014 AVERAGE	0	217	0	512
2013 AVERAGE	0	671	0	4
2012 AVERAGE	0	730	0	0
2011 AVERAGE	0	730	0	0
2010 AVERAGE	0	730	0	0
2009 AVERAGE	0	691	469	0
2008 AVERAGE	732	732	732	0
2007 AVERAGE	841	841	660	0
2006 AVERAGE	129	129	719	0
2005 AVERAGE	744	744	668	0
2004 AVERAGE	684	684	413	410
2003 AVERAGE	0	0	729	19
2002 AVERAGE	566	536	670	549
2001 AVERAGE	281	281	216	669
2000 AVERAGE	0	0	464	616
1999 AVERAGE	107	674	70	587
1998 AVERAGE	94	186	697	0
1997 AVERAGE	346	346	671	0

PUMPS - HOURS OF OPERATION

MONTH	RAW SEWAGE PUMPS			VERTICAL	RETURN SLUDGE PUMPS		
	#1	#2	#3	PUMP	#1	#2	#3
JANUARY	352.7	307.9	167.9	0.0	249.0	0.0	495.0
FEBRUARY	178.7	234.6	268.9	0.0	0.0	0.0	672.0
MARCH	418.9	355.6	35.7	0.0	0.0	0.0	719.0
APRIL	391.7	384.0	0.0	0.0	0.0	0.0	720.0
MAY	534.6	464.9	0.0	0.0	0.0	0.0	744.0
JUNE	391.5	367.7	0.0	0.0	0.0	0.0	720.0
JULY	376.6	488.0	0.0	0.0	0.0	0.0	742.0
AUGUST	341.9	411.2	0.0	0.0	0.0	0.0	744.0
SEPTEMBER	290.2	194.3	242.3	0.0	0.0	0.0	720.0
OCTOBER	268.8	184.9	307.9	0.0	0.0	0.0	744.0
NOVEMBER	232.1	174.5	354.5	0.0	0.0	0.0	721.0
DECEMBER	168.3	336.2	246.8	0.0	0.0	0.0	744.0
TOTAL	3946.0	3903.8	1624.0	0.0	249.0	0.0	8485.0
2017 AVERAGE	328.8	325.3	135.3	0.0	20.8	0.0	707.1

PREVIOUS YEARS AVERAGES

2016 AVERAGE	249.9	255.3	265.5	0.0	677.1	0.0	52.8
2015 AVERAGE	257.4	258.9	262.2	0.0	165.9	131.0	432.7
2014 AVERAGE	241.6	233.7	258.9	0.0	116.5	13.1	598.4
2013 AVERAGE	132.9	479.8	247.6	0.0	257.1	472.9	0.0
2012 AVERAGE	221.9	531.7	175.9	0.0	681.0	0.0	146.5
2011 AVERAGE	221.9	531.7	175.9	0.0	681.0	0.0	146.5
2010 AVERAGE	271.0	300.9	441.1	0.0	327.9	170.1	246.9
2009 AVERAGE	254.7	541.1	155.0	0.0	720.8	2.6	3.4
2008 AVERAGE	594.0	139.6	155.4	0.0	192.4	0.0	632.8
2007 AVERAGE	726.6	46.4	124.9	0.0	732.0	0.0	732.0
2006 AVERAGE	668.0	2.0	630.1	0.0	668.0	0.0	667.8
2005 AVERAGE	416.0	453.8	589.7	0.0	730.0	185.8	544.2
2004 AVERAGE	684.0	156.6	649.5	0.0	729.9	1.4	730.0
2003 AVERAGE	314.6	417.9	730.4	0.5	735.5	601.7	133.8
2002 AVERAGE	730.0	350.2	358.3	0.0	734.8	736.0	0.0
2001 AVERAGE	719.7	341.6	400.4	65.7	154.0	698.9	598.1
2000 AVERAGE	730.0	431.0	542.0	24.0	694.9	540.4	644.9
1999 AVERAGE	722.0	554.0	306.5	0.0	729.7	390.5	632.0
1998 AVERAGE	615.0	64.0	465.3	0.0	705.0	729.4	498.1
1997 AVERAGE	559.0	661.0	539.8	0.0	714.2	648.0	483.5

DETENTION TIME - HOURS

MONTH	PRIMARY			AERATION			FINAL		
	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
JANUARY	1.82	6.45	4.59	1.84	4.19	3.49	1.62	3.67	3.06
FEBRUARY	3.30	6.31	5.15	2.84	4.15	3.73	2.49	3.64	3.27
MARCH	1.83	5.36	4.00	1.86	3.81	3.21	1.63	3.34	2.81
APRIL	1.60	5.30	3.96	1.67	3.79	3.19	1.46	3.32	2.80
MAY	1.34	4.53	2.81	1.44	3.46	2.55	1.26	3.04	2.23
JUNE	2.19	4.97	3.80	2.12	3.65	3.11	1.86	3.20	2.73
JULY	1.60	4.57	3.18	1.67	3.48	2.77	1.46	3.05	2.43
AUGUST	3.50	5.63	4.52	2.95	3.91	3.46	2.59	3.43	3.03
SEPTEMBER	2.92	6.57	5.45	2.62	4.23	3.84	2.29	3.71	3.37
OCTOBER	3.09	7.94	5.53	2.72	4.63	3.87	2.38	4.06	3.40
NOVEMBER	2.65	8.42	4.99	2.44	4.75	3.66	2.14	4.17	3.21
DECEMBER	3.87	10.33	6.84	3.14	5.17	4.32	2.76	4.53	3.79
TOTAL	29.71	76.38	54.82	27.31	49.22	41.20	23.94	43.16	36.13
2017 AVERAGE	2.48	6.37	4.57	2.28	4.10	3.43	2.00	3.60	3.01

PREVIOUS YEARLY AVERAGES

2016 AVERAGE	2.21	5.93	4.46	2.26	4.16	3.56	1.98	3.64	3.12
2015 AVERAGE	2.67	8.05	5.28	2.39	4.58	3.72	2.09	4.01	3.265
2014 AVERAGE	2.26	6.37	4.68	2.36	4.38	3.75	2.09	3.85	3.2875
2013 AVERAGE	2.70	8.22	5.70	2.62	4.91	4.18	1.73	3.36	2.85
2012 AVERAGE	2.77	6.53	4.81	2.95	4.71	4.10	2.34	3.95	3.36
2011 AVERAGE	1.86	3.65	5.42	2.14	3.27	4.10	1.57	2.39	2.92
2010 AVERAGE	2.49	4.34	5.95	2.37	3.45	4.09	1.93	2.91	3.42
2009 AVERAGE	2.20	5.43	3.98	2.43	4.12	3.56	1.99	3.35	2.9
2008 AVERAGE	1.98	5.43	4.10	2.75	4.66	4.09	1.96	3.18	2.79
2007 AVERAGE	2.06	4.34	3.39	2.80	4.20	3.78	1.96	3.32	2.77
2006 AVERAGE	1.57	3.56	2.76	2.40	3.88	3.41	1.58	2.56	2.26
2005 AVERAGE	1.97	4.09	3.23	2.83	4.27	3.82	1.86	2.93	2.53
2004 AVERAGE	1.95	4.11	3.25	2.83	4.39	3.90	1.87	2.89	2.57
2003 AVERAGE	1.86	4.24	3.18	2.75	4.40	3.85	1.83	2.93	2.56
2002 AVERAGE	1.74	3.88	2.99	2.57	4.18	3.66	1.80	2.85	2.52
2001 AVERAGE	1.63	3.50	2.73	2.64	4.20	3.69	1.85	2.89	2.53
2000 AVERAGE	1.61	4.67	3.22	2.90	5.73	4.73	1.79	3.35	2.78
1999 AVERAGE	2.05	4.59	3.31	2.96	4.79	4.02	2.06	3.33	2.81
1998 AVERAGE	1.80	3.60	2.75	3.14	5.11	4.31	1.99	3.21	2.71
1997 AVERAGE	1.85	3.65	2.92	3.76	6.02	5.23	2.25	3.83	3.16

LABORATORY CONTROL

Laboratory data defines the character of the treatment plant effluent, the performance of various steps in the treatment processes and the final pollutant load imposed upon the receiving stream. Compliance or noncompliance with effluent limits and water quality standards is determined from laboratory data developed by plant operating personnel and reported to the responsible regulatory agency.

To properly determine plant operation and control information, laboratory work must be as precise and accurate as possible. Accuracy is a measure of the analyst's ability to obtain a known and true value. Precision is a measure of the analyst's ability to obtain the same result by repeated tests. With the current legal requirements and social pressures to abate water pollution, the laboratory analysts should be aware of his or her responsibility to provide results that are reliable.

RECORD KEEPING AND REPORTS

The value of information, whether produced by the laboratory, maintenance or operating personnel, is dependent upon the integrity of the records kept. Records must be permanent, complete and accurate. Entries on data sheets should be made with ink or indelible pencil. False or misleading records may actually do more harm than no records. Record keeping costs time and money, and only useful records should be kept. Records no longer useful should be discarded. Laboratory analysis of receiving water quality should be kept indefinitely. Records are needed for the following reasons:

Review of operational records can indicate the efficiency of the plant and its treatment processes and past and future problems.

Records are needed to show type and frequency of maintenance and evaluation of the effectiveness of maintenance programs.

Records may be needed in damage suits brought against the municipality.

Records are required by the regulatory agency.

Records provide the actual data for the preparation of weekly, monthly and annual reports to administrative officials, the public and the regulatory agencies.

In short, the making of clear concise memorandum of what has happened and what has been accomplished provides assistance in meeting future situations.

SAMPLING PROCEDURES

Laboratory analysis and plant records mean nothing if not obtained from samples that are collected properly. The objective of correct sampling is to get a representative portion of the whole that can be easily handled by the laboratory. Not only should the sample be taken correctly, but it should also be stored correctly. This means making sure that no changes occur prior to analysis.

There are two types of samples that may be collected, depending on the time available, the tests to be done and the object of the tests. One is called a grab sample and consists of a portion of waste all taken at one time. The other is an integrated or composite sample consisting of portions of waste taken at regular time intervals, the volume of each portion being proportional to the wastewater flow at the time it is collected. All the portions are mixed to produce a final sample representative of the waste. There are advantages and disadvantages in both types.

The regulatory requirements of the N.P.D.E.S permit stipulate that 24-hour composite samples for several analyses must be taken. Each 24-hour composite sample is composed of eight grab samples collected over equal time intervals by automatic samplers. The samples are collected at set intervals as follows:

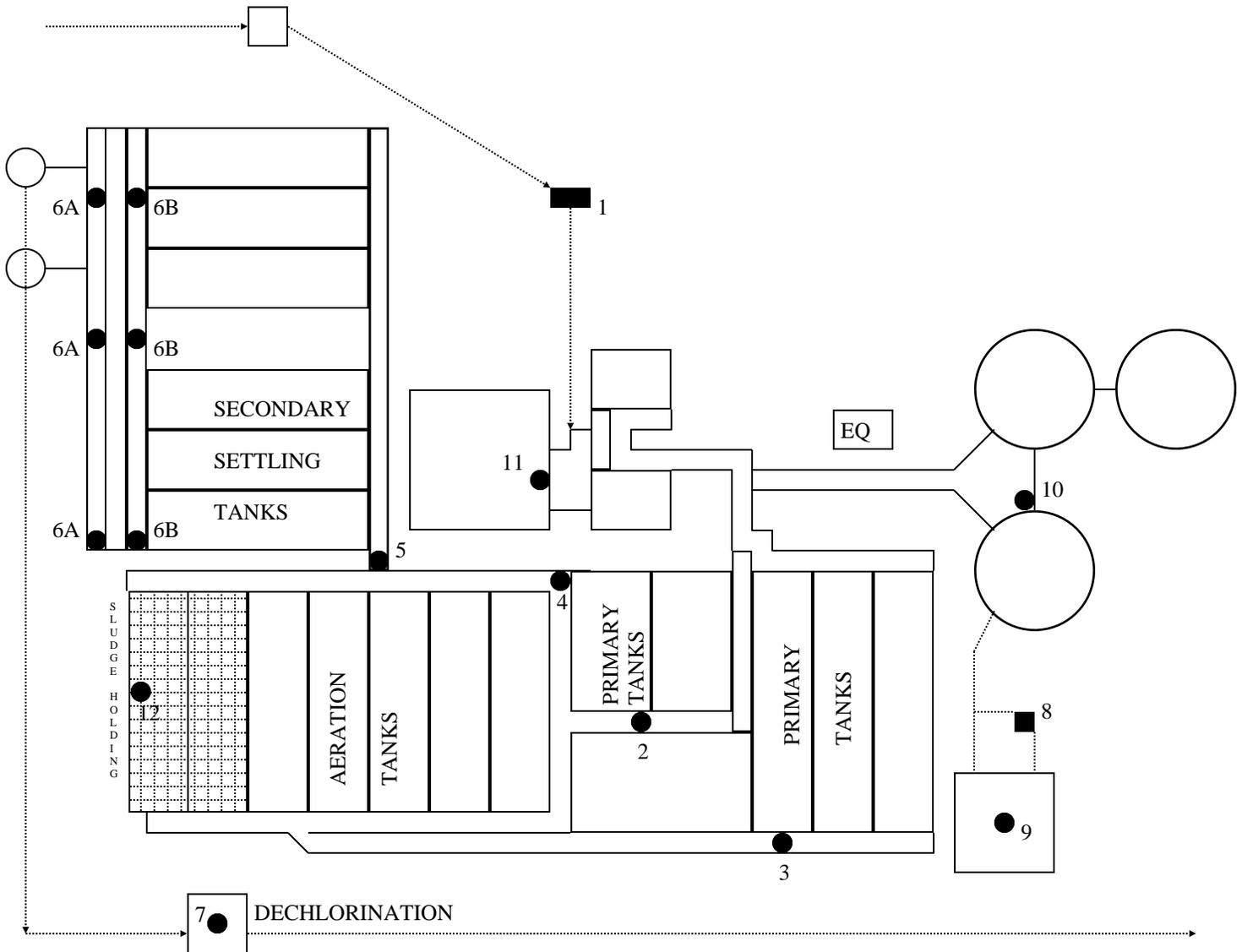
1:30 AM
4:30 AM
7:30 AM
10:30 AM
1:30 PM
4:30 PM
7:30 PM
10:30 PM

The flow proportioned composite samples are obtained by completing the following steps:

1. recording the flow rate on the daily operator log sheet at the time each individual sample is taken;
2. adding the flow rates together to obtain the total flow value;
3. dividing the flow rate of each individual sample by the total flow value to determine its percentage of the total flow value;
4. multiplying the volume of the total composite sample by each individual sample's percentage to determine the volume of that individual sample which will be included in the total composite sample.

For some tests, grab samples must be used. Examination of the samples is made as soon as possible after collection.

A plant schematic showing all current sampling stations follows.



SAMPLING STATIONS

- | | |
|------------------------------|--------------------|
| 1. Raw Influent | 7. Dechlorination |
| 2. Primary | 8. Digester |
| 3. Primary | 9. Belt Press |
| 4. Return Sludge | 10. Supernatant |
| 5. Aeration | 11. Raw Sludge |
| 6A Final after chlorination | 12. Sludge Holding |
| 6B Final before chlorination | |



**DISSOLVED OXYGEN
MG/L**

MONTH	RAW	PRIMARY	AERATION	FINAL
JANUARY	6.9	4.6	4.6	8.6
FEBRUARY	6.4	3.2	5.3	8.2
MARCH	6.9	5.0	7.0	9.1
APRIL	6.3	3.0	6.0	8.1
MAY	5.8	4.4	5.1	8.0
JUNE	4.7	2.0	5.0	7.5
JULY	4.5	2.3	4.9	7.3
AUGUST	4.4	1.1	4.3	7.0
SEPTEMBER	4.6	1.1	5.2	6.9
OCTOBER	4.7	1.2	4.4	7.2
NOVEMBER	5.3	2.2	4.2	7.7
DECEMBER	6.5	2.2	4.9	8.3
TOTAL	67.0	32	61	94
2017 AVERAGE	5.6	2.7	5.1	7.8

PREVIOUS YEARS TOTALS

2016 AVERAGE	5.5	2.6	4.5	7.6
2015 AVERAGE	5.7	2.5	4.9	7.7
2014 AVERAGE	6.0	2.8	6.1	8.2
2013 AVERAGE	6.1	2.9	5.8	7.8
2012 AVERAGE	5.7	3.0	5.3	8.3
2011 AVERAGE	6.9	4.9	5.8	8.4
2010 AVERAGE	6.0	3.8	5.1	7.6
2009 AVERAGE	6.8	3.8	6.1	8.0
2008 AVERAGE	6.3	3.4	7.2	7.8
2007 AVERAGE	5.8	3.3	6.3	7.7
2006 AVERAGE	5.5	3.0	5.7	7.1
2005 AVERAGE	5.0	2.5	5.0	7.4
2004 AVERAGE	5.3	2.2	5.4	7.5
2003 AVERAGE	5.3	2.2	4.9	7.3
2002 AVERAGE	5.8	2.4	5.1	7.4
2001 AVERAGE	5.6	2.1	4.1	7.1
2000 AVERAGE	5.1	1.5	3.2	6.5
1999 AVERAGE	4.3	1.5	2.9	4.0
1998 AVERAGE	4.9	1.9	2.8	3.7
1997 AVERAGE	4.8	2.1	2.8	3.9

BIOCHEMICAL OXYGEN DEMAND

MONTH	RAW MG/L	PRIMARY MG/L	FINAL MG/L	% REMOVAL PRIMARY	% REMOVAL SECONDARY	% REMOVAL OVERALL	LBS/DAY REMOVED	LBS/DAY TO STREAM
JANUARY	87	23	2.8	73.8%	87.7%	96.8%	3656	81
FEBRUARY	98	24	2.5	75.5%	89.6%	97.4%	3696	55
MARCH	96	20	2.6	79.5%	86.8%	97.3%	4657	83
APRIL	83	20	3.8	75.4%	81.4%	95.4%	4033	107
MAY	66	15	3.1	76.8%	79.7%	95.3%	4477	153
JUNE	79	17	4.8	79.0%	71.1%	93.9%	3939	159
JULY	72	14	6.5	80.8%	52.9%	91.0%	4193	275
AUGUST	85	18	3.6	78.4%	80.4%	95.8%	3618	89
SEPTEMBER	105	21	4.1	80.5%	80.0%	96.1%	3716	85
OCTOBER	81	25	5.4	68.8%	78.7%	93.3%	2777	114
NOVEMBER	89	19	2.8	78.3%	85.5%	96.9%	3440	79
DECEMBER	112	28	3.5	75.1%	87.5%	96.9%	3158	74
TOTAL	1053	244	45.5	9.2	9.6	11.5	45359	1353
2017 AVERAGE	88	20	3.8	76.8%	80.1%	95.5%	3780	113

PREVIOUS YEARLY AVERAGES

2016 AVERAGE	81	24	3.5	70.8%	84.9%	95.6%	3302	95
2015 AVERAGE	78	31	3.6	60.8%	88.3%	95.5%	2820	88
2014 AVERAGE	81	42	3.0	47.1%	92.8%	96.3%	3006	78
2013 AVERAGE	112	58	2.9	46.7%	94.9%	97.3%	4170	80
2012 AVERAGE	100	55	2.0	42.3%	96.1%	97.8%	3731	55
2011 AVERAGE	56	45	1.9	16.5%	95.7%	96.4%	2074	52
2010 AVERAGE	73	47	2.2	34.7%	95.2%	96.9%	2713	60
2009 AVERAGE	98	62	2.6	34.8%	95.6%	97.1%	3638	69
2008 AVERAGE	94	73	1.2	19.8%	98.4%	98.7%	3534	32
2007 AVERAGE	83	69	1.1	12.2%	98.5%	98.7%	3888	30
2006 AVERAGE	67	60	1.0	9.3%	98.3%	98.5%	3656	33
2005 AVERAGE	80	73	1.3	8.8%	98.2%	98.4%	4288	68
2004 AVERAGE	81	69	1.5	14.8%	97.8%	98.1%	4206	87
2003 AVERAGE	89	70	1.3	21.3%	98.1%	98.5%	4803	71
2002 AVERAGE	86	64	1.3	25.6%	98.0%	98.5%	4307	72
2001 AVERAGE	88	65	3.2	26.1%	95.1%	96.4%	4291	163
2000 AVERAGE	96	66	2.8	31.3%	95.8%	97.1%	4076	126
1999 AVERAGE	132	99	6.9	25.0%	93.0%	94.8%	5350	319
1998 AVERAGE	101	73	7.0	27.7%	90.4%	93.1%	5411	399
1997 AVERAGE	93	75	7.7	19.4%	89.7%	91.7%	4482	421

SUSPENDED SOLIDS

MONTH	RAW MG/L	PRIMARY MG/L	FINAL MG/L	% REMOVAL PRIMARY	% REMOVAL SECONDARY	% REMOVAL OVERALL	LBS/DAY REMOVED	LBS/DAY TO STREAM
JANUARY	113	30	7.8	73.5%	74.0%	93.1%	4067	212
FEBRUARY	134	28	4.7	79.1%	83.2%	96.5%	4946	128
MARCH	136	26	6.3	80.9%	75.8%	95.4%	4978	171
APRIL	145	27	3.6	81.4%	86.7%	97.5%	5392	98
MAY	92	23	3.9	75.0%	83.0%	95.8%	3377	106
JUNE	118	20	2.6	83.1%	87.0%	97.8%	4397	71
JULY	105	17	3.9	83.8%	77.1%	96.3%	3870	106
AUGUST	120	21	3.5	82.5%	83.3%	97.1%	4448	95
SEPTEMBER	146	23	3.7	84.2%	83.9%	97.5%	5427	101
OCTOBER	115	33	2.9	71.3%	91.2%	97.5%	4275	79
NOVEMBER	138	22	4.5	84.1%	79.5%	96.7%	5103	122
DECEMBER	183	30	6.2	83.6%	79.3%	96.6%	6760	169
TOTAL	1545	300	53.6	9.6	9.8	11.6	57042	1457
2017 AVERAGE	129	25	4.5	80.2%	82.0%	96.5%	4753	121

PREVIOUS YEARLY AVERAGES

2016 AVERAGE	141	40	3.6	71.8%	90.0%	97.3%	5240	99
2015 AVERAGE	124	40	4.9	65.4%	88.4%	96.2%	4589	133
2014 AVERAGE	111	41	3.9	69.1%	88.2%	96.4%	4614	113
2013 AVERAGE	173	38	4.3	76.4%	88.6%	97.4%	6417	117
2012 AVERAGE	145	35	3.3	75.9%	90.6%	97.7%	3731	55
2011 AVERAGE	90	35	3.8	61.1%	89.1%	95.8%	2074	52
2010 AVERAGE	142	31	3.6	78.2%	88.4%	97.5%	2713	60
2009 AVERAGE	168	51	4.0	69.6%	92.2%	97.6%	3638	69
2008 AVERAGE	78	49	2.8	37.2%	94.3%	96.4%	3534	32
2007 AVERAGE	79	55	2.6	30.4%	95.3%	96.7%	3888	30
2006 AVERAGE	76	59	3.5	22.4%	94.1%	95.4%	3656	33
2005 AVERAGE	91	69	3.5	24.2%	94.9%	96.2%	4288	68
2004 AVERAGE	83	68	3.1	18.1%	95.4%	96.3%	4206	87
2003 AVERAGE	92	67	3.5	27.2%	94.8%	96.2%	4803	71
2002 AVERAGE	97	64	5.0	34.0%	92.2%	94.8%	4307	72
2001 AVERAGE	97	64	4.2	34.0%	93.4%	95.7%	4291	163
2000 AVERAGE	127	69	3.2	45.7%	95.4%	97.5%	4076	126
1999 AVERAGE	165	89	4.7	46.1%	94.7%	97.2%	5350	319
1998 AVERAGE	110	64	3.3	41.8%	94.8%	97.0%	5411	399

ACTIVATED SLUDGE

MONTH	MGD RAS	RAS/SS MG/L	MIXED LIQUOR SS MG/L	SETTELABLE SOLIDS %	SLUDGE VOLUME INDEX	LBSBOD/ 1000 CU. FT. AER. CAP	MEAN CELL RESIDENCE TIME/DAYS	FOOD/ MICROORGANISM RATIO
JANUARY	3.67	6,335	2,652	54	201	21.4	30.8	0.045
FEBRUARY	3.66	5,823	2,507	55	219	21.6	33.1	0.045
MARCH	3.66	6,081	2,384	51	210	27.2	29.1	0.052
APRIL	3.66	6,245	2,530	35	139	23.6	32.1	0.053
MAY	3.66	7,377	2,383	17	71	26.2	24.2	0.145
JUNE	3.66	5,666	2,174	15	71	23	30.5	0.057
JULY	3.65	5,676	1,917	13	67	24.5	28.1	0.066
AUGUST	3.66	5,002	2,090	15	70	21.2	33.0	0.052
SEPTEMBER	3.66	4,709	2,160	13	61	21.7	36.3	0.045
OCTOBER	3.66	3,891	1,812	12	67	16.2	37.9	0.044
NOVEMBER	3.66	4,155	1,707	12	69	20.1	40.2	0.056
DECEMBER	3.66	4,367	2,073	14	66	18.5	26.4	0.047
TOTAL	44	65,327	26,389	306	1311	265.2	381.7	0.7
2017 AVERAGE	3.66	5,444	2,199	26	109	22.1	31.8	0.06

PREVIOUS YEARLY AVERAGES

2016 AVERAGE	3.67	4,994	2,147	16	76	19.3	25.5	0.06
2015 AVERAGE	3.73	4,383	1,940	17	88	16.2	12.5	0.08
2014 AVERAGE	3.71	4,804	2,160	18	85	14.5	9.0	0.11
2013 AVERAGE	3.76	4,135	2,116	17	79	15.6	7.9	0.11
2012 AVERAGE	3.77	4,016	2,079	14	67	15.2	7.7	0.11
2011 AVERAGE	3.77	5,560	2,260	17	75	15.5	8.2	0.14
2010 AVERAGE	3.67	4,318	2,060	16	78	15.0	8.8	0.13
2009 AVERAGE	4.21	4,319	2,311	25	108	19.2	6.6	0.13
2008 AVERAGE	5.38	3,826	2,123	26	122	26.4	9.0	0.13
2007 AVERAGE	5.43	4,322	2,312	34	147	28.1	9.1	0.13
2006 AVERAGE	5.44	4,951	2,521	32	127	26.6	9.9	0.14
2005 AVERAGE	5.01	5,492	2,832	-	118	26.6	11.0	0.10
2004 AVERAGE	4.85	5,600	2,979	-	91	25.9	8.4	0.11
2003 AVERAGE	5.03	5,729	3,074	-	87	27.1	7.6	0.10
2002 AVERAGE	5.15	6,903	3,427	-	92	26.6	10.9	0.10
2001 AVERAGE	4.82	5,595	2,818	-	123	25.9	15.5	0.13
2000 AVERAGE	3.77	4,624	2,281	-	122	21.2	15.6	0.14
1999 AVERAGE	3.81	2,722	1,287	-	141	32.7	27.6	0.41
1998 AVERAGE	4.16	3,846	1,781	-	187	29.0	14.7	0.23
1997 AVERAGE	3.23	5,044	2,167	-	206	27.1	10.6	0.22
1996 AVERAGE	3.29	5,942	2,251	-	164	25.0	6.7	0.19

