

ONWASA

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ONWASA Wastewater Facilities Annual Report 2016

The Onslow Water and Sewer Authority (ONWASA) is required by the North Carolina Clean Water act of 1999 to produce this annual report on the performance of each Publicly Operated Treatment Works (POTW) and Collection System operated and maintained by ONWASA. This report is available for public review via Internet, the ONWASA Office and Member Governments.

ONWASA is pleased to present to you this year's Wastewater Facilities Annual Report. This report is a summary of last year's wastewater facilities performance. Included are monthly descriptions of each facilities activity. Our constant goal through wastewater treatment is to protect public health and safety by minimizing the risk of further contamination to surface and ground waters, to protect the quality of surface and ground waters so they will continue to be available as a drinking water source for future generations and to prevent and abate public health hazards. We want you to understand the effort we make to continually improve the wastewater treatment process and protect our water resources. We are committed to providing you with this information, because informed customers provide support in our continuing efforts.

ONWASA manages 5 treatment facilities and 8 collection systems. The facilities are as follows: Northwest Regional Reclamation Facility, Holly Ridge Wastewater Treatment Plant, Kenwood Wastewater Treatment Plant, Swansboro Wastewater Treatment Plant, and Hickory Grove Wastewater Treatment Plan For collection and treatment Springdale and Piney Green are only collection systems operated by ONWASA and sent to Camp Lejeune and City of Jacksonville. This report contains a description and snap shot of the monthly activities of each plant and the collection system operated by ONWASA.

ONWASA has removed 1 facility this year from the system: Hickory Grove, ONWASA installed a pump station and the flow now goes the Camp Lejeune. The Plant still has its permit; we are working on shutting the plant down.

Should you have any questions regarding this report you may contact ONWASA at:

ONWASA
228 Georgetown Rd.
Jacksonville, NC 28540
onwasa.com

Swansboro: Summary

Swansboro Wastewater Treatment Facility is located at 199 Williams Street and currently has two employees. The plant is designed to treat 0.6 Million Gallons per Day (MGD) and is rated a Grade 3 facility. The average daily flow received at the plant in 2016 was 0.349 MGD, which is approximately 58% of the design flow at the wastewater plant. The facility treated a total of 127,496,436 gallons during the year, and average of 10,624,703 gallons per month.

General Information

Facility Name: Swansboro Wastewater Treatment Plant

Facility Type/ Operation: Activated Sludge Extended Air

Responsible Entity: ONWASA

Facility Address: 199 Williams Road Swansboro, NC 28584

Facility Phone: (910) 326-4819

Operator in Responsible Charge (ORC): Mike Lutz

ORC Type / Grade License: WW3

Applicable Facility Permit Numbers: WQ0023261

Description of Facility: The Wastewater Facility is located in Swansboro on Williams Road where it was constructed in 1979. A Plant upgrade was completed in July of 2007 and the capacity was increased to .6 MGD. The current plant is equipped with (1) aerated equalization basin, Automatic bar screen and grit removal system, (2) Oxidation ditches, (3) secondary clarifiers, (1) aerobic digester, (1) fine bubble sludge holding tank, (1) return sludge pump station, (1) sludge transfer station, (3) Motor control centers, (2) tertiary filters, (1) triple bank UV light system, (1) effluent pump station, (1) upset pond, and (4) low rate infiltration basins.

Swansboro Collection System

Collection System Name: Town of Swansboro Wastewater Collection System

Collection System Grade/ Type Operation: Grade 2/ Domestic

Responsible Entity: Onslow Water and Sewer Authority (ONWASA)

Facility Address: Town of Swansboro located in the eastern part of Onslow County

Contact Phone: 910-937-7560

Operator in Responsible Charge (ORC): Shawn E. Nason

ORC Type / Grade License: CS Grade 4 License # 990238

Applicable Collection System Permit Numbers: WQCS00249

2016
Swansboro WWTP
Annual WW Report

Jan.			
13,192,412	TOTAL GALLONS TREATED		
0.426	AVERAGE FLOW (MGD)		
0.605	MAX DAY (MGD)		
NO	WWTP IN COMPLIANCE (Explanation)		<div style="border: 1px solid black; padding: 5px;"> Pond 2A exceeded the daily application rate on 15,22,23,26,27 and 29 of Jan 16. Pond 3 exceeded on 22 and 23 Jan 16. On 15 Jan, received 1.55' of rain. On 23 Jan, received 2.60" of rain. On 26,27 and 29 Jan, there was no issues, but, recorded higher than normal flow. App rate exceeded due to the calculation of flow. </div>
5.21"	TOTAL INCHES RAIN FALL		
13,192,412	GALLONS APPLIED TO PONDS		
0.426	AVERAGE FLOW (PERMIT FLOW 0.6 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
0	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
0	ACRES MOWED		
Feb.			
14,174,554	TOTAL GALLONS TREATED		
0.489	AVERAGE FLOW (MGD)		
1.094	MAX DAY (MGD)		
NO	WWTP IN COMPLIANCE		<div style="border: 1px solid black; padding: 5px;"> From 3-16 Feb 16, the plant received 9.63" of rainfall w/ 8.68" from 3-8 Feb and 10.16 Total. Exceeded daily app. Rates as follows: Pond 1: 4 and 7 Feb. Pond 2A: 3-13,15 and 16 Feb. Pond 2B: 4,5,7 and 8 Feb. Pond 3: 4-9 Feb. All due to heavy rains and higher than normal flows. </div>
10.16	TOTAL INCHES RAIN FALL		
14,174,554	GALLONS APPLIED TO PONDS		
0.489	AVERAGE FLOW (PERMIT FLOW 0.6 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
0	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
0	ACRES MOWED		
Mar.			
11,854,719	TOTAL GALLONS TREATED		
0.382	AVERAGE FLOW (MGD)		
0.506	MAX DAY (MGD)		
YES	WWTP IN COMPLIANCE (Explanation)		<div style="border: 1px solid black; height: 60px; width: 100%;"></div>
3.43	TOTAL INCHES RAIN FALL		
11,854,719	GALLONS APPLIED TO PONDS		
0.382	AVERAGE FLOW (PERMIT FLOW 0.6 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
0	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
0	ACRES MOWED		
Apr.			
9,608,722	TOTAL GALLONS TREATED		
0.320	AVERAGE FLOW (MGD)		
417,961.000	MAX DAY (MGD)		
YES	WWTP IN COMPLIANCE (Explanation)		<div style="border: 1px solid black; height: 60px; width: 100%;"></div>
2.48	TOTAL INCHES RAIN FALL		
9,608,722	GALLONS APPLIED TO PONDS		
0.320	AVERAGE FLOW (PERMIT FLOW 0.6 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
0	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
43.5	ACRES MOWED		
May			
9,819,446	TOTAL GALLONS TREATED		
0.317	AVERAGE FLOW (MGD)		
0.512	MAX DAY (MGD)		
YES	WWTP IN COMPLIANCE		<div style="border: 1px solid black; height: 60px; width: 100%;"></div>
6.4	TOTAL INCHES RAIN FALL		
9,819,446	GALLONS APPLIED TO PONDS		
0.317	AVERAGE FLOW (PERMIT FLOW 0.6 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
0	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
73	ACRES MOWED		
Jun.			
10,827,407	TOTAL GALLONS TREATED		
0.361	AVERAGE FLOW (MGD)		
0.735	MAX DAY (MGD)		
NO	WWTP IN COMPLIANCE		<div style="border: 1px solid black; padding: 5px;"> On Jun 7-8 16, 3.90" of rain was received. On 7 Jun 16 the plant flow was 735,496 GPD, this resulted in the daily loading rate to be exceeded in ponds 1, 2A, 2B and 3. Loading rates are .9044 for all ponds. Pond loading rate was 1.11 for that day. </div>
6.54	TOTAL INCHES RAIN FALL		
10,827,407	GALLONS APPLIED TO PONDS		
0.361	AVERAGE FLOW (PERMIT FLOW 0.6 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
0	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
73	ACRES MOWED		

Jul.
 9,735,525 TOTAL GALLONS TREATED
 0.314 AVERAGE FLOW (MGD)
 0.398 MAX DAY (MGD)
 YES **WWTP IN COMPLIANCE**
 8.31 TOTAL INCHES RAIN FALL
 9,735,525 GALLONS APPLIED TO PONDS
 0.314 AVERAGE FLOW (PERMIT FLOW 0.6 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 48 ACRES MOWED

Aug.
 9,095,714 TOTAL GALLONS TREATED
 0.293 AVERAGE FLOW (MGD)
 0.405 MAX DAY (MGD)
 Yes **WWTP IN COMPLIANCE**
 4.91 TOTAL INCHES RAIN FALL
 9,095,714 GALLONS APPLIED TO PONDS
 0.293 AVERAGE FLOW (PERMIT FLOW 0.6 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 30 ACRES MOWED

Sep.
 11,572,387 TOTAL GALLONS TREATED
 0.386 AVERAGE FLOW (MGD)
 0.797 MAX DAY (MGD)
 NO **WWTP IN COMPLIANCE**
 15.59 TOTAL INCHES RAIN FALL
 11,572,387 GALLONS APPLIED TO PONDS
 0.386 AVERAGE FLOW (PERMIT FLOW 0.6 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 33 ACRES MOWED

On Sept. 2 2016 the application rate for all 4 ponds (0.9044 GPD/ft²) was exceeded (1.20 GPD/ft²). This was due to 6" of rain from Tropical Storm Hermine.

Oct.
 11,023,617 TOTAL GALLONS TREATED
 0.356 AVERAGE FLOW (MGD)
 0.745 MAX DAY (MGD)
 NO **WWTP IN COMPLIANCE**
 4.4 TOTAL INCHES RAIN FALL
 11,023,617 GALLONS APPLIED TO PONDS
 0.356 AVERAGE FLOW (PERMIT FLOW 0.6 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 ACRES MOWED

On Oct. 8th the application rate for all four ponds was exceeded. This was due to the 3.15" of rain from Hurricane Matthew.

