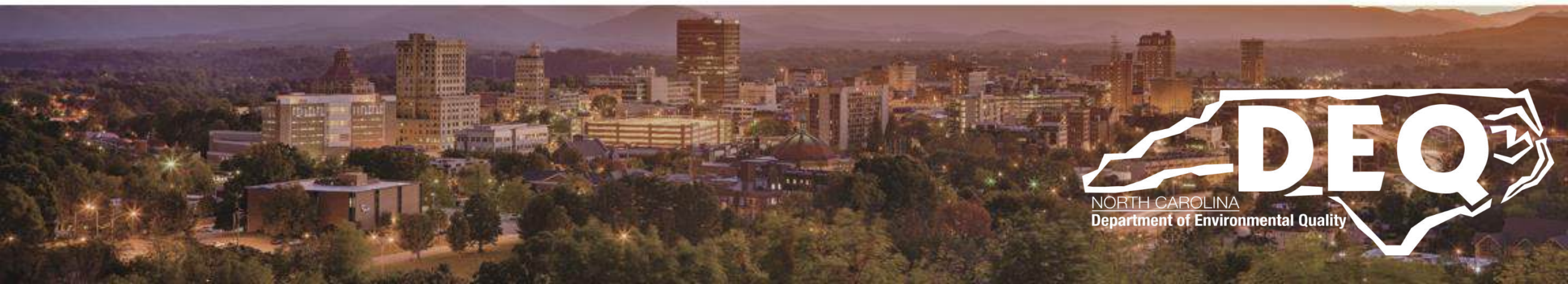




NPDES Inspection and Other "Stuff"

NCMA Annual North Carolina Water Quality Workshop, February 6 and 18, 2025

Daniel Boss, Asheville



Compliance and Reporting Topics

- eDMR questions and issues
- Emergency preparation
- Examples of what not to do

Common eDMR Problems

- A delay in submitting information could result in monthly eDMR not being submitted on time. Late or missing reports raises red flags with EPA.
- Change of Ownership / Responsible Official / Delegation of Signatory Authority
 - <https://deq.nc.gov/about/divisions/water-resources/edmr/forms-and-reports>
 - Forms may need to be notarized.
- When ORC, Back-Up ORC, or other official separates from service, please deactivate their eDMR account.
 - <https://deq.nc.gov/about/divisions/water-resources/edmr/edmr-contacts>
 - You can also add users by the same method
 - Must be done by the responsible official on the account

Data Entry

- After a NPDES permit renewal is issued, please check the following before entering a monthly report into eDMR:
 - Are all parameters present?
 - Should new parameters be present according to permit?
 - Have some parameters been removed?
 - Are the correct sampling frequencies listed?
 - Are the correct units of measure being used?
- If you find any errors, please contact permitting and regional office staff so that corrections can be made.
- Failure to correct these items could lead to erroneous NOV's and possible enforcement actions.

Validation

- Please pay close attention to this step.
- This step can help you identify data that was entered incorrectly:
 - Missing a decimal – 99 instead of 9.9
 - Too many zeros – 100 instead of 10
 - Missing Data – only 4 TSS's for the week instead of 5
 - Data entered in the wrong column – temperature entered in the pH column
 - Missing a page – Upstream, Downstream, other internal outfalls
- Yes, there will always be warnings for split weeks.
- Please enter “H” in cells for holidays.

Certification

- This step must be completed by the ORC or Back-up ORC.
 - Make sure they have the correct type and grade ORC for the facility
 - Make sure their certifications are active
- Reasons for certifications being moved to invalid status include:
 - Failure to pay annual fee
 - Did not complete required continuing education requirements.
- Invalid status will create errors in the eDMR program

ORC and Back-Up ORC

- Please submit an updated ORC form to the Technical Assistance and Certification Unit anytime there is a change in the ORC or Back-Up ORC positions. This can affect the certification step in submitting monthly eDMR.
- The Back-up ORC can serve as the ORC for 120 days.
- In the event the ORC and Back-up ORC positions are vacated at the same time, the facility has 7 days to fill one of the positions.

Submission

- This step must be completed by Owner of the Permit or their designee.
- The owner must submit the delegation of signature authority forms granting others permission to submit.
 - <https://deq.nc.gov/about/divisions/water-resources/edmr/forms-and-reports>
- Please do not share log-in information with others. This information is specific to the submitter and is part of the electronic signatory agreements.
- If you allow someone else to log in and submit the report with your credentials, it is considered wire fraud and penalties are very similar to mail fraud.
- Once the report is submitted, the data will upload into DWR's system and you should receive a confirmation email.

