



WATER DIVISION INSPECTION REPORT

ARKANSAS
Department of Environmental Quality

AFIN: 31-00036	PERMIT #: AR0021776	DATE: 3/12/2015
COUNTY: 31 Howard	PDS #: 082884	MEDIA: WN
GPS LAT: 33.919810 LONG: -93.861199 LOCATION: Entrance		

FACILITY INFORMATION

NAME:
City of Nashville WWTP

LOCATION:
1/2 mile south of Nashville on Hwy 27

CITY:
Nashville

INSPECTION INFORMATION

FACILITY TYPE: 1 - Municipal	INSPECTOR ID#: 26294 S - State		
FACILITY EVALUATION RATING: N	INSPECTION TYPE: Reconnaissance		
DATE(S): 3/12/2015	ENTRY TIME: 10:00	EXIT TIME: 12:15	PERMIT EFFECTIVE DATE: 7/1/2014
			PERMIT EXPIRATION DATE: 6/30/2019

RESPONSIBLE OFFICIAL

NAME / TITLE:
Larry Dunaway / Public Works Director

COMPANY:
City of Nashville

MAILING ADDRESS:
426 North Main Street

CITY, STATE, ZIP:
Nashville AR 71852

PHONE & EXT. / FAX:
870-845-4015 /

EMAIL:

FAYETTEVILLE SHALE RELATED: **N**

FAYETTEVILLE SHALE VIOLATIONS: **N**

INSPECTION PARTICIPANTS

NAME/TITLE/PHONE/FAX/EMAIL/ETC.:
Larry Dunaway / Public Works Director / 870-845-4015
Greg Strawn / Production Superintendent / 870-845-7400
Chip Colston / Chief Operator / 870-845-4522

CONTACTED DURING INSPECTION: **Yes**

AREA EVALUATIONS

(S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Applicable/Evaluated)

N	PERMIT	N	FLOW MEASUREMENT	N	STORMWATER
S	RECORDS/REPORTS	N	LABORATORY	N	FACILITY SITE REVIEW
N	OPERATION & MAINTENANCE	N	EFFLUENT/RECEIVING WATER	N	SELF-MONITORING PROGRAM
N	SAMPLING	N	SLUDGE HANDLING/DISPOSAL	N	PRETREATMENT
N	OTHER:				

SUMMARY OF FINDINGS

This inspection was initiated at the request of the Enforcement Branch due to the City reporting that the two-cell stabilization pond was overflowing. At the time of the inspection, the two-cell stabilization pond was still overflowing through the spillways. It was estimated to be 1-2 inches. The overflow was being reported to ADEQ.

GENERAL COMMENTS

A discussion was conducted with the City to determine why the pond was overflowing. All personnel stated that it was due to the recent rains. The area had been overwhelmed with major rainfall during the past several weeks. The City also brought up the fact that a major sewer rehab project had been completed recently and a new activated sludge plant would become available and be online in 4-6 weeks. The design flow will go from 2.3 MGD to 3.5 MGD. The current stabilization pond will become an EQ basin. I asked for and received the past 6 months of effluent flows, influent flows, pond levels, and rainfall data. Also, I received the calculations for the future EQ basin and a summary of the rehab process. These reports are attached to this inspection. According to Google Maps, it appears that the southern spillway discharges directly into Temperanceville Creek and the eastern spillway into Mine Creek.

INSPECTOR'S SIGNATURE: 	Red Smith	DATE: 3/13/2015
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SUPERVISOR'S SIGNATURE: 	Kerri McCabe	DATE: 3/13/2015
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Water Division Photographic Evidence Sheet

Location:	City of Nashville WWTP				
Photographer:	Red Smith	Date:	3/12/2015	Time:	1129
Witness:	Chip Colston / Chief Operator Nashville WWTP			Photo #:	1
Description:	Eastern spillway (33.914177; -93.859655); estimated 1-2 inch flow.				



Photographer:	Red Smith	Date:	3/12/2015	Time:	1133
Witness:	Chip Colston / Chief Operator Nashville WWTP			Photo #:	2
Description:	Southern spillway (33.915238; -93.862727); estimated 1-2 inch flow.				