NITROGEN (AMMONIA)

MONTH	INFLUENT NH3 mg/l	EFFLUENT NH3 mg/l	% NH3 REMOVAL	POUNDS NH3 REMOVED/ DAY
JANUARY	6.47	0.54	91.7%	262.3
FEBRUARY	6.89	0.56	91.9%	251.4
MARCH	5.81	0.33	94.3%	276.4
APRIL	6.26	0.54	91.4%	297.0
MAY	3.89	0.30	92.3%	258.1
JUNE	5.03	0.21	95.8%	254.0
JULY	4.43	0.43	90.3%	256.7
AUGUST	6.53	0.34	94.8%	276.4
SEPTEMBER	7.87	0.30	96.2%	278.7
OCTOBER	8.29	0.71	91.4%	280.9
NOVEMBER	7.54	0.83	89.0%	274.7
DECEMBER	10.24	1.02	90.0%	274.0
TOTAL	79.3	6.11	1109%	3,241
2017 AVERAGE	6.60	0.51	92.4%	270.0

PREVIOUS YEARS TOTALS

2016 AVERAGE	6.89	0.42	93.7%	270.8
2015 AVERAGE	7.43	0.75	90.2%	261.0
2014 AVERAGE	7.65	0.60	91.9%	269.6
2013 AVERAGE	9.93	0.48	95.0%	279.0
2012 AVERAGE	8.92	0.61	93.2%	311.7
2011 AVERAGE	7.36	0.84	88.6%	241.6
2010 AVERAGE	8.11	0.84	89.6%	256.3
2009 AVERAGE	9.68	0.65	93.3%	337.6
2008 AVERAGE	10.01	0.18	98.2%	340.0
2007 AVERAGE	8.25	0.18	97.8%	431.8
2006 AVERAGE	7.10	0.19	97.3%	377.9
2005 AVERAGE	9.37	0.26	97.2%	428.6
2004 AVERAGE	9.99	0.27	97.3%	456.8
2003 AVERAGE	9.29	0.35	96.2%	417.2
2002 AVERAGE	8.29	0.18	97.8%	397.0

CHLORINATION

MONTH	CHLORINE LBS/DAY	CHLORINE RESIDUAL MG/L	ESCHERICA COLI COLONY/100 ML GEOMETRIC MEAN
JANUARY	-	-	-
FEBRUARY	-	-	-
MARCH	-	-	-
APRIL	90.90	0.010	28
MAY	136.00	0.020	47
JUNE	123.60	0.020	155
JULY	136.00	0.020	67
AUGUST	109.80	0.020	23
SEPTEMBER	105.00	0.020	31
OCTOBER	101.90	0.020	23
NOVEMBER	-	-	-
DECEMBER	-	-	-
TOTAL	803.2	0.130	374.0
2017 AVERAGE	114.7	0.02	53

PREVIOUS YEARS TOTALS

2016 AVERAGE	127.7	0.02	34
2015 AVERAGE	140.0	0.02	21
2014 AVERAGE	127.6	0.02	36
2013 AVERAGE	90.4	0.02	35
2012 AVERAGE	77.0	0.02	145
2011 AVERAGE	85.2	0.03	39
2010 AVERAGE	84.8	0.03	20
2009 AVERAGE	81.0	0.05	110
2008 AVERAGE	78.2	0.02	97
2007 AVERAGE	73.2	0.03	56
2006 AVERAGE	75.6	0.03	104
2005 AVERAGE	67.1	0.03	80
2004 AVERAGE	67.9	0.03	77
2003 AVERAGE	81.8	0.03	65
2002 AVERAGE	91.0	0.03	88
2001 AVERAGE	78.0	0.03	30
2000 AVERAGE	59.0	0.04	16
1999 AVERAGE	62.0	0.03	171
1998 AVERAGE	51.0	0.02	186
1997 AVERAGE	49.0	0.03	115

pH

MONTH	RAW INFLUENT	PRIMARY EFFLUENT	AERATION MIXED LIQUOR	FINAL EFFLUENT	RAW SLUDGE	SECONDARY DIGESTER	DIGESTER SUPERNATANT
JANUARY	7.3	7.4	7.0	7.3	6.7	7.0	7.1
FEBRUARY	7.3	7.5	7.0	7.3	6.6	6.9	7.1
MARCH	7.3	7.4	7.0	7.3	6.6	7.0	7.1
APRIL	7.3	7.4	7.0	7.2	6.4	7.4	7.1
MAY	7.5	7.6	7.3	7.3	6.4	6.9	7.2
JUNE	7.5	7.5	7.2	7.3	6.2	6.9	7.2
JULY	7.4	7.5	7.2	7.3	6.3	6.9	7.4
AUGUST	7.4	7.6	7.2	7.4	6.3	7.0	7.5
SEPTEMBER	7.4	7.5	7.2	7.3	6.2	6.9	7.2
OCTOBER	7.4	7.5	7.1	7.3	6.1	7.1	7.5
NOVEMBER	7.5	7.6	7.1	7.4	6.3	7.1	7.2
DECEMBER	7.5	7.5	7.1	7.4	6.4	6.9	7.1
TOTAL	88.8	90.0	85.4	87.8	76.5	84.0	86.7
2017 AVERAGE	7.4	7.5	7.1	7.3	6.4	7.0	7.2

PREVIOUS YEARLY AVERAGES

2016 AVERAGE	7.4	7.5	7.2	7.4	6.4	7.1	7.3
2015 AVERAGE	7.5	7.5	7.2	7.3	6.4	7.0	7.2
2014 AVERAGE	7.5	7.5	7.2	7.3	6.3	7.0	7.2
2013 AVERAGE	7.5	7.5	7.2	7.3	6.5	7.0	7.1
2012 AVERAGE	7.5	7.6	7.2	7.4	6.2	7.1	7.2
2011 AVERAGE	7.6	7.6	7.3	7.4	6.5	7.3	7.3
2010 AVERAGE	7.5	7.5	7.2	7.4	6.3	7.1	7.3
2009 AVERAGE	7.6	7.5	7.2	7.3	6.2	7.2	7.3
2008 AVERAGE	7.7	7.8	7.3	7.4	6.7	7.4	7.3
2007 AVERAGE	7.7	7.9	7.3	7.5	6.8	7.3	7.2
2006 AVERAGE	7.7	7.9	7.3	7.5	6.9	7.4	7.3
2005 AVERAGE	7.8	7.9	7.4	7.5	6.7	7.4	7.4
2004 AVERAGE	7.7	7.9	7.4	7.4	6.7	7.4	7.4
2003 AVERAGE	7.7	7.9	7.4	7.4	6.6	7.4	7.4
2002 AVERAGE	7.8	7.9	7.5	7.5	6.6	7.4	7.4
2001 AVERAGE	7.8	8.0	7.4	7.5	6.6	7.4	7.3
2000 AVERAGE	7.8	7.9	7.3	7.4	6.6	7.4	7.3
1999 AVERAGE	7.8	7.9	7.4	7.4	6.5	7.4	7.3
1998 AVERAGE	7.8	7.8	7.6	7.7	6.3	7.5	7.5
1997 AVERAGE	7.8	7.8	7.5	7.7	6.2	7.4	7.4

INDUSTRIAL PRETREATMENT PROGRAM

The national Pretreatment Program empowers a combination of federal, state and local regulatory agencies to protect water quality. The program is designed to reduce the level of pollutants discharged into the municipal sewer system by industrial wastewater sources. The objectives of the program are to protect the Publicly Owned Treatment Works (POTW) from pollutants that may interfere with the plant operation, to prevent pollutants that may pass through untreated from being introduced into the POTW, and to improve opportunities for the POTW to reuse wastewater and sludges that are generated.

The term “pretreatment” refers to the requirement that industrial sources discharging wastewater to the sewer system control their discharges and meet limits established by the EPA, the state or the local authority on the amount of pollutants allowed to be discharged. The control of the pollutants may necessitate treatment prior to discharge therefore the term “pretreatment”.

In order to assure the Connersville Utilities is implementing its pretreatment program according to the General Pretreatment Regulations, 40CFR 403.2, the submittal of an annual report is required. The majority of the following information is contained within that report.

Summary of Program and Changes

In 1977, the United States Congress amended the Clean Water Act to include the requirement for the control of industrial discharges to municipal wastewater treatment plants. Pursuant to the Clean Water Act amendment, the United States Environmental Protection Agency promulgated the regulation for implementing pretreatment programs on a nationwide basis. This regulation became effective August 25, 1978.

In April, 1982, The Indiana Stream Pollution Control Board established policies, procedures and technical criteria for the implementation of a statewide program for the pretreatment of industrial wastewater discharged to municipal wastewater treatment plants.

The City of Connersville was required to establish an Industrial Pretreatment Program as described in the City's N.P.D.E.S. permit. A Pretreatment Program is required of all municipal treatment plants in the State of Indiana with a design loading of greater than 1,000,000 gallons per day. The purpose is to limit the discharge of wastes which pass through or interfere with treatment processes or which may contaminate the sludge generated.

The industries in the City of Connersville with the potential for discharging substances which might be subject to regulation under the pretreatment program were identified using the following sources of information:

1. Harris Industrial Directory of Indiana
2. MacRae Industrial Directory
3. Industrial/Commercial water billing records
4. Telephone Directory
5. Past data from the City's industrial Monitoring Program

With these sources of information, a listing of thirty-one commercial and industrial businesses in the Connersville WWTP service area was compiled. Upon identification of all known industries, it was necessary to evaluate which were potential dischargers of process wastewater. This was accomplished in the following manner:

1. City representatives most knowledgeable about local industrial activities reviewed the industrial inventory list and identified those industries which may be contributors of process wastewater.
2. Industries were evaluated for potential wastewater based on the activities indicated in the state industrial directory.
3. A review of water use records was conducted, and the data was compared to the number of employees at each industry.
4. A review was made of historical wastewater sampling data compiled by the City as it pertained to past industrial surveillance and pretreatment requirements.

The evaluation permitted a number of industries to be eliminated from further consideration. Of the 31 listed industries, 17 appeared to be justified for further evaluation. Those 17 industries were notified of the City's need to establish a formal pretreatment program and asked to complete an industrial waste survey (IWS) questionnaire. Completed questionnaires were returned by all of the industries surveyed. Sufficient information was derived from the completed questionnaires for the classification of each industry into either a "wet" or "dry" category. A "dry" industry is one where no process water is used in product manufacturing; thus, no industrial wastewater discharge would be expected. A "wet" industry generates process wastewater which may be discharged into the municipal sewer system. The questionnaire portion of the survey resulted in the conclusion that eight wet industries are connected to the municipal sewer system in Connersville.

On May 4, 1987, Connersville Utilities implemented its pretreatment program and issued permits. Since that time, no new industrial users have been issued permits, however, two permitted industries were changed from non-categorical to categorical. The original Industrial Waste Survey was updated in 1994. This was done in preparation of passing the "Metal Products and Machinery" regulations due to be published in the Federal Register during 1996.

Permits were originally issued for a period of one year. In order to reduce the amount of paperwork for the IU's as well as the WWTP staff, permits are now issued for a three year period. In February of 1995, a pretreatment program modification, to revise the City's Sewer Use Ordinance, by including a definition for significant industrial user and revising the local limits for oil and grease and pH was approved by the U.S. EPA and the Indiana Department of Environmental Management. These modifications were included in permits which were reissued in May.

1995 marked the loss of a major contributing industry to the pretreatment program. Frigidaire Co. formerly known as White Consolidated Industries and Design & Manufacturing ceased operations as of December 31, 1994. Connersville Industrial Center purchased the facility but phased out all operations and is no longer a permitted facility.

1996 and 1997 saw no changes in the pretreatment program.

In 1998, one permitted industry was changed from categorical to non-categorical status. Ready Machine Tool & Die discontinued the processes which caused it to be covered under the Metal Finishing category and was reclassified as a non-categorical industry. Only two other events had any significant impact on the pretreatment program in 1998. These were the removal of the zinc plating line at Stant Manufacturing and the removal of the zinc-phosphating line at Greene Manufacturing.

In 1999, two industries were removed from the permit system. Ready Machine Tool & Die and Dresser Industries, Roots Division were dropped because they no longer met the criteria for significant industrial users as defined in 40 CFR 403.3 (t). The only other change was at Custom Extrusions where they went to a closed loop system.

The year 2000 saw significant changes to the Pretreatment program. On April 1st, two major plating facilities, Stant Manufacturing and Greene Coatings Division, ceased operations in Connersville. Stant's union failed to ratify a contract proposal and subsequently the plating line was closed and the equipment sold. Greene's operations ceased when they were forced into bankruptcy court and all assets frozen. Also in 2000, a technical re-evaluation of local limits was

undertaken as a required by Connersville's new N.P.D.E.S. permit. As a result of the re-evaluation, it was determined that no changes to the local limits were necessary.

2001 saw the approval and adoption of major modifications to Connersville's Sewer Use Ordinance. The ordinance now reflects all modifications as required by the P.I.R.T and D.S.S. rules. All changes were approved by Region 5 of the EPA and adopted by the Connersville Common Council on November 19, 2001. Also in 2001, Connersville was considered for and selected to receive the Region 5 USEPA Operation and Maintenance (O & M) Excellence Award for first place in the large advanced category. In addition to excellent pollutant removal, the pretreatment program was cited for industrial waste controls reducing metals in the wastewater by 60 - 90 %.

There were no significant changes to the pretreatment program in 2002 or 2003.

In 2004, Altec, formerly known as Custom Extrusions, Inc, was purchased by Indalex Aluminum Solutions, Inc. New owners anticipated a dramatic increase in production. Previously, Indalex discharged no categorical wastes. Because of the increase in production, Indalex would once again begin discharge of categorical wastes to the Connersville sewer system.

2005 was a year of little change for the Pretreatment Program. In February, Visteon Systems, LLC suspended the production of 6mm condensers. With this shutdown came the discontinuation of the use of methanol and a flux that contained zinc chloride, which was the compound that produced the zinc constituent of their effluent.

2006 saw Ready Machine Tool & Die sold to Crown Equipment Corporation. No changes to the facility's operations or processes occurred.

On December 21, 2007, Visteon Systems, LLC, ceased operations. A plant closure plan was submitted and completed. Visteon was the largest industrial waste discharger to the Connersville sewer system accounting for over 90% of all permitted industrial flow. In 2007, construction began for facilities to house a new press at the Indalex facility. The new press will triple production at the facility and is expected to be operational by June, 2008.

2008 saw few but significant changes. While construction was underway at Indalex that was expected to increase production, installation was not completed as expected. Elements of a reorganization plan initiated in 2008 at the WWTP to streamline operations and reduce expenses impacted the pretreatment program by eliminating the Pretreatment Coordinator position and making changes in operator attendance.

In a proactive response to publication of the Pretreatment Streamlining revisions, Connersville submitted changes to the Indiana Department of Environmental Management and Region 5 of the EPA for approval in November, 2009. Several substantial modifications were necessary. Also in 2009, Sapa Extruder, Inc. purchased the Indalex facility. No changes to discharges from the facility are anticipated. The only other change was the addition of a lubricant manufacturing process at Reclaimed Energy. The wax blending operation was added in an effort to retain personnel. This is a problem all facilities tied to the printing and automotive industries share. The process is "0" discharge and will have little effect on the pretreatment program.

In 2010, Sewer Use Ordinance modifications for compliance with Pretreatment Streamlining revisions were approved and adopted. Sampling and evaluation in support of a technical re-evaluation of local limits was initiated for submittal as per NPDES permit requirements.

The technical re-evaluation of local limits initiated in 2010 was completed and submitted in January of 2011. The requirement to conduct periodic review of discharge limitations applicable to local industry is necessary to insure adequacy of the existing limitations and to determine the need for additional standards. Also, in response to an audit by IDEM, Industrial Discharge Permits were revised and reissued to incorporate streamlining provisions.

In implementing provisions of the City of Connersville's Sewer Use Ordinance and the Industrial Pretreatment Program, pretreatment personnel must look for changes to, omissions from and errors in the Industrial Waste Survey and regularly update it. This is essential in determining the nature and quantity of pollutants entering the wastewater treatment plant and in issuing or modifying permits. In 2012, a new, extensive IWS was conducted. Several industries were identified as possible sources of wastewater discharge and have been added to a list of site visits to be performed in 2013.

2013 saw no changes to the pretreatment program.

In June 2014 IDEM representatives visited three industries with Maryellen Blanton and it was determined at that time that Keener Corporation on 10th Street needed to be added to the permitted industries. Maryellen retired from the Connersville Utilities in July and was replaced with Bob Shoemaker as Superintendent of Connersville WWTP and Erin Johnson as the Pretreatment Coordinator and Laboratory Supervisor. The end of 2014 was spent familiarizing with the Connersville Pretreatment Program and working with Keener on the permit process.

In 2015, the Keener plant located at 419 E. 10th street was added to the permitted industries under the Metal Finishing category. Industrial Waste Surveys were sent to industries to provide an update to the nature and quantity of pollutants entering the wastewater treatment plant and to determine the need for additions or modifications to industry permits. Per NPDES permit requirements, sampling was performed in October for a technical re-evaluation of local limits. Evaluation of the sampling results led to a request to EPA Region 5 that no changes be made to the current local limits. In addition, the current sewer use ordinance was submitted for review as well.

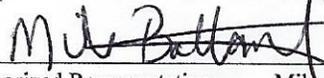
2016 began with a request from the EPA to update the Legal Authority document from the original Legal Authority letter written in 1985. The Legal Authority document demonstrates that Connersville Utilities has the authority to effectively implement our Pretreatment Program and was updated with current references to both local and state regulations. In May, EPA Region 5 gave approval to the recommendation that no changes be made to the current local limits, however at that time the sewer use ordinance was still under review. EPA Region 5 found deficiencies with the current sewer use ordinance and gave a list of required revisions. The required revisions were made and submitted to EPA Region 5, which they responded with other revisions. At the end of 2016, approval for the final revisions of the sewer use ordinance from EPA Region 5 had not been received. In July, IDEM had an audit of the Pretreatment Program. There were minor changes to industrial permits required and Connersville Utilities needed to evaluate and determine if Jacobs & Brichford Cheese needed to be a permitted significant industrial user. Changes were made to ensure industrial permits were compliant and the decision was made that Jacobs & Brichford did not need to be permitted as a significant industrial user at that time.

In 2017, the updated sewer use ordinance was approved by the Board of Works and City Council. EPA gave final approval for the updated sewer use ordinance in May. Stant requested that we allow them to discharge water from their leak test station. After testing and an onsite inspection, approval was given that they could discharge water from the leak test station and did not need an industrial permit.

PRETREATMENT PERFORMANCE SUMMARY

Connersville Utilities
 216 Vine Street
 Connersville, In
 NPDES Permit # IN0032336
 Contact: Erin Johnson 765-825-9411

"I certify that the information contained herein is complete and accurate to the best of my knowledge."


 Authorized Representative: Mike Bottomley
 Utilities Manager

Total Categorical IU's = Two (2)
 Total Significant Noncategorical IU's = One (1)

SIGNIFICANT INDUSTRIAL USER COMPLIANCE:	SIGNIFICANT INDUSTRIAL USERS	
	CATEGORICAL	NONCATEGORICAL
1 Number of SIUs submitting BMRs/Number required.....	0/0	N/A
2 Number of SIUs submitting 90-Day compliance reports/Number required.....	0/0	N/A
3 Number of SIUs submitting semiannual reports/Number required.....	0/0	0/0
4 Number of SIUs meeting compliance schedules/Number required.....	0/0	0/0
5 Number of SIUs in Significant Noncompliance/Total number of SIUs.....	0/2	0/1
6 Rate of SNC for all SIUs (Categorical & Noncategorical).....		0/3

COMPLIANCE MONITORING PROGRAM:

1 Number of nonsampling inspections conducted.....	2	2
2 Number of sampling visits conducted.....	4	4
3 Number of facilities inspected (all industrial users).....	2	2
4 Number of facilities sampled (all industrial users).....	1	1

ENFORCEMENT ACTIONS:

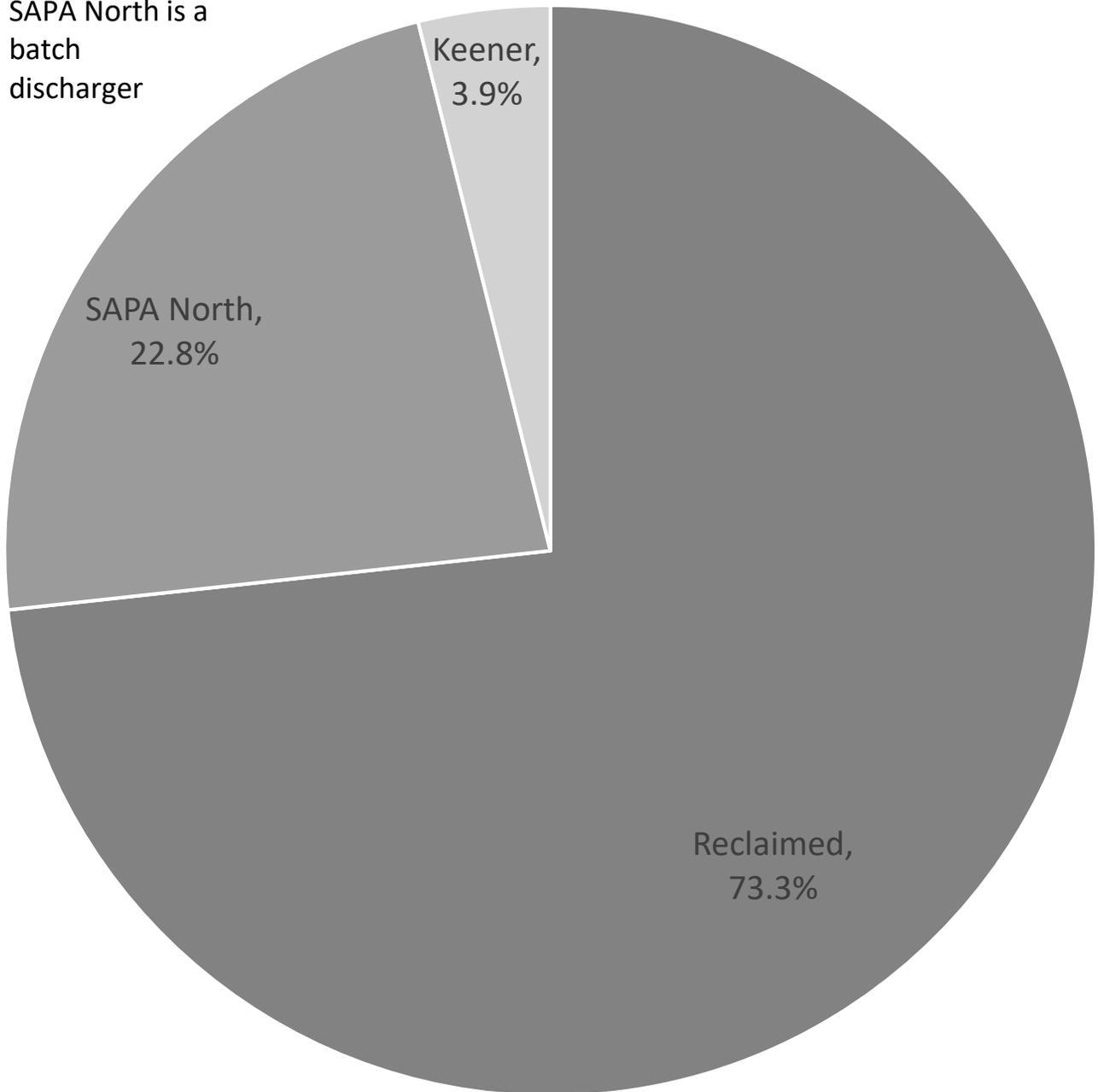
1 Compliance schedules issued/Schedules required.....	0/0	0/0
2 Notices of violation issued to SIUs.....	0	0
3 Administrative orders issued to SIUs.....	0	0
4 Civil suits filed.....	0	0
5 Criminal suits filed.....	0	0
6 Significant violators (attach newspaper list).....	0	0
7 Amount of penalties collected.....	\$68.92 (surcharges)	\$0.00
8 Other actions taken (sewer bans, etc.).....	0	0

INDUSTRIAL USER LIST INSPECTION AND SAMPLING SUMMARY

Industry Name	Permit Number	Expiration Date	Applicable Standards	Average Discharge Flow (gpd)	Control Authority Sampling Events	Control Authority Inspections	Industrial User Sampling Events
Reclaimed Energy	CU-106	8/30/2019	City Ordinance	16,044	4	2	59
SAPA North	CU-105	10/31/2019	40 CFR 467.35	5,000	0	1	0
Keener 419 E. 10th St.	CU - 110	4/7/2018	40 CFR 433.17	854	4	2	12

2017 Permitted Industrial Users: Average Discharge Flow

SAPA North is a
batch
discharger



INDUSTRIAL USER SUMMARIES

INSPECTION

FACILITY	DATE OF INSPECTION	PROBLEMS ADDRESSED
Keener	6/7/2017	Took a sample from manhole in the middle of the building to test for phosphorus
	11/29/2017	Annual inspection - no issues found; Took a sample from manhole in line of the sampling manhole to test the phosphorus
Reclaimed Energy	12/8/2017	Annual Inspection - no problems found
SAPA	12/12/2017	Annual inspection - no problems found
Stant	3/13/2017	Inspected procedures for discharging water from the leak test stations
Sugarcreek	8/2/2017	Meet with compnay officials about hauling wastewater to WWTP

ENFORCEMENT

INDUSTRY	TYPE OF ENFORCEMENT	DATE	REASON
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There were no instances of enforcement for the year 2017.

SIGNIFICANT NON-COMPLIANCE

There were no instances of significant non-compliance for the year 2017.

INTERFERENCE AND PASSTHROUGH

There were no instances of interference or passthrough for the year 2017.

PROGRAM GOALS AND PROGRESS

An integral part of the Pretreatment Program is the Industrial Waste Survey which is sent to all industrial users to provide updated information on the quantity and nature of pollutants entering the sewer system from each industrial user. In 2018 the Pretreatment Survey will be updated and sent to industrial users. This information will be organized and used to prioritize site visits to non-permitted industrial users. Additionally the information will be used by the cross connection staff to determine if visits are necessary to any industrial users to ensure protection of the drinking water system. Working with the non-permitted industrial users as well as permitted will help to continue the progress the pretreatment program has made in regulating wastes and thus continuing to provide protection to the people, environment, collection system, and wastewater treatment plant.

Another goal for the year 2018 is to educate the restaurants, car washes, and other commercial users of the need for grease traps and interceptors to prevent a problem with fats, oils, and grease in the sewer system. The plan is to combine inspections with the cross connection staff to have better inspections of the grease traps, interceptors, and backflow devices and also provide a copy of the ordinance codes that explains the responsibility of users to have prevention devices in place that limit potentially contaminated water and fats, oils, and grease from entering the sewer system and causing issues.