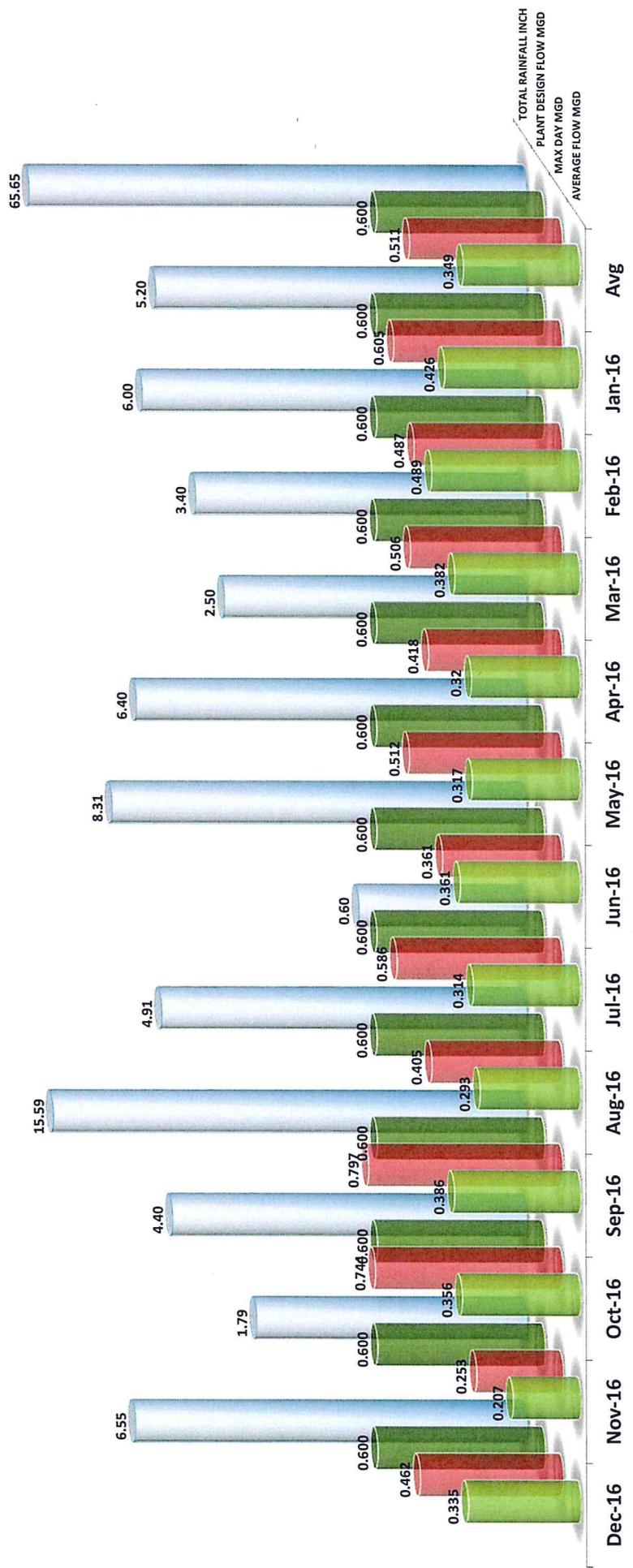
Nov.
 7,170,846 TOTAL GALLONS TREATED
 0.239 AVERAGE FLOW (MGD)
 0.332 MAX DAY (MGD)
 Yes **WWTP IN COMPLIANCE**
 1.81 TOTAL INCHES RAIN FALL
 7,170,846 GALLONS APPLIED TO PONDS
 0.239 AVERAGE FLOW (PERMIT FLOW 0.6 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 0 ACRES MOWED

Dec.
 10,377,773 TOTAL GALLONS TREATED
 0.335 AVERAGE FLOW (MGD)
 0.462 MAX DAY (MGD)
 Yes **WWTP IN COMPLIANCE (Explanation)**
 6.55 TOTAL INCHES RAIN FALL
 10,377,773 GALLONS APPLIED TO PONDS
 0.335 AVERAGE FLOW (PERMIT FLOW 0.6 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 0 ACRES MOWED

128,453,122	Total Treated		
128,453,122	Total Spray	0	Total Footage Pipe Cleaned
0.351	Average MG/day treated	0	Total Footage Pipe Videoed
0.351	Average MG/day to the ponds		

Swansboro WWTP

■ AVERAGE FLOW MGD
 ■ MAX DAY MGD
 ■ PLANT DESIGN FLOW MGD
 ■ TOTAL RAINFALL INCH



Holly Ridge: Summary

Holly Ridge Wastewater Treatment Plant (WWTP) is located at 286 N. Jenkins Street and is currently staffed by three plant operators. The plant has a design capacity of 0.261 million gallons per day (MGD). The average flow at the plant in 2016 was 0.231 MGD, which is 88.5 % of the permitted design flow of the wastewater plant. The facility treated a total of 84,240,965 gallons during the past year an average of 7,020,080 gallons per month.

General Information

Facility Name: Holly Ridge WWTP and Wastewater Surface Irrigation

Facility Type/ Operation: Grade 2 WWTP and Surface Irrigation Facility

Responsible Entity: ONWASA

Facility Address: 286 N. Jenkins St. Holly Ridge, N.C. 28445 (WWTP) 220

Dolph Everett Rd. Holly Ridge, N.C. 28445 (Surface Irrigation Facility)

Facility Phone: 910 329-0951

Operator in Responsible Charge (ORC): Mark C. Young

ORC Type / Grade License: WW4, SI, SS

Applicable Facility Permit Numbers: WQ0019907

Description of Facility: The Holly Ridge WWTP is a 260,626 GPD Wastewater treatment facility consisting of headworks with manual bar screen and grit chamber, influent flow measurement with ultrasonic flow meter; a 1.82 (MG) treatment lagoon with three (3) aeration cells (cells 1&2 each have 2-25 HP aerators with anti-erosion baffles, cell 3 has 2-25 HP mixers with anti-erosion baffles), a 0.49 MG settling cell; an ultraviolet (UV) disinfection system; a 22,400 gallon aerobic sludge digester with a 2 HP aerator and 3 HP discharge pump; an effluent pump station with duplex 450 GPM pumps; and 17,900 ft. of 8 in. force main to Surface Irrigation Facility. The Surface Irrigation is a 240,179 GPD facility consisting of a 13.30 MG storage lagoon (51 days storage); ten(10) spray fields consisting of 93.42 wetted acres (789 total spray heads); and an irrigation pump station with dual 700 GPM pumps and an effluent flow meter. The Holly Ridge WWTP and Surface Irrigation Facility is a Non-Discharge facility.

Holly Ridge Collection System

Collection System Name: Town of Holly Ridge Wastewater Collection System

Collection System Grade/ Type Operation: Grade 1/ Domestic

Responsible Entity: Onslow Water and Sewer Authority (ONWASA)

Facility Address Town of Holly Ridge located in the southeast part of Onslow County

Contact Phone: 910-937-7560

Operator in Responsible Charge (ORC): Shawn E. Nason

ORC Type / Grade License: CS Grade 4 License #990238

Applicable Collection System Permit Numbers: WQCS00249

2016
Holly Ridge
Annual WW Report

Jan.			
7,596,850	TOTAL GALLONS TREATED		
0.245	AVERAGE FLOW (MGD)		
0.324	MAX DAY (MGD)		
NO	WWTP IN COMPLIANCE		The 2' freeboard was not maintained from 1-9 Jan 16 due to the excessive rainfall in Dec 15. On 10 Jan 16, the freeboard was at 2' and remained in compliance thru the remainder of month, 2.25 on 30 Jan 16.
3.9	TOTAL INCHES RAIN FALL		
6,105,025	GALLONS SPRAYED		
0.197	AVERAGE FLOW (PERMIT FLOW 0.24 MGD)		
NO	OVERFLOW AT FACILITY?		
NO	COLLECTION SYSTEM PIPE CLEANED		
	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
2	ACRES MOWED		
Feb.			
7,472,330	TOTAL GALLONS TREATED		
0.258	AVERAGE FLOW (MGD)		
0.456	MAX DAY (MGD)		
NO	WWTP IN COMPLIANCE (Explanation)		The 2' freeboard was compliant from 1- 4 Feb 16, (2.4' on 3 Feb 16). Lost freeboard due to 5.96" of rain on 3-4 Feb and 2.97" of rain on 7 Feb. Freeboard was at .90' on 8 Feb. On 29 Feb 16, freeboard was at 1.50'. 10.43" total rainfall.
10.43	TOTAL INCHES RAIN FALL		
5,685,730	GALLONS SPRAYED		
0.196	AVERAGE FLOW (PERMIT FLOW 0.24 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
0	ACRES MOWED		
Mar.			
6,457,650	TOTAL GALLONS TREATED		
0.208	AVERAGE FLOW (MGD)		
0.258	MAX DAY (MGD)		
NO	WWTP IN COMPLIANCE		The 2' freeboard was non-compliant from 1-13 Mar 16. This was due to the heavy rains from Feb 16. On 14 Mar 16 the freeboard was achieved and maintained for the remainder of the month. On 31 Mar 16, the freeboard was at 2.65'.
3.52	TOTAL INCHES RAIN FALL		
6,495,085	GALLONS SPRAYED		
0.210	AVERAGE FLOW (PERMIT FLOW 0.24 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
6.5	ACRES MOWED		
Apr.			
5,866,380	TOTAL GALLONS TREATED		
0.196	AVERAGE FLOW (MGD)		
0.238	MAX DAY (MGD)		
Yes	WWTP IN COMPLIANCE (Explanation)		The 2' freeboard was maintained throught the month. On 1 Apr 16, FB was at 2.65' and was at 4.30' on 30 Apr 16.
1.38	TOTAL INCHES RAIN FALL		
6,212,220	GALLONS SPRAYED		
0.207	AVERAGE FLOW (PERMIT FLOW 0.24 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
65	ACRES MOWED		
May			
7,046,150	TOTAL GALLONS TREATED		
0.227	AVERAGE FLOW (MGD)		
0.294	MAX DAY (MGD)		
YES	WWTP IN COMPLIANCE (Explanation)		
10.82	TOTAL INCHES RAIN FALL		
2,903,005	GALLONS SPRAYED		
0.094	AVERAGE FLOW (PERMIT FLOW 0.24 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
40	ACRES MOWED		
Jun.			
6,834,690	TOTAL GALLONS TREATED		
0.228	AVERAGE FLOW (MGD)		
293,100.000	MAX DAY (MGD)		
YES	WWTP IN COMPLIANCE		
5.78	TOTAL INCHES RAIN FALL		
4,523,765	GALLONS SPRAYED		
0.151	AVERAGE FLOW (PERMIT FLOW 0.24 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
159.43	ACRES MOWED		