Revised eDMRs

- If you need to revise an eDMR:
 - Log in
 - Search reports
 - Click revise-button on the right-hand side near the delete button
 - Select the page you need to revise and click edit page
 - Enter corrected data and save
 - Then follow normal submittal procedures:
 - Validate
 - Certify
 - Submit

Cybersecurity

- Please make sure your system is secure.
- Fayetteville Region example:
 - A county network was attacked and held for ransom
 - FBI recommended not paying
 - County had to rebuild system. Estimated time 2 weeks. Actual time 6 weeks.
 - Facility was late submitting eDMR. DWR knew it was going to be late and was in routine contact with the County.
- This late submittal caused the County WWTP to be on the EPA watch list. DWR and County had to explain this to the EPA
- Lesson learned:
 - If you cannot submit electronically due to a cyberattack-PLEASE submit a paper copy like we did in the past

Emergency Preparedness

What types of emergencies to anticipate

- Fires: Evacuation procedures in place?
- Floods: Are you in the flood plain?
- Power outages: Test generators regularly and occasionally under load
- Chemical spills: Check your secondary containment structures and know where your drains go.
- Process and equipment failures: How good is your preventative maintenance program?



To be prepared for an emergency, you should have....

- an environmental cleanup contractor list or service contract
- relevant contact info for plant staff 'in the know' about drains, chemicals, stormwater conveyances, etc.
- a clear understanding of your SW permit
- knowledge of receiving stream class, location of downstream intakes, recreational areas, etc.
- a working relationship with local RO, EM, etc.
- available site maps with infrastructure detail
- ability to access all areas of facility in off business hours (whoever is on call)
- sufficient onsite materials to contain spills (plugs, SW inlet mats, etc.)
- sufficient management of secondary containment structures (e.g., drain valves)



General Emergency Preparedness To Do List

- ✓ Locate all floor drains and know where they discharge
- ✓ Test pumps and controls
 - Do you need the ability to rent pumps in an emergency?
 - Some rental companies will develop a plan based on your system. This plan will list what pumps you need, help you make electrical hookups, and determine what size pipes or hoses are needed.
- ✓ Test alarms and make sure they alert the correct people at the correct numbers
- ✓ Generators
 - When was the last time serviced?
 - Does the automatic transfer work?
 - Do staff know how to crank manually if needed?
 - Do you have a vendor fuel agreement?

Emergency Preparedness

- What if the RO loses power or closes due to an emergency, and you can't contact anyone to report issues to?
 1. Contact the NC Emergency Management Center 919-733-3300 or 800-858-0368
 - During emergency weather events, the call center can be busy, so...
 2. Contact another Regional Offices:
 - <https://deq.nc.gov/about/contact/regional-offices>
- Make sure to speak with a person and do not just leave a voicemail
- Record the name of the person you talked to and any incident tracking number they give you during the call

Trickling filter WWTP



- Few trickling filter plants in the state
- Old technology
- Fixed film vs. activated sludge



Inspector Red Flag





Hope their windows are up!



Stuff we encounter



Foaming issue at WWTP

Foam lifted manhole cover.
Caused by industry discharge of
cleaner. Plant became deficient in
N and P. Hurt biology of WWTP.



Foaming at WWTP from industry discharge



Industry was fined.
City tracked down
the industry and
made them clean
up the process.