RAW INFLUENT METALS

2017 MONTH	CADMIUM mg/l	CHROMIUM mg/l	COPPER mg/l	LEAD mg/l	NICKEL mg/l	ZINC mg/l	CYANIDE mg/l	PHOSPHORUS mg/l
JANUARY	<0.00020	0.00063	0.0141	0.00226	0.00256	0.0564	< 0.0040	2.96
FEBRUARY	0.00020			0.00273				3.70
MARCH	0.00031			0.01437				2.50
APRIL	0.00025	0.00077	0.0220	0.00196	0.00433	0.0508	<0.0040	2.32
MAY	0.00024			0.00098				1.29
JUNE	0.00028			0.00304				4.18
JULY	0.00031	0.00108	0.0141	0.00404	0.00336	0.0357	<0.0040	1.60
AUGUST	0.00026			0.00210				2.02
SEPTEMBER	0.00022			0.00305				3.43
OCTOBER	0.00021	0.00126	0.0206	0.00273	0.00571	0.0675	<0.0040	2.92
NOVEMBER	0.00031			0.00567				3.31
DECEMBER	<0.00020			0.00082				3.22
TOTAL	0.00299	0.0037	0.0708	0.0438	0.0160	0.2104	<0.0040	33.450
2017 AVERAGE	0.00025	0.0009	0.0177	0.0036	0.0040	0.0526	<0.0040	2.79

PREVIOUS YEAR'S AVERAGES

2016 AVERAGES	0.00033	0.0020	0.0214	0.0052	0.0040	0.0763	<0.0040	2.92
2015 AVERAGES	0.0003	0.0010	0.0199	0.0055	0.0027	0.0497	0.0252	-
2014 AVERAGES	<0.005	<0.020	0.049	<0.050	<0.050	0.101	0.0060	-
2013 AVERAGES	0.000	0.000	0.017	0.000	0.000	0.090	0.0020	-
2012 AVERAGES	0.000	0.000	0.009	0.000	0.000	0.054	0.0020	-
2011 AVERAGES	0.000	0.020	0.010	0.000	0.000	0.039	0.0030	-
2010 AVERAGES	0.000	0.020	0.025	0.007	<0.050	0.081	0.0020	-
2009 AVERAGES	<0.002	<0.005	0.033	<0.004	<0.020	0.101	<0.005	-
2008 AVERAGES	<0.002	<0.005	0.03	<0.004	<0.020	0.050	<0.005	-
2007 AVERAGES	<0.002	<0.005	0.024	0.001	<0.020	0.038	<0.005	-
2006 AVERAGES	<0.002	<0.005	0.023	<0.004	<0.020	0.045	0.0030	-
2005 AVERAGES	<0.002	<0.005	0.015	<0.004	<0.020	0.049	0.0370	-
2004 AVERAGES	<0.002	0.006	0.019	<0.004	<0.020	0.064	0.0010	-
2003 AVERAGES	<0.002	<0.005	0.034	<0.004	<0.020	0.073	0.0030	-
2002 AVERAGES	<0.002	<0.005	0.039	<0.004	<0.020	0.069	0.0010	-
2001 AVERAGES	<0.002	0.001	0.040	0.002	0.002	0.125	0.0070	-
2000 AVERAGES	<0.002	0.020	0.042	0.001	0.022	0.164	0.0060	-
1999 AVERAGES	<0.002	0.033	0.046	0.004	0.023	0.232	0.0120	-
1998 AVERAGES	<0.002	0.036	0.045	0.033	0.022	0.264	0.0170	-
1997 AVERAGES	<0.002	0.067	0.044	<0.004	0.026	0.238	0.0270	-
1996 AVERAGES	<0.002	0.084	0.045	0.021	0.047	0.235	0.0140	-
1995 AVERAGES	<0.002	0.058	0.041	0.034	0.832	0.227	0.0360	-

FINAL EFFLUENT METALS

2017 MONTH	CADMIUM mg/l	CHROMIUM mg/l	COPPER mg/l	LEAD mg/l	NICKEL mg/l	ZINC mg/l	CYANIDE mg/l	PHOSPHORUS mg/l
JANUARY	<0.00020	<0.00040	0.00346	0.00044	0.00218	0.0359	<0.0040	2.14
FEBRUARY	<0.00020			0.00054				1.57
MARCH	0.00020			0.00103				1.33
APRIL	0.00021	<0.00040	0.00887	0.00057	0.00314	0.0286	<0.0040	1.25
MAY	0.00020			0.00032				1.00
JUNE	0.00022			0.00030				1.14
JULY	0.00021	0.00044	0.00636	0.00030	0.00273	0.0217	<0.0040	1.24
AUGUST	0.00023			0.00030				1.53
SEPTEMBER	<0.00020			0.00027				2.18
OCTOBER	0.00020	0.00069	0.0160	0.00030	0.00496	0.0495	<0.0040	2.21
NOVEMBER	<0.00020			0.00032				1.68
DECEMBER	<0.00020			0.00035				2.04
TOTAL	0.00247	0.00193	0.0347	0.00504	0.01301	0.1357	<0.0040	19.31
2017 AVERAGE	0.00021	0.00048	0.00867	0.00042	0.00325	0.0339	<0.0040	1.61

PREVIOUS YEAR'S AVERAGES

2016 AVERAGE	<0.00020	<0.00040	0.0059	0.00040	0.00281	0.0219	<0.0040	1.58
2015 AVERAGE	<0.00220	<0.01265	0.00430	0.000	0.002	0.0262	0.0056	-
2014 AVERAGE	<0.005	<0.020	<0.020	<0.050	<0.050	0.0310	0.0050	-
2013 AVERAGE	0.000	0.000	0.00000	0.000	0.000	0.0260	0.0000	-
2012 AVERAGES	0.000	0.000	0.00000	0.000	0.000	0.0240	0.0000	-
2011 AVERAGES	0.000	0.000	0.00200	0.000	0.000	0.0080	0.0010	-
2010 AVERAGES	0.000	0.000	0.00000	0.000	0.000	0.0200	0.0010	-
2009 AVERAGES	0.000	0.001	0.00500	0.000	0.000	0.0090	0.0010	-
2008 AVERAGES	0.000	0.001	0.00600	0.000	0.000	0.0140	0.0010	-
2007 AVERAGES	0.000	0.000	0.00200	0.000	0.000	0.1240	0.0030	-
2006 AVERAGES	0.000	0.000	0.00400	0.000	0.000	0.0060	0.0020	-
2005 AVERAGES	0.000	0.000	0.00400	0.000	0.000	0.0060	0.0010	-
2004 AVERAGES	0.000	0.000	0.01000	0.000	0.000	0.1400	0.0000	-
2003 AVERAGES	0.000	0.000	0.01300	0.000	0.000	0.0290	0.0020	-
2002 AVERAGES	0.000	0.000	0.01700	0.000	0.000	0.0310	0.0010	-
2001 AVERAGES	<0.002	<0.005	0.02400	<0.004	<0.020	0.0740	0.0020	-
2000 AVERAGES	<0.002	0.009	0.01500	<0.004	<0.020	0.0930	0.0040	-
1999 AVERAGES	<0.002	0.002	0.00800	<0.004	0.005	0.0920	0.0030	-
1998 AVERAGES	<0.002	<0.005	0.01100	<0.004	<0.020	0.0980	0.0070	-
1997 AVERAGES	<0.002	0.002	0.01800	<0.004	0.006	0.1200	0.0160	-
1996 AVERAGES	<0.002	0.003	0.02400	<0.004	<0.020	0.1240	0.0160	-
1995 AVERAGES	<0.002	0.005	0.00900	0.011	0.200	0.0790	0.0040	-

Industrial Water Usage

	RECLAIMED	STANT	HOWDEN	SAPA	FAYETTE	KEENER	INDIANA
MONTH	ENERGY	MFG.	ROOTS	EXTRUDER	TOOL	CORPORATION	ORDINANCE
JANUARY	13,459	3,735	10,712	4,479	1,724	1,038	1,130
FEBRUARY	17,745	4,987	4,802	7,719	3,133	1,427	1,364
MARCH	15,533	5,055	2,258	7,476	1,704	852	1,052
APRIL	16,147	4,649	7,176	10,204	1,514	911	1,121
MAY	16,411	3,939	9,211	9,694	1,115	689	808
JUNE	16,560	4,029	8,604	8,027	1,130	763	89
JULY	16,628	4,431	12,406	9,548	1,126	916	61
AUGUST	17,514	5,125	5,497	10,535	1,084	1,537	82
SEPTEMBER	16,188	4,676	6,960	10,962	1,094	1,735	93
OCTOBER	16,408	5,250	4,134	10,525	1,136	1,980	28
NOVEMBER	17,209	27,681	3,167	11,517	1,233	1,296	26
DECEMBER	12,958	15,455	3,056	7,733	1,068	1,969	874
TOTAL GALLONS	5,856,203	2,703,338	2,377,155	3,297,090	514,508	459,488	203,100
2017 AVERAGE	16,044	7,406	6,513	9,033	1,410	1,259	556

PREVIOUS YEARS AVERAGES							
2016 AVERAGE	17,129	8,544	5,133	10,305	1,884	1,352	566
2015 AVERAGE	16,200	7,267	11,866	18,652	1,969	2,097	90
2014 AVERAGE	15,951	2,147	9,531	10,105	1,992	2,631	2,392
2013 AVERAGE	14,066	2,010	15,065	9,333	3,021	2,347	2,008
2012 AVERAGE	12,847	2,407	10,595	8,849	1,756	2,068	2,118
2011 AVERAGE	11,896	2,061	10,794	8,467	4,365	2,843	2,147
2010 AVERAGE	9,978	1,573	5,528	9,133	2,761	2,055	1,283
2009 AVERAGE	11,034	1,656	10,353	12,082	6,764	2,099	2,852
2008 AVERAGE	11,750	1,294	10,804	5,051	8,315	1,579	1,859
2007 AVERAGE	12,468	2,857	16,661	8,716	-	-	-
2006 AVERAGE	11,900	1,707	17,364	30,716	-	-	-
2005 AVERAGE	13,502	2,155	38,541	17,906	-	-	-
2004 AVERAGE	14,206	3,664	52,254	17,320	-	-	-
2003 AVERAGE	12,988	4,272	46,782	12,351	-	-	-
2002 AVERAGE	13,686	6,494	33,769	11,335	-	-	-
2001 AVERAGE	13,733	3,235	15,755	7,422	-	-	-
2000 AVERAGE	15,157	11,990	19,730	6,600	-	-	-
1999 AVERAGE	14,898	32,684	25,887	31,487	-	-	-

	MAC	H & E	VORZEIGAN	ADVANCED	ECONOMIC	KENLEY	DIECO	CONTAINER-
MONTH	MACHINE	MACHINE	MACHINING	PRODUCTS	GROUP			KRAFT

JANUARY	237	702	265	217	280	419	78	304
FEBRUARY	337	797	249	318	197	230	167	306
MARCH	563	667	2,609	235	107	576	117	223
APRIL	263	811	363	221	99	273	128	268
MAY	268	736	394	188	113	346	96	267
JUNE	265	748	371	234	90	428	65	224
JULY	263	463	305	183	118	240	65	206
AUGUST	292	632	345	185	169	849	104	217
SEPTEMBER	260	712	424	160	132	827	105	190
OCTOBER	263	807	370	170	144	1116	163	172
NOVEMBER	288	877	408	168	148	1221	211	189
DECEMBER	317	698	393	171	136	1246	148	180

TOTAL GALLONS	110,018	262,583	199,095	74,220	52,628	237,473	43,875	83,303
2017 AVERAGE	301	719	545	203	144	651	120	228

PREVIOUS YEARS AVERAGES								
2016 AVERAGE	280	559	273	200	369	475	117	322
2015 AVERAGE	291	470	301	234	212	231	119	262
2014 AVERAGE	285	419	412	227	141	392	105	317
2013 AVERAGE	285	464	292	221	170	466	131	280
2012 AVERAGE	285	680	332	-	233	-	-	-
2011 AVERAGE	846	459	360	-	305	-	-	-
2010 AVERAGE	276	351	673	-	337	-	-	-
2009 AVERAGE	-	-	888	-	2,262	-	-	-
2008 AVERAGE	-	-	-	-	1,212	-	-	-
2007 AVERAGE	-	-	-	-	1,904	-	-	-
2006 AVERAGE	-	-	-	-	3,815	-	-	-
2005 AVERAGE	-	-	-	-	3,861	-	-	-
2004 AVERAGE	-	-	-	-	6,604	-	-	-
2003 AVERAGE	-	-	-	-	1,594	-	-	-
2002 AVERAGE	-	-	-	-	1,653	-	-	-
2001 AVERAGE	-	-	-	-	-	-	-	-
2000 AVERAGE	-	-	-	-	-	-	-	-
1999 AVERAGE	-	-	-	-	-	-	-	-

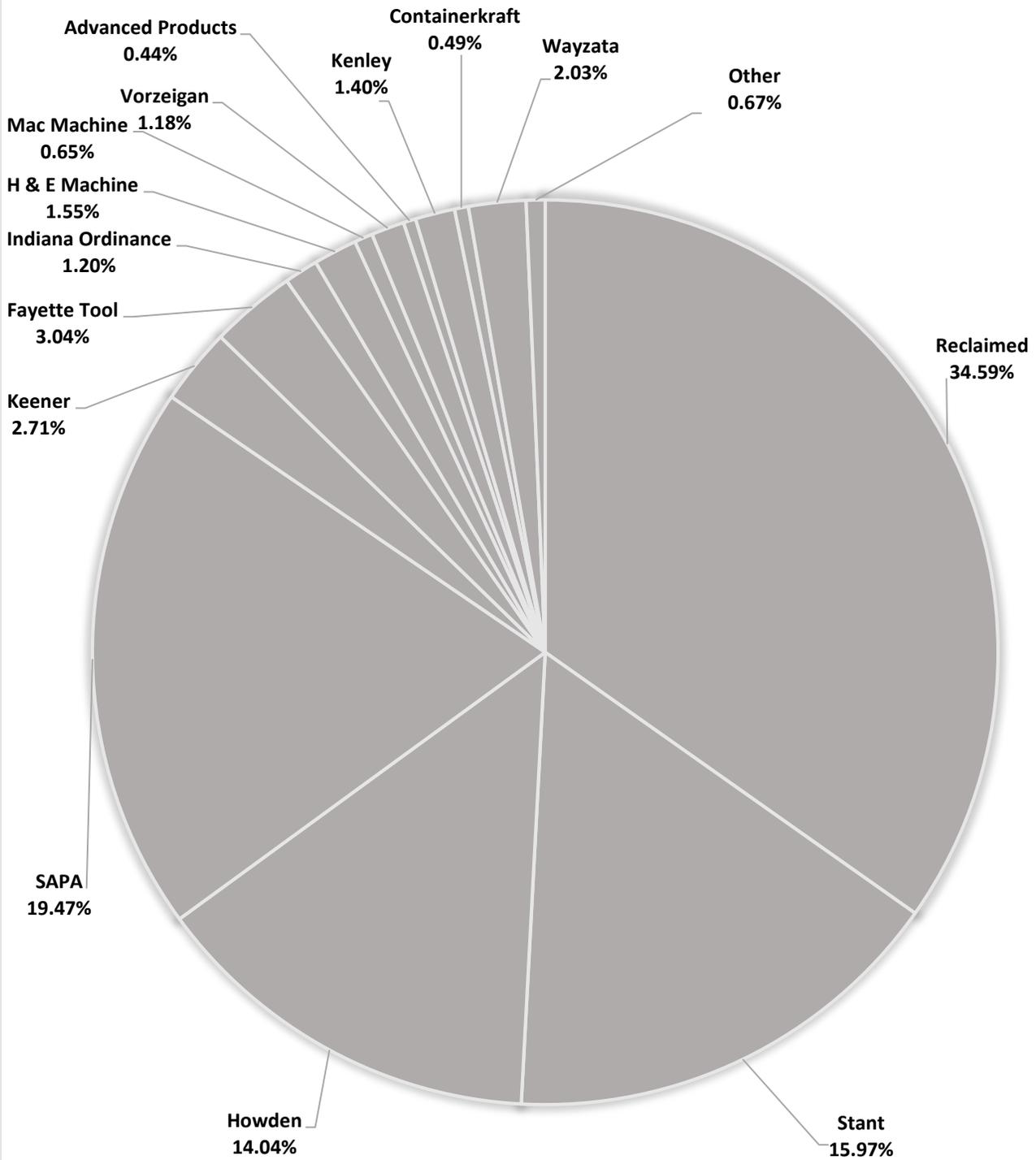
	WAYZATA	C & P	MADISON	BROWNFIELDS	INDIANA	ADVANTAGE
MONTH			AVE		TOOL	WIRE

JANUARY	787	48	45	97	10	18
FEBRUARY	1,034	45	50	117	17	217
MARCH	961	38	41	106	14	46
APRIL	940	45	0	348	17	29
MAY	817	55	40	82	16	22
JUNE	829	50	30	84	15	22
JULY	840	52	60	66	14	22
AUGUST	1,154	44	62	87	22	23
SEPTEMBER	1,100	58	43	55	33	28
OCTOBER	1,072	52	68	233	18	49
NOVEMBER	947	56	46	135	18	88
DECEMBER	834	53	39	119	15	93

TOTAL GALLONS	343,830	18,105	15,975	53,610	6,315	19,560
2017 AVERAGE	942	50	44	147	17	54

PREVIOUS YEARS AVERAGES						
2016 AVERAGE	422	54	65	154	22	41
2015 AVERAGE	221	64	48	116	16	33
2014 AVERAGE	286	46	55	216	32	41
2013 AVERAGE	-	-	-	-	-	-
2012 AVERAGE	-	-	-	-	-	-
2011 AVERAGE	-	-	-	-	-	-
2010 AVERAGE	-	-	-	-	-	-
2009 AVERAGE	-	-	-	-	-	-
2008 AVERAGE	-	-	-	-	-	-
2007 AVERAGE	-	-	-	-	-	-
2006 AVERAGE	-	-	-	-	-	-
2005 AVERAGE	-	-	-	-	-	-
2004 AVERAGE	-	-	-	-	-	-
2003 AVERAGE	-	-	-	-	-	-
2002 AVERAGE	-	-	-	-	-	-
2001 AVERAGE	-	-	-	-	-	-
2000 AVERAGE	-	-	-	-	-	-
1999 AVERAGE	-	-	-	-	-	-

2017 INDUSTRY BREAKDOWN: METERED WATER USAGE



ORGANIC POLLUTANT MONITORING

The Connersville Wastewater Treatment Plant N.P.D.E.S Permit requires that in addition to priority pollutants, a reasonable attempt must be made to provide identification and quantification of the ten most abundant constituents (excluding priority pollutants or un-substituted aliphatic compounds) present in the influent, effluent and sludge shown to be present by peaks on the total ion plots. The peaks must be ten times higher than the adjacent background noise. After visual confirmation by an out side lab engaged by the WWTP, the following compounds were identified.

	Conc. Rank	Concentration	Name	Identification
Influent Volatiles			No library search compounds detected.	
Effluent Volatiles			No library search compounds detected.	
Sludge Volatiles	4	27.95 ppb	2-tert-Butylcyclohexanone	Unknown source
Influent Semi-volatiles	1	0.07 ng/ul	Hexadecanoic Acid	Aka Palmitic acid; One of the most common saturated acids found in animals, plants, and microorganisms; Also found in meats, cheeses, and dairy products
Effluent Semi-volatiles			No library Search compounds detected.	
Sludge Semi-volatiles	1	84.26 ng/ul	Coprostan-3-one	Intermediate in conversion of cholesterol to coprostanol that occurs in gut of many higher animals; found in human waste
	2	16.82 ng/ul	2-Methylphenanthro [3,4-D][1,3]oxazol-10-ol	Unknown source
	3	15.95 ng/ul	Cholestan-3-one, 4,4-dimethyl-5α-	Component in human body and food; a cholesterol derivative in human feces and other biological matter
	4	12.01 ng/ul	Colan-24-oic acid, 3-oxo-, meth...	Unknown source
	5	7.62 ng/ul	Benzenamine, 2,3,4,5-tertracholoro-	Unknown source
	6	6.77 ng/ul	Pregnan-20-one, 3-(acetyloxy)-5,6-epoxy-,(3b,5a,6a)	Unknown source

	7	6.17 ng/ul	Pyrrolo[2,3-b]indole, 1,2,3,3a,8,8a-hexahydro-	Aka Eseroline; A drug that acts as an opioid agonist
	8	4.66 ng/ul	Pregn-4-ene-3, 20-dione, (9.beta,10.alpha)-	aka Retroprogesterone; A synthetic steroid
	9	4.38 ng/ul	(5A.alpha.,9A.alpha.)-4,5,5a,6,7,8,9,9a-octahydro-6,6,9a-trimethylnaphtho[1,2-c]furan-1(3H)-one	Aka Isodrimenin; Unknown source
	10	3.96 ng/ul	1(2H)-Naphthalenone, 8a.beta.-et....	Unknown source
	11	3.76 ng/ul	Acetyl-1-(3-n-propoxyphenyl)-2-p....	Unknown source
	12	3.65 ng/ul	Dibenzo-p-dioxin	The carbon skeleton of polychlorinated dibenzodioxins (PCDDs)

BIOSOLIDS DISPOSAL

In complying with the Clean Water Act by effectively treating raw wastewater, biosolids are generated which in turn must be disposed of. Biosolids management begins with sludge generation and continues through sludge treatment, sludge use and disposal. It can be the most complex and costly part of the wastewater treatment process. Early in 2009, as the age and sustainability of the equipment became a concern and staffing was reduced, Connersville was forced to consider alternative methods of disposal. The decision was made to reapply to the Indiana Department of Environmental Management for a Land Application permit. Land application is a very efficient method of biosolids disposal as all nutrients are returned to the soil. Operators transfer digested sludge to two 425,000 gallon holding tanks to await disposal. An outside contractor is hired to handle the sampling, removal and application processes. The contractor for 2017 was Wealing Bros.

QUALITY ASSURANCE/QUALITY CONTROL DOCUMENTATION

All operators are thoroughly trained in sampling technique and laboratory procedures for analysis performed by WWTP personnel. All samples taken by Connersville WWTP that are not analyzed in-house are sent to:

Sherry Laboratories – Daleville
9301 Innovation Drive
Daleville, Indiana 47334
765-378-4103

A copy of Sherry's analytical methodology and QA/QC is on file in this office and can be reviewed if needed. All QA/QC relative to any individual sample is submitted with the analytical results.

Additional QA/QC is available upon request.

RAW SLUDGE

MONTH	AVG. DAILY FLOW			TOTAL POUNDS	
	TO DIGESTER 1000 GALS/DAY	AVERAGE DAILY LBS. SLUDGE	AVERAGE % TOTAL SOLIDS	AVERAGE % VOLATILE SOLIDS	VOLATILE SOLIDS ADDED
JANUARY	15.7	130,938	1.95%	74%	1,889
FEBRUARY	15.9	132,606	1.69%	77%	1,726
MARCH	17.9	149,286	1.97%	73%	2,147
APRIL	16.7	139,278	2.27%	71%	2,245
MAY	16.1	134,274	2.24%	66%	1,985
JUNE	15.3	127,602	2.38%	69%	2,095
JULY	14.4	120,096	1.97%	65%	1,538
AUGUST	14.6	121,764	2.11%	72%	1,850
SEPTEMBER	12.7	105,918	1.91%	75%	1,517
OCTOBER	11.9	99,246	2.57%	75%	1,913
NOVEMBER	13.5	112,590	2.20%	74%	1,833
DECEMBER	13.4	111,756	2.20%	81%	1,991
TOTAL	178.1	1,485,354	0.3	8.7	22729.6
2017 AVERAGE	14.8	123,780	2.12%	73%	1894.1

PREVIOUS YEARS AVERAGES

2016 AVERAGE	13.6	113,563	2.42%	70%	1,890
2015 AVERAGE	13.2	109,984	2.46%	72%	1,927
2014 AVERAGE	16.1	134,211	2.58%	71%	2,427
2013 AVERAGE	17.5	145,804	1.97%	75%	2,154
2012 AVERAGE	14.7	122,663	2.23%	77%	2,106
2011 AVERAGE	14.7	122,598	2.38%	73%	2,130
2010 AVERAGE	16.1	134,274	2.21%	77%	2,285
2009 AVERAGE	15.6	130,104	2.43%	73%	2,308
2008 AVERAGE	19.5	162,630	1.96%	72%	2,295
2007 AVERAGE	22.9	190,986	1.88%	72%	2,585
2006 AVERAGE	21.1	175,974	1.85%	70%	2,279
2005 AVERAGE	19.4	161,796	2.11%	70%	2,390
2004 AVERAGE	20.2	168,468	2.13%	69%	2,476
2003 AVERAGE	20.1	167,634	2.28%	68%	2,599
2002 AVERAGE	17.5	145,950	2.39%	68%	2,372
2001 AVERAGE	19.3	160,962	2.23%	69%	2,477
2000 AVERAGE	20.1	167,634	2.38%	69%	2,753

SUPERNATANT

AVERAGE SUPERNATANT				
MONTH	WITHDRAWN 1000 GALLONS/DAY	% TOTAL SOLIDS	% VOLATILE SOLIDS	CBOD5 MG/L
JANUARY	12.5	0.140	42	117
FEBRUARY	13.5	0.142	47	129
MARCH	10.9	0.147	42	114
APRIL	16.5	0.138	44	125
MAY	10.9	0.139	47	133
JUNE	12.1	0.138	44	132
JULY	15.8	0.127	45	121
AUGUST	17.5	0.111	41	102
SEPTEMBER	10.1	0.137	44	120
OCTOBER	8.4	0.121	40	107
NOVEMBER	9.6	0.135	46	126
DECEMBER	9.5	0.148	49	157
TOTAL	147.3	1.623	531	1,483
2017 AVERAGE	12.3	0.135	44	124

P PREVIOUS YEARS AVERAGES

2016 AVERAGE	13.1	0.138	46	132
2015 AVERAGE	11.2	0.147	47	139
2014 AVERAGE	12.3	0.141	41	123
2013 AVERAGE	14.3	0.165	42	128
2012 AVERAGE	11.7	0.190	50	166
2011 AVERAGE	11.9	0.160	44	124
2010 AVERAGE	13.4	0.135	45	85
2009 AVERAGE	13.2	0.136	44	85
2008 AVERAGE	12.2	0.156	45	105
2007 AVERAGE	16.5	0.157	42	108
2006 AVERAGE	15.0	0.185	42	119
2005 AVERAGE	13.5	0.207	41	150
2004 AVERAGE	14.0	0.195	41	119
2003 AVERAGE	13.9	0.240	45	219
2002 AVERAGE	14.2	0.220	44	177
2001 AVERAGE	16.6	0.199	42	94
2000 AVERAGE	19.2	0.210	42	61

Sludge Production 2017

MONTH	DIGESTED SLUDGE			METRIC DRY	DRY	METRIC	TONS	METRIC
	TRANSFERRED	% TOTAL	% VOL	TONS TO	TONS LAND	TONS LAND	TO	TONS TO
	TO HOLDING			HOLDING	APPLIED	APPLIED	LANDFILL	LANDFILL
	1000 GALS/MONTH	SOLIDS	SOLIDS					
JANUARY	199.5	6.53	47.7	49.3		0.0	0.00	0.0
FEBRUARY	132.3	6.00	49.5	30.0		0.0	0.00	0.0
MARCH	94.5	5.93	52.0	21.2		0.0	0.00	0.0
APRIL	0.0			0.0	122.4	111.0	0.00	0.0
MAY	80.9	5.96	52.0	18.2		0.0	0.00	0.0
JUNE	132.3	5.59	52.0	28.0		0.0	0.00	0.0
JULY	51.0	5.53	51.0	10.7		0.0	0.00	0.0
AUGUST	77.7	5.41	60.0	15.9		0.0	0.00	0.0
SEPTEMBER	50.4	5.98	50.0	11.4		0.0	0.00	0.0
OCTOBER	206.8	5.91	48.3	46.2		0.0	0.00	0.0
NOVEMBER	226.1	6.12	48.0	52.3	150.2	136.3	0.00	0.0
DECEMBER	254.7	6.30	50.0	60.7	125.3	113.7	0.00	0.0
TOTAL	1506.2	65.26	560.5	344.0	397.9	361.0	0.0	0.0
2017 AVERAGE	136.93	5.93	50.95					

PREVIOUS YEARS AVERAGES

2016 AVERAGE	112.90	5.58	49.42	188.60	252.10	228.70	0.00	0.00
2015 AVERAGE	238.4	11.99	107.0	162.6	182.4	256.2	0.0	0.0
2014 AVERAGE	173.4	5.84	49.6		162.0	146.9	312.3	283.1
2013 AVERAGE	149.3	4.88	53.9		37.5	34.0	0.0	0.0
2012 AVERAGE	84.3	5.65	53.2		68.9	62.4	0.0	0.0
2011 AVERAGE	92.2	5.80	51.0		203.2	184.2	0.0	0.0
2010 AVERAGE	96.5	4.82	53.0		120.9	109.6	22.5	20.4
2009 AVERAGE	102.0	5.03	55.0		112.2	101.7	40.7	36.9
2008 AVERAGE	185.9	4.67	51.5		0.0	-	80.50	73.00
2007 AVERAGE	177.5	3.83	53.8		0.0	-	118.60	107.50
2006 AVERAGE	157.9	4.69	53.5		0.0	-	146.10	132.40
2005 AVERAGE	163.0	4.86	53.1		0.0	-	121.70	110.30
2004 AVERAGE	182.1	4.83	52.0		0.0	-	166.75	151.18
2003 AVERAGE	178.9	4.98	53.0		0.0	-	148.47	134.60
2002 AVERAGE	166.2	5.29	51.0		0.0	-	147.67	133.88
2001 AVERAGE	164.9	4.84	-		0.0	-	150.36	136.32
2000 AVERAGE	178.8	4.54	-		0.0	-	149.91	135.91

Narrative Description of Pathogen Reduction and Vector Attraction

When land applying, Connersville Wastewater Treatment Plant uses both Option 9, Injection and Option 1, Volatile Solids Reduction, to meet its' vector attraction reduction requirements. The Option 1 rule specifies that there be a reduction in organic matter of 38%. The percent reduction is measured from the stabilization process or digester influent to the sludge that is disposed of on land. Connersville also uses Alternative B2, Processes to Significantly Reduce Pathogens, to meet its' pathogen reduction requirements. This rule requires that the sludge treatment units (digesters) be operated to maintain the sludge at a specific temperature for a specific amount of time.