Jul.
 6,759,820 TOTAL GALLONS TREATED
 0.218 AVERAGE FLOW (MGD)
 0.317 MAX DAY (MGD)
 YES **WWTP IN COMPLIANCE**
 10.43 TOTAL INCHES RAIN FALL
 5,361,390 GALLONS SPRAYED
 0.173 AVERAGE FLOW (PERMIT FLOW 0.24 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 123.57 ACRES MOWED



Aug.
 8,036,050 TOTAL GALLONS TREATED
 0.259 AVERAGE FLOW (MGD)
 0.371 MAX DAY (MGD)
 YES **WWTP IN COMPLIANCE (Explanation)**
 8.89 TOTAL INCHES RAIN FALL
 5,689,405 GALLONS SPRAYED
 0.184 AVERAGE FLOW (PERMIT FLOW 0.24 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 167.47 ACRES MOWED

147.47 acres were spray fields mowed by staff.
 20 acres were mowed by grass cutting crew at
 HRWWTP, Spray Fields and Summerhouse.

Sep.
 5,380,055 TOTAL GALLONS TREATED
 0.179 AVERAGE FLOW (MGD)
 0.559 MAX DAY (MGD)
 NO **WWTP IN COMPLIANCE (Explanation)**
 26.19 TOTAL INCHES RAIN FALL
 5,380,055 GALLONS SPRAYED
 0.179 AVERAGE FLOW (PERMIT FLOW 0.24 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 15 ACRES MOWED

Freeboard was less than 2' for most of the month
 due to the large amount of rain fall received
 during the month.

Oct.
 8,320,970 TOTAL GALLONS TREATED
 0.268 AVERAGE FLOW (MGD)
 0.418 MAX DAY (MGD)
 No **WWTP IN COMPLIANCE (Explanation)**
 6.99 TOTAL INCHES RAIN FALL
 7,847,389 GALLONS SPRAYED
 0.253 AVERAGE FLOW (PERMIT FLOW 0.24 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 60.91 ACRES MOWED

Plant exceeded flow limits due to heavy rain and
 flow associated with Hurricane Matthew

Nov.
 6,214,160 TOTAL GALLONS TREATED
 0.207 AVERAGE FLOW (MGD)
 0.253 MAX DAY (MGD)
 Yes **WWTP IN COMPLIANCE**
 1.79 TOTAL INCHES RAIN FALL
 4,862,695 GALLONS SPRAYED
 0.157 AVERAGE FLOW (PERMIT FLOW 0.24 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 31.27 ACRES MOWED



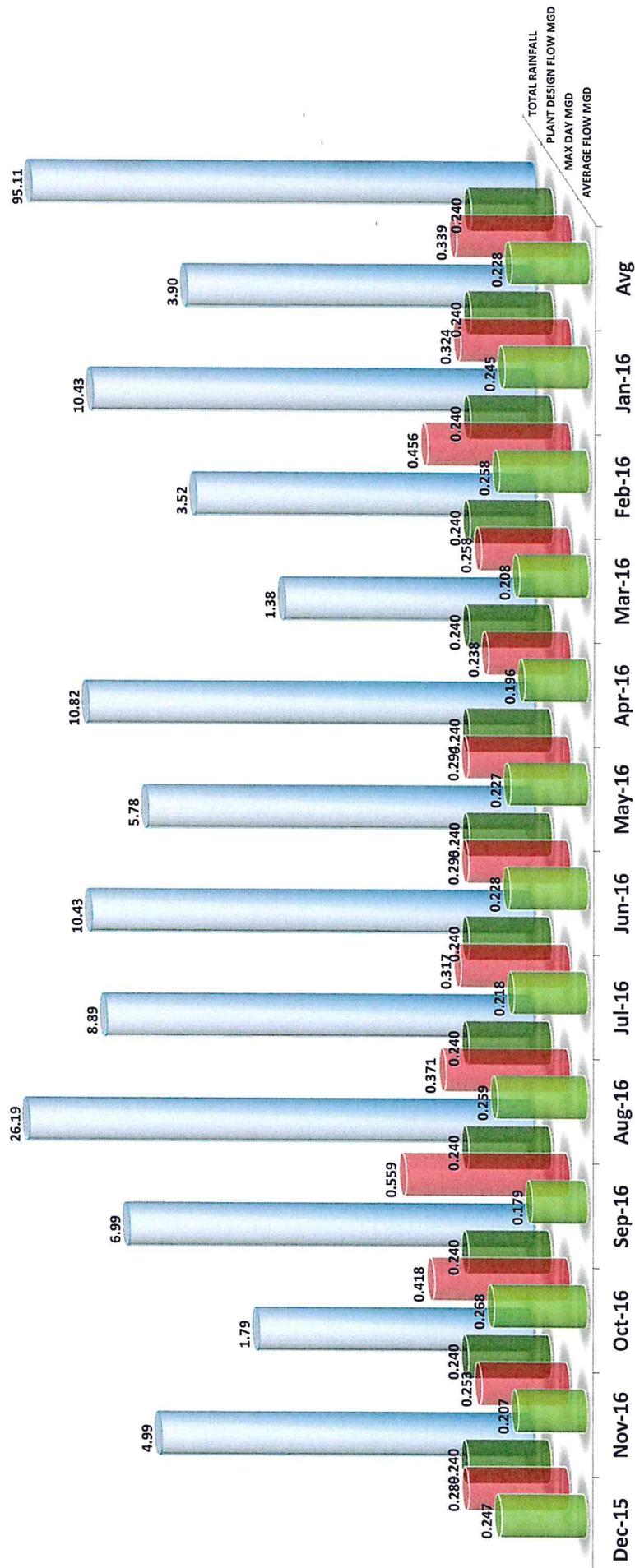
Dec.
 7,664,590 TOTAL GALLONS TREATED
 0.247 AVERAGE FLOW (MGD)
 0.289 MAX DAY (MGD)
 Yes **WWTP IN COMPLIANCE**
 4.99 TOTAL INCHES RAIN FALL
 5,026,295 GALLONS SPRAYED
 0.162 AVERAGE FLOW (PERMIT FLOW 0.24 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 0 ACRES MOWED



83,649,695	Total Treated		
66,092,059	Total Spray	0.00	Total Footage Pipe Cleaned
0.22	Average MG/day treated	0	Total Footage Pipe Videoed
0.180	Average MG/day sprayed		

Holly Ridge WWTP

■ AVERAGE FLOW MGD
 ■ MAX DAY MGD
 ■ PLANT DESIGN FLOW MGD
 ■ TOTAL RAINFALL



Richlands: Summary

This Plant was replaced by the Northwest Regional Reclamation Facility in April 1, 2015.

Richlands: Collection System

Collection System Name: Town of Richlands Wastewater Collection System

Collection System Grade/ Type Operation: Grade 2/ Domestic

Responsible Entity: Onslow Water and Sewer Authority (ONWASA)

Facility Address: Town of Richlands located in the northwest part of Onslow County

Contact Phone: 910-937-7560

Operator in Responsible Charge (ORC): Shawn E. Nason

ORC Type / Grade License: CS Grade 4 License # 990238

Applicable Collection System Permit Numbers: WQCS00249

Northwest Regional Reclamation Facility: Summary

Northwest Regional Reclamation Facility (WWTP) is located at 189 Mills Field Road and is currently staffed by three plant operators. The plant has a design capacity of 1.273 million gallons per day (MGD). The average flow at the plant in 2016 was 0.268 MGD, which is 24.7% of the permitted design flow of the wastewater plant. The facility treated a total of 114,939,174 gallons during the past year an average of 9,578,264 gallons per month.

General Information

Facility Name: Northwest Regional Reclamation Facility
Type/ Operation: Grade 4 WWTP and High-rate Infiltration Facility
Responsible Entity: ONWASA
Facility Address: 189 Mills Field Road Richlands, N.C. 28574
Facility Phone: 910 937-7572
Operator in Responsible Charge (ORC): Mark C. Young
ORC Type / Grade License: WW4, SI, SS,
Applicable Facility Permit Numbers: WQ0034367

Description of Facility: The Northwest Regional Reclamation Facility design flow is 1,272,973 (GPD) wastewater treatment, high infiltration and reclaimed water bulk distribution system. The plant has: plant drain station, influent flow meter, 2 fine screen/grit removal systems, flow splitter box, 2 sequencing batch reactors, 2 sludge digesters, post EQ basin, 2 tertiary disc filter units, membrane feed tank, membrane skids for blowers, UV disinfection system, 3 chemical bulk tanks and 4 high –rate infiltration basins,

Richlands Collection System

Collection System Name: Richlands Wastewater Collection System
Collection System Grade/ Type Operation: Grade 2/ Domestic
Responsible Entity: Onslow Water and Sewer Authority (ONWASA)
Facility Address: Town of Richlands located in the northwest part of Onslow County
Contact Phone: 910-937-7560
Operator in Responsible Charge (ORC): Shawn E. Nason
ORC Type / Grade License: CS Grade 4 License #990238
Applicable Collection System Permit Numbers: WQCS00249