Effluent from foaming plant







Drying beds

Sewage dumped in beds not appropriate



Select your sample location carefully



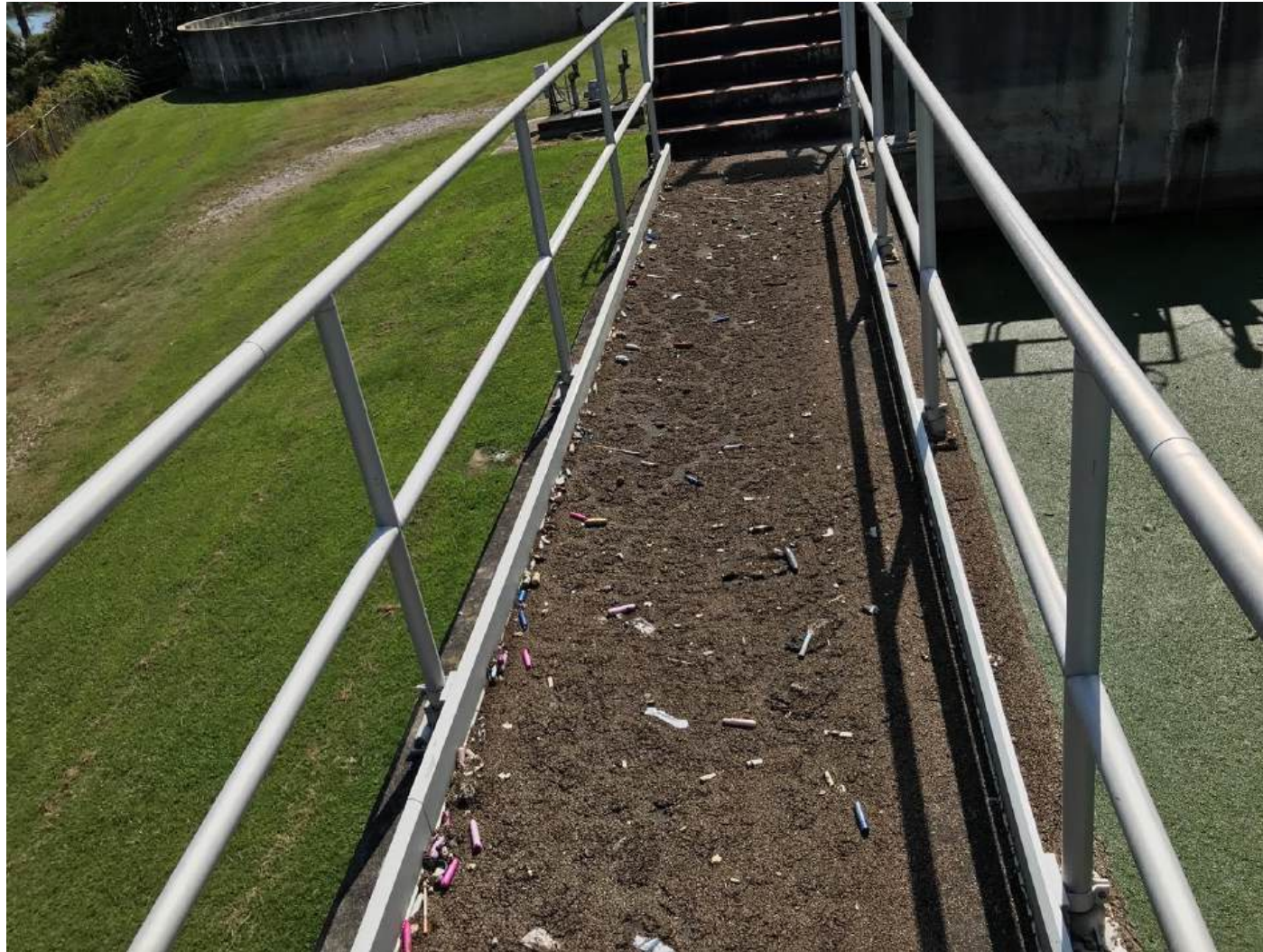
Grass growing in Clarifier



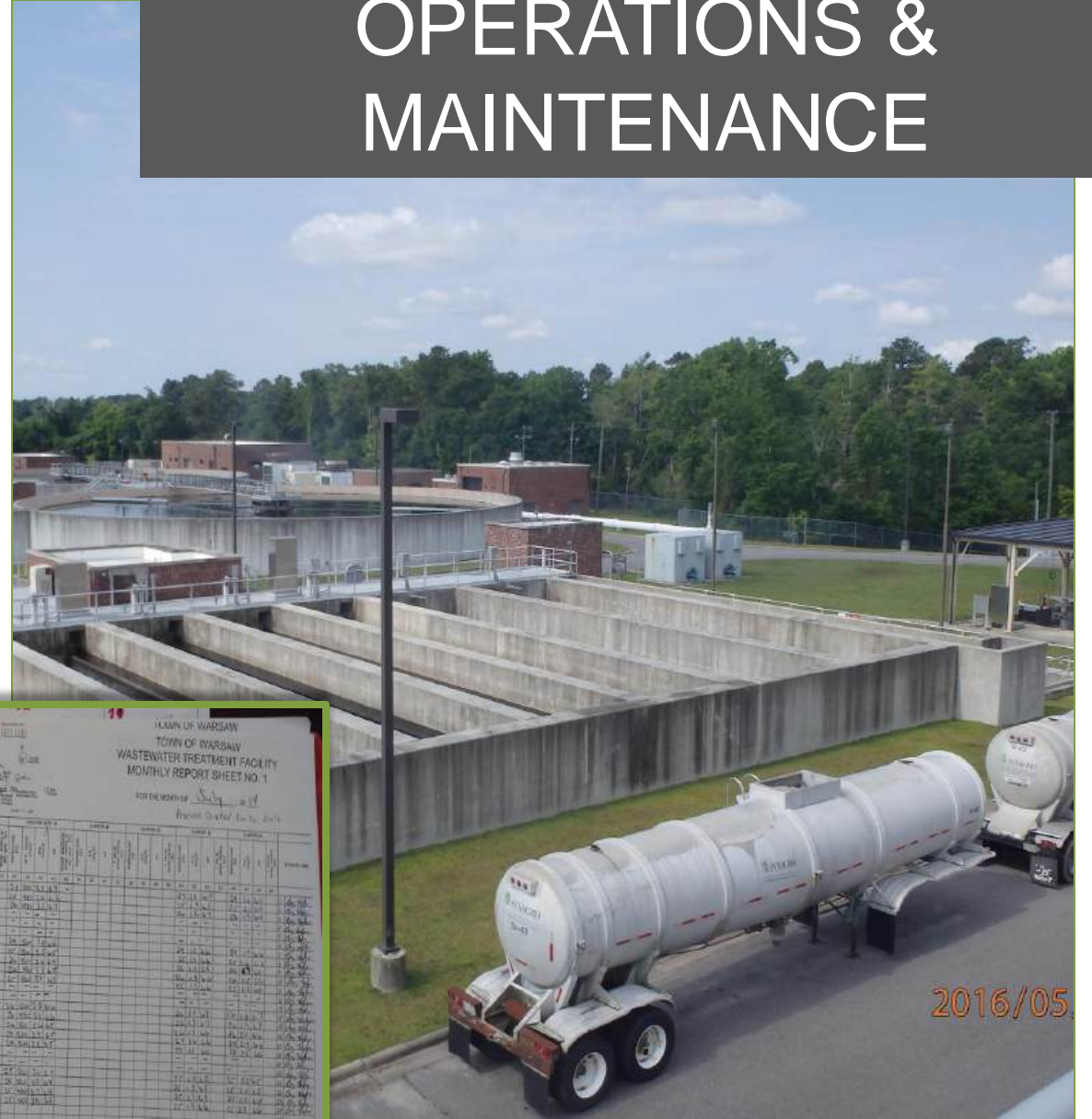
Grass growing in anaerobic basin



Trash on walkway from an unreported spill



OPERATIONS & MAINTENANCE



10

TOWN OF WARSAW
WASTEWATER TREATMENT FACILITY
MONTHLY REPORT SHEET NO. 1

FOR THE MONTH OF July, 2016
Prepared by Cheryl E. Smith

NO.	DATE	INFLUENT FLOW (MGD)	EFFLUENT FLOW (MGD)	DIFFERENCE (MGD)	PERCENT RECOVERY	INFLUENT BOD5 (MG/L)	EFFLUENT BOD5 (MG/L)	DIFFERENCE (MG/L)	PERCENT REMOVAL	INFLUENT TSS (MG/L)	EFFLUENT TSS (MG/L)	DIFFERENCE (MG/L)	PERCENT REMOVAL
1	7/1/16	1.2	1.0	0.2	83.3	150	100	50	33.3	200	150	50	25.0
2	7/2/16	1.3	1.1	0.2	84.6	160	110	50	31.3	210	160	50	23.8
3	7/3/16	1.4	1.2	0.2	85.7	170	120	50	29.4	220	170	50	22.7
4	7/4/16	1.5	1.3	0.2	86.7	180	130	50	27.8	230	180	50	21.7
5	7/5/16	1.6	1.4	0.2	87.5	190	140	50	26.3	240	190	50	20.8
6	7/6/16	1.7	1.5	0.2	88.2	200	150	50	25.0	250	200	50	20.0
7	7/7/16	1.8	1.6	0.2	88.9	210	160	50	23.8	260	210	50	19.6
8	7/8/16	1.9	1.7	0.2	89.5	220	170	50	22.7	270	220	50	18.9
9	7/9/16	2.0	1.8	0.2	90.0	230	180	50	21.7	280	230	50	18.2
10	7/10/16	2.1	1.9	0.2	90.5	240	190	50	20.8	290	240	50	17.6