In 2017, there were at least three out of five available primary settling tanks on line at all times. Capacity varies as the tanks are rotated into service. Minimum capacity was 755,000 gallons during dry weather and the maximum total capacity during wet weather was 985,640 gallons. Waste activated sludge is introduced at the head of the primary tanks. Raw sludge is pumped from the primaries twice daily. Samples are taken from each tank and visually inspected during pumping operations. Approximately 14,800 gallons of primary sludge, with an average solids concentration of 2.12%, was pumped daily to the digesters.

There are three digesters equipped with floating covers and a means of sludge recirculation through external heat exchangers. Two of the digesters are equipped with a gas recirculation system used to mix the digester contents. At the present time, only one of the digesters is in operation. Detention time is designed for 40 days. The unit has an average temperature of 97° - 100° F (36° - 38° C) and is recirculated on a continuous basis. Temperature readings are taken twice each day and logged on the operator's Daily Report Form. A daily average of these readings is recorded on the DMR. Table 1, Class B Pathogen Reduction Alternative B2, gives the monthly average for these readings.

Approximately 75,000 gallons of sludge is transferred between the digesters every three to four days. Supernatant is drawn from the secondary digester twice weekly. The supernatant is discharged to the headworks of the plant. After digestion, sludge from the secondary digester is further processed by dewatering. As digested sludge reaches capacity in the digesters, it is transferred to two holding tanks for storage until land application in the spring and fall. The total capacity of stored sludge is 600,000 gallons.

For land application, a representative sample of the stored sludge is sent to an outside laboratory for analysis to determine concentrations of cadmium, chromium, copper, lead, nickel, zinc, arsenic, mercury, molybdenum, selenium, phosphorus, potassium, total nitrogen, ammonia nitrogen, and nitrate nitrogen and fecal coliform. After the tanks have been sampled for land application, no further digested sludge is added nor is any more supernatant withdrawn. As per contract, Wealing Brothers, LLC was responsible for all required analysis in 2017 with the exception of daily % total solids. Total solids are performed by the Connersville Wastewater Treatment Plant laboratory staff.

In the event that land application of sludge is delayed when reaching capacity in the system, Connersville will contract to have the biosolids processed by a portable press and removed to a landfill.

**TABLE 1
CLASS B PATHOGEN REDUCTION ALTERNATIVE B2**

MONTH	TEMPERATURE	DIGESTER	SUPERNATANT	RAW	AVERAGE	AVERAGE	SOLIDS
	°CENTIGRADE	% TOTAL SOLIDS	% TOTAL SOLIDS	% TOTAL SOLIDS	GALLONS/DAY SUPERNATANT	GALLONS/DAY RAW SLUDGE	RETENTION TIME/DAYS
JANUARY	36.4	6.24	0.143	1.95	12,532	15,652	130.6
FEBRUARY	36.3	6.02	0.142	1.69	14,925	15,900	143.1
MARCH	36.2	5.93	0.147	1.97	10,906	17,852	107.7
APRIL	36.4	6.09	0.138	2.27	16,487	16,697	102.6
MAY	36.5	6.52	0.139	2.24	10,906	16,123	115.4
JUNE	36.6	5.59	0.138	2.38	12,077	15,297	98.1
JULY	36.6	5.50	0.127	1.97	15,842	14,429	123.6
AUGUST	36.6	5.41	0.111	2.11	17,545	14,600	112.2
SEPTEMBER	36.6	5.72	0.137	1.91	10,083	12,707	150.6
OCTOBER	36.1	5.20	0.121	2.57	8,387	11,942	108.3
NOVEMBER	36.8	4.03	0.135	2.20	9,627	13,513	86.6
DECEMBER	36.8	4.98	0.148	2.20	9,484	13,413	107.8
TOTAL	437.8	67.23	1.626	25.46	148,802	178,123	1,387
2017 AVERAGE	36.5	5.60	0.136	2.12	12,400	14,844	115.6

PREVIOUS YEARS AVERAGES

2016 AVERAGE	36.5	5.71	0.138	2.42	13,122	13,669	116.6
2015 AVERAGE	36.2	4.89	0.143	2.46	12,600	13,197	101.2
2014 AVERAGE	34.6	5.84	0.143	2.58	12,308	16,092	97.1
2013 AVERAGE	37.4	5.28	0.165	1.97	14,260	17,483	103.8
2012 AVERAGE	37.1	5.65	0.172	2.23	11,658	14,708	112.7
2011 AVERAGE	37.2	5.77	0.167	2.38	11,953	14,650	112.1
2010 AVERAGE	37.3	4.73	0.135	2.21	13,442	16,135	85.6
2009 AVERAGE	36.3	4.62	0.136	2.43	13,233	15,616	79.6
2008 AVERAGE	36.7	4.67	0.156	1.96	16,317	19,475	129.0
2007 AVERAGE	36.7	3.83	0.157	1.88	16,817	22,525	92.4
2006 AVERAGE	36.8	4.69	0.185	1.85	14,950	21,075	123.9
2005 AVERAGE	37.0	4.86	0.207	2.11	13,508	19,433	122.8
2004 AVERAGE	36.7	4.83	0.195	2.13	13,967	20,175	114.1
2003 AVERAGE	36.7	4.92	0.242	2.28	13,908	20,125	111.4
2002 AVERAGE	36.7	5.29	0.220	2.39	14,225	17,467	127.6
2001 AVERAGE	36.7	4.44	0.199	2.23	16,650	19,542	105.8
2000 AVERAGE	36.1	4.41	0.213	2.29	19,175	20,104	98.1
1999 AVERAGE	36.8	3.71	0.243	2.19	15,800	20,125	78.7
1998 AVERAGE	36.4	1.66	0.111	2.56	3,339	19,252	34.5
1997 AVERAGE	36.6	1.60	0.216	2.74	6,366	15,925	37.6

Where SRT = $\frac{\text{Total Solids in Digester (lbs)} - \text{Supernatant (lbs)}}{\text{Total Solids in Raw Sludge}}$

Total Solids in Raw Sludge

**TABLE 2
VECTOR ATTRACTION REDUCTION**

MONTH	% RAW VOLATILE SOLIDS	% STABLE VOLATILE SOLIDS	% VOLATILE SOLIDS REDUCTION
JANUARY	0.74	0.48	67.6%
FEBRUARY	0.77	0.50	70.1%
MARCH	0.73	0.52	59.9%
APRIL	0.71	0.50	59.2%
MAY	0.66	0.56	34.4%
JUNE	0.69	0.52	51.3%
JULY	0.65	0.51	44.0%
AUGUST	0.72	0.60	41.7%
SEPTEMBER	0.75	0.51	65.3%
OCTOBER	0.75	0.50	66.7%
NOVEMBER	0.74	0.53	60.4%
DECEMBER	0.81	0.52	74.6%
2017 AVERAGE	0.73	0.52	59.9%
PREVIOUS YEARS AVERAGES			
2016 AVERAGE	0.70	0.50	57.1%
2015 AVERAGE	0.72	0.52	57.9%
2014 AVERAGE	0.71	0.50	59.2%
2013 AVERAGE	0.75	0.54	60.9%
2012 AVERAGE	0.75	0.53	62.4%
2011 AVERAGE	0.71	0.55	50.1%
2010 AVERAGE	0.74	0.57	53.4%
2009 AVERAGE	0.70	0.55	47.6%
2008 AVERAGE	0.71	0.50	59.2%
2007 AVERAGE	0.72	0.53	56.1%
2006 AVERAGE	0.68	0.53	46.9%
2005 AVERAGE	0.70	0.54	49.7%
2004 AVERAGE	0.68	0.52	49.0%
2003 AVERAGE	0.67	0.52	46.6%
2002 AVERAGE	0.66	0.50	48.5%
2001 AVERAGE	0.69	0.54	47.3%
2000 AVERAGE	0.69	0.55	45.1%
1999 AVERAGE	0.70	0.57	43.2%
1998 AVERAGE	0.69	0.56	42.8%
1997 AVERAGE	0.69	0.53	49.3%

Where: % VS Reduction = $\frac{\% VS (raw) - \% VS (stable)}{\% VS (raw) - [\% VS (raw) \times \% VS (stable)]}$
 Stable = Digested

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The management practices in §503.14 were met by adherence to the following:

- Prohibiting application if likely to adversely affect an endangered species or its' habitat.
- Prohibiting application on sites with slope restrictions.
- Prohibiting application where seasonal high water tables are 3' or less below the surface without evidence of adequate drainage.
- Prohibiting application where there are flood plain restrictions.
- Prohibiting application where there are restrictions on buffer zones for fresh water, well water or residences.
- Prohibiting application where the moisture holding capacity of the soil is exceeded.
- Prohibiting application when conditions are conducive to runoff.
- Prohibiting application when the daily average surface soil temperature is less than 32°F.

Requirements on site restrictions in §503.32(b)(5) were met as follows:

- Prohibiting application when soil pH is less than 6.5 until adjustment is made.
- Prohibiting application on sites used for growth of crops for direct human consumption.
- Prohibiting grazing of animals for 30 days after application.
- Prohibiting application where there are restrictions on buffer zones for fresh water, well water, or residences.
- Prohibiting the stockpiling of dewatered sludge at any application site.
- Notifying authorities of any change in the use of a land application site.

The Class B Pathogen and the Vector Attraction Reduction requirements were met in the following manner:

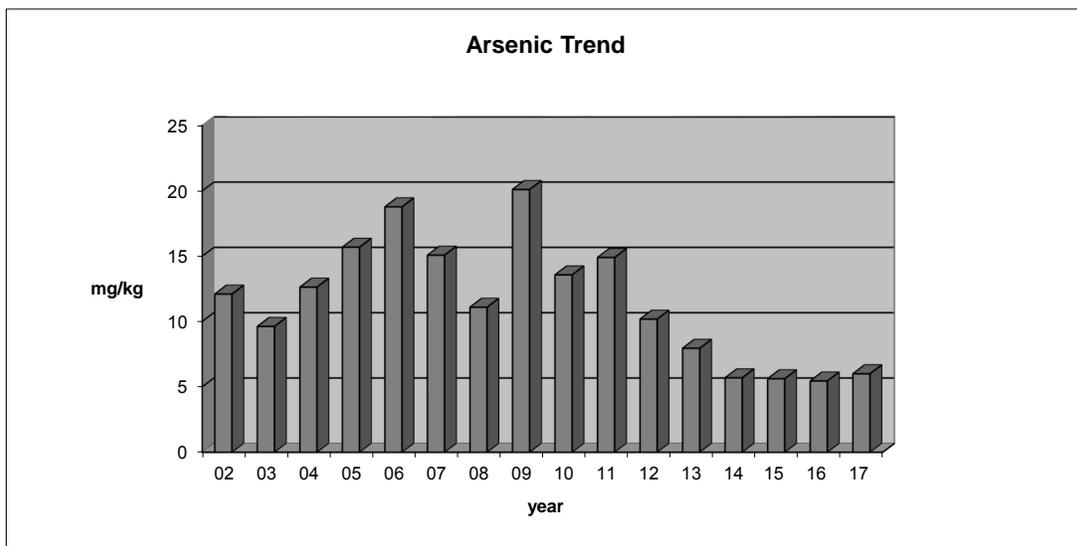
- The Class B Pathogen requirements in §503.32(b) were met through anaerobic digestion as described in Alternative B2 - Processes to Significantly Reduce Pathogens (PSRP).
- The Vector Attraction Reduction requirements were met through Option 9 – Injection and Option 1 – Volatile Solids (VS) Reduction.

ARSENIC in DIGESTED SLUDGE

2017

PREVIOUS YEARS AVERAGES

MONTH	2017				PREVIOUS YEARS AVERAGES		
	WET WEIGHT MG/KG	% TOTAL SOLIDS	DRY WEIGHT MG/KG		WET WEIGHT MG/KG	% TOTAL SOLIDS	DRY WEIGHT MG/KG
JANUARY	0.436	5.96	7.31	2016 AVERAGE	0.290	5.52	5.45
FEBRUARY				2015 AVERAGE	0.260	4.46	5.62
MARCH	0.211	5.93	3.56	2014 AVERAGE	0.300	5.90	5.69
APRIL				2013 AVERAGE	0.390	4.95	7.95
MAY	0.220	5.86	3.75	2012 AVERAGE	0.610	5.65	10.18
JUNE				2011 AVERAGE	0.900	6.23	14.90
JULY	0.236	5.43	4.34	2010 AVERAGE	0.730	5.45	13.57
AUGUST				2009 AVERAGE	0.640	5.05	20.11
SEPTEMBER	0.410	5.26	7.79	2008 AVERAGE	0.530	4.53	11.09
OCTOBER				2007 AVERAGE	0.580	3.78	15.08
NOVEMBER	0.550	5.95	9.24	2006 AVERAGE	0.870	4.69	18.78
DECEMBER				2005 AVERAGE	0.750	4.76	15.69
				2004 AVERAGE	0.590	4.66	12.63
TOTAL	2.06	34.39	35.99	2003 AVERAGE	0.480	4.99	9.62
2017 AVERAGE	0.34	5.73	6.00	2002 AVERAGE	0.622	5.14	12.10

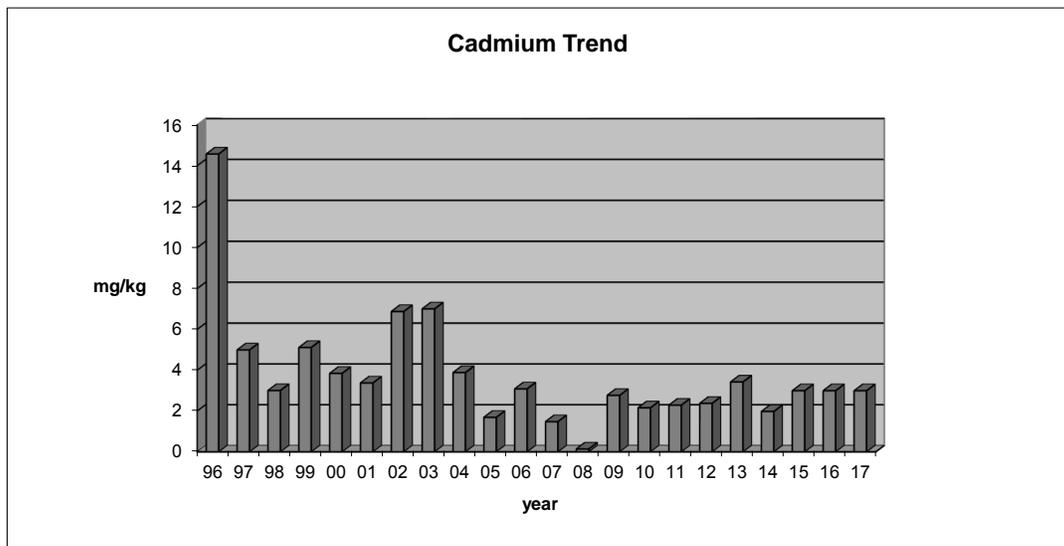


CADMIUM in DIGESTED SLUDGE

2017

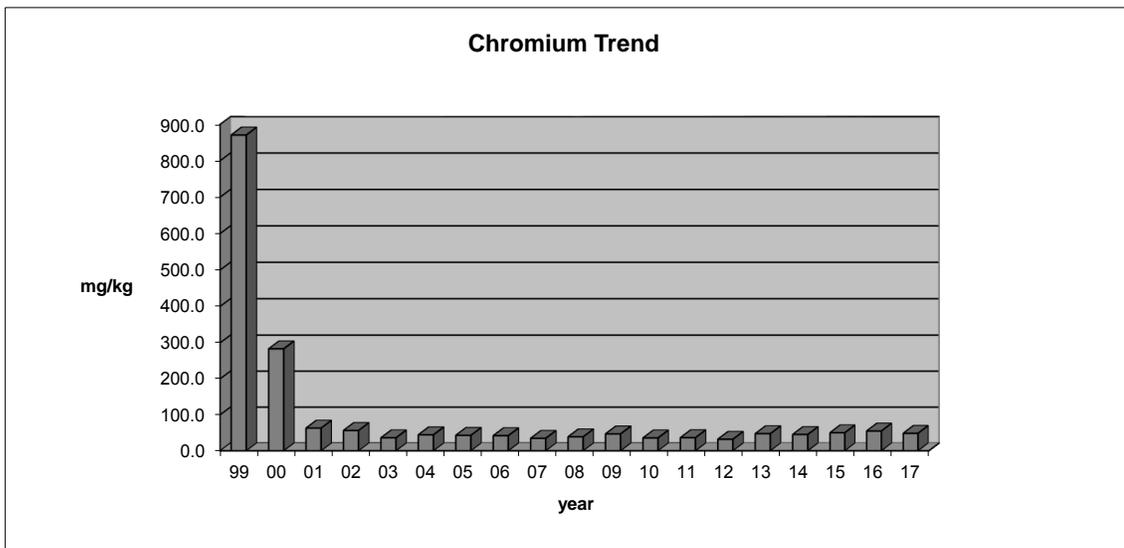
PREVIOUS YEARS AVERAGES

MONTH	WET WEIGHT	% TOTAL	DRY WEIGHT		WET WEIGHT	% TOTAL	DRY WEIGHT
	MG/KG	SOLIDS	MG/KG		MG/KG	SOLIDS	MG/KG
JANUARY	<0.18	5.96	<3	2016 AVERAGE	<0.166	5.52	<3
FEBRUARY				2015 AVERAGE	<0.170	4.81	<3
MARCH	<.18	5.93	<3	2014 AVERAGE	0.119	6.453	1.98
APRIL				2013 AVERAGE	0.18	5.82	3.43
MAY	<0.18	5.86	<3	2012 AVERAGE	0.15	5.65	2.38
JUNE				2011 AVERAGE	0.15	6.28	2.29
JULY	<0.163	5.43	<3	2010 AVERAGE	0.12	5.45	2.16
AUGUST				2009 AVERAGE	0.31	5.05	6.86
SEPTEMBER	<0.16	5.26	<3	2008 AVERAGE	0.05	4.53	1.62
OCTOBER				2007 AVERAGE	0.05	3.78	1.48
NOVEMBER	<.18	5.95	<3	2006 AVERAGE	0.11	4.69	3.09
DECEMBER				2005 AVERAGE	0.07	4.76	1.69
				2004 AVERAGE	0.17	4.66	3.89
TOTAL	0.00	34.39	0.00	2003 AVERAGE	0.35	4.99	7.01
2017 AVERAGE	<0.18	5.73	<3	2002 AVERAGE	0.35	5.14	6.88
				2001 AVERAGE	0.15	4.44	3.38
				2000 AVERAGE	0.17	4.41	3.85
				1999 AVERAGE	0.19	3.71	5.12



CHROMIUM in DIGESTED SLUDGE

2017				PREVIOUS YEARS AVERAGES			
MONTH	WET WEIGHT	% TOTAL	DRY WEIGHT		WET WEIGHT	% TOTAL	DRY WEIGHT
	MG/KG	SOLIDS	MG/KG		MG/KG	SOLIDS	MG/KG
JANUARY	4.19	5.96	70.30	2016 AVERAGE	3.05	5.52	54.92
FEBRUARY				2015 AVERAGE	2.31	4.46	50.08
MARCH	2.56	5.93	43.17	2014 AVERAGE	2.69	5.90	45.34
APRIL				2013 AVERAGE	2.38	4.95	47.58
MAY	2.38	5.86	40.61	2012 AVERAGE	1.81	5.64	32.06
JUNE				2011 AVERAGE	2.22	6.28	36.57
JULY	2.33	5.43	42.91	2010 AVERAGE	1.92	5.45	35.78
AUGUST				2009 AVERAGE	2.28	5.05	46.60
SEPTEMBER	2.45	5.26	46.58	2008 AVERAGE	1.77	4.53	38.93
OCTOBER				2007 AVERAGE	1.31	3.78	34.71
NOVEMBER	2.83	5.95	47.56	2006 AVERAGE	1.96	4.69	42.04
DECEMBER				2005 AVERAGE	2.04	4.76	42.48
				2004 AVERAGE	2.11	4.66	44.50
TOTAL	16.74	34.39	291.14	2003 AVERAGE	1.82	4.99	36.12
2017 AVERAGE	2.79	5.73	48.52	2002 AVERAGE	2.89	5.14	56.48
				2001 AVERAGE	2.8	4.44	63.06
				2000 AVERAGE	12.5	4.41	283.45
				1999 AVERAGE	32.3	3.71	870.62

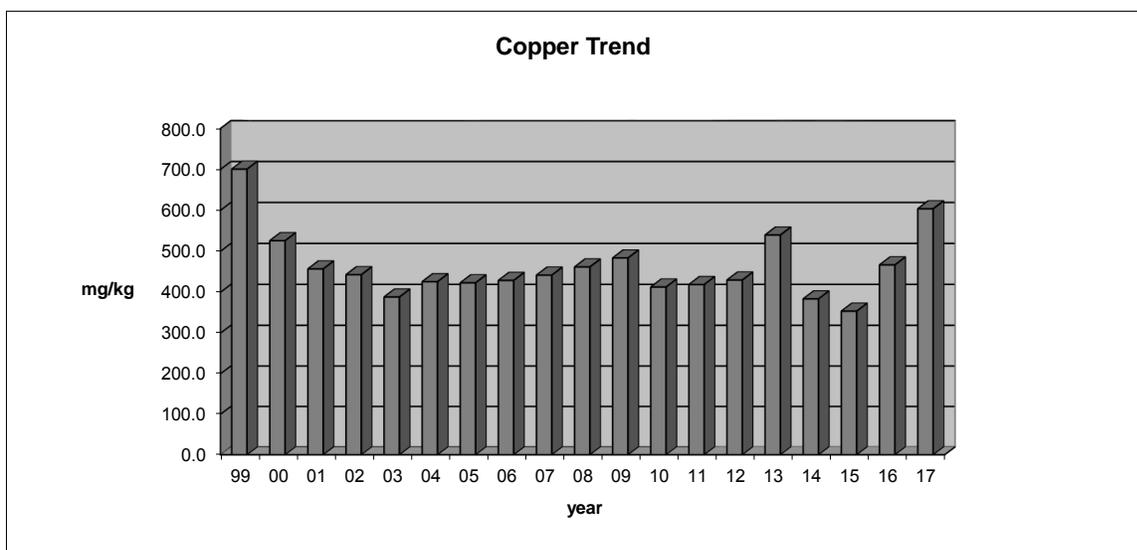


COPPER in DIGESTED SLUDGE

2017

PREVIOUS YEARS AVERAGES

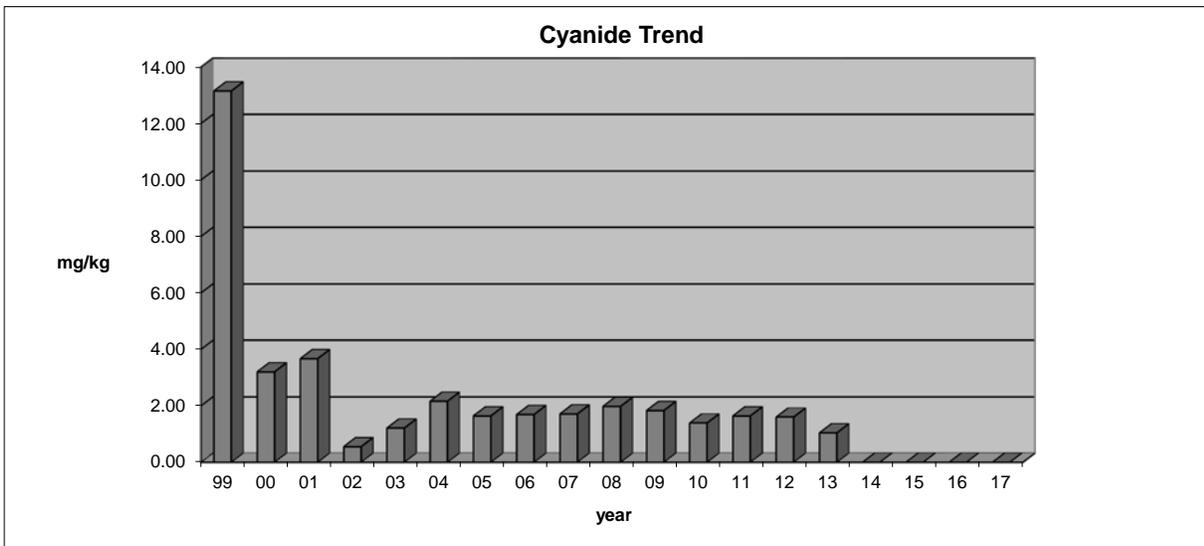
MONTH	WET WEIGHT	% TOTAL	DRY WEIGHT		WET WEIGHT	% TOTAL	DRY WEIGHT
	MG/KG	SOLIDS	MG/KG		MG/KG	SOLIDS	MG/KG
JANUARY	28.30	5.96	474.83	2016 AVERAGE	25.94	5.52	466.93
FEBRUARY				2015 AVERAGE	15.37	4.46	353.79
MARCH	26.00	5.93	438.45	2014 AVERAGE	22.62	5.9	384.32
APRIL				2013 AVERAGE	27.11	4.95	540.24
MAY	31.90	5.86	544.37	2012 AVERAGE	24.24	5.65	429.55
JUNE				2011 AVERAGE	24.32	6.28	419.11
JULY	33.50	5.43	616.94	2010 AVERAGE	22.14	5.45	413.66
AUGUST				2009 AVERAGE	23.78	5.05	484.04
SEPTEMBER	35.70	5.26	678.71	2008 AVERAGE	20.84	4.53	462.05
OCTOBER				2007 AVERAGE	16.72	3.78	442.04
NOVEMBER	51.80	5.95	870.59	2006 AVERAGE	20.18	4.69	429.08
DECEMBER				2005 AVERAGE	20.24	4.76	423.26
				2004 AVERAGE	19.93	4.66	425.99
TOTAL	106.10	17.84	1783.87	2003 AVERAGE	19.58	4.99	388.57
2016 AVERAGE	34.53	5.73	603.98	2002 AVERAGE	22.78	5.14	443.04
				2001 AVERAGE	20.3	4.44	457.21
				2000 AVERAGE	23.2	4.41	526.08
				1999 AVERAGE	26.0	3.71	700.81