2016
Northwest WRF
Annual WW Report

Jan.			
12,978,011	TOTAL GALLONS TREATED		
0.419	AVERAGE FLOW (MGD)		
0.862	MAX DAY (MGD)		
Yes	WWTP IN COMPLIANCE (Explanation)		
4.45	TOTAL INCHES RAIN FALL		
12,978,011	GALLONS APPLIED TO PONDS		
0.419	AVERAGE FLOW (PERMIT FLOW 1.27 MGD)		
No	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
0	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
45	ACRES MOWED		
Feb.			
15,385,200	TOTAL GALLONS TREATED		
0.531	AVERAGE FLOW (PERMIT FLOW 1.27 MGD)		
1.131	MAX DAY (MGD)		
No	WWTP IN COMPLIANCE		Plant exceeded allotment applied to basin D on Feb. 6. Staff opened additional valves to the basin to accommodate for higher than normal flows received at the plant from rain. It was discovered the SCADA was producing false numbers at the start of the day and the numbers were recalculated. Staff is working with Mckim and Creed on the issue.
9.4	TOTAL INCHES RAIN FALL		
15,385,200	GALLONS APPLIED TO PONDS		
0.531	AVERAGE FLOW (PERMIT FLOW 1.27 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
0	COLLECTION SYSTEM PIPE VIDEOED		
0	COLLECTION SYSTEM OVERFLOWS?		
0	ACRES MOWED		
Mar.			
8,857,755	TOTAL GALLONS TREATED		
0.286	AVERAGE FLOW (MGD)		
0.544	MAX DAY (MGD)		
Yes	WWTP IN COMPLIANCE (Explanation)		
3.85	TOTAL INCHES RAIN FALL		
8,857,755	GALLONS APPLIED TO PONDS		
0.286	AVERAGE FLOW (PERMIT FLOW 1.27 MGD)		
No	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
0	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
40	ACRES MOWED		
Apr.			
6,686,804	TOTAL GALLONS TREATED		
0.223	AVERAGE FLOW (MGD)		
0.390	MAX DAY (MGD)		
Yes	WWTP IN COMPLIANCE (Explanation)		On 5 Apr 16 the plant had a fecal coliform level higher than the permitted limit. The result occurred during new operator training. The ORC spoke with the State about the fecal and was advised that it would not cause the plant to be non-compliant. However, it will be reported on the NDMR.
2	TOTAL INCHES RAIN FALL		
6,686,804	GALLONS APPLIED TO PONDS		
0.223	AVERAGE FLOW (PERMIT FLOW 1.27 MGD)		
No	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
0	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
40	ACRES MOWED		
May			
9,474,468	TOTAL GALLONS TREATED		
0.306	AVERAGE FLOW (MGD)		
0.692	MAX DAY (MGD)		
No	WWTP IN COMPLIANCE		Plant exceeded effluent BOD limit on May 4, 2016. Plant also exceeded monthly averages for Total Nitrogen and Nitrates limits. Plant and Chemical adjustments are being made to reduce the levels. Possible causes are due to seasonal changes and leachate being fed to the plant.
9.3	TOTAL INCHES RAIN FALL		
9,474,468	GALLONS APPLIED TO PONDS		
0.306	AVERAGE FLOW (PERMIT FLOW 1.27 MGD)		
NO	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
0	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
80	ACRES MOWED		
Jun.			
8,435,769	TOTAL GALLONS TREATED		
0.281	AVERAGE FLOW (MGD)		
0.699	MAX DAY (MGD)		
No	WWTP IN COMPLIANCE		The plant exceeded limits for BOD, NH3, TSS, No3, and Fecal for the month. Staff continues to make adjustments to chemical feed in the SBR's and have cleaned a lot of the plant's equipment/tanks/ instruments. Discoloration of the water in the plant has presented problems and the UV system is unable to achieve the proper UVI for treatment.
3.15	TOTAL INCHES RAIN FALL		
8,435,769	GALLONS APPLIED TO PONDS		
0.281	AVERAGE FLOW (PERMIT FLOW 1.27 MGD)		
No	OVERFLOW AT FACILITY?		
0	COLLECTION SYSTEM PIPE CLEANED		
0	COLLECTION SYSTEM PIPE VIDEOED		
NO	COLLECTION SYSTEM OVERFLOWS?		
N/A	ACRES MOWED		

Jul.
 7,961,394 TOTAL GALLONS TREATED
 0.257 AVERAGE FLOW (MGD)
 0.594 MAX DAY (MGD)
 NO **WWTP IN COMPLIANCE**
 6 TOTAL INCHES RAIN FALL
 7,961,394 GALLONS APPLIED TO PONDS
 0.257 AVERAGE FLOW (PERMIT FLOW 1.27 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 ACRES MOWED

At the time of this report. The staff has been able to bring most of the previous months violations back in to compliance. The plant did exceed BOD limits again this month likely due to over De-chlorination of samples by the plant staff and Lab staff. We cont. to work on the UV system and deal with the discoloration of the water.

Aug.
 7,408,817 TOTAL GALLONS TREATED
 0.239 AVERAGE FLOW (MGD)
 801,552.000 MAX DAY (MGD)
 NO **WWTP IN COMPLIANCE**
 6 TOTAL INCHES RAIN FALL
 7,408,817 GALLONS APPLIED TO PONDS
 0.239 AVERAGE FLOW (PERMIT FLOW 1.27 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 ACRES MOWED

Plant had violations for BOD and TSS. Further investigation has begun concerning the Leachate effects on the plant. Plant adjustments and maintenance have been performed to help the water quality. The NCDWR have been notified of all violations and corrective actions.

Sep.
 11,158,208 TOTAL GALLONS TREATED
 0.372 AVERAGE FLOW (MGD)
 1.188 MAX DAY (MGD)
 No **WWTP IN COMPLIANCE**
 10.6 TOTAL INCHES RAIN FALL
 11,158,208 GALLONS APPLIED TO PONDS
 0.372 AVERAGE FLOW (PERMIT FLOW 1.27 MGD)
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 ACRES MOWED

The plant had a few more violations for BOD. Additional sampling throughout the plant is being conducted to assist with possible plant adjustments. Also, there were violations for fecal and Nitrate. The fecal violations were likely from the CL17 malfunctioning and recording levels incorrectly. The nitrates have run high all month and staff had stopped feeding Carbon on the advise of the Engineer. On 9/30 we re-started a low dose of Carbon to assist with the Nitrates in the plant.

Oct.
 11,696,200 TOTAL GALLONS TREATED
 0.377 AVERAGE FLOW (MGD)
 1.238 MAX DAY (MGD)
 No **WWTP IN COMPLIANCE**
 9.3 TOTAL INCHES RAIN FALL
 11,696,200 GALLONS APPLIED TO PONDS
 0.377 AVERAGE FLOW (PERMIT FLOW 1.27 MGD)
 No OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 ACRES MOWED

The plant had excursions for TSS and Nitrates. We continue to work with Evoqua and the engineers bring the plant into compliance. Current focus is on making further SBR adjustment to improve the denitrification which will reduce the nitrates in the plant. Carbon is also being fed to assist with the levels and some improvements have been noticed in the results.

Nov.
 6,445,766 TOTAL GALLONS TREATED
 0.215 AVERAGE FLOW (MGD)
 0.401 MAX DAY (MGD)
 No **WWTP IN COMPLIANCE**
 0.9 TOTAL INCHES RAIN FALL
 6,445,766 GALLONS APPLIED TO PONDS
 0.215 AVERAGE FLOW (PERMIT FLOW 1.27 MGD)
 No OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 0 ACRES MOWED

The plant continues to have violations for Nitrates. Changes were made to operations of the SBRs to run the aeration on timers verses DO levels. This is an ongoing process and staff is making adjustments to fine tune the operation. The membranes were put back in service on 11 29-16.

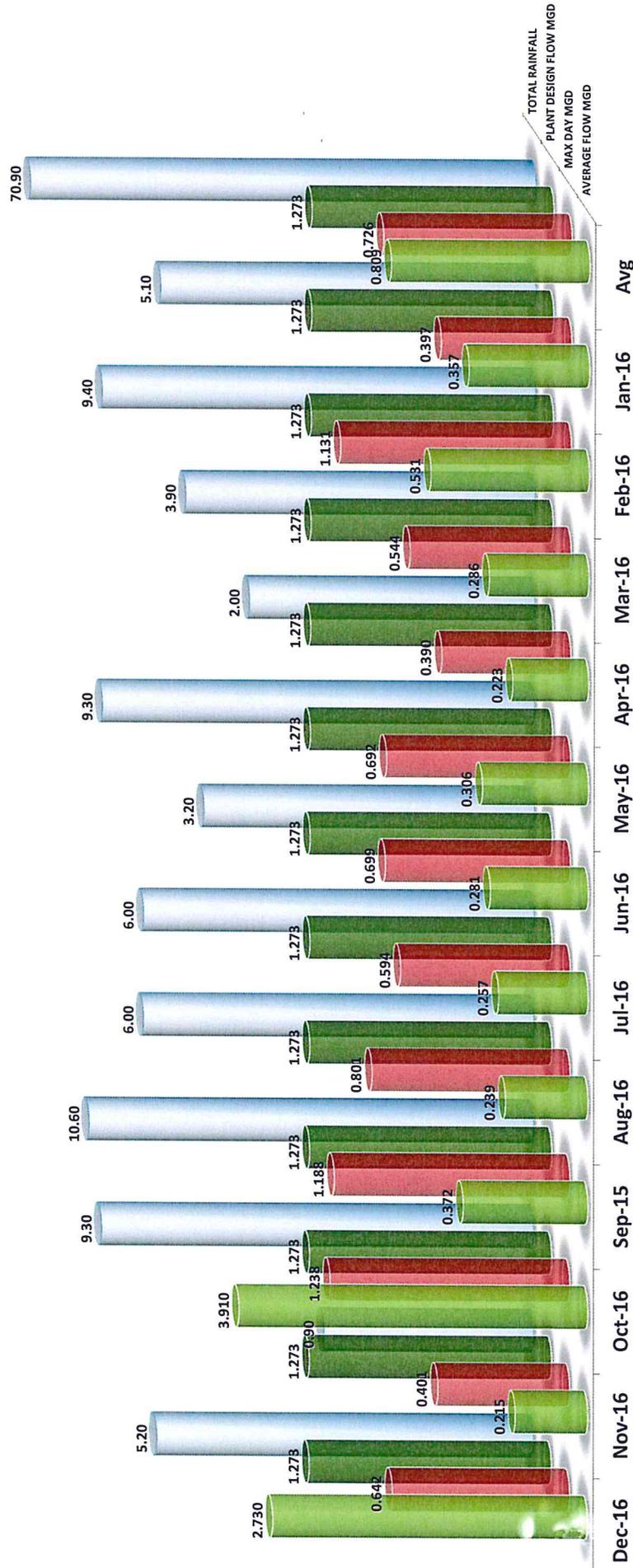
Dec.
 8,450,782 TOTAL GALLONS TREATED
 0.273 AVERAGE FLOW (MGD)
 0.642 MAX DAY (MGD)
 No **WWTP IN COMPLIANCE (Explanation)**
 5.15 TOTAL INCHES RAIN FALL
 8,450,782 GALLONS APPLIED TO PONDS
 0.273 AVERAGE FLOW (PERMIT FLOW 1.27 MGD)
 No OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?
 5 ACRES MOWED

The plant had violations for nitrates, fecal, BOD and NH3. Additional changes were made to the SBR operations and by the end of the month the nitrates had come back into compliance. The fecal violations were due to irratic feed rates in the chlorine system. The NH3 was due to the adjustments on the SBR's and wam temp. BOD results for the last week of the month were estimated due to high chlorine levels in the samples.