Water Division Photographic Evidence Sheet

Location:	City of Nashville WWTP				
Photographer:	Red Smith	Date:	3/12/2015	Time:	1133
Witness:	Chip Colston / Chief Operator Nashville WWTP			Photo #:	3
Description:	Looking at the overall freeboard estimated to be 2 feet.				



Figure 1. Google Earth image dated Nov 6, 2014 of Nashville WWTP, permitted outfall, and two spillways.



Last 6 Months Flow, Pond, and Rainfall Totals

	<u>Effluent Flow MGD</u>	<u>Influent Flow MGD</u>	<u>Pond Level</u> <u>Fri. each Week</u>	<u>Weekly Rainfall</u> <u>Totals</u>
9/1-9/6	6.474	9.22	18"	0"
9/7-9/13	7.721	8.33	18"	1.75"
9/14-9/20	8.158	8.02	19.25"	.18"
9/21-9/27	6.429	6.96	19.5"	0"
9/28-10/4	6.903	8.23	19.75"	.85"
10/5-10/11	6.102	9.88	21.75"	3.79"
10/12-10/18	9.659	15.58	11.75"	1.72"
10/19-10/25	10.511	2.62	17.75"	0"
10/26-11/1	7.895	3.34	21"	.15"
11/2-11/8	7.08	9.14	19.5"	1.10"
11/9-11/15	4.152	6.98	20"	.01"
11/16-11/22	8.106	8.95	21.25"	1.27"
11/23-11/29	3.896	8.37	20.25"	.31"
11/30-12/6	8.59	9.95	20.75"	.69"
12/7-12/13	8.679	7.45	22.5"	.42"
12/14-12/20	10.247	14.1	20.75"	1.27"
12/21-12/27	2.76	13.63	19.25"	.98"
12/28-1/3	11.938	14.72	13.75"	3.21"
1/4-1/10	13.626	22.04	8.25"	0"
1/11-1/17	14.046	20.57	8.5"	1.05"
1/18-1/24	14.241	12.96	12"	.45"
1/25-1/31	13.996	12.52	17.5"	0"
2/1-2/7	9.256	12.45	22.5"	.37"
2/8-2/14	7.403	12.23	23.25"	0"
2/15-2/21	5.768	10.67	21.5"	.89"
2/22-2/28	9.292	19.62	15"	2.26"
3/1-3/7	12.42	26.08	9"	2.53"
3/8-3/11	7.428	16.63	overflow	2.13"
Totals	242.776	331.24		27.38"

Nashville Waste Treatment Plant

The current polishing pond will be converted to an equalization pond. With a storage capacity with out changes of 33,644,116 Gal.

Pond surface area: 41.3 acres

Spillway overflow height: 330.0 ft

Bottom of Pump Station Intake: 327.5 ft

Storage capacity: $2.5 \text{ ft} \times 325,851 \text{ gal.} \times 41.3 \text{ acres} = 33,644,116 \text{ Gal.}$

The City of Nashville has experienced large amounts of inflow and infiltration into the Sewage Collection System, particularly during periods of prolonged wet weather. Video inspection of the sewer mains revealed that there were several areas of pipe deterioration and visual inspection of manholes revealed leaking; both of which have led to increased inflow and infiltration. Partially due to the increased amount of inflow and infiltration problem that the City experiences, the current Wastewater Treatment Facility cannot handle this additional flow and has seen some overflow from their "polishing pond" during periods of prolonged wet weather. The City has undertaken an improvement project that consists of rehabilitating their current collection system (in the areas of greatest need) and expanding the Wastewater Treatment Facility.

Rehabilitation of the City of Nashville's Wastewater Collection System was performed in the summer of 2014. This system rehabilitation was done in conjunction with a \$6.0 Million expansion to its Wastewater Treatment Facility. The collection system rehabilitation consisted of replacing approximately 2,080 LF of 12" sewer main by pipe bursting, 3-12" aerial creek crossings and 1-8" aerial creek crossing, and rehabilitation of 100 manholes. A majority of the manhole rehabilitation consisted installing a cement liner (Quadex), but some only required new rings and covers. The total construction cost of the Collection System Rehabilitation was \$451,910.00. With this improvement and the expansion to the Wastewater Treatment Facility (which is nearing completion), the City has reduced the amount of inflow and infiltration to the system and increased the capacity of the Wastewater Treatment Facility. Upon completion, the City will be better able to control their system and virtually eliminate future overflows from the treatment facility.