2017

PREVIOUS YEARS AVERAGES

MONTH	WET WEIGHT	% TOTAL	DRY WEIGHT		WET WEIGHT	% TOTAL	DRY WEIGHT
	mg/l	SOLIDS	MG/KG		MG/KG	SOLIDS	MG/KG
JANUARY	<0.005	5.96		2016 AVERAGE	<0.005	5.52	<0.09
FEBRUARY				2015 AVERAGE	<0.005	4.46	<0.11
MARCH	<0.005	5.93		2014 AVERAGE	<.005	5.9	<0.09
APRIL				2013 AVERAGE	0.05	4.95	1.04
MAY	<0.005	5.86		2012 AVERAGE	0.09	5.65	1.60
JUNE				2011 AVERAGE	0.11	6.28	1.64
JULY	<0.005	5.43		2010 AVERAGE	0.08	5.45	1.39
AUGUST				2009 AVERAGE	0.09	5.13	1.83
SEPTEMBER	<0.005	5.26		2008 AVERAGE	0.085	4.53	1.98
OCTOBER				2007 AVERAGE	0.063	3.78	1.71
NOVEMBER	<0.005	5.95		2006 AVERAGE	0.079	4.69	1.69
DECEMBER				2005 AVERAGE	0.077	4.76	1.64
				2004 AVERAGE	0.099	4.66	2.16
TOTAL	0.000	34.390	0.000	2003 AVERAGE	0.058	4.99	1.21
2017 AVERAGE	<0.005	5.73	<0.09	2002 AVERAGE	0.028	5.14	0.55
				2001 AVERAGE	0.163	4.44	3.67
				2000 AVERAGE	0.141	4.41	3.20
				1999 AVERAGE	0.488	3.71	13.15

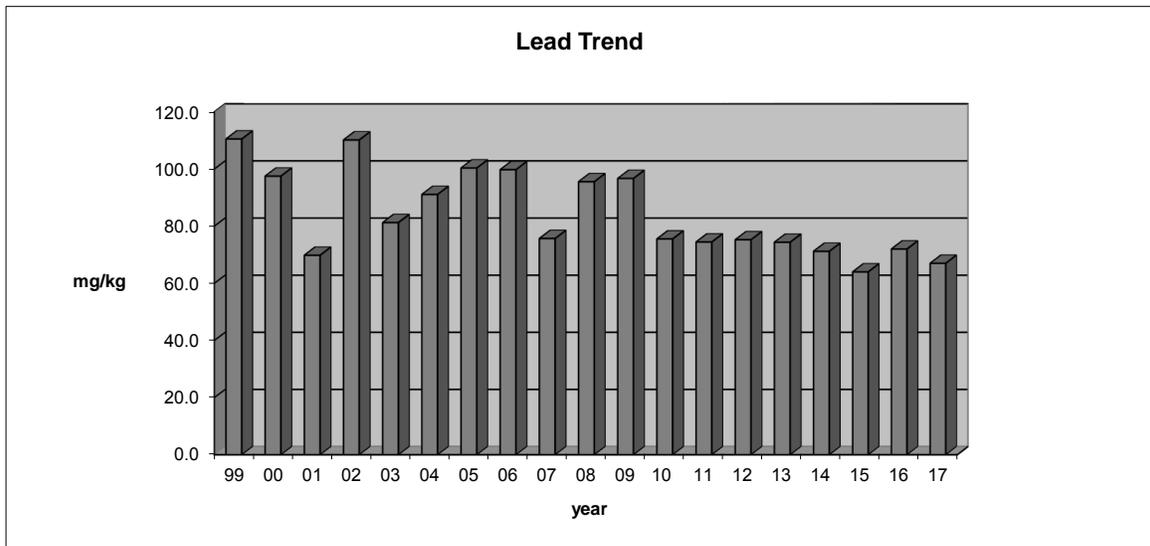


LEAD in DIGESTED SLUDGE

2017

PREVIOUS YEARS AVERAGES

MONTH	WET WEIGHT	% TOTAL	DRY WEIGHT		WET WEIGHT	% TOTAL	DRY WEIGHT
	MG/KG	SOLIDS	MG/KG		MG/KG	SOLIDS	MG/KG
JANUARY	4.30	5.96	72.1	2016 AVERAGE	3.80	5.28	72.25
FEBRUARY				2015 AVERAGE	2.87	4.46	64.32
MARCH	3.48	5.93	58.7	2014 AVERAGE	4.2	5.90	71.96
APRIL				2013 AVERAGE	3.7	4.95	74.37
MAY	3.57	5.86	60.9	2012 AVERAGE	4.2	5.65	75.24
JUNE				2011 AVERAGE	4.6	6.28	74.46
JULY	3.49	5.43	64.3	2010 AVERAGE	4.0	5.45	75.53
AUGUST				2009 AVERAGE	4.7	5.05	96.71
SEPTEMBER	3.91	5.26	74.3	2008 AVERAGE	4.3	4.53	95.55
OCTOBER				2007 AVERAGE	2.9	3.78	75.68
NOVEMBER	4.08	5.95	68.6	2006 AVERAGE	4.7	4.69	99.76
DECEMBER				2005 AVERAGE	4.8	4.76	102.51
				2004 AVERAGE	4.3	4.66	91.20
TOTAL	22.83	34.39	398.93	2003 AVERAGE	4.1	4.99	81.96
2016 Average	3.81	5.73	66.49	2002 AVERAGE	5.7	5.14	110.89
				2001 AVERAGE	3.1	4.44	69.82
				2000 AVERAGE	4.3	4.41	97.51
				1999 AVERAGE	4.1	3.71	110.51

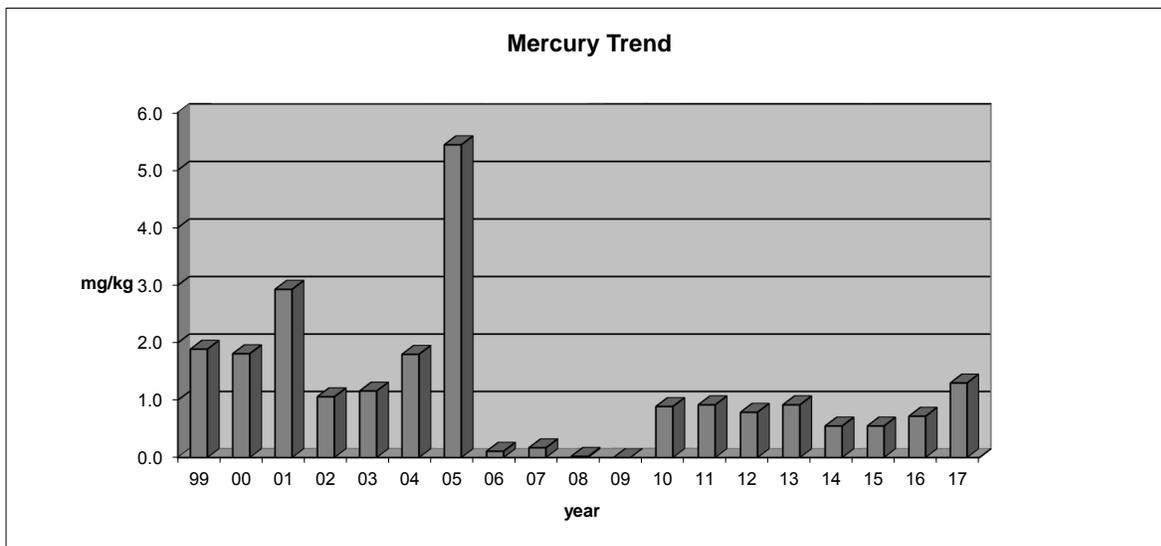


MERCURY in DIGESTED SLUDGE

2017

PREVIOUS YEARS AVERAGES

MONTH	2017				PREVIOUS YEARS AVERAGES		
	WET WEIGHT MG/KG	% TOTAL SOLIDS	DRY WEIGHT MG/KG		WET WEIGHT MG/KG	% TOTAL SOLIDS	DRY WEIGHT MG/KG
JANUARY	0.016	5.96	0.27	2016 AVERAGE	0.04	5.52	0.72
FEBRUARY				2015 AVERAGE	0.03	4.46	0.55
MARCH	0.0327	5.93	0.55	2014 AVERAGE	0.030	5.90	0.55
APRIL				2013 AVERAGE	0.050	4.95	0.92
MAY	0.3170	5.86	5.41	2012 AVERAGE	0.040	5.65	0.79
JUNE				2011 AVERAGE	0.050	6.28	0.92
JULY	0.0250	5.43	0.46	2010 AVERAGE	0.050	5.45	0.89
AUGUST				2009 AVERAGE	0.001	4.53	0.02
SEPTEMBER	0.0195	5.26	0.37	2008 AVERAGE	0.001	4.53	0.02
OCTOBER				2007 AVERAGE	0.01	3.78	0.17
NOVEMBER	0.0371	5.95	0.62	2006 AVERAGE	0.01	4.69	0.11
DECEMBER				2005 AVERAGE	0.26	4.76	5.44
				2004 AVERAGE	0.09	4.66	1.80
TOTAL	0.4473	34.3900	7.6840	2003 AVERAGE	0.06	4.99	1.20
2017 AVERAGE	0.0746	5.7317	1.2807	2002 AVERAGE	0.05	5.14	0.97
				2001 AVERAGE	0.13	4.44	2.93
				2000 AVERAGE	0.08	4.41	1.81
				1999 AVERAGE	0.07	3.71	1.89

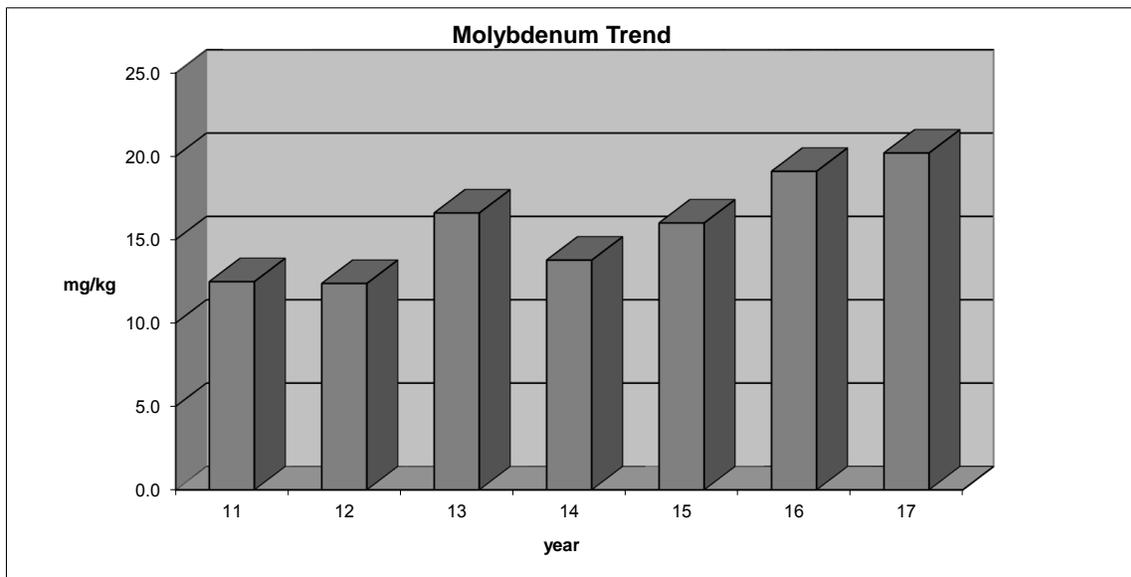


MOLYBDENUM in DIGESTED SLUDGE

2017

PREVIOUS YEARS AVERAGES

MONTH	2017				PREVIOUS YEARS AVERAGES		
	WET WEIGHT MG/KG	% TOTAL SOLIDS	DRY WEIGHT MG/KG		WET WEIGHT MG/KG	% TOTAL SOLIDS	DRY WEIGHT MG/KG
JANUARY	1.44	5.96	24.20	2016 AVERAGE	1.05	5.52	19.1
FEBRUARY				2015 AVERAGE	0.71	4.46	15.97
MARCH	1.16	5.93	19.60	2014 AVERAGE	0.81	5.90	13.77
APRIL				2013 AVERAGE	0.82	4.95	16.56
MAY	0.86	5.86	14.70	2012 AVERAGE	0.72	5.65	12.37
JUNE				2011 AVERAGE	0.81	6.28	12.48
JULY	0.88	5.43	16.20				
AUGUST							
SEPTEMBER	1.20	5.26	22.80				
OCTOBER							
NOVEMBER	1.41	5.95	23.70				
DECEMBER							
TOTAL	6.95	34.39	121.20				
2017 AVERAGE	1.16	5.73	20.20				

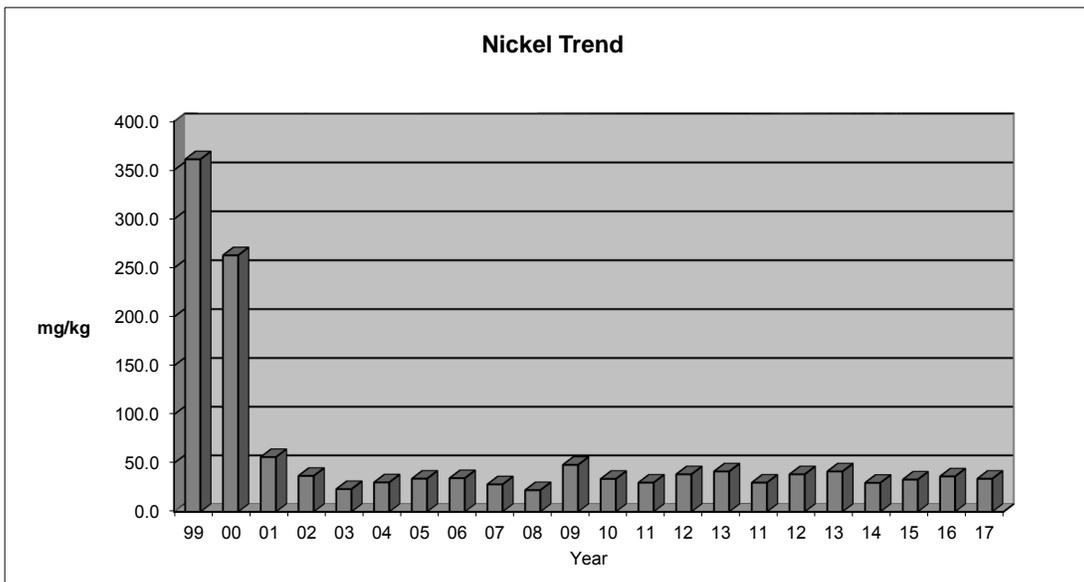


NICKEL in DIGESTED SLUDGE

2017

PREVIOUS YEARS AVERAGES

MONTH	WET WEIGHT	% TOTAL	DRY WEIGHT		WET WEIGHT	% TOTAL	DRY WEIGHT
	MG/KG	SOLIDS	MG/KG		MG/KG	SOLIDS	MG/KG
JANUARY	4.19	5.96	70.30	2016 AVERAGE	1.95	5.52	36.43
FEBRUARY				2015 AVERAGE	1.45	4.46	33.21
MARCH	1.64	5.93	27.70	2014 AVERAGE	1.76	5.9	29.82
APRIL				2013 AVERAGE	2.02	4.95	41.54
MAY	1.49	5.86	25.40	2012 AVERAGE	2.16	5.65	38.56
JUNE				2011 AVERAGE	1.83	6.28	30.02
JULY	1.40	5.43	25.80	2010 AVERAGE	1.81	5.45	33.88
AUGUST				2009 AVERAGE	2.44	5.05	48.43
SEPTEMBER	1.46	5.26	27.80	2008 AVERAGE	1.01	4.53	22.93
OCTOBER				2007 AVERAGE	1.07	3.78	28.23
NOVEMBER	1.60	5.95	26.90	2006 AVERAGE	1.61	4.69	34.63
DECEMBER				2005 AVERAGE	1.61	4.76	34.10
				2004 AVERAGE	1.42	4.86	30.29
TOTAL	11.78	34.39	203.90	2003 AVERAGE	1.17	4.99	23.45
2017 AVERAGE	1.96	5.73	33.98	2002 AVERAGE	1.9	5.14	36.96
				2001 AVERAGE	2.50	4.44	56.31
				2000 AVERAGE	11.60	4.41	263.04
				1999 AVERAGE	13.40	3.71	361.19

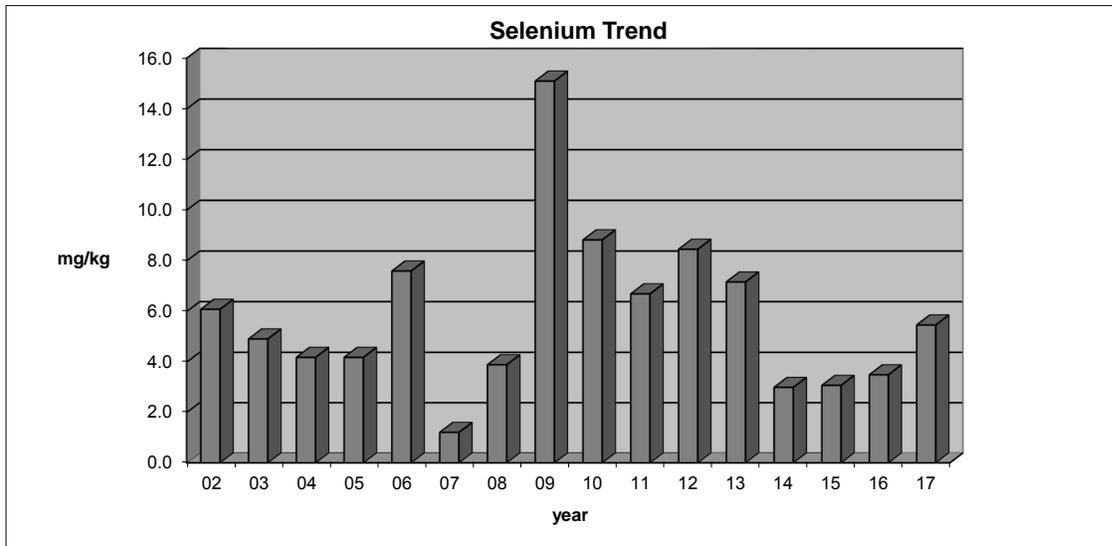


SELENIUM in DIGESTED SLUDGE

2017

PREVIOUS YEARS AVERAGES

MONTH	WET WEIGHT	% TOTAL	DRY WEIGHT		WET WEIGHT	% TOTAL	DRY WEIGHT
	MG/KG	SOLIDS	MG/KG		MG/KG	SOLIDS	MG/KG
JANUARY	0.24	5.96	4.04	2016 AVERAGE	0.19	5.52	3.5
FEBRUARY				2015 AVERAGE	<0.138	4.46	<3.08
MARCH	<0.12	5.93	<2.0	2014 AVERAGE	<0.18	5.9	<3.0
APRIL				2013 AVERAGE	0.360	4.95	7.17
MAY	<0.12	5.86	<2.0	2012 AVERAGE	0.520	5.65	8.46
JUNE				2011 AVERAGE	0.410	6.28	6.65
JULY	<0.11	5.43	<2.0	2010 AVERAGE	0.480	5.45	8.83
AUGUST				2009 AVERAGE	0.760	5.05	15.12
SEPTEMBER	<0.11	5.26	<2.0	2008 AVERAGE	0.179	4.53	3.90
OCTOBER				2007 AVERAGE	0.050	3.78	1.21
NOVEMBER	0.410	5.95	6.89	2006 AVERAGE	0.348	4.69	7.60
DECEMBER				2005 AVERAGE	0.251	4.76	5.28
				2004 AVERAGE	0.192	4.66	4.19
TOTAL	0.65	34.39	10.93	2003 AVERAGE	0.250	4.99	5.01
2017 AVERAGE	0.33	5.73	5.47	2002 AVERAGE	0.314	5.14	6.11
				2001 AVERAGE	0.230	4.44	5.18

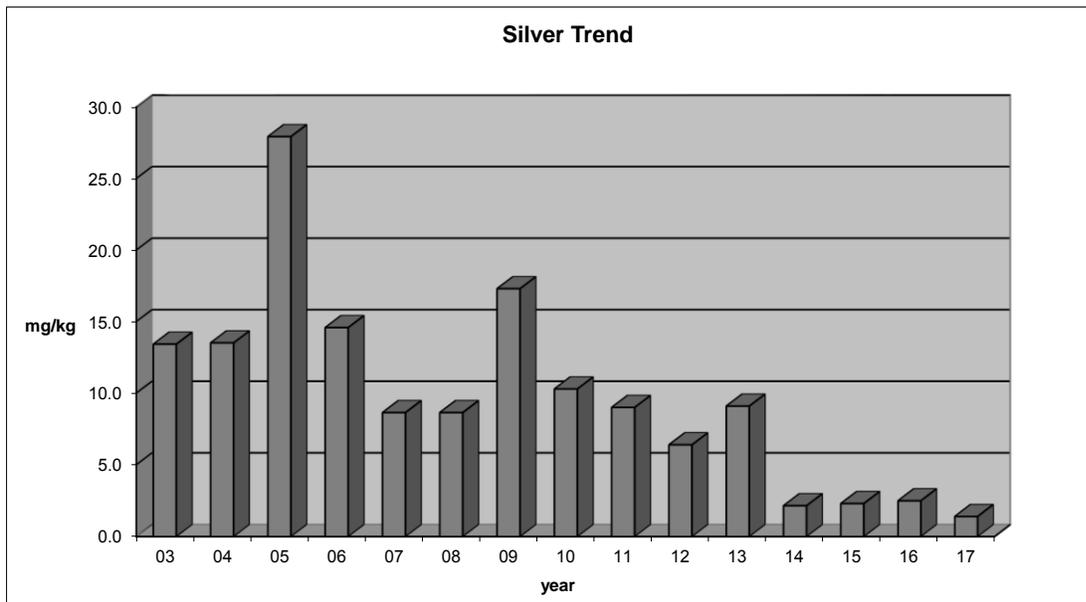


SILVER in DIGESTED SLUDGE

2017

PREVIOUS YEARS AVERAGES

MONTH	WET WEIGHT	% TOTAL	DRY WEIGHT		WET WEIGHT	% TOTAL	DRY WEIGHT
	MG/KG	SOLIDS	MG/KG		MG/KG	SOLIDS	MG/KG
JANUARY	0.086	5.96	1.44	2016 AVERAGE	0.15	5.52	2.49
FEBRUARY				2015 AVERAGE	0.119	4.46	2.30
MARCH	0.080	5.93	1.35	2014 AVERAGE	0.130	5.9	2.20
APRIL				2013 AVERAGE	0.232	4.95	4.69
MAY	0.079	5.86	1.35	2012 AVERAGE	0.390	5.65	6.90
JUNE				2011 AVERAGE	0.542	6.28	8.63
JULY	0.082	5.43	1.51	2010 AVERAGE	0.566	5.45	10.39
AUGUST				2009 AVERAGE	1.094	5.13	21.33
SEPTEMBER	0.053	5.26	<1	2008 AVERAGE	0.423	4.53	9.34
OCTOBER				2007 AVERAGE	0.323	3.78	8.54
NOVEMBER	0.080	5.95	1.34	2006 AVERAGE	0.694	4.69	14.80
DECEMBER				2005 AVERAGE	1.367	4.76	28.72
				2004 AVERAGE	0.63	4.66	13.52
TOTAL	0.5	34.4	7.0	2003 AVERAGE	0.682	4.99	13.67
2017 AVERAGE	0.077	5.732	1.398	2002 AVERAGE	0.622	5.14	12.10

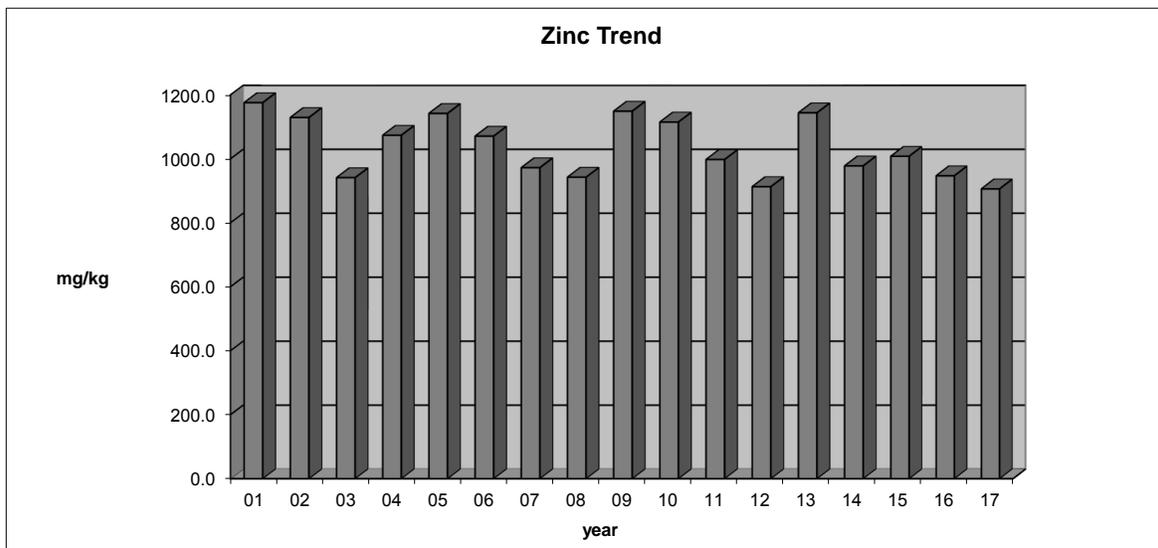


ZINC in DIGESTED SLUDGE

2017

PREVIOUS YEARS AVERAGES

MONTH	WET WEIGHT	% TOTAL	DRY WEIGHT				
	MG/KG	SOLIDS	MG/KG	WET WEIGHT	% TOTAL	DRY WEIGHT	
				MG/KG	SOLIDS	MG/KG	
JANUARY	59.3	5.96	995.00	2016 AVERAGE	51.76	5.52	946.99
FEBRUARY				2015 AVERAGE	44.74	4.46	1008.10
MARCH	47.7	5.93	805.00	2014 AVERAGE	57.77	5.9	977.79
APRIL				2013 AVERAGE	57.07	4.92	1144.22
MAY	48.50	5.86	827.00	2012 AVERAGE	51.69	5.65	912.9
JUNE				2011 AVERAGE	60.28	6.28	997.66
JULY	45.40	5.43	836.00	2010 AVERAGE	58.59	5.45	1114.94
AUGUST				2009 AVERAGE	58.06	5.05	1149.70
SEPTEMBER	52.50	5.26	988.00	2008 AVERAGE	43.14	4.53	942.60
OCTOBER				2007 AVERAGE	36.65	3.78	972.40
NOVEMBER	58.6	5.95	985.00	2006 AVERAGE	50.52	4.69	1070.9
DECEMBER				2005 AVERAGE	54.84	4.76	1142.04
				2004 AVERAGE	51.05	4.66	1073.98
TOTAL	312.00	34.39	5436.00	2003 AVERAGE	47.43	4.99	941.19
2017 AVERAGE	52.00	5.73	906.00	2002 AVERAGE	58.12	5.14	1129.28
				2001 AVERAGE	52.20	4.44	1175.68