114,939,174	Total Treated		
114,939,174	Total Infiltrated		
0.315	Average MG/day treated	0	Total Footage Pipe Cleaned
0.315	Average MG/day sprayed		Total Footage Pipe Videoed

Northwest Regional Reclamation Facility

■ AVERAGE FLOW MGD
 ■ MAX DAY MGD
 ■ PLANT DESIGN FLOW MGD
 ■ TOTAL RAINFALL



Kenwood: Summary

Kenwood Wastewater Treatment Facility is located at 507 OCI Drive in Kenwood Subdivision off Blue Creek Road. The plant currently has one employee. The plant has a design capacity of 0.049 mgd. The average flow for 2016 was .029 MGD, which is 58 % of the design flow of the wastewater plant. The facility treated a total of 10,364,468 gallons during the year, which averages 863,706 gallons per month.

Kenwood: General Information

Facility Name: Kenwood Wastewater Treatment Plant

Facility Type/ Operation: Activated Sludge Extend Air

Responsible Entity: ONWASA

Facility Address: 501 OCI Dr. Jacksonville, NC 28540

Facility Phone: (910) 455-0722

Operator in Responsible Charge (ORC): Allen Rhue

ORC Type / Grade License: WW4, CS2, SS, PC1

Applicable Facility Permit Numbers: NC 0030813

Description of Facility: Wastewater Facility is located in the southwest area of Onslow County where it was constructed in 1976. The current plant is a .049 gallons per day, Treatment Facility. The Treatment process consist of, bar screens, flow equalization basin, 2 clarifiers, 2 sand filters, clear well, effluent with gaseous chlorine and sodium bisulfite de-chlorination system.

Kenwood: Collection System

Collection System Name: Kenwood Subdivision

Collection System Grade/ Type Operation: Grade 1/ Domestic

Responsible Entity: Onslow Water and sewer Authority ONWASA

Facility Address: Southwest area of Onslow County

Contact Phone: (910)-937-7560

Operator in Responsible Charge (ORC): Shawn E. Nason

ORC Type / Grade License: CS Grade 4 License # 990238

Applicable Collection System Permit Numbers: WQCS00249

2016
Kenwood
Annual WW Report

Jan.
1,137,510 TOTAL GALLONS TREATED
0.037 AVERAGE FLOW (MGD) (PERMIT FLOW 0.049 MGD)
0.064 MAX DAY (MGD)
YES **WWTP IN COMPLIANCE (Explanation)**
3.55 TOTAL INCHES RAIN FALL
NO OVERFLOW AT FACILITY?
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Feb.
1,116,950 TOTAL GALLONS TREATED
0.040 AVERAGE FLOW (MGD) (PERMIT FLOW 0.049 MGD)
0.101 MAX DAY (MGD)
Yes **WWTP IN COMPLIANCE**
10 TOTAL INCHES RAIN FALL
NO OVERFLOW AT FACILITY?
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
COLLECTION SYSTEM OVERFLOWS?

Mar.
908,560 TOTAL GALLONS TREATED
0.029 AVERAGE FLOW (MGD) (PERMIT FLOW 0.049 MGD)
0.048 MAX DAY (MGD)
Yes **WWTP IN COMPLIANCE**
3.8 TOTAL INCHES RAIN FALL
NO OVERFLOW AT FACILITY?
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
Yes COLLECTION SYSTEM OVERFLOWS?

Apr.
720,646 TOTAL GALLONS TREATED
0.024 AVERAGE FLOW (MGD) (PERMIT FLOW 0.049 MGD)
0.030 MAX DAY (MGD)
No **WWTP IN COMPLIANCE (Explanation)** Exceeded Effluent BOD Limit on April 27, 2016.
2.8 TOTAL INCHES RAIN FALL
No OVERFLOW AT FACILITY?
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
No COLLECTION SYSTEM OVERFLOWS?

May
1,007,560 TOTAL GALLONS TREATED
0.033 AVERAGE FLOW (MGD) (PERMIT FLOW 0.049 MGD)
0.071 MAX DAY (MGD)
Yes **WWTP IN COMPLIANCE**
13.2 TOTAL INCHES RAIN FALL
No OVERFLOW AT FACILITY?
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Jun.
780,964 TOTAL GALLONS TREATED
0.026 AVERAGE FLOW (MGD) (PERMIT FLOW 0.049 MGD)
0.051 MAX DAY (MGD)
No **WWTP IN COMPLIANCE** Plant exceeded the BOD limit on the last sample day of the month likely caused from excessive de-chlorination of the sample. All samples collected prior for the month were in compliance.
5.85 TOTAL INCHES RAIN FALL
No OVERFLOW AT FACILITY?
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Jul.
 766,978 TOTAL GALLONS TREATED
 0.025 AVERAGE FLOW (MGD) (PERMIT FLOW 0.049 MGD)
 0.065 MAX DAY (MGD)
 Yes **WWTP IN COMPLIANCE** Monthly BOD was 11.025 mg/l. Limit is 11mg/l.
 12.95 TOTAL INCHES RAIN FALL
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?

Aug.
 647,442 TOTAL GALLONS TREATED
 0.021 AVERAGE FLOW (MGD) (PERMIT FLOW 0.049 MGD)
 0.042 MAX DAY (MGD)
 NO **WWTP IN COMPLIANCE** Failed on several BOD samples. We are working with the lab and DWQ to resolve. Looking into interference of dechlor chemical causing false BOD results.
 7.04 TOTAL INCHES RAIN FALL
 NO OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?

Sep.
 916,797 TOTAL GALLONS TREATED
 0.031 AVERAGE FLOW (MGD) (PERMIT FLOW 0.049 MGD)
 0.104 MAX DAY (MGD)
 NO **WWTP IN COMPLIANCE** Failed two BOD samples. We are continuing to work with the lab and DWQ to resolve. Looking into interference of dechlor chemical causing false BOD results.
 13.6 TOTAL INCHES RAIN FALL
 No OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?

Oct.
 838,601 TOTAL GALLONS TREATED
 0.027 AVERAGE FLOW (MGD) (PERMIT FLOW 0.049 MGD)
 0.100 MAX DAY (MGD)
 No **WWTP IN COMPLIANCE** Failed one BOD sample and a Fecal sample. Still working with state on addressing BOD. A second fecal sample on that week.
 7.2 TOTAL INCHES RAIN FALL
 No OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?

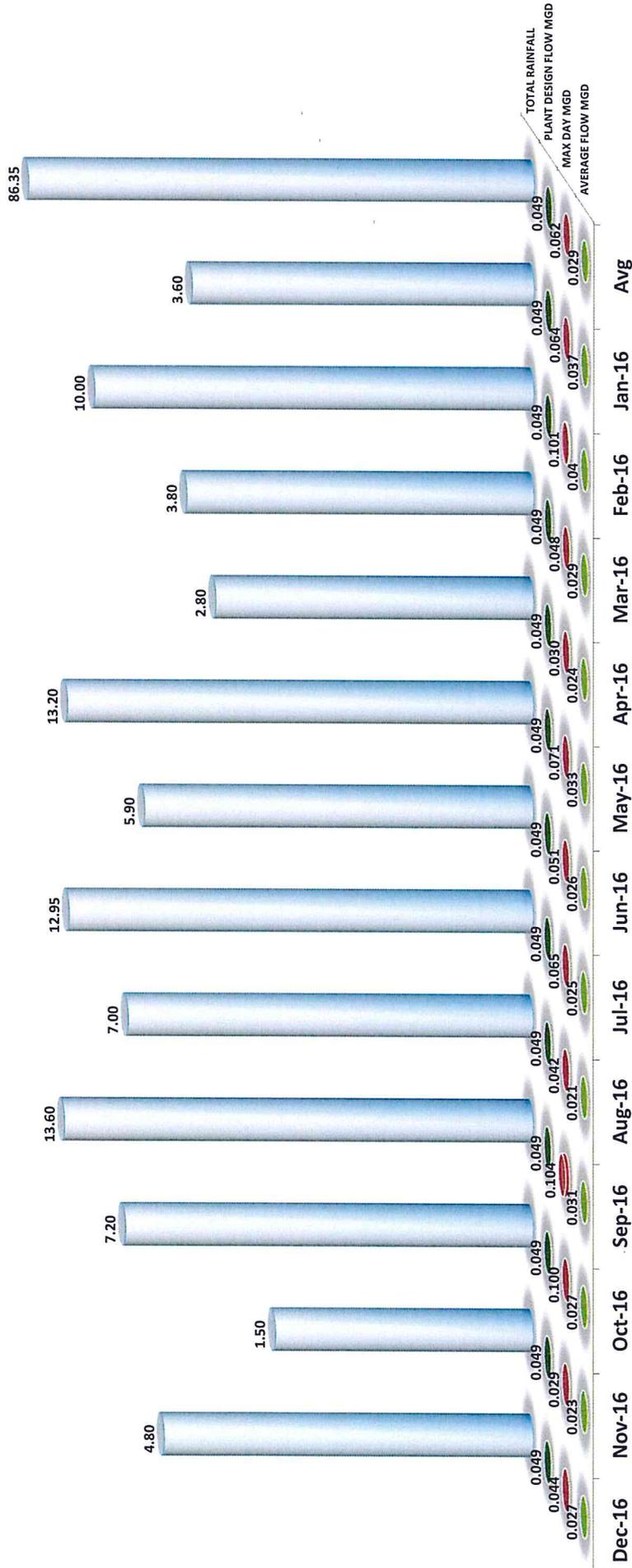
Nov.
 701,832 TOTAL GALLONS TREATED
 0.023 AVERAGE FLOW (MGD) (PERMIT FLOW 0.049 MGD)
 0.029 MAX DAY (MGD)
 Yes **WWTP IN COMPLIANCE**
 1.5 TOTAL INCHES RAIN FALL
 No OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?