11	7/11/16	2.2	2.0	0.2	90.9	250	200	50	20.0	300	250	50	17.0
12	7/12/16	2.3	2.1	0.2	91.3	260	210	50	19.6	310	260	50	16.4
13	7/13/16	2.4	2.2	0.2	91.7	270	220	50	18.9	320	270	50	15.9
14	7/14/16	2.5	2.3	0.2	92.0	280	230	50	18.2	330	280	50	15.5
15	7/15/16	2.6	2.4	0.2	92.3	290	240	50	17.6	340	290	50	15.0
16	7/16/16	2.7	2.5	0.2	92.6	300	250	50	15.0	350	300	50	14.3
17	7/17/16	2.8	2.6	0.2	92.9	310	260	50	15.5	360	310	50	13.9
18	7/18/16	2.9	2.7	0.2	93.1	320	270	50	15.0	370	320	50	13.5
19	7/19/16	3.0	2.8	0.2	93.3	330	280	50	15.0	380	330	50	13.2
20	7/20/16	3.1	2.9	0.2	93.5	340	290	50	14.7	390	340	50	12.8
21	7/21/16	3.2	3.0	0.2	93.8	350	300	50	14.3	400	350	50	12.5
22	7/22/16	3.3	3.1	0.2	93.9	360	310	50	14.0	410	360	50	12.2
23	7/23/16	3.4	3.2	0.2	94.1	370	320	50	13.5	420	370	50	11.9
24	7/24/16	3.5	3.3	0.2	94.3	380	330	50	13.2	430	380	50	11.6
25	7/25/16	3.6	3.4	0.2	94.4	390	340	50	12.8	440	390	50	11.4
26	7/26/16	3.7	3.5	0.2	94.6	400	350	50	12.5	450	400	50	11.1
27	7/27/16	3.8	3.6	0.2	94.7	410	360	50	11.9	460	410	50	10.9
28	7/28/16	3.9	3.7	0.2	94.9	420	370	50	11.6	470	420	50	10.6
29	7/29/16	4.0	3.8	0.2	95.0	430	380	50	11.4	480	430	50	10.2
30	7/30/16	4.1	3.9	0.2	95.1	440	390	50	11.1	490	440	50	10.0
31	7/31/16	4.2	4.0	0.2	95.2	450	400	50	10.9	500	450	50	9.8



Monitoring & Process Control