Date	WWTP Service Log
1/1/2017	Changed light bulb in lower east.
1/2/2017	
1/3/2017	Added oil to gas compressor.
1/4/2017	Emptied grit hopper. Cleared floor drain in the grit room (floor drain in chlorine still full). Water crew installed sampling port on the west transfer pump pipe. Adjusted east sludge pump packing (packing will need to be changed soon).
1/5/2017	Got CSOs. Tightened packing on #1 raw pump. Cleaned vanes and took seal bearing on west gas compressor pump. Chains on #1 and #2 secondary are loose and need to be tightened.
1/6/2017	Added oil to gas compressor. Checked fire extinguishers. Pulled east sump pump in sub basement of control building - pump is shot. West sump pump caused an alarm to go off - the float is sticking and the suspension holding the contact switch and float rod is broken - used rope to temporarily hold in place. Adjusted the tension on #1 secondary. Worked on east gas compressor - cleaned some of the parts. Bill called in for a sump pump failure alarm in subbasement - he stabilized the base that the float switch is on, replaced float, float rod, and float switch - it is a temporary fix (there is a lot of corrosion around base & float rod - need the base & C channel that holds float switch replaced).
1/7/2017	Worked on west sump pump in basement - drilled and tapped new hole for float switch post. Also removed the temporary rod and replaced with stainless rod.
1/8/2017	
1/9/2017	Added oil to the gas compressor. Disassembled west transfer pump and sucked the water in the cap dry, pulled the end cover and inspected the rotors, and checked the tension on the belt - no issues seen. Installed a drain valve on the west transfer pump on the inlet side (removed a cap). Replaced a bulb in the control panel for the green light for the draft fan.
1/10/2017	Changed needle valves and copper supply lines on the east gas compressor. Replaced bad gaskets on new needle valves - replaced with new o rings.
1/11/2017	Switched from ras 1 to ras 3. Ran blower 2 to just run. Fastened sign by road to posts. Checked filters in blower 4 and cleaned with air. Adjusted packing on #2 raw pump. Cleaned the gas regulator valve and pressure switch on the east heat exchanger. Dug a trench near the front gate. Added oil to the gas compressor. Shut down gas compressor due to gas leak in the pipe - running east transfer pump to help circulate.
1/12/2017	Got CSOs. Capped digester gas line in the tunnel on both ends. Gas compressor back online. Changed light bulbs on stair landing.
1/13/2017	Did 3 week and weely maintenance: unclogged grit separator, added oil to grit collector, checked grit hopper, ran overhead crane, and cleaned skimmer pit.
1/14/2017	Tightened packing on #1 raw pump check valve shaft. Raw pump #3 making a lot of noise - sounds rough. West transfer pump is stuck - quit running during the transfer.
1/15/2017	Tightened packing on ras #3. Had trash stuck in #3 primary tank valve - couldn't get valve to close. Opened muffin monster/grinder on west transfer pump - had a rag or carpet ground up in the grinder rollers.
1/16/2017	Added oil to the gas compressor. Put access covers to grinder back on west transfer pump and cleaned up mess around pump.
1/17/2017	
1/18/2017	Cleaned out the main control and methane gas control valves and check valve on east heat exchanger. Inspected the cover of the east digester - cover was tilted and 8 inches high on the opposite side of the gauge. Had broken bulb in fixture in digester room - killed the power, took fixture apart, replaced broken wire and bulb.
1/19/2017	Got CSOs. Cleaned top side of methane control valve on east heat exchanger. Sprayed and cleaned out EQ tank. Sprayed #1 secondary for 0.25 hours with 1 hose. Added oil to gas compressor. Changed water supply line on east heat exchanger circulation pump.
1/20/2017	
1/21/2017	Sprayed 0.5 hrs on 2nd and 3rd secondary tanks. #2 lag raw pump still running even though water level was down - wet well level transducer was stuck - worked on transducer and stilling well pipe needs a thorough cleaning. #3 raw pump packing leaking - packing gland broke. Vertical pump packing leaking - needs new packing gland.
1/22/2017	Added oil to the gas compressor. Basement sump pump is making a lot of bearing noise - needs to be looked at. Sprayed secondary 1 & 2 for hours. Sprayed grate and influent pit. Used 1 hose for 1.75 hours.
1/23/2017	
1/24/2017	Pumped east digester down to get cover to level out - didn't work and east side still 10 inches higher than west (checked measurements every foot of transfer and cover didn't change from 10 inches; went down to 5'3" and didn't hit the corprals.)

1/25/2017 Changed light bulb in lower digester. Adjusted packing on #1 raw sludge pump. Unclogged grit separator. Added oil to the gas compressor. Set up portable sump pump/system as a back up in case of failure in sump pump in control building subbasement.

1/26/2017 Got CSOs. Adjusted packing on east heat exchanger circulation pump. Changed light bulb in tool crib. Scraped old paint from walls in lower west digester.

1/27/2017 Scraped old paint from walls in west digester (lower and upper). Changed light bulb in grit room.

1/28/2017

1/29/2017 Added oil to gas compressor. Pulled on transducer to see if it would move up and down - it feels like there is movement. Matt called in for raw common alarm - he reset it.

1/30/2017 Changed light bulb in lower east digester. Scraped old paint near raw sludge pumps.

1/31/2017 Scraped old paint near raw sludge pumps.

2/1/2017 Got CSOs. Cleaned out transducer pipe and added an access point in the influent pit. Scraped paint from walls in basement.

2/2/2017 Scraped old paint, cleaned walls, and started painting in basement. Added oil to the gas compressor. Changed light bulb in sub basement.

2/3/2017 Did 3 week maintenance: cleaned out skimmer pit, added oil to grit collector, and emptied grit hopper. Checked fire extinguishers. West middle supernatant drain valve is leaking - tore apart the valve and removed debris that was preventing valve from closing. Scraped old paint and painted in the basement area.

2/4/2017 Replaced cap of the line in the influent pit used as a back up for the sump pump.

2/5/2017 Added oil to gas compressor and cleaned cobwebs out of the lights in lobby and in the entrance way.

2/6/2017 Sprayed all the secondaries for 2 hours with 1 hose.

2/7/2017

2/8/2017 Unclogged grit separator - took the cover off and cleaned the separator & took the inlet and outlet off the pump and cleaned. Scraped old paint in upper digester. Got a sample of Everton's flow at their discharge point into our system. Scraped and painted in control building basement. Stabilized step in sub basement of control building. Added oil to the gas compressor.

2/9/2017 Got CSOs. Grit separator pump not working - took apart the outlet pipe from the motor and it was clear. Also tried to backflush numerous times and that did not help. It is believed that the inlet to the grit separator at the bottom grit tank is clogged.

2/10/2017 Set up pumps and drained the grit tank. Shovelled grit and debris in sump area, collector arm, and baffle area. Put tank back online.

2/11/2017 Added oil to gas compressor. Sprayed EQ tank for .75 hours.

2/12/2017 Air leak in the cross pipe between aeration tanks 1 & 2. Packing leaking for tanks #5 & #4 raw sludge valves. Cleaned debris off grate in influent pit - hosed area down with water for 15 mins. Grit separator pump plugged - removed the top and cone and found a broken piece of 6" pvc pipe stuck in the cyclone area.

2/13/2017 Installed hydraulic hose clamp on the upper motor for the south grinder and the 2 upper hydraulic hoses need replaced on that motor. Looked at air leak on aeration pipe between tanks 1 & 2 - has a bad o ring in the flange and will need replaced. Scraped paint on walls in raw sludge pump area. Cleaned parts and disassembled drive cover on the down west gas compressor.

2/14/2017 Sprayed secondaries 1-3 for 2 hours with 1 hose. Added oil in the gas compressor. Adjusted shaft packing on #4 & 5 raw sludge pump valves.

2/15/2017 Tore apart water drain valve on east gas compressor water separator - blocked with solids - cleaned the valve and put back together.

2/16/2017 Got CSOs. Installed 2 new short hydraulic hoses on the upper motor for the south grinder. Added oil to both north and south grinders. Added a new cap on drain line set up for temporary sump pump. Added flat washers to plastic pipe on outlet to the grit pump.

2/17/2017 Did weekly maintenance: ran overhead crane and checked grit hopper level. Cleaned skimmer pit - it was clogged somewhere in the line. Got a sample of Milton discharge. Changed light in tool crib. Changed probe tubing on the final sampler. Sprayed #1 secondary with 1 hose for 1 hour.

2/18/2017 Added oil to gas compressor. Sprayed each secondary with 1 hose for 1 hour.

2/19/2017 Still no grit when running the separator. Raw #2 has a leak on water cooler line at the pump packing fitting - waiting till Friday to fix when the pump changes. Sprayed secondaries and contact tanks for 2.5 hours with 1 hose. Pulled the cross pipe off between #5 and #6 aer tanks to find new seals for the cross pipe between aer #1 and #2.

2/20/2017

2/21/2017 Sprayed EQ tank for 1 hour. Sprayed secondary 1 & 2 for 1 hour with 1 hose. Pumping slow - pulled cover off to check west transfer pump belts tension - didn't see any signs of belt slipping or belt wear.

2/22/2017 Replaced probe (Telog replaced ventilation system, circuit board, and connector) in Water St CSO. Looked at muffin monster on west transfer pump - had debris clogging it. Fixed the seal in the #6 crosspipe between aeration #1 and 2. Put a new nipple and valve at end of the main line between aeration #1 and #2. Placed and put online the new east sump pump in the subbasement. Sprayed secondaries 5-7 for 1.25 hours with 1 hose. Added oil to the gas compressor.

2/23/2017 Got CSOs & stabilized probe bracket at Water St - had problems reading with the handheld. Sprayed secondary #5 for 0.5 hrs with 1 hose. Finished wiring on east sump pump and installed west sump.

2/24/2017 Installed new ball valve and cooler line fitting on raw pump #2. Finished installing sump pumps in subbasement. Hauled trash and debris to transfer station. Added oil to the grit collector. Sprayed secondary #1 and #2 for 1.25 hours with 1 hose.

2/25/2017 Added oil to gas compressor. Cleaned drain on east heat exchanger circulation pump.

2/26/2017

2/27/2017

2/28/2017 Added oil to the gas compressor. Still no grit.

3/1/2017 Cleaned up grease on floor from raw pump motors. Cleaned paint chips on the floor in basement. Checked Water St CSO - was overflowing.

3/2/2017 Marc called in for a raw common alarm - acknowledged but alarm still on and #3 raw pump that was running is off due motor temp overheat. Still do not have grit when running grit separator. Pulled panels off the grit separator - found no problems and replaced missing bolts on the panel. Cleaned grate and floor in the influent pit. Adjusted packing on #1 raw pump - almost out of adjustments.

3/3/2017 Added oil to the gas compressor. No grit when running separator and tried to backflush. Cleaned up the oil mess in filter building.

3/4/2017 Adjusted the packing on raw pump #2.

3/5/2017 #2 raw pump panel said it was not running - reset the panel and everything came back on. #2 raw pump packing was very loose - tightened packing. Had to tighten pump packing on #2 raw again - leaking water and packing needs replaced Friday. Hosed out EQ tank. Sprayed secondaries 1-7 for 1.5 hours with 1 hose.

3/6/2017 Added oil to the gas compressor.

3/7/2017

3/8/2017 Adjusted the packing cleaned drain on east sludge transfer pump. Adjusted packing on east and west raw sludge pumps. Cleaned debris from floor drain connected to raw sludge pumps. Emptied #3 contact tank and sprayed with 1 hose for 3 hours - put tank back online. Scrapped old paint from window area upstairs and basement wall. Replaced cross pipe between #5 & 6 aeration. No grit when running separator.

3/9/2017 Added oil to the gas compressor. Emptied and sprayed #2 contact tank - sprayed with 1 hose for 3.5 hours - put the tank back online. Cleaned and painted pillars at the back of the main building. Got CSOs. Put new packing and new packing flange on vertical pump.

3/10/2017 Scrapped and painted in the basement. Scrapped and painted upstairs window in main building. Replaced packing in #2 influent pump and replaced packing drain hose. American pump inspected #3 influent pump - needs to be pulled for further analysis. No grit when running separator.

3/11/2017 Finished painting inside frames of observation deck windows.

3/12/2017 Very small amount of grit when running separator. Closed intake and outtake valves on #3 raw pump - cleaned lime deposits so valve seals are not cut. Put a hose on drain valve on #3 pump and started draining line and pump. Removed lower inspection plate on #3. Finished pump packing drain line repair on #2 raw pump.

3/13/2017

3/14/2017 Added oil to the gas compressor.

3/15/2017 Fixed heat in lab. Access plug for the impellor on east heat exchanger circulation pump leaking sludge and water - pump is offline and tore apart the casing, took the pump apart and packing out, checked the lantern ring - which has issues but can't be fixed, brazed the access plug hole and plan to tap the plug back in. Using the east transfer pump to circulate the sludge.

3/16/2017 Set sampler at Keener. Got CSOs. Finished east heat exchanger circulation pump - back online. Replaced all packing in vertical pump. #1 primary flights were off - turned back on and everything looks to be working.

3/17/2017 Got sampler from Keener. Worked on plumbing and cold water on sink in break room. Scrapped paint on floor and cleaned the window sill to prepare for painting. Fixed leak in women's sink - replaced o ring. Added oil to grit collector. Added oil to the gas compressor.

3/18/2017 Started removing old drywall from the ceiling in the break room.

3/19/2017 On #1 raw pump - replaced packing on pump and replaced packing on water cooler valve and hose and fittings. Sprayed EQ tank out.

3/20/2017

3/21/2017 Sprayed secondary 1 & 2 for 1 hour with 1 hose. Added oil to the gas compressor. More grit than there has been when running the separator.

3/22/2017 Set sampler at Reclaimed. Adjusted packing on raw pump #2. Replaced light bulb above raw sludge pumps in basement. Assisted American Pump in pulling raw #3 influent pump for analysis. Worked on light in the paint room area. Painted walls in the basement in the aeration tunnel. Released gas pressure from top of the east digester lid - lid levelled out.

3/23/2017 Sprayed all secondaries and 2 and 3 contact tanks for 4 hours with 1 hose. Got CSOs and sampler from Reclaimed. Washed screens for season. Replaced ballast in paint room light fixture. Lid on east digester is still level. Loosened bolts for the drive shaft on raw influent motor #3. Some grit but not a lot.

3/24/2017 Replaced batteries and desiccant in Eastern CSO. Cleaned skimmer pit. Did 12 week maintenance: lubed sludge heater draft blower bearings, oiled sludge heater circulation water pump, lubed sludge recirculation pumps on heater, lubed sump pumps, lubed raw sewage pumps, lubed ras pumps, oiled boiler water pumps, lubed drag unit end bearings, tested emergency lights, changed air filters on raw sewage control panel, and lubed grit collector. Emptied and sprayed #1 contact tank: used 1 hose for 3.5 hours. Got SO2 and Cl2 tanks ready for disinfection season.

3/25/2017 Drained #1 contact. Cleaned the outside of the weir and put silicone on the crack. Patched concrete on floor of the outfall on #1 and north wall of the tank. Replaced top treated 2x6 on baffle boards in contact tank #1. Added oil to gas compressor.

3/26/2017 Bleach wall in aeration tunnel. Cleaned grate off in influent pit. Opened drain on pump packing on pumps 1 and 2.

3/27/2017 Put east plant water pump online for the season. Tried to fix the leaking ball valve on the water line at SO2. Pulled the gate on #1 contact and it is back online.

3/28/2017 Added oil to the gas compressor. Put new oil absorbent pads down in the gas compressor room.

3/29/2017

3/30/2017 Finished setting up and turned on chlorine and SO2 for disinfection season. Cleaned moisture out of the gauge in the SO2 building.

3/31/2017 Got CSOs. Helped with crane inspections (all 3). Worked on/cleaned fan in SO2 - need to order a new one. Took light fixture out of chlorine room. Not much grit when running the separator. Worked on portable air compressor - tightened belt and checked oil.

4/1/2017 #3 secondary was off in the morning - raised the skimmer bar and telescopic and gated off the tank - replaced drive motor #3 secondary with a new motor - returned #3 secondary to service. Got CSOs and changed rain gauges. Add oil to gas compressor. Adjusted packing on raw influent #2. Reset south grinder in morning - it was overloaded.

4/2/2017 Sprayed out EQ tank. Cleaned trash off grate in influent pit. Painted in the aeration tunnel in basement (northwest corner).

4/3/2017 Sprayed/cleaned weirs on the south side of the primaries. Added oil to the gas compressor. Hardly any/no grit when running separator.

4/4/2017 Little grit when running separator.

4/5/2017 Installed new fan motor in SO2. Sprayed secondary's 1-7 with one hose for 3 hrs. Took broken drive shaft from #3 raw sewage pump to Powertrain - they could not repair it. Added oil to gas compressor. Changed light at sample barrel for raw sludge pumps.

4/6/2017 Got CSOs. Scraped old paint in lower west digester. Painted in new tunnel. Not much grit when running the separator.

4/7/2017 Replaced some conduit clamps in tunnel area & removed some old conduit and wire that was not being used anymore. Added oil to gas compressor. Took trash and recyclables to the transfer station. Did 3 week maintenance: cleaned skimmer pit and added oil to the grit collector. Checked all fire extinguishers. Replaced ball valve on south chlorine tank. Removed falling soffit from filter building on west side. Painted basement walls near ras motors.

4/8/2017

4/9/2017 Cleaned debris from grate in influent pit. Hauled scrap from blower area in basement.

4/10/2017 Added oil to the gas compressor.

4/11/2017

4/12/2017 Muffin monster for the raw sludge pumps making a slapping noise - initially checked the belts on the raw pumps to make sure it that wasn't the problem and it wasn't, restarted the process and still heard the noise - believe it is something metal and internal - shut down the system and bypassed the muffin monster to finish pumping. Worked on repairing concrete around #2 Chlorine contact tank wall and channel. Painted in Digester. Sprayed secondaries 1 & 2 with 1 hose for 2 hours. Not much grit when running the collector.

4/13/2017 Got CSOs. Tore apart the grinder for raw sludge pumps and found debris (i.e. rock and other large piece of debris) and the shafts are very worn - put back online and noise is stopped (needs parts replaced). Outlet valves on the grinder for the raw sludge is leaking - put a drain pan under valve until it stops leaking. Worked on forming and pouring concrete on the wall and sidewalk of back of #3 secondary. Very little grit when running collector. Turned off heat tape for the SO2 and waste sludge. Replaced pump tubing on the influent sampler.

4/14/2017 Removed vent on the south side of the breakroom roof and repaired the hole. Shingled the area with new shingles. Added oil to gas compressor. Exhaust fan motor in SO2 building bad - smoking and turned it off.

4/15/2017 Adjusted drive motor chains on #1 & 2 secondary - removed 2 chain links from each secondary. Patched concrete on wall on west side of #3 secondary (the new pour had honey comb and applied a thin layer of cement to fill in holes).

4/16/2017 Hosed EQ tank. Hosed secondaries 3, 5, & 6 with 1 hose for 2.5 hours. Started to disassemble the old skimmer pump (horizontal pump).

4/17/2017 Not much grit when running the separator. Sprayed out EQ tank. Added oil to the gas compressor. Sprayed the back of primary #3. Turned the exhaust fan back on in the SO2 building - did not see any issues.

4/18/2017 Sprayed secondaries #6 & 7 for 1.25 hours with 1 hose. North grinder overloading - cleared debris and cannot find a problem - leaving gated off for the night. Very little grit when running the grit separator.

4/19/2017 Cleared more debris from the north grinder and it is working again - returned to service. Very little grit when running separator. Sprayed secondaries 3, 5, 6, & 7 for 1 hour with 1 hose. Started tearing old skimmer pump/piping. Took driveshaft to Powertrain to have a sleeve put on.

4/20/2017 Got CSOs. Sprayed back of the primary tanks for an hour. Very little to no grit when running grit separator. Continued tearing out old skimmer pump and started demo of the concrete stand. Changed the bottom 3 filters on VFDs on raw pumps because of concrete dust.

4/21/2017 Added oil to the gas compressor. North influent grinder overloaded - clogged with trash - switched from hand to auto a few times and broke up debris - working again. Changed all 6 filters on VFDs on raw pumps because of concrete dust. Finished demo on the concrete stand and hauled old debris from the pump, old pipes, and concrete from basement. Hauled out the old and new elevator shaft. Replaced boards & siliconed new boards for the tunnel exhaust fan on the walkway (damaged by the mower)

4/22/2017 Sprayed EQ tank.

4/23/2017 Started removing insulation from around water pipes in blower area (stopped removing until the material can be identified - it is not fiberglass). Grinded 6 bolts out of the floor where skimmer pump was removed. Had more grit when running the collector. Picked up debris in the EQ tank and cleaned grate in the wet well. Hosed secondary #1 with 1 hose for 45 mins.

4/24/2017 Added oil to the gas compressor. Hung dry wall in the break room.

4/25/2017 Finished hanging dry wall and added a tape coat in the break room.

4/26/2017 Put a bed coat in the break room and added trim around the vent in the break room. Picked up the driveshaft for raw pump #3 from Powertrain. Took trash and recyclables to the transfer station. Sprayed #3 secondary with 1 hose for 45 mins. Had lots of grit when running grit collector. Replaced ballast for light in basement near raw sludge pumps.

4/27/2017 Got CSOs. Put a skim coat on the walls and ceiling in the break room.

4/28/2017 Lots of grit when running separator. Sanded the ceiling in the break room. Sprayed weeds around the plant. Cleaned the skimmer pit out. Added oil to the grit collector. Finished putting together the drive shaft for the #3 raw pump.

4/29/2017 Added oil to the gas compressor. Had a brief power outage during the day - checked/restarted everything.

4/30/2017 Lots of grit when running separator. Adjusted packing on #1 raw pump. Cleaned hose on pump packing drain for #2 raw pump. Tightened the idlers on all primary chains.

5/1/2017 Added oil to the gas compressor. Cheyenne got called in for raw alarm - raw pump #2 overheating and switched to pump #1 - alarm stopped.

5/2/2017 Switched back to raw pump #2. Switched to raw pump #1 for the night.

5/3/2017 Rebuilt the laboratory vacuum pump. Looked at the raw sewage pump #2 - found/removed trash and debris in the pump. Used scope on the pump but didn't find anything else - put raw pump #2 back online. Added oil to the gas compressor. Sprayed the backside of the primaries. Started to pull insulation off pipes in basement around the aeration channel. Scrapped metal by pole barn.

5/4/2017 Got CSOs. Unclogged drain in the sink in the basement. Added new oil in vaccum pump in lab. Started taking off insulation on old pipes in basement that are no longer used. Scraped and painted pillars in the raw sludge pump area in basement. Cheyenne called in twice - power flickered.

5/5/2017 Hung new utility hanger in laboratory. Scraped and painted sewage lines around raw sludge pumps. Added oil to the gas compressor.

5/6/2017 Skimmer pit drain line clogged - balloned the line. Cleaned skimmer pit. Grit collector clogged with debris - cleaned it out.

5/7/2017 Hosed #1 & 2 secondaries and skimmers for 1 hour. One of the telescopes in #7 isn't flowing as well as the others.

5/8/2017 Raw common alarm - no known reason. Changed light bulb in the grit room.

5/9/2017 Added oil to the gas compressor.

5/10/2017 Raw common alarm - no known reason. Removed insulation from pipe in basement area. Sprayed out EQ tank. Pulled transducer and cleaned the tube and sensor. Cleaned grate in wet well. Finished loading scrap next to pole barn into the dumpster. Sprayed secondary 1 for 0.5 hours with 1 hose.

5/11/2017 Got CSOs. Took down more insulation from old pipes. Started taking down old pipe in basement. Added oil to the gas compressor. Power surge in the afternoon - raw pump alarm went off - checked the plant.

5/12/2017 Sprayed secondaries 1-6 for 3.5 hrs with 1 hose. Worked on taking old lines out and capping lines in the control building basement area. Sprayed weeds around the plant grounds. Hauled trash and recyclables to the transfer station. Checked fire extinguishers.

5/13/2017 Sprayed back of the primaries.

5/14/2017 Added oil to the gas compressor.

5/15/2017 Hung individual holders for the brooms and such in the laboratory. Adjusted packing on east sludge pump.

5/16/2017 Hosed #7 secondary and channels between secondaries and contact tanks with 1 hose for 1.5 hours.

5/17/2017 Loaded old pipe and fittings into dumpster. Sprayed EQ tank. Hauled old PVC pipe and old siding to the transfer station. Added oil to the gas compressor.

5/18/2017 Got CSOs. Removed insulation from old pipes in tunnel and basement area.

5/19/2017 Finished taking insulation off old pipes in tunnel and hauled trash to the transfer station. Added oil in the grit collector. Cleaned out the skimmer pit. Finished loading old pipe into Integrity dumpster. Mowed the plant grounds. Replaced packing in fire hose valve near secondary 1 on the main walkway. Added oil to the gas compressor.

5/20/2017 Sprayed secondary tanks for 2.5 hrs with 1 hose. Sprayed back of primaries.

5/21/2017 Unplugged drain on #2 raw pump packing. Removed the rest of the insulation from old water pipes all the way to the lower digester and cleaned up debris.

5/22/2017 Emptied grit hopper. Changed light bulbs in basement. Added oil to gas compressor. Fixed rain flap on east heater roof.

5/23/2017 Changed light bulb in the tunnel.

5/24/2017 Worked on draining old lines in the basement area to prepare to take them out. Worked on mounting back up water pump on control building break tank. Finished cleaning up debris from insulation.

5/25/2017 Got CSOs. Disconnected water pipes from east digester heater. Removed the east heater overflow tank and cleaned it out. Resealed water valve and sight glass on east overflow tank. Replaced pipe fittings as needed on the east overflow tank. Removed clamps along old pipe in tunnel. Finished draining water from old pipes in basement. Added oil to the gas compressor.

5/26/2017 Put back together overflow tank and put east heater back online. Removed old piping in upper digester level to the heater. Cleaned up mess from removal process. Worked on removing old pipes in the lower digester. Hauled the trash from the scrap pile to the transfer station.