Dec.
 820,628 TOTAL GALLONS TREATED
 0.027 AVERAGE FLOW (MGD) (PERMIT FLOW 0.049 MGD)
 0.044 MAX DAY (MGD)
 No **WWTP IN COMPLIANCE** Exceeded BOD sample limits for week.
 4.8 TOTAL INCHES RAIN FALL
 No OVERFLOW AT FACILITY?
 0 COLLECTION SYSTEM PIPE CLEANED
 0 COLLECTION SYSTEM PIPE VIDEOED
 NO COLLECTION SYSTEM OVERFLOWS?

10,364,468 Total Treated
 0.029 Average MG/Day
 0 Total Footage Pipe Cleaned
 0 Total Footage Pipe Videoed

Holly Ridge WWTP

■ AVERAGE FLOW MGD
 ■ MAX DAY MGD
 ■ PLANT DESIGN FLOW MGD
 ■ TOTAL RAINFALL



Hickory Grove: Summary

The Hickory Grove Wastewater Treatment Plant (WWTP) is located off Easy Street in the Hickory Grove Subdivision and is operated by the staff of the Swansboro WWTP. The plant is designed to treat 22,500 gallons per day (GPD). This Plant was taken off line April of 2015, replace by a lift station. The Plant still retains the NPDES permit for discharge.

Hickory Grove: General Information

Facility Name: Hickory Grove WWTP
Facility Type/ Operation: Facultative Lagoon
Responsible Entity: ONWASA
Facility Address: Hickory Grove Subdivision
Facility Phone: (910)-455-0722
Operator in Responsible Charge (ORC): Mark Young
ORC Type / Grade License: WW4, SI, SS
Applicable Facility Permit Numbers: NC 0034991

Description of Facility: The facility is located off NCSR 1406 east of Jacksonville at the Hickory Grove Subdivision. The facility is rated to treat 0.0225 MGD or 22,500 gallons per day of wastewater. The system is comprised of a 2.9 acre lagoon, a tablet chorine system and a chlorine contact chamber with de-chlorination. The plant discharges to the Little Northeast Creek, classified C-NSW waters in the White Oak River Basin.

Hickory Grove: Collection System

Collection System Name: Hickory Grove Collection System
Responsible Entity: Onslow Water and sewer Authority ONWASA
Facility Address: Hickory Grove Subdivision
Contact Phone: (910)-937-7560
Operator in Responsible Charge (ORC): Shawn E. Nason
ORC Type / Grade License: CS Grade 4 License # 990238
Applicable Collection System Permit Numbers: WQCS00249

2016
Hickory Grove WWTP
Annual WW Report

Jan.

TOTAL GALLONS TREATED
0.000 AVERAGE FLOW (MGD) (PERMIT FLOW 0.0225 MGD)
MAX DAY (MGD)

YES **WWTP IN COMPLIANCE (If NO Explain ->)**

TOTAL INCHES RAIN FALL
NO OVERFLOW AT FACILITY?
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Feb.

TOTAL GALLONS TREATED
0.000 AVERAGE FLOW (MGD) (PERMIT FLOW 0.0225 MGD)
MAX DAY (MGD)

YES **WWTP IN COMPLIANCE (If NO Explain ->)**

TOTAL INCHES RAIN FALL
NO OVERFLOW AT FACILITY?
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Mar.

TOTAL GALLONS TREATED
0.000 AVERAGE FLOW (MGD) (PERMIT FLOW 0.0225 MGD)
MAX DAY (MGD)

YES **WWTP IN COMPLIANCE (If NO Explain ->)**

N/A TOTAL INCHES RAIN FALL
NO OVERFLOW AT FACILITY?
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Flow is being pumped to Piney Green pump station, Plant is off line.

Apr.

FLOW TO PG TOTAL GALLONS TREATED
N/A AVERAGE FLOW (MGD) (PERMIT FLOW 0.0225 MGD)
N/A MAX DAY (MGD)

N/A **WWTP IN COMPLIANCE (If NO Explain ->)**

N/A TOTAL INCHES RAIN FALL
N/A OVERFLOW AT FACILITY?
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

May

FLOW TO PG TOTAL GALLONS TREATED
N/A AVERAGE FLOW (MGD) (PERMIT FLOW 0.0225 MGD)
N/A MAX DAY (MGD)

N/A **WWTP IN COMPLIANCE (If NO Explain ->)**

N/A TOTAL INCHES RAIN FALL
N/A OVERFLOW AT FACILITY?
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Jun.

FLOW TO GP TOTAL GALLONS TREATED
N/A AVERAGE FLOW (MGD) (PERMIT FLOW 0.0225 MGD)
N/A MAX DAY (MGD)

YES **WWTP IN COMPLIANCE (If NO Explain ->)**

2.65 TOTAL INCHES RAIN FALL
NO OVERFLOW AT FACILITY?
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Jul.

FLOW TO PG TOTAL GALLONS TREATED

N/A AVERAGE FLOW (MGD) (PERMIT FLOW 0.0225 MGD)

N/A MAX DAY (MGD)

N/A WWTP IN COMPLIANCE (If NO Explain ->)

N/A TOTAL INCHES RAIN FALL

N/A OVERFLOW AT FACILITY?

0 COLLECTION SYSTEM PIPE CLEANED

0 COLLECTION SYSTEM PIPE VIDEOED

NO COLLECTION SYSTEM OVERFLOWS?

Empty rectangular box for July data entry.

Aug.

FLOW TO PG TOTAL GALLONS TREATED

N/A AVERAGE FLOW (MGD) (PERMIT FLOW 0.0225 MGD)

N/A MAX DAY (MGD)

N/A WWTP IN COMPLIANCE (If NO Explain ->)

N/A TOTAL INCHES RAIN FALL

N/A OVERFLOW AT FACILITY?

0 COLLECTION SYSTEM PIPE CLEANED

0 COLLECTION SYSTEM PIPE VIDEOED

NO COLLECTION SYSTEM OVERFLOWS?

Empty rectangular box for August data entry.

Sep.

FLOW TO PG TOTAL GALLONS TREATED

N/A AVERAGE FLOW (MGD) (PERMIT FLOW 0.0225 MGD)

N/A MAX DAY (MGD)

N/A WWTP IN COMPLIANCE (If NO Explain ->)

N/A TOTAL INCHES RAIN FALL

N/A OVERFLOW AT FACILITY?

0 COLLECTION SYSTEM PIPE CLEANED

0 COLLECTION SYSTEM PIPE VIDEOED

NO COLLECTION SYSTEM OVERFLOWS?

Empty rectangular box for September data entry.

Oct.

FLOW TO PG TOTAL GALLONS TREATED

N/A AVERAGE FLOW (MGD) (PERMIT FLOW 0.0225 MGD)

N/A MAX DAY (MGD)

N/A WWTP IN COMPLIANCE (If NO Explain ->)

N/A TOTAL INCHES RAIN FALL

N/A OVERFLOW AT FACILITY?

1,900 COLLECTION SYSTEM PIPE CLEANED

0 COLLECTION SYSTEM PIPE VIDEOED

NO COLLECTION SYSTEM OVERFLOWS?

Empty rectangular box for October data entry.

Nov.

FLOW TO PG TOTAL GALLONS TREATED

N/A AVERAGE FLOW (MGD) (PERMIT FLOW 0.0225 MGD)

N/A MAX DAY (MGD)

N/A WWTP IN COMPLIANCE (If NO Explain ->)

N/A TOTAL INCHES RAIN FALL

N/A OVERFLOW AT FACILITY?

0 COLLECTION SYSTEM PIPE CLEANED

0 COLLECTION SYSTEM PIPE VIDEOED

NO COLLECTION SYSTEM OVERFLOWS?

Empty rectangular box for November data entry.

Dec.

FLOW TO PG TOTAL GALLONS TREATED

N/A AVERAGE FLOW (MGD) (PERMIT FLOW 0.0225 MGD)

N/A MAX DAY (MGD)

N/A WWTP IN COMPLIANCE (If NO Explain ->)

N/A TOTAL INCHES RAIN FALL

N/A OVERFLOW AT FACILITY?