Self-Monitoring & Compliance Monitoring

Sampling & Measurements

- Compliance History of Discharge Monitoring Reports
- Appropriate Sampling Protocol
- Proper Analytical Methods
- Certified Laboratory
- Complete Records
- Meter Calibrations Performed



SOUTHPORT WASTE TREATMENT PLANT
pH WORKSHEET

ALL SAMPLES TESTED WITHIN 15 MINUTES OF COLLECTING. pH CHECKED WHILE STIRRING

Calibration Time: 7:30 DATE: 5-25-15
3:00 AM

pH METER CALIBRATION	CAL CHECK Wght 7		CAL CHECK Wght 4		METER CHECK Wght 10
	Results	+ or - 0.1 pH	Results	+ or - 0.1 pH	Results
METER READING	7.2		7.1		10
SAMPLES	TIME OF COLLECTION	COLLECTED BY	TIME OF ASSAY	ASSAY BY	pH RESULTS
REC	07:00	JLS	07:10	JLS	6.3
Q-902 EFF					7.1
Q902 BASIN					7.2
Q-905					5.7
Q905 COMP					5.6
Std. pH 10 Check (Nights)					10.0
Q908	0640	JL	0645	JL	8.17
Q908 DUP	0640	JL	0645	JL	8.13
B-901	1100	JL	1110	JL	7.92
B-902					7.89
B-904					7.43
Std. pH 10 Check (Days)	1121	JL	1122	JL	10.12

2015/06/

Calibrations

I-93A, Semi-Annual PM Tank Drop of Effluent Flow T-927 to River

PMID	Work Order Number	Date	Instrument Loop	Description
WTC-I93A	47560	6-17-15	I-93A	Effluent Flow T-927 to River

1. PURPOSE

To perform Environmental Management System required Waste Water Treatment instrument calibrations containing the following instruments: FT-9022 and FCV-9022.