5/27/2017

5/28/2017 Added oil to the gas compressor. Hosed secondary 1 and 2 for 2 hrs with 1 hose. Changed the marker tip on the raw sewage flow chart.

5/29/2017

5/30/2017

5/31/2017 Set sampler at Reclaimed. Replaced probe tubing on effluent sampler. Started removing old pipes in basement area. Added oil to the gas compressor.

6/1/2017 Got CSOs. Got sampler from Reclaimed. Continued removing old pipe in basement area. Bagged and cleaned out the skimmer pit to get it unclogged - flowing good again. Sprayed #1 secondary for 1 hour with 1 hose.

6/2/2017 Set effluent sampler for WETT testing. Worked on removing old pipe in basement area and hauled removed pipe to the scrap dumpster.

6/3/2017 Added oil to the gas compressor. Reset sampler/bottles in the final sampler for bio-monitoring. Turned back up chlorine on.

6/4/2017 North grinder off - reset and was working. Sprayed EQ tank. Added water to the east heater tank. Unplugged drain on heater sludge pump and adjusted packing. Hosed #2 secondary for 45 mins with 1 hose.

6/5/2017 Changed light bulb in lower east digester

6/6/2017 Added oil to the gas compressor.

6/7/2017 Unplugged pump packing drain on #2 raw pump. Vaccumed sludge from #2 raw pump packing area (drain keeps plugging up). Installed bolts on grate in the wet well and cleaned debris off the grate. Set sampler at Keener. Took down brackets from old pipes in tunnel. Emptied grit hopper.

6/8/2017 Got CSOs and sampler from Keener. Started to install new Vogelsang grinder for the raw sludge pumps. Added oil to the gas compressor. Sprayed secondaries 1-3 for 2 hrs. Unloaded new chlorine and SO2 tanks. Set up a chlorine and SO2 tank for standby.

6/9/2017 Completed installation of Vogelsang grinder for raw sludge pumps. Repacked knife valves for grinder. Re-set effluent sampler after WETT testing. Added oil to grit collector. Sprayed the back of the primaries.

6/10/2017

6/11/2017 Sprayed secondary 6 & 7 for 2 hours with one hose. Added oil to the east gas compressor.

6/12/2017 Sprayed EQ tank. Sprayed secondary #1 for 1 hour. Started cleaning up mess in basement.

6/13/2017 Continued cleaning up mess in basement. North break tank offline (electrical issue)

6/14/2017 Finished cleaning up mess in basement. Worked on plumbing for the new break tank backup motor and pump (installed new shut off valve, changed 2 on/off valves and fittings).

6/15/2017 Spray secondary tanks 2 and 3 for 1.5 hours. Add oil to gas compressor. Installed backup pump and motor for break tank, (plumbing, mounting plate, check valve and water line valves).

6/16/2017 Did 12 week maintenance. Checked fire extinguishers. Worked on break tank electrical box assembly and hardware. Replaced battery in step well security light.

6/17/2017 Added oil to the gas compressor.

6/18/2017 Mounted electric box for break tank pumps in the sub basement. Removed old electric in sub basement to the break tank pumps, boxes, conduit, and wiring.

6/19/2017 Worked on unclogging drains in grit room.

6/20/2017 Worked on drains in grit room. Checked drains in grit room opened but still going to work on them. Added oil to gas compressor.

6/21/2017 Emptied grit hopper. Replacing electric panel for break tank pumps.

6/22/2017 Got CSOs. Looked at problem with A/C unit - not cooling lab or break room. Finished replacing electric panel for break tank pumps.

6/23/2017 South break tank online. Added oil to the gas compressor. Replaced belt on the A/C unit for the lab. Hauled trash & recyclables to transfer station. Adjusted the sludge barrel motor (crooked). Check water separator on gas compressor - not clogged.

6/24/2017 Replaced motor on secondary #1.

6/25/2017 Tightened the packing on raw pump #1. Added oil to the gas compressor. Adjusted the float on the break tank in the basement. Sprayed out EQ tank. Sprayed #1-3 secondaries for 1.5 hours. Cleaned up debris from break tank repair. Cyclone on the grit separator was plugged - found debris stuck in cyclone.

6/26/2017 Drained/cleaned/refilled #3 contact tank. Sprayed contact tank for 3 hours. West exhaust not running - needs a new motor.

6/27/2017 Sprayed secondaries 5-7 for 2.5 hours. East transfer pump in leaking sludge - packing may need replaced. Added oil to the gas compressor.

6/28/2017 Pulled motor from west exhaust fan. Pulled and removed debris from EQ lift station pump. Sprayed secondary 2-3 for 1 hour.

6/29/2017 Repaired both vent pipes for the gas regulators in tunnel - both had came loose from the ceiling. Refastened conduit for the grinder to the column in the raw sludge pump area. Removed more old piping in digester area and made a cover for the two 6 in. holes in the floor by the east heater. Did CSO's. Took electric motor apart for the exhaust vent,(the rear bearing is bad and the windings are burnt). Sprayed secondary #3 for 0.75 hours.

6/30/2017 Added oil to the gas compressor. Replaced a 5 ft section of pipe into the manhole for the drain line from the grit room.

26 week maintenance,(raw sludge pumps, filters changed in air room, drag units, raw sewage pumps, grit separator, dewatering pump, channel grinders, sludge draw off pump, service front gate, clean screens and rooftop A/C.

7/1/2017 Sprayed secondaries 1- 3 for two hours.

7/2/2017 South influent grinder not running - reversed hydraulic hoses and ran grinder in reverse for a few seconds and put the hose back to normal - grinder was running good after. Changed a grease fitting on the bottom side of the motor and gear box for the grit separator (made the fitting more accessible). Cleaned the skimmer pit. Tightened pump packing on #2 raw pump. Sprayed secondary tanks 5 & 6 for 1 hour.

7/3/2017 Unclogged grit separator. Added oil to the gas compressor.

7/4/2017 Sprayed secondary tanks #5-7 for 2.75 hours. Sprayed the back of the primaries.

7/5/2017 Sprayed secondary tanks #1-3 for 2 hours. North and south grinder stopped - removed debris and both back running. Checked fire extinguishers. Moved the thermometer to the entry for the back door to the lobby. Put a new ball valve on the sludge barrel. Set up equipment to draw supernate from #5 aeration to #4. Put an additional mount on the sludge mixer. Sprayed the back of the primary tanks. Took the valve off/cleaned for the gas compressor separator (gas not blowing out) - gas was coming out after cleaning.

7/6/2017 Got CSOs. Added oil to the gas compressor. Continued pumping down #5 Aer. Took down old pipes in the basement area.

7/7/2017 Continued pumping down supernatant on #5 aeration tank. Finished removal of old plumbing in digester area and removed last of remaining pipe hanger hardware.

7/8/2017 Drained/cleaned/refilled #1 contact tank. Sprayed contact tank for 4 hours.

7/9/2017 Added oil to the gas compressor. Drained/cleaned/refilled #2 contact tank. Sprayed contact tank for 1.5 hours. Skimmer pit clogged - flushed out drain with the hose. North grinder off - low oil light - hydraulic motor looks like it is leaking fluid - filled tank with fluid and turned back on.

7/10/2017 Sprayed EQ tank. Secondary #7 telescopics not flowing - adjusted telescopics. Adjusted packing on east raw sludge pumps. Methane gas line for the digester is leaking at the elbow of the pipe - shut the gas valve off.

7/11/2017 Added oil to the gas compressor.

7/12/2017 Installed new motor for the west exhaust fan. Replace 2 o-rings on the hydraulic lines for the north grinder motor. Added oil to the north grinder. Sprayed secondaries 1, 3, 5, 6, & 7 for 4.25 hours.

7/13/2017 Got CSOs. Put a chlorine tank on standby. Emptied the grit hopper. Removed/recycled old materials from the basement area and mopped mess up. Disassembled the old grinder for raw sludge pumps and save the motor. Sprayed primary weirs.

7/14/2017 Changed batteries in recorder at eastern. Pulled weeds in channel between #3 & #4 aeration tanks. Removed weeds from end of #4 aeration tank. Sprayed all secondary's again for 4 hours. Added oil to the gas compressor.

7/15/2017 Added oil to the gas compressor.

7/16/2017 Raked dirt and picked up large rocks on the dig for the grit room drain line repair. Scrubbed stairwell walls and steps to the subbasement. Cheyenne called in for a power failure from a car wreck. Power off from 11:40 to 1:40 am on 7/17.

7/17/2017

7/18/2017 Added oil to the gas compressor. Hosed EQ tank. Tried to clean debris from driveway caused by overflow.

7/19/2017 Worked on cleaning debris from fence and grass from the overflow.

7/20/2017 Got CSOs. Finished cleaning debris from grass from the overflow and put lime down. Took trash and recyclables to the transfer station. Sprayed the EQ tank. Added oil to the gas compressor.

7/21/2017 Did 3 week maintenance: cleaned skimmer pit and added oil to the grit collector. Changed light bulbs in the lobby stairway. Started removing second set of old water lines in the basement area - cut and capped the lines from the aeration wall. Sprayed 0.75 minutes on secondary #1.

7/22/2017

7/23/2017 Added oil to the gas compressor. Added water to the east digester heater overflow tank.

7/24/2017 Display screen on blower #4 is dead. Replaced light bulb at bottom of the digester steps.

7/25/2017 Sprayed secondary #1 for 75 minutes. Turned off/restarted blower #4 - display screen came back on. Scrapped/cleaned up paint around drain near vertical pump.

7/26/2017 Worked on taking down old pipes in the basement area. Replaced packing on the East transfer pump and repaired the drain.

7/27/2017 Got CSOs. Replaced the battery in the Canal CSO meter. Added oil to the gas compressor. Continued taking down old pipes in the basement area. Tightened packing on the East transfer pump and circulated the sludge to check there were no leaks.

7/28/2017 Cleaned up landscaping near sign by the road.

7/29/2017 Added oil to the gas compressor.

7/30/2017 Cleaned/adjusted packing on #2 raw pump drain. Sprayed secondary tanks 6 & 7 for 2 hours. South grinder shut off and gated off - south wheel is not turning.

7/31/2017

8/1/2017 Added oil to the gas compressor.

8/2/2017 Adjusted packing on the east raw sludge pump. Sprayed on secondary 1/5 for 2 hours. Replaced the chain on the south grinder - grinder back online. Replace wooden gates with aluminum gates on secondary 1.

8/3/2017 Got CSOs. Sprayed secondaries 3-7 for 1.5 hours. Worked on removing old pipes in the basement area. Repaired wiring on fan in SO2 building (had stopped working on 8/2). Added oil to the gas compressor.

8/4/2017 Sprayed secondary 2-7 for 1.5 hours. Power went off for a brief period - everything restarted. Adjusted gates on secondary 1 to balance the flow between the contact tanks. Power went off that night two times - Phil called in.

8/5/2017 Added oil to the gas compressor. SO2 alarm went off - water line busted (temporary repaired that night) and sensor panel got wet.

8/6/2017 Adjusted gates on secondary 1 to balance the flow. Sprayed secondary #1 and #2 for 1 hour. Dried SO2 panel.

8/7/2017 Replaced hose for water inlet line in the SO2 building. Added oil to the gas compressor.

8/8/2017

8/9/2017 Changed pump hosing on the influent sampler. Sprayed weirs and back of the primary tanks. Added oil to the gas compressor. Set up to pull supernatant off #6 aeration tank.

8/10/2017 Sprayed secondary 1 & 2 and railings for 1.5 hours. Got CSOs.

8/11/2017 Added oil to the gas compressor. Did 3 week maintenance: cleaned skimmer pit and added oil to the grit collector and greased lower bearing in drive. Sprayed out the EQ tank.

8/12/2017

8/13/2017 Worked on removing old plumbing in raw pump panel area. Rehung gas lines after old plumbing removal (heater by raw pump panel). Sprayed secondary 6 and 7 tank for 2 hours.

8/14/2017 Added oil to the gas compressor.

8/15/2017

8/16/2017 #3 primary has a wear strip floating in the tank - tank is offline and pumped down. Sprayed secondary #1 and 2 for 1.5 hours. Worked on getting the south grinder ready to be pulled. Chomels pulled the south grinder for rebuild by Quality. Worked on removing old pipes in the basement area.

8/17/2017 Got CSOs. Removed old pipes in the basement area. Added oil to the gas compressor.

8/18/2017 Looked at the chlorine setup (low readings) - no obstructions in the lines but found there was possibly a leak at the regulator valve - tightened the valve down. Set up portable pump to pump down #3 primary. Sprayed the walls and floor on #3. Put the chains back on the sprockets and tore off one of the baffle boards on the tank. American pump came and replaced the wear ring for the #3 raw pump. Sprayed secondary 2 & 3 for 1.5 hours.

8/19/2017 Fan motor in SO2 building out at afternoon check. Added oil to the gas compressor.

8/20/2017 Cleaned debris out of the grate in the influent pit. Cut old pipes from the tunnel area into sections to be able to move/discard. Finished hosing #3 primary tank and had portable pump pumping out sump area. Replaced top row of the baffle boards on #3 primary tank.

8/21/2017 Hauled old pipe sections from tunnel to the basement area. Sprayed secondary 3 and 5 for 0.5 hours. Sprayed out the EQ tank.

8/22/2017 Added oil in the gas compressor. Cut old pipes from tunnel into sections.

8/23/2017 Finished installing baffle boards on #3 primary tank. Replaced 2 flights in #3. Replaced the broken wear strip in #3. Took apart bottom sprockets on the north side of the tank - they are worn. Installed 2 fans in RAS #3 panel.

8/24/2017 Worked on cutting up more old plumbing. Replaced blower motor in SO2 building. Replaced front and rear bearings in the blower motor on the east digester heater. Adjusted idler on primary #1. Got CSOs. Emptied grit hopper. Unloaded SO2 and chlorine tanks. Set a chlorine tank on back up. Had issues with the sludge barrel draining - opened/closed the valve and eventually got it to drain (west digester was open which may have been part of the problem)

8/25/2017 Finished cutting old plumbing in tunnel. Cleaned packing drain and adjusted packing on #2 raw pump. Worked on flights and sprockets on #3 primary. Carried pipe sections out of the tunnel.

8/26/2017 Changed light bulb in grit room. New fan motor in SO2 building stopped.

8/27/2017 Cleaned grate in influent wet well. Added oil to the gas compressor. Carried the rest of the old pipes from the tunnel. Checked SO2 building for a gas leak - didn't find any gas leaks (did find a small water leak on inlet valve). Chains and sprocket back together on #3 primary tank.

8/28/2017

8/29/2017 Added oil to the gas compressor.

8/30/2017 Sprayed/cleaned the outside lobby windows/porch. Replaced light bulbs in grit room. Repaired the lamp assembly in the upper digester room (above the east heater). Rebuilt one flight in #3. Cleaned debris from sump pump area in #3 primary. Sprayed #1 secondary for 0.75 hours. Pulled transducer and cleaned debris (raw common alarm went off 8/28).

8/31/2017 Got CSOs. Replaced 2 flights in #3 pri, welded washers for the wear strips at the bottom of the tank, and replaced/repairs misc hardware throughout the tank. Sprayed/cleaned tunnel of the mess from the pipe removal. Cleaned the front door.

9/1/2017 Completed 52 week maintenace: changed secondary filter material for the air system, lubed all the motors, ran emergency lights changed box filters on rooftop a/c unit, and changed oil in gear box and buffer chamber on W. transfer pump. Added oil to the gas compressor. Rebuilt/replaced 4 flights on #3 primary and replaced a wear strip in #3 primary. Swept basement area.

9/2/2017 Cleaned lower digester backroom, walls, and mopped floor.

9/3/2017 Added oil to the gas compressor. Cleaned debris from drain for the pump packing on the grit pump (it was plugged). Replaced flight chain link and filled/put #3 primary tank online. Cleaned skimmer pit. Replaced bulb in lower digester stock room. Washed north and west sides of Devor shed.

9/4/2017 Swept around sludge pumping area, swept upstairs/stairs, swept lobby and entry ways/removed cobwebs, and swept operator room.

9/5/2017 Hauled trash and recyclables to the transfer station. Chlorine readings falling - looked at/tightened regulator valve (had greer buildup around the valve). Changed light bulb over the sludge barrel. Changed light bulb in tunnel. Scrubbed mildew off walls in tunnel.

9/6/2017 Cleaned off corrosion from brass fitting on chlorine tank, checked regulator valve for cracks (didn't find any), and changed seal. Gated #5 secondary off and started draining with portable pump (valve wouldn't turn to drain the tank). Replaced empty SO2 with a back up tank. Hauled old pipe debris from basement. Changed oil in the grit separator. Added oil to the grit collector. Added oil to the gas compressor. Cleaned filter in air conditioner. Cleaned walls in tunnel.

9/7/2017 Got CSOs. Checked fire extinguishers. Sprayed #5 secondary for 3 hours. Cleaned tunnel walls and mopped water.

9/8/2017 12 week maintenance: lubed sludge heater draft blower bearings, oil sludge heater circulation water pumps, lubed sludge recirculation pumps, lubed sump pumps, lubed raw sewage pumps, lubed all ras pumps, lubed drag unit end bearings (primary and secondary tanks), test emergency lights for 30 seconds, changed air filters on raw sewage control panel, and lubed grit collector. Installed broken fan blade on electric motor for the East digester heater blower. Replaced drain valve on recirculation pump on the East digester heater. Set a chlorine tank on standby. Unclogged the grit separator. Replaced light bulbs in tunnel and stock room. Worked on #5 secondary: replaced top row of baffle boards.

9/9/2017 Swept in digester. Cleaned walls in digester area. SO2 fan off in the afternoon.

9/10/2017 Adjusted pump packing and cleaned packing drain on #2 raw pump. Mopped water up in sludge pump area. Sprayed out EQ tank. Worked on #5 secondary : repaired 1 washer on north top rail and 1 washer on bottom south rail, finished installing new baffle boards, took 1 link out of each chain, and replaced 12 bolts in flights that were too short. Turned SO2 fan back on.

9/11/2017 Added oil to the gas compressor. Cleaned the grit room and scrapped paint from walls in there.

9/12/2017

9/13/2017 Sprayed 1 and 2 secondary for 2 hours. Cleaned sump area on #5 secondary with vac truck. Replace brokens nuts on gear band on #5 secondary. Replaced packing on the east raw sludge pump. Started to slowly fill #5 secondary. Scrubbed tunnel wall (near Devor shed steps). Unclogged sink for south supernatant.

9/14/2017 Got CSOs. Set sampler at Keener. Replaced pump packing in the grit pump. Put portable pump back in #5 secondary to drain (weir needs repaired). Pulled transducer and flushed pipe (raw common alarm going off frequently). Added oil to the gas compressor. SO2 fan off - turned back on.

9/15/2017 Got sampler from Keener. Finished draining #5 secondary - replaced washers, bolts, lock nuts with stainless ones on the I-beams. Replaced drain valve and fittings on the condensation tank on the gas compressor on the east digester - previous valve was clogged. Sprayed and scrubbed tunnel floor. Swept by Bob's office and stairs.

9/16/2017 Swept and mopped lobby. Mopped up by Bob's office area. Swept stairs to basement. Swept westside of upper and lower digester and stairs. #3 primary not working - switch may be bad but got the motor to work. Gas compressor drain valve not functioning all the time - at times pulling a vaccum instead of blowing out water - tried to clean around the valve and troubleshoot. Exhaust fan in SO2 off - turned back on Sunday morning.

9/17/2017 Pulled weeds from #1 and 2 primary baffle boards/skimmer. Finished cleaning up tools from #5 secondary. Added oil to the gas compressor. Installed drive shaft for #3 raw pump.

9/18/2017 Scrubbed and vacuumed lower digester floor.

9/19/2017 Added oil to the gas compressor. Sprayed secondary #6 and 7 for 1.5 hours. Mopped and scrubbed floors in lower west digester. Scrubbed walls in lower west digester.

9/20/2017 Set sampler at Reclaimed. Help American Pump install raw pump #3 (it is the pump currently running lead). Replaced 2 light bulbs in lower digester. Painted grit room. Mopped up water in basement areas. Swept digester stairs and upper and lower areas.

9/21/2017 Started pumping down #4 primary tank to inspect. Troubleshoot the switches on #4 primary - made no repairs. SO2 fan off again - turned back on. Reset sampler at Reclaimed (didn't get any samples). Hosed secondary tanks 2-7 for 2.5 hours.

9/22/2017 Rebuilt #4 primary tank valve in sludge pump area. Repaired handle assembly on #5 primary tank valve in raw sludge pump area. Picked up sampler at Reclaimed Energy. Swept in digester areas. Swept in lobby and control room. Cleaned control room windows and started lobby windows. Added oil to the gas compressor. SO2 fan off - back on by pm.

9/23/2017 Cleaned up water in basement area. Unclogged skimmer pit drain line (balloned/backflushed the line). Cleaned the skimmer pit out. SO2 fan off in pm.

9/24/2017 Hosed down #4 primary and dropped sump pump in tank to finish draining sump. Replaced baffle board, bolts and straps on #4 primary (had to make 10 straps). Cleaned debris off grate in influent pit area. Adjusted pump packing on raw east sludge pump. Changed 2 light bulbs in work shop area. Repaired broken drain pipe tool that unplugs drains. SO2 fan back on - propped door open all day to keep it cooler

9/25/2017 Changed probe tubing on the influent and effluent sampler. Started pumping down #3 secondary - broken weir. Added oil to gas compressor.

9/26/2017 Sprayed secondaries 1&2 for 1.5 hours. Changed light bulbs in basement near raw sludge pumps.

9/27/2017 Changed light bulb in the grit room and compressor room. Added oil to the gas compressor. Used crane from Chomels to install rebuilt south grinder. Pulled north grinder and lubed. Replaced the south floor plate behind the grinder. Anchored north and south floor plates down. Replaced parts for the 2 drains in the influent pit. SO2 fan off in the morning - turned back on.

9/28/2017 Got CSOs. Added oil to the gas compressor. Troubleshoot issues with the east gas compressor and heater (both are off - gas lines had black water/heater had water leaking - hooked hose to drain overnight). Took a link out of each chain on #4 primary, rotated the drive gear one tooth (to fix alignment), switched bolts to correct spots, replaced all nuts on the band clamps with stainless steel ones, and fixed several bolts and washers on wear strips. Swept and mopped lobby. Cleaned inside front door and frame. Swept and mopped control room.

9/29/2017 Worked on issues with the east gas compressor and heater - drained water from furnace area and lines - heater is back online, gas compressor still off. Replaced water valve and fittings on the water line to east sludge pump packing. Unclogged the skimmer pit with ballon. Sprayed secondary #3 for 1.25 hours.

9/30/2017 Removed both gas valves from east heater and cleaned debris from valves. (Digester gas valve was stuck open). Unclogged skimmer pit. Swept in upper digester areas. Dusted equipment in basement area. SO2 fan motor off again - back on in the afternoon.

10/1/2017 Adjusted pump packing on east sludge pump (digester). Pulled side cover off east gas compressor for inspection. Cleaned EQ tank. Worked on #4 primary - replaced both sprockets on shaft at sump, replaced a wear strip (center of east upper rail) that broke when I started the drive, and started changing black wear shoes on the upper rail on the flights.

10/2/2017 Adjusted packing on both east and west sludge pumps (digester). Worked on getting the cover on the lid loose to see inside the east digester - looked for the gas lines but couldn't see any lines. Set up circulation for the east digester using the east transfer pump. Sprayed down grit room walls.

10/3/2017 Removed the dome on East digester to look for internal gas lines - did not see any of the piping that is expected to be there. Finished cleaning floors and wall in west lower digester. Circulated east sluge overnight with east pump.

10/4/2017 Emptied grit hopper. Set up equipment to pull supernatant off #5 aerator tank. Leveled and put down grass seed and straw on exposed ground from chlorine drain repair. Worked on #4 primary: finished changing the shoes on the flights. Circulated east sludge overnight with east pump.

10/5/2017 Got CSOs. Worked on unclogging the grit separator/getting grit collector motor to run - couldn't get it unclogged or running so tank is gated off. Unloaded chlorine delivery. Looked in the east digester - still no pipes visible (cover is down to the corbels and think we have moved around 9 foot of sludge). Cleaned up mess from east sludge pump leaking. East pump stopped transferring east to west (possibly clogged) - switched to the west transfer pump. Circulated east sludge overnight with east pump. SO2 tank switched to a new tank. SO2 fan off.

- 10/6/2017 Worked on unclogging grit separator and getting grit collector motor to run - used portable pump to pump the tank down and used the vac truck to grit and gravel from the tank - got the grit separator unclogged but grit collector still won't run. Set up a back up chlorine tank. SO2 seemed diluted - regulator on the ground was left open and pulling air causing dilution. Finished moving sludge and got another 2 feet of sludge out of the east digester (level around 11 ft from the wall) - couldn't see much besides dark. Cleaned sludge up in lower digester. Swept and mopped in tunnel area. Swept in basement area and in upper digester area. Circulated east sludge overnight. SO2 fan off.
- 10/7/2017 Cleaned up sludge/mess from circulating with east transfer pump overnight. Circulated east sludge overnight. Reset alarm on east digester heater and then turned the east heater off (not enough sludge in the digester to run through the heater). Pumped #4 aer down.
- 10/8/2017 Looked in the east digester with the sludge level down - gas pipe is broken off at wall and sludge return pipe is broken off just back under the lid. Pumped sludge back into the east digester from west to cover pipe so heater and circulation pump can be turned back on - moved enough sludge and turned both back on. Returned #4 primary to service. Worked on water lines to the east transfer/circulation pump - all lines need to be replaced (full of lime). Cleaned sludge and water off floor in lower digester by east transfer pump. Mopped water up from working on water lines. Adjusted packing cleaned out plugged drain line on #2 raw pump. Dumped 5 gal buckets. Ran grit separator in morning and cleaned out auger. Put grit collector back in service - grit separator already plugged up - cleaned out separator again. Turned sludge heater and circulation pump off - didn't know what would happen overnight or how high temperatures would go.
- 10/9/2017 Pumped #4 aer down. Circulated east sludge overnight with east transfer pump.
- 10/10/2017 Attempted to circulate east sludge overnight. SO2 fan off.
- 10/11/2017 Cleaned gas compressor room. Mopped the upper digester by sludge heater. Replaced all the bolts with stainless steels ones in the I beams on #3 secondary. On the southwest end of the I beam had to install an extra bracket on #3 secondary. Cleaned/fixd water leak on the coupler of the grit separator. Changed light bulbs in the grit room. Sprayed off front porch/windows. Circulating east sludge constantly besides when pumping. Turned SO2 fan back on.
- 10/12/2017 Got CSOs. Took trash and recyclables to transfer station. Took a link from each chain on #3 secondary. Filled and put #3 secondary back online. Removed part of the weir plate on #1 primary. Disassembled the east gas compressor. Unclogged east transfer pump drain line and cleaned up sludge mess in lower digester. East heater had an alarm when restarting circulation after pumping - adjusted gas control valve 3 times on the heater - in the pm heater had no alarm and fired the first try.
- 10/13/2017 Sprayed secondary 1/2 for 1 hour. Cleaned skimmer pit. Added oil to the grit collector. Changed gear oil/lubed in the motor drive on the grit collector. Disassembled pump/replaced plumbing/cleaned lime with muriatic acid (can't find any replacement packing) on break tank in the digester room (runs water for the packings in the digester area). SO2 fan off in pm - shut switch off.
- 10/14/2017 Turned SO2 fan back on.
- 10/15/2017 Adjusted pump packing and cleaned drain line on #2 raw pump. Had to adjust packing on #2 raw pump again - gland is bottomed out and will need a packing when pump switches. Replaced bulb over sump pumps in sub basement. Tried to adjust pump packing on ras pump #3 - lime and rust won't let the packing gland move. Removed remainder of weir plate on #1 primary.
- 10/16/2017 Cleaned up sludge mess in lower digester from transfer pump. Picked up trash by gate/fence. Sprayed #2/3 secondary and #4 skimmer bar for 0.75 hours. Cleaned packing on the east transfer pump.
- 10/17/2017 Checked packing on east transfer pump - looked ok. Swept digester stairs. Sprayed the back of the primary tanks. Dropped hook in #5 primary - blocked the tank off and started pumping it down.
- 10/18/2017 Sprayed secondaries 5-7 for 1.5 hours. Reassembled the break tank in the digester room back together - put a new seal in pump. Replaced the plumbing from the pump to the break tank on the pressure side. Replaced plumbing from pressure side of the pump to the basement side of the digester. Replaced valve and plumbing on the lower digester sink. Put temporary plumbing in the lower digester room to the east transfer pump.
- 10/19/2017 Got CSOs. Sprayed 1 hour on secondaries 1-2. Replaced all the 1/2 inch water seal plumbing in the lower digester room to the east transfer pump. Added pressure gauge to the east transfer pump by pump packing. Replaced pump packing in the east transfer pump. Set up sump pump in #5 primary to drain the tank. Sprayed weirs on back of #3/4 primary. Swept in digester area. SO2 fan off.
- 10/20/2017 Replaced light bulb over #3 blower. Replaced 2 8 ft. bulbs by elevater in blower area. Replaced 2 4 ft. bulbs at west end of tunnel. Replaced drive chain on #5 primary tank. Replaced 3/8" line and fittings on water line feeding pump packing on east heater circulation pump (was plugged up with lime). Still pumping down #5 primary. When finished with pumping down #5 primary, cleaned heavy debris up on floor of tank. Checked fire extinguishers. Removed plate and made sure grit separator was not plugged. Swept lobby and control room.
- 10/21/2017 Replaced bulb in night light at north west corner of building. SO2 fan off - turned the fan back on.