0 COLLECTION SYSTEM PIPE CLEANED

0 COLLECTION SYSTEM PIPE VIDEOED

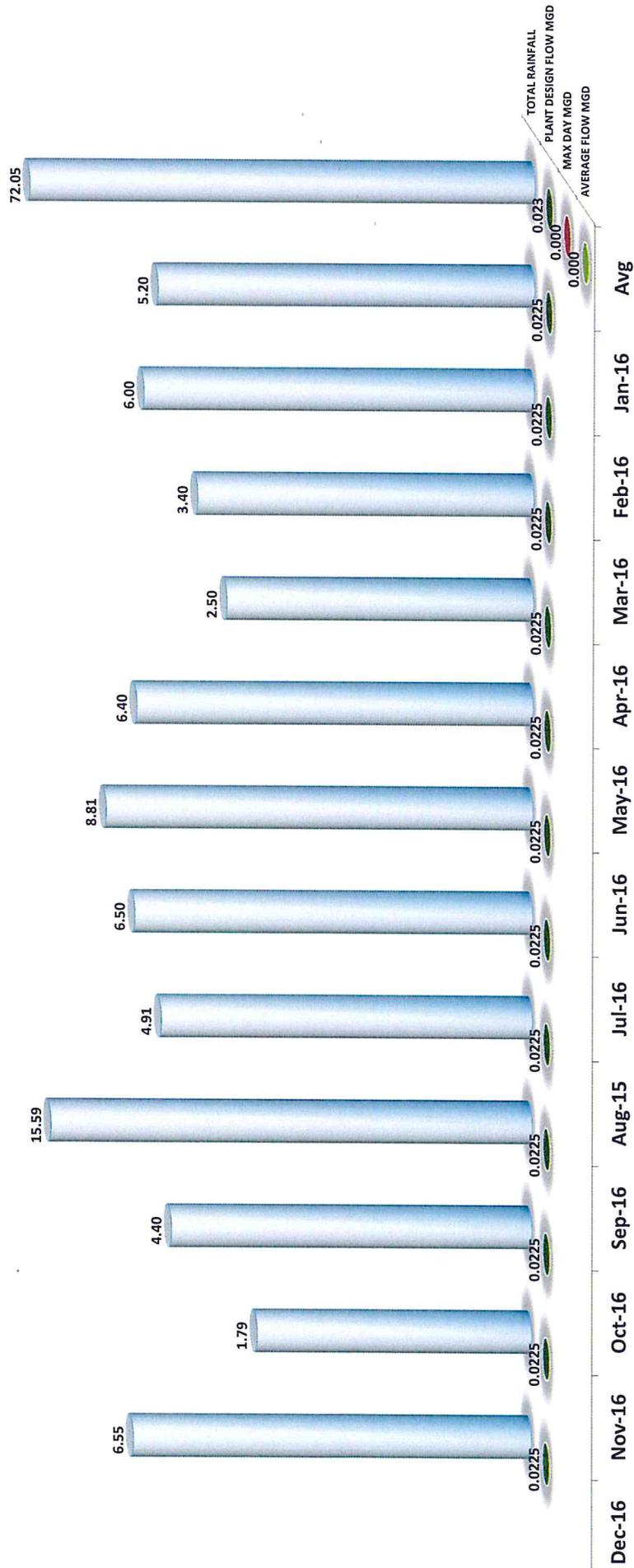
NO COLLECTION SYSTEM OVERFLOWS?

Empty rectangular box for December data entry.

0 Total Treated
0.000 Average MG/Day
1,900 Total Footage Pipe Cleaned
0 Total Footage Pipe Videoed

Hickory Grove WWTP

■ AVERAGE FLOW MGD
 ■ MAX DAY MGD
 ■ PLANT DESIGN FLOW MGD
 ■ TOTAL RAINFALL



Collection Systems

Collection System Name: Piney Green Wastewater Collection

System Collection System Grade/ Type Operation: Grade 1/ Domestic

Responsible Entity: Onslow Water and Sewer Authority (ONWASA)

Facility Address: East of the City of Jacksonville along Piney Green Corridor

Contact Phone: (910)-937-7560

Operator in Responsible Charge (ORC): Shawn E. Nason

ORC Type / Grade License: CS Grade 4 License # 990238

Applicable Collection System Permit Numbers: WQCS00249

Description of Collection System: This system consist of fifty one thousand four hundred and forty nine feet (51,449') of gravity sewer ranging from eight inch (8") to fifteen inch (15"), sixty three thousand nine hundred and ninety-three feet (63993') of force mains ranging from four inch (4") to twenty four inch (24"). The system has a total of 10 pump stations; Piney Green is the main pump station that sends the flow directly to the French Creek WWTP on Camp Lejeune.

2016
Piney Green Collection System
Annual WW Report

Jan.
11,070,675 TOTAL GALLONS TO FRENCH CREEK WWTP
0.357 AVERAGE FLOW (MGD) (PERMIT FLOW 0.5 MGD)
0.397 MAX DAY (MGD)
5.21 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Feb.
11,475,645 TOTAL GALLONS TO FRENCH CREEK WWTP
0.410 AVERAGE FLOW (MGD) (PERMIT FLOW 0.5 MGD)
0.637 MAX DAY (MGD)
8.24 TOTAL INCHES RAIN FALL
11475 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Mar.
8,197,662 TOTAL GALLONS TO FRENCH CREEK WWTP
0.264 AVERAGE FLOW (MGD) (PERMIT FLOW 0.5 MGD)
0.383 MAX DAY (MGD)
3.52 TOTAL INCHES RAIN FALL
22,820' COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Apr.
5,777,036 TOTAL GALLONS TO FRENCH CREEK WWTP
0.193 AVERAGE FLOW (MGD) (PERMIT FLOW 0.5 MGD)
0.284 MAX DAY (MGD)
2.5 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

May
9,071,447 TOTAL GALLONS TO FRENCH CREEK WWTP
0.293 AVERAGE FLOW (MGD) (PERMIT FLOW 0.5 MGD)
0.485 MAX DAY (MGD)
5.87 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Jun.
7,696,019 TOTAL GALLONS TO FRENCH CREEK WWTP
0.257 AVERAGE FLOW (MGD) (PERMIT FLOW 0.5 MGD)
0.372 MAX DAY (MGD)
5.68 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Jul.
7,477,507 TOTAL GALLONS TO FRENCH CREEK WWTP
0.241 AVERAGE FLOW (MGD) (PERMIT FLOW 0.5 MGD)
0.312 MAX DAY (MGD)
8.31 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Aug.
7,727,956 TOTAL GALLONS TO FRENCH CREEK WWTP
0.249 AVERAGE FLOW (MGD) (PERMIT FLOW 0.5 MGD)
0.336 MAX DAY (MGD)
4.91 TOTAL INCHES RAIN FALL
COLLECTION SYSTEM PIPE CLEANED
COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Sep.
9,296,198 TOTAL GALLONS TO FRENCH CREEK WWTP
0.310 AVERAGE FLOW (MGD) (PERMIT FLOW 0.5 MGD)
0.641 MAX DAY (MGD)
15.59 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

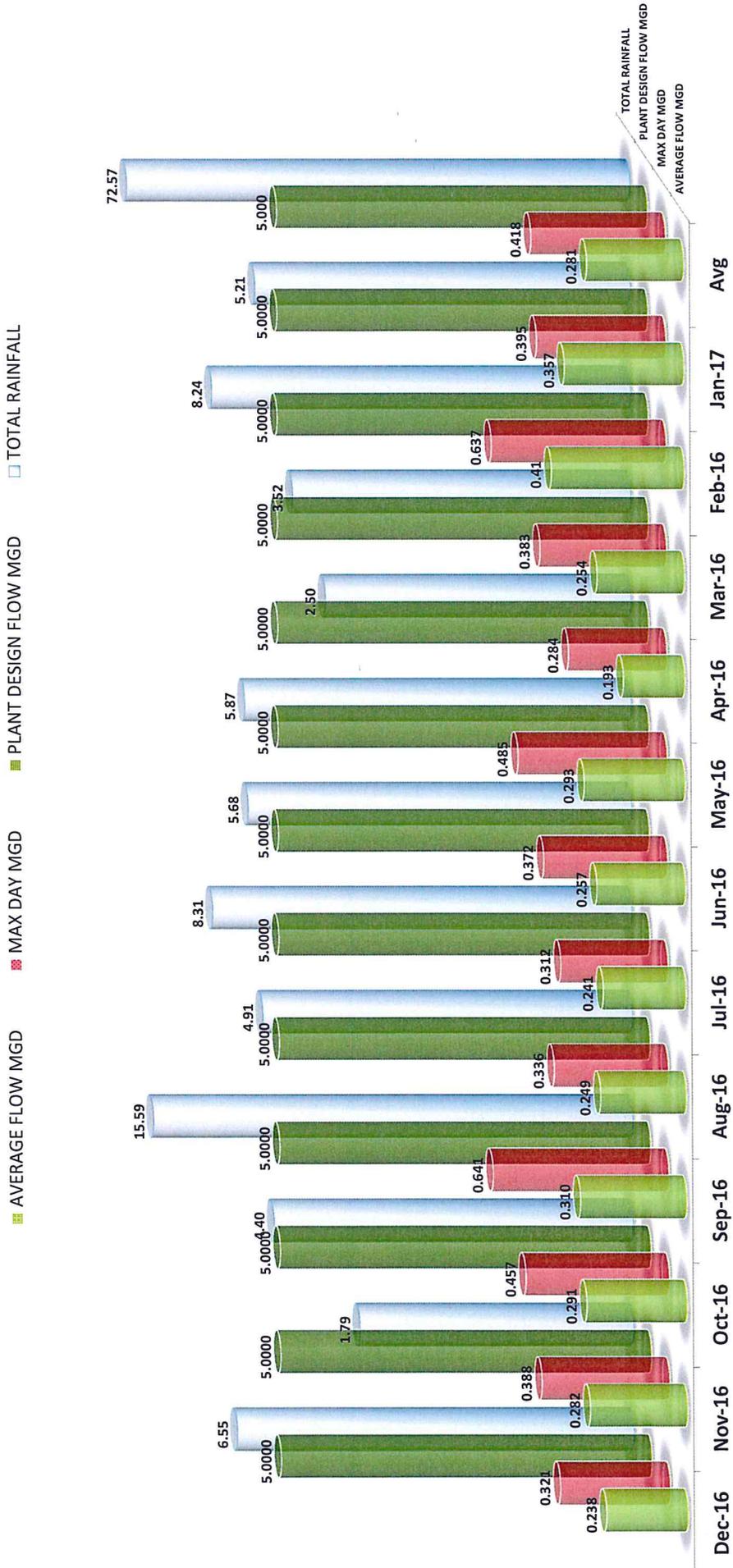
Oct.
9,033,427 TOTAL GALLONS TO FRENCH CREEK WWTP
0.291 AVERAGE FLOW (MGD) (PERMIT FLOW 0.5 MGD)
0.457 MAX DAY (MGD)
4.4 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Nov.
8,464,966 TOTAL GALLONS TO FRENCH CREEK WWTP
0.282 AVERAGE FLOW (MGD) (PERMIT FLOW 0.5 MGD)
0.388 MAX DAY (MGD)
1.79 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Dec.
7,384,989 TOTAL GALLONS TO FRENCH CREEK WWTP
0.238 AVERAGE FLOW (MGD) (PERMIT FLOW 0.5 MGD)
0.321 MAX DAY (MGD)
6.55 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

102,673,527 Total Treated
0.281 Average MG/Day
22,820' Total Footage Pipe Cleaned
0 Total Footage Pipe Videoed

Piney Green Collection System



Collection System Name: Springdale Wastewater Collection
System Collection System Grade/ Type Operation: Grade 1/ Domestic
Responsible Entity: Onslow Water and Sewer Authority (ONWASA)
Facility Address: Southwest area of Onslow County
Contact Phone: (910)-937-7509
Operator in Responsible Charge (ORC): Shawn E. Nason
ORC Type / Grade License: CS Grade 4 License # 990238
Applicable Collection System Permit Numbers: WQCS00249

Description of Facility: This system consist of eighteen thousand six hundred and seventy seven feet (18,677') of gravity sewer ranging from eight inch (8") to twelve inch (12"), ten thousand four hundred and twenty-four feet (10,424) of force mains ranging from four inch (4") to six inch (6")

2016
Springdale Collection System
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Jan.		
2,052,385	TOTAL GALLONS TREATED	
0.066	AVERAGE FLOW (MGD)	
0.742	MAX DAY (MGD)	
6.68	TOTAL INCHES RAIN FALL	
0	COLLECTION SYSTEM PIPE CLEANED	
0	COLLECTION SYSTEM PIPE VIDEOED	
NO	COLLECTION SYSTEM OVERFLOWS?	