2. PREPARATION

Check with Production for availability.
Obtain Work Permit.

3. PROCEDURE

Task	Results	Init
A. Have Operator put control valve, FCV-9022 in MANUAL and CLOSED.	N/A	JLS
B. Have Operator stop flow from T-909 by placing all Effluent pumps (PT909-1, 2, & 3) in MANUAL and STOPPED. -Flow from T-909 will now overflow into T-904.	N/A	
C. Verify that all flow has stopped going into T-927.	N/A	
D. Verify that NO flow is going into T-927 overflow pipe.	N/A	
E. Verify the Bailey permissive to dump to the river.	N/A	
F. Verify "START FLOW METER VERIFICATION" is in the OFF mode.	N/A	
G. Measure and Record T-927 level from the RED datum point to the surface.	12 Ft	
	6 In	
H. Verify "START FLOW METER VERIFICATION" is in the ON mode.	N/A	
I. Verify Bailey FLOW METER VERIFICATION displays ZERO (0) Gallons.	N/A	
J. Manually OPEN T-927 discharge valve (FCV-9022) and START Timer.	N/A	
K. After Two (2) hours, CLOSE T-927 Discharge Valve (FCV-9022).	N/A	
L. Measure and Record T-927 Level from the red datum point to the surface.	19 Ft	
	7 In	
M. Record Bailey FLOW METER VERIFICATION Gallons.	353118	
N. Perform following conversions and calculations: Convert Line G to inches: <u>150</u> Convert Line L to inches: <u>235</u> Subtract Line L from Line G: = <u>-85</u> Inches Multiply difference by 3921.3: = <u>333310</u> Gallons		19808 Gals
O. Have Operator put all controls back in Automatic.	N/A	JLS

What do I find?

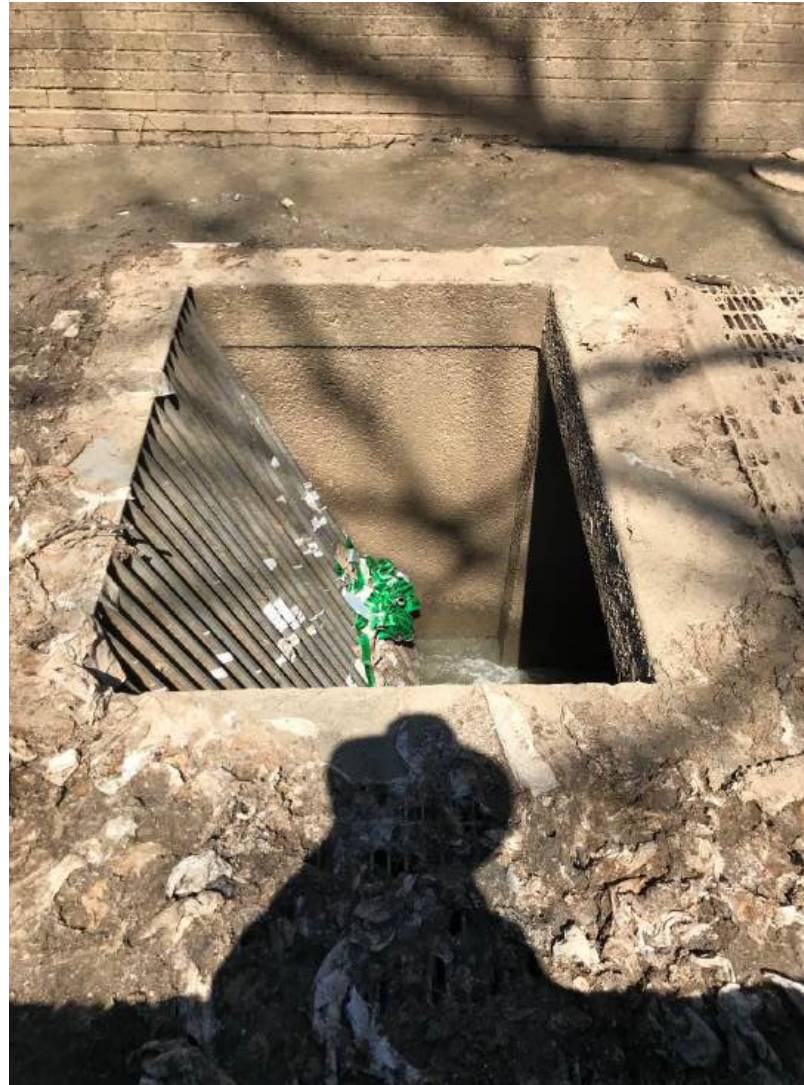
- A well managed facility

Or...