10/22/2017 Reset east heater and adjusted gas valve (alarm going off in the am/late morning/early afternoon). Replaced bulbs in all the outside corner lights of control building. Replaced drive chain on #5 Primary drive unit and worked on pump #5 primary down. Worked on sealing bases of handrails (16) around primaries (#5 primary/southeast corner). Adjusted packing on both east transfer pump and circulation pump. Dumped trash cans in shop and 5 gal. buckets.

10/23/2017

10/24/2017 Changed light bulbs in control building basement and in chlorine room. Cleaned break room.

10/25/2017 Changed light bulbs and ballast in lab. Replaced baffle boards in #5 Primary. Changed pump tubing on effluent sampler. Got debris out of the north grinder. Checked light in the influent pit - it works and tried to check parking lot lights (couldn't reach them). Cleaned men's restroom. Cleaned operator room.

10/26/2017 Finished baffle board for #5 primary. Replaced and sealed blockage at old overflow on #1 primary. Started working on air handler/makeup air unit in control building basement. Checked CSO's. Put #5 primary back on line. Swept lobby and stairs.

10/27/2017 Continued work on air unit in basement (repaired break in duct work on furnace inlet). Replaced blower drive belt on same furnace. Swept upstairs/stairs. Cleaned off stirrer on sludge barrel.

10/28/2017 Turned control building heat on.

10/29/2017 East heater alarm on in am. Finished duct work repair on basement furnace. Sealed 10 more handrail pipes on #4 and #5 primary walkways. Adjusted packing on both raw sludge pumps and the packing on the east transfer pump.

10/30/2017 Swept maintenance room and disposed of wood near primary tanks.

10/31/2017 Adjusted packing on east transfer pump. Moved the temperature sensor from back door to the porch area by front door.

11/1/2017 Turned chlorine and SO2 off for the winter season (left plant water on). Took old outside hoses for SO2 tanks. Turned heat tape on at SO2 and waste sludge line.

11/2/2017 Got CSOs. Cleaned skimmer pit. Raised the front gate 2 inches and leveled the gate. Vacuumed inside the furnace in control building basement. Adjusted packing on east transfer pump.

11/3/2017 Added oil to the grit collector. Checked fire extinguishers. Cleaned debris from grate out in the influent pit and cleaned debris from the transducer. Raw pump #2 packing needs to be changed.

11/4/2017 Cleaned in digester area.

11/5/2017 Cleaned EQ tank. Cleaned in the pole barn - removed debris in middle section, cleaned floor, removed old skids, and bolted down the tongue & groove boards on south side of building. Replaced plumbing hangers for regulator lines for SO2. Put SO2 tank in chlorine room for winter and covered SO2 hoist controls. #4 primary has a wear strip broke off on the top north east corner - shut flights off and gated the tank off.

11/6/2017

11/7/2017 Cleaned in break room.

11/8/2017 Fixed wear strip on #4 primary and put tank back online. Started to clean up filter press building for demo.

11/9/2017 Got CSOs (corrected for time change - might need to look at Canal bed). Changed batteries in eastern CSO. Took trash and recyclables to the transfer station. Cleaned trash from the filter press building. Filled in around handrails (18 more holes) near 4/5 primary.

11/10/2017 Replaced flood lamp bulb at sampler barrel in sludge pump area. Remounted outside wall receptacle box on east side of the SO2 building. Replaced the light and fan switches and put on a new cover to the electric box at the entry door of the SO2 building.

11/11/2017 #2 Raw pump down for service - removed driveshaft assembly and disassembled for repair (replaced u-joints, carrier bearing, and some shaft yokes). Swept and mopped upstairs and stairs. Swept and mopped lobby and basement stairs. Cleaned the operator room.

11/12/2017 Added a packing to # 2 raw pump. Adjusted drive chain Idlers on primary tanks 1-4. Sprayed on #1 and #2 secondary tanks for 1 hour.

11/13/2017 Drained and started to clean contact tank #1. Sprayed #1 contact tank for 2 hours. Put fallen chlorine line back in cradle. Swept digester stairs. Cleaned debris from waste sludge line discharge pipe.

11/14/2017 Sprayed contact tank #1 for 2.5 hours. Filled and put #1 contact tank back online. Sprayed #6/7 secondary for 0.5 hours. Started to drain contact tank #3.

11/15/2017 Cleaned more debris and trash from pole barn and filter press building.

11/16/2017 Finished draining #3 contact and cleaned the tank. Started to fix top baffle board. Sprayed for 1.5 hours.

11/17/2017 Finished fixing baffle board and spraying on #3 contact tank (sprayed for 30 minutes). Starting filling #3 and started to drain #2 contact tank. Sprayed contact tank #2 for 30 minutes. Cleaned pump packing drain and adjusted packing on east transfer pump. Cleaned up water on digester floor.

11/18/2017 Sprayed out the EQ tank.

11/19/2017 Added a packing to the east transfer pump. Drained/cleaned/refilled #2 contact tank (sprayed for 1 hour). Mopped floor in men's restroom. Replaced broken bolts on wall mount for carrier bearing on the driveshaft for #2 raw pump.

11/20/2017 Pulled gate on #2 contact tank. Disassembled lab dishwasher to inspect filter assembly for debris - dish washer was making a loud noise Sunday - didn't see anything wrong and dishwasher worked quietly after being put back together.

11/21/2017 Turned plant water off - pump seal is leaking.

11/22/2017 Got CSOs. Replaced a bulb in the grit room. Filled 37 handrail post holes between contact tank 1/2 and secondary 2/3. Cleaned break room. Worked on getting the sludge barrel to drain. Swept west upper digester and digester stairs.

11/23/2017 Turned waste sludge on to 25% - later in the day the line plugged - opened completely to flush the line and then reset back to 25%. Cleaned up water near plant water pump - pump seal is leaking.

11/24/2017 Waste sludge line off/plugged - opened fully and then turned back to 25%. Did 3 Week maintenance: cleaned skimmer pit and put gear oil in grit collector. Hosed out EQ tank. Cleaned debris from aeration pipes and dumped buckets. Hose down influent pit and cleaned grate. Cleaned up water in aeration tunnel again - water running into tunnel between aeration tanks 4 and 5).

11/25/2017 Filled 17 more handrail post holes on walkway over secondary tanks 5, 6, and 7. Swept lobby. Swept stairs to basement. Picked up trash along the fenceline. Swept stairs in digester and upper digester.

11/26/2017 Filled 15 more handrail post holes on walkway over secondary tanks 6, 7, and at stairs to primary tanks. Cleaned debris in small gravel lot by primary tanks. Cleaned up water in aeration tunnel again.

11/27/2017 Wheeling started to haul sludge from tank #5. Turned west plant water pump on for the haulers. Waste sludge was not coming out in the am - opened valve to 100% and let it run for awhile then went back to 25%. Swept digester stairs and swept sludge in lower digester.

11/28/2017 Switched to the east plant water pump for the haulers. Looked at the gauge on south digester - not moving. Swept tool crib. Mopped up water by plant water pump.

11/29/2017 Set sampler at Keener. Got driveshaft for raw pump #2 from Powertrain. Started to install the driveshaft - it is too short. Cleaned up water in basement area. Swept in basement area and digester area. Put a new pump packing in the east transfer pump.

11/30/2017 Got sampler from Keener. Returned driveshaft for raw pump #2 to Powertrain. Turned plant water off. Pulled a light bulb from light poles with bucket truck to replace bulbs - ordered from Fastenal. Tore west water plant pump apart to fix leak. Cleaned out bay 3 of the pole barn. Swept in basement and basement stairs.

12/1/2017 Got CSOs. Changed rain gauges. Changed the battery in Water St. CSO. Cleaned out the pole barn. Changed out all the light bulbs for the parking lots. Swept and mopped control room. Swept in basement areas. Swept and mopped lobby. Swept in upper digester area. Swept tunnel area.

12/2/2017 Picked up trash along fence and yard area.

12/3/2017 Replaced light bulb in blower area and replaced bulb at end of aeration tunnel. Filled 22 more handrail pipes on walkway between #5 and 6 aeration tanks. Did 12 week maintenance: checked emergency lights - one had a bad battery in blower area, changed air filters on raw pump control panel, oiled water circulation pump on east heater, lubed blower shaft on the east heater, lubed circulation sludge pump on east heater, lubed primary tank drag units, lubed grit collector, lubed sump pumps, lubed RAS #3, and lubed raw pumps.

12/4/2017

12/5/2017

12/6/2017 Set sampler at Reclaimed. Replaced battery in the emergency light near the blower area. Picked up trash along the fence. Picked up driveshaft from Powertrain and installed driveshaft in raw pump #2. Raw pump #2 back in service. Finished installing seal kit and gasket on the west plant water pump to fix the leak. Swept digester stairs, swept upstairs, swept basement stairs, swept operator room, and cleaned sink in operator room.

12/7/2017 Picked up sampler from Reclaimed. Got CSOs. Worked on cleaning out filter building. Replaced rain gauge with a new one at the wastewater plant. Swept in upper digester areas, lower digester areas, and lobby.

12/8/2017 Checked fire extinguishers. Lubed drag units and oiled idlers on secondaries. Oiled boiler water pump. Worked clearing out filter building. Swept cobwebs off digester building windows, door, and west heater and swept mats.

12/9/2017 Swept in digester area and basement area. Put salt down on walkways/steps.

12/10/2017 Mopped lab and men's restroom. Cleared walkways/steps of snow. Replaced another light bulb in aeration tunnel. Disassembled a lamp in aeration tunnel for repair. Removed the driveshaft on #1 raw pump for repair - pump is out of service. Worked on clearing out filter building.

12/11/2017 Mopped upper digester area.

- 12/12/2017 Turned plant water pressure on/off for haulers.
- 12/13/2017 Took driveshaft for raw pump #1 to Richmond. Worked on clearing out filter building. Picked up trash outside. Swept and mopped in lobby, control room, upper and lower digester areas, tunnel, and control building basement.
- 12/14/2017 Got weekly CSOs. Worked on clearing out filter building. Repaired light fixture in aeration tunnel. Swept digester stairs and basement stairs, upper area, & stairs in control building.
- 12/15/2017 Worked on clearing out filter building - south press is out. Swept and mopped in basement areas.
- 12/16/2017 Worked on clearing out filter building. Swept and mopped in basement areas. Picked up trash outside.
- 12/17/2017 Cleaned skimmer pit. Sprayed out EQ tank. Added oil and lubed grit collector. Worked in the filter building - removing plumbing, hydraulic lines, and electrical wiring. Valve on the break tank in sub-basement is bad.
- 12/18/2017 Replaced valve on the break tank in the sub-basement. North grinder offline - one of the rollers not turning.
- 12/19/2017 Put chain back on north grinder and got north grinder running.
- 12/20/2017 Worked on clearing out filter building. Went to Powertrain to get the driveshaft for raw pump #1.
- 12/21/2017 Got CSOs. North grinder chain off - replaced the chain and replaced bolts on top cover. Returned driveshaft to Powertrain (welding not correct). Worked in filter building (removed conveyer on the inside of building). Dusted in basement areas. Swept and mopped in basement areas. Swept in control room and lobby. Picked up trash outside. Swept stairs to the control building basement, upper digester, and stairs in digester building.
- 12/22/2017 Ran to Powertrain and picked up driveshaft for raw pump #1. Assembled driveshaft for raw pump #1 for installation. North grinder stopped working again - gated and shut down grinder. Adjusted packing on #2 raw pump. Hauled trash, recyclables, and old tires to transfer station. Adjusted packing on #2 raw pump.
- 12/23/2017 Worked on installing driveshaft assembly on # 1 raw pump - upper shaft installed and lower shaft was cut too short and will have to go back to Powertrain. Swept and mopped in basement areas. Salted walkways. Swept and mopped in basement areas.
- 12/24/2017 Mopped lab, mens restroom, and lobby. Adjusted packing on #2 raw pump. Started working on 26 week maintenance - lubed raw sludge pumps, changed filters in air room, lubed sludge pumps in digester building, lubed and oiled all primary and secondary drag units, and serviced front gate. Salted the front steps.
- 12/25/2017 Worked in filter press building again, removing old conveyer assembly. Shoveled outside areas. Chains on secondary tanks 3 & 7 are slipping due to ice on sprockets - removed ice.
- 12/26/2017 Swept upstairs, stairs, and lobby. Mopped lobby & entry ways. Swept and mopped operator room.
- 12/27/2017 Replaced the probe tubing on the raw sampler. Chipped ice off sprockets on the tanks. Swept lobby, stairs to basement, and basement areas in control building. Scrapped old paint from floor in basement. Capped came off line in the influent pit from the pre aeration tank - retrieved the cap but didn't replace it yet.
- 12/28/2017 Got CSOs. Chipped ice off sprocket on the tanks. Replaced cap on line in the influent pit from the preaeration tank - tried to close valve on the line but it just kept turning.
- 12/29/2017 Changed the pump tubing influent sampler - had a hole in the line. Chipped ice off the sprockets for the tanks. Scrapped old paint on floors in control building basement. Swept upper digester areas.
- 12/30/2017 Salted and cleaned snow off walkways. Swept in digester, tunnel, and basement areas. Finished removing conveyer in filter building.
- 12/31/2017 Installed lower half of #1 raw pump driveshaft and lubed driveshaft. Dumped trash cans in paint room, tool room, and lower digester room. Swept snow off walkways. Chipped ice off sprockets for the tanks. Worked on 26 week maintenance: changed hydraulic filters on influent grinders.

Date**2017 Motor Vehicle Mechanic Work Log**

1-Jan Holiday
3-Jan Sick
4-Jan Repair MVG shop lights & restroom exhaust fan
5-Jan Start service & repair on #18, transmission repair on #8
6-Jan Weekly inspections, finish #8
9-Jan Finish #18, repair left door on #7
10-Jan Assist WWTP maint.
11-Jan Research new trucks
12-Jan Research new trucks
13-Jan Weekly inspections, meet w/Pal-fleet rep. about new service truck, update records
16-Jan Holiday
17-Jan Repair hood on #19, start electrical repair on #55
18-Jan Research new trucks
19-Jan Trip to Columbus, OH for auction preview
20-Jan Weekly inspectionsw, start bucket repair on #23
23-Jan Finish #23, start fuel system repair on #20
24-Jan Continue #20
25-Jan Service & repair lights on #6, continue #20
26-Jan Service & repair lights on #25, continue #20
27-Jan Weekly inspections, research work van, continue #20
30-Jan Finish #20, start electrical repairs on #10 & #37
31-Jan Finish #10& #37, repair lights on #20, repair wiring on #54

1-Feb Electrical & cab repair on#50
2-Feb Service & clean up #56
3-Feb Weekly inspections, weekly cleaning duties
6-Feb Start preseason mower service, update insurance records, service #12
7-Feb Continue mowers & trailer
8-Feb Repair crane on #16, continue mowers
9-Feb Continue mowers & trailer
10-Feb Weekly inspections, continue mowers
13-Feb Repair MVG air system
14-Feb Continue mowers & trailer
15-Feb Service & install trailer hitch on #39, tire repair on #8
16-Feb Service #4, assist WWTP maintenance
17-Feb PBD
20-Feb Holiday
21-Feb Service #6, tire repair #26
22-Feb Repair #23 to start, update insurance records, assist WWTP maintenance
26-Feb Update shop records, assist WWTP maintenance
24-Feb Weekly inspections & cleaning duties
27-Feb Repair #7 to run
28-Feb Continue mowers & trailer

1-Mar Continue mowers, truck & van research
2-Mar Continue mowers, truck & van research
3-Mar Weekly inspections, start brake repair on #7, start sprayer repair
6-Mar Finish sprayer, continue #7, continue mowers
7-Mar Repair lights on #56, continue #7, truck quote from Pal-Fleet
8-Mar Continue mowers
9-Mar Start exhaust repair on #14, research trucks
10-Mar Weekly inspections, finish #14, review service truck quote
13-Mar Clean out loading pit, continue #7
14-Mar Continue #7
15-Mar Continue mowers

16-Mar Service & repair brakes on #17
 17-Mar Weekly inspections & cleaning duties
 20-Mar Continue #7
 21-Mar Continue #7 & mowers
 22-Mar Finish #7, start service & repairs on #34
 23-Mar Finish #34
 24-Mar Weekly inspections & cleaning duties
 27-Mar Continue mowers
 28-Mar Update records & files
 29-Mar Create specs for new service truck
 30-Mar Continue truck & service body specs
 31-Mar Weekly inspections, assist WWTP maintenance

3-Apr Service & clean up #26
 4-Apr Research work van &/or truck
 5-Apr Assist WWTP maintenance, purchase work van, mow WWTP
 6-Apr research truck chassis w/Riedmans
 7-Apr Weekly inspections & cleaning duties, finalize service truck chassis spec
 10-Apr Order service truck chassis & body
 11-Apr Wayne Co commissioners visit WWTP, meeting w/Mike Bottomley
 12-Apr Hand gun hose reel repair on #19
 13-Apr Repair tires on #35, mow WWTP
 14-Apr Holiday
 17-Apr Vacation
 18-Apr Vacation
 19-Apr Vacation
 20-Apr Vacation
 21-Apr Vacation
 24-Apr Repair drive shaft on #39
 25-Apr Finish #39, finish #19, replace tire on #35
 26-Apr Finish prep on #5, tire repair on #56, start spindle repair on #43
 27-Apr Continue #43, replace engine belts on #35
 28-Apr Weekly inspections, finish #35

1-May Sick day (brother)
 2-May Repair deck on #35, update inspection records
 3-May Service #6, assist WWTP maintenance
 4-May Continue #43
 5-May Weekly inspections, finish #43
 8-May Mow WWTP
 9-May CDL drug test, assist WWTP maintenance
 10-May Assist street dept w/alternate RR crossing, clean out loading pit
 11-May Update records, assist WWTP maintenance, clean MVG swhop
 12-May Weekly inspections, assist WWTP maintenance, start repairs on #36
 15-May Finish #36
 16-May Hose reel repair on #19, start electrical repair on #56
 17-May Finish #56, start electrical repair on #23, start transmission repair on #7
 18-May Continue #7, repair gauges on #25
 19-May Weekly inspections, continue #7, start tire work on #54
 22-May Finish #23
 23-May Finish #54, continue #7, update inspection records
 24-May Continue #7
 25-May Finish #7
 26-May Weekly inspections, mow WWTP
 29-May Holiday
 30-May P/S repair on #39, service #26

31-May Repair gas leak on #38, chop saw repair

1-Jun Service & tire repair on #40, clean up #26

2-Jun Weekly inspections, finish #26, service #12, repair brake lights on #16

5-Jun Start engine repairs on #20

6-Jun Replace tire on #9, continue #20

7-Jun Finish #20, service #18

8-Jun Clean up #18

9-Jun Weekly inspections, repair flashers on #8, start suspension repair on #43

12-Jun Continue #43, repair tire on #35,

13-Jun Repair MVG battery charger, continue #43, update shop records

14-Jun Continue #43, start window repair on #50

15-Jun Continue #43 & #50

16-Jun Weekly inspections, continue #43 & #50

19-Jun A/C repair on #50, sharpen blades on #35

20-Jun Electrical repair on #24

21-Jun Haul top soil for service department

22-Jun A/C repair on #6, deck repair on #35

23-Jun Weekly inspections & clean up

26-Jun Finish #43

27-Jun Mow WWTP

28-Jun Service #34, finish mowing WWTP

29-Jun Service & clean up #56

30-Jun Weekly inspections, tire repair on #70, replace blade on #61, assist WWTP maint.

3-Jul Vacation

4-Jul Holiday

5-Jul Vacation

6-Jul Vacation

7-Jul Vacation

10-Jul Vacation

11-Jul Chop saw repair, 1/2 sick day-Dentist

12-Jul Crane repair on #16

13-Jul Start work on mosquito sprayer

14-Jul Weekly inspections, continue mosquito sprayer

17-Jul Assist WWTP maint. With overflow clean up

18-Jul Service #39, tire repair on #35

19-Jul Purchase new truck chassis, start repairs on #54

20-Jul Continue #54, repair #35 to run

21-Jul Weekly inspections, continue #54

24-Jul Continue #54

25-Jul PBD

26-Jul Air bag recall on #17, finish #54, CDL drug test

27-Jul Repair lights on #39, deck repair on #43, fabricate tool for #43

28-Jul Weekly inspections, start drive line repair on #35, air bag recall on #6

31-Jul start generator repair on #13

1-Aug Continue #13, air bag recall on #9

2-Aug Air bag recall on #39, start push mower repair

3-Aug Finish push mower, replace suction hose on #19

4-Aug Weekly inspections, finish #13, start repairs to #10

7-Aug Continue compressor & brake repairs on #10

8-Aug Continue #10

9-Aug Service & repair lights on #6, replace tire on #44, start crane repair on #16

10-Aug Continue #16

11-Aug Weekly inspections, meeting w/ Mike bottomly

14-Aug Repair MVG restroom water leak
 15-Aug Service #8 & start suspencion repairs
 16-Aug Finish #8
 17-Aug Sick time
 18-Aug Weekly inspections, repair #59 to run
 21-Aug Repair deck on #43, trimmer repairs
 22-Aug Service #7, repair MVG printer/copier
 23-Aug Service #17, repair P/S on #12
 24-Aug Service #20
 25-Aug Weekly inspections, 1/2 personal day
 28-Aug Clean up MVG shop
 29-Aug Assist WWTP operater, repair #32 to run
 30-Aug Assist WWTP maint., clean out loading pit
 31-Aug Assist WWTP maint.

1-Sep Weekly inspections, trip to Indy to Reading truck body
 4-Sep Holiday
 5-Sep Finish brake & tire work on #10
 6-Sep Repair deck & replace belt on #43
 7-Sep Start hydraulic repairs on #23
 8-Sep Weekly inspections, continue #23, service #26 & repair to start
 11-Sep Continue #23, assist St. Dept. with #52
 12-Sep Continue #23, repair drive shaft on #7
 13-Sep Repair front suspencion on #43
 14-Sep Mow WWTP
 15-Sep Weekly inspections, Continue #23
 18-Sep Finish #23
 19-Sep Service & clean up #18
 20-Sep Service #34
 21-Sep Trip to Indy to pick up new truck #11
 22-Sep Prep. & instruct service crew on #11 truck
 25-Sep Vacation
 26-Sep Vacation
 27-Sep Vacation
 28-Sep Vacation
 29-Sep Vacation

2-Oct Vacation
 3-Oct Vacation
 4-Oct Vacation
 5-Oct Vacation
 6-Oct Vacation
 9-Oct Holiday
 10-Oct Service #4, assist service department
 11-Oct Service #12, clean out loading pit
 12-Oct Damage estimates on #6, start brake repairs on #40
 13-Oct PBD
 16-Oct Finish #40
 17-Oct Check engine light & body work on #18
 18-Oct Flu shot, finish body work on #18
 19-Oct PBD
 20-Oct Weekly inspections, service & clean up #56
 23-Oct Tire work on #26
 24-Oct Service #39, repair lights on #4, start suspencion repair on #43
 25-Oct Crane repair on #16, start MVG heater repairs, replace tires on #12
 26-Oct Tire work on #26, replace tires on #4, continue #16

27-Oct Weekly inspections, tire work on #26, repair MVG air tank
 30-Oct Crane work on #16
 31-Oct Continue MVG heaters, continue #43

 1-Nov Continue #43
 2-Nov Finish #43
 3-Nov Weekly inspections, mow WWTP
 6-Nov Try to sell #16
 7-Nov Compressor software update on #11, CDL physical
 8-Nov Update records & files, assist WWTP maint.
 9-Nov Repair #61
 10-Nov Holiday
 13-Nov Continue #61, sharpen mower blades
 14-Nov Service & repair emissions system on #18
 15-Nov Finish #18, research auction sites to sell #16
 16-Nov Finish #61, update records
 17-Nov Weekly inspections
 20-Nov Vacation
 21-Nov Vacation
 22-Nov Vacation
 23-Nov Holiday
 24-Nov Holiday
 27-Nov Service & start running board installation on #11
 28-Nov Finish #11
 29-Nov Clean out loading pit, start tire work on #18 & #26
 30-Nov Finish #18 & #26, service #25

 1-Dec Weekly inspections, remove equipment from #13
 4-Dec Service & repair wipers on #40, repair charging system on #8
 5-Dec Repair dash light on #5, repair brakes on #10
 6-Dec Service #13, clean MVG restroom
 7-Dec Service #8, service #6, assist WWTP maint.
 8-Dec Weekly inspections, start bucket repair on #50, replace belt on #8
 11-Dec MS-4 inspection, repair lights on #39, update inspection records
 12-Dec Repair wipers on #8
 13-Dec Service and clean up #26
 14-Dec Continue MVG heater repairs
 15-Dec PBD
 18-Dec Continue MVG heater repairs
 19-Dec CDL drug test, continue MVG heaters, clean out loading pit, regrade back lot
 20-Dec City employee luncheon
 21-Dec Personal time
 22-Dec PBD
 25-Dec Holiday
 26-Dec Holiday
 27-Dec Vacation
 28-Dec Vacation
 29-Dec Bonus day