Feb.		
2,153,129	TOTAL GALLONS TREATED	
0.077	AVERAGE FLOW (MGD)	
0.125	MAX DAY (MGD)	
8.33	TOTAL INCHES RAIN FALL	
0	COLLECTION SYSTEM PIPE CLEANED	
0	COLLECTION SYSTEM PIPE VIDEOED	
NO	COLLECTION SYSTEM OVERFLOWS?	

Mar.		
1,823,363	TOTAL GALLONS TREATED	
0.059	AVERAGE FLOW (MGD)	
0.069	MAX DAY (MGD)	
2.39	TOTAL INCHES RAIN FALL	
0	COLLECTION SYSTEM PIPE CLEANED	
0	COLLECTION SYSTEM PIPE VIDEOED	
NO	COLLECTION SYSTEM OVERFLOWS?	

Apr.		
1,638,019	TOTAL GALLONS TREATED	
0.055	AVERAGE FLOW (MGD)	
0.069	MAX DAY (MGD)	
1.24	TOTAL INCHES RAIN FALL	
0	COLLECTION SYSTEM PIPE CLEANED	
0	COLLECTION SYSTEM PIPE VIDEOED	
NO	COLLECTION SYSTEM OVERFLOWS?	

May		
1,766,439	TOTAL GALLONS TREATED	
0.057	AVERAGE FLOW (MGD)	
0.063	MAX DAY (MGD)	
3.88	TOTAL INCHES RAIN FALL	
0	COLLECTION SYSTEM PIPE CLEANED	
0	COLLECTION SYSTEM PIPE VIDEOED	
NO	COLLECTION SYSTEM OVERFLOWS?	

Jun.		
1,479,773	TOTAL GALLONS TREATED	
0.049	AVERAGE FLOW (MGD)	
0.493	MAX DAY (MGD)	
2.21	TOTAL INCHES RAIN FALL	
0	COLLECTION SYSTEM PIPE CLEANED	
0	COLLECTION SYSTEM PIPE VIDEOED	
NO	COLLECTION SYSTEM OVERFLOWS?	

Jul.
1,470,264 TOTAL GALLONS TREATED
0.047 AVERAGE FLOW (MGD)
0.062 MAX DAY (MGD)
9.28 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Aug.
1,477,602 TOTAL GALLONS TREATED
0.048 AVERAGE FLOW (MGD)
0.067 MAX DAY (MGD)
5.5 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Sep.
1,920,703 TOTAL GALLONS TREATED
0.064 AVERAGE FLOW (MGD)
0.067 MAX DAY (MGD)
14.11 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

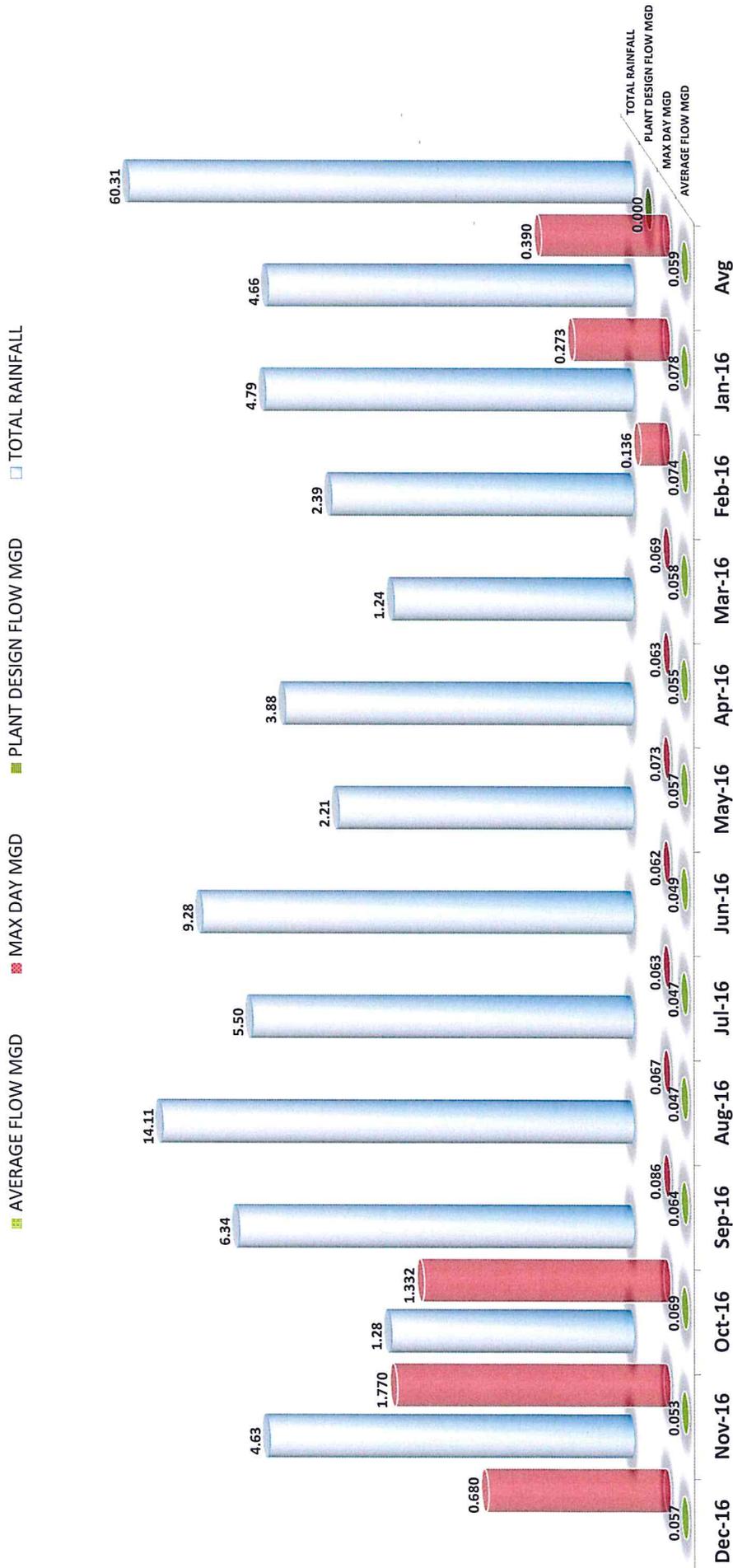
Oct.
2,162,474 TOTAL GALLONS TREATED
0.070 AVERAGE FLOW (MGD)
1.332 MAX DAY (MGD)
6.34 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Nov.
1,607,946 TOTAL GALLONS TREATED
0.054 AVERAGE FLOW (MGD)
1.770 MAX DAY (MGD)
1.28 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

Dec.
1,784,695 TOTAL GALLONS TREATED
0.058 AVERAGE FLOW (MGD)
0.680 MAX DAY (MGD)
4.63 TOTAL INCHES RAIN FALL
0 COLLECTION SYSTEM PIPE CLEANED
0 COLLECTION SYSTEM PIPE VIDEOED
NO COLLECTION SYSTEM OVERFLOWS?

21,336,792 Total Treated
0.059 Average MG/Day
0 Total Footage Pipe Cleaned
0 Total Footage Pipe Videoed

Sprindale Collection System



Collection System Name: Summerhouse Wastewater Collection System
Collection System Grade/ Type Operation: Grade 1/ Domestic Responsible
Entity: Onslow Water and Sewer Authority (ONWASA)
Facility Address: Stump Sound area of Onslow County Summerhouse
Subdivision
Contact Phone: (910) 937-7560
Operator in Responsible Charge (ORC): Shawn E. Nason
ORC Type / Grade License: CS Grade 4 License # 990238
Applicable Collection System Permit Numbers: WQCS00249

Description of Facility: This system consists of five (5) pump stations, thirty seven thousand and twenty-eight (37,028') 8" gravity sewer, nineteen thousand eight hundred and forty-two feet (19,842') of force mains ranging from four inch (4") to six inch (8"). Currently the system operates under a Pump and Haul permit issued by NC DENR. The permit number is WQ0036955. This permit allows ONWASA to haul wastewater to either the Holly Ridge treatment plant or the Piney Green collection system for disposal.

Collection Systems

This year ONWASA has added gravity lines and force main to the Collection system in different projects:

Paradise Point at Onslow Bay: 1738 feet of 8 inch gravity and 424 feet of 12 inch gravity.

Section 1, Atlantic Cove at Onslow Bay: 941 feet of 8 inch gravity and 1485 feet of 12 inch gravity.

Taco Bell- Richands: 440 feet of 2 inch force main.

Stones Landing Section at Onslow Bay: 2224 feet of 8 inch gravity.

Watercrest Landing: 1554 feet of 8 inch gravity.

Shadow Creek Estates: 2824 of 8 inch gravity and 2000 feet of 4 inch force main.