- Misunderstanding of treatment process and control
- Poor sampling protocol
- Deferred maintenance
- Aging and failure of treatment components
- System design issues and limitations
- Operator/staff apathy



Overflowing bar screen



Rags and sludge clogging the grates and screens and overtopping the walls



Strange placement for a bar screen. They are typically at the WWTP headworks.



Aerial Sewer Line in Haywood County



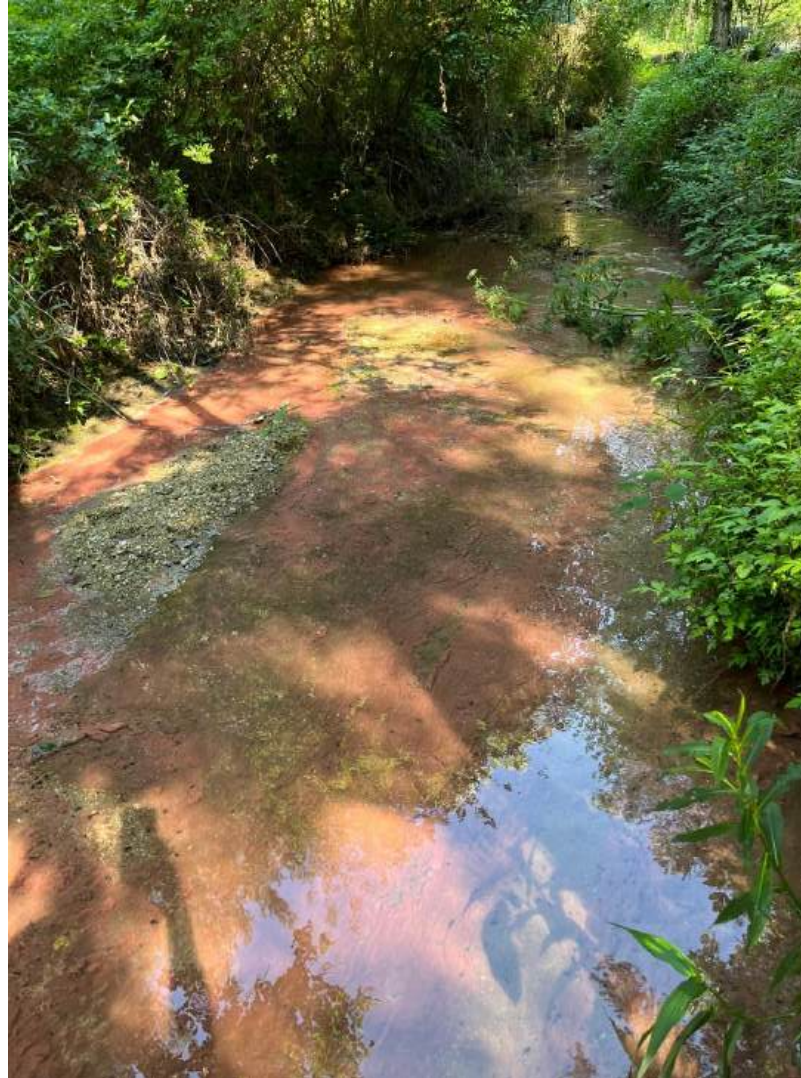
Obvious evidence of Sanitary Sewer Overflows



Henderson Creek on a Friday late afternoon



DO measured less than 2 mg/L



Site of spill

- Tomato pulp and seeds all over the ground





Check your outfall!



Oil Complaint Silver Creek



Light Blue Sheen



Oil Spill in Caldwell County

Manufacturing equipment failure



What went wrong?

- Mold press heat exchanger jacket burst (during deep freeze in Asheville Region) and leaked hydraulic oil into the cooling water system. The cooling water is discharged and permitted under their NPDES permit NCG500000
- Not enough checks on the NPDES outfall
- Not great knowledge on where the flows were going
- Needed more alarms for equipment failures



What the company did right

- They had clear safety protocols (hard hats, safety boots, eye protection, etc.)
- They were forthright and didn't try to hide anything
- They had an environmental cleanup contractor on site almost immediately

