

CORRECTIVE ACTION PLAN
FOR
STUTTGART MUNICIPAL SEWERAGE TREATMENT SYSTEM
NPDES PERMIT NO. AR0034380, AFIN 01-00214
RESULTING FROM CERTIFIED LETTER
RECEIVED FROM ADEQ DATED JANUARY 5, 2018
OVER MR. ALAN ANDERSON'S SIGNATURE AS
ENFORCEMENT ANALYST, OFFICE OF WATER QUALITY

Included were thirty-three (3) test violations of permit effluent limits as follows:

FAILED TESTS:

- 1) Two (2) Dissolved Oxygen Limit Tests, one dated September 30, 2015 @ 5.61 mg/L and one dated October 31, 2016 @ 5.9 mg/L where minimum permitted limit is 6.0 mg/L.
- 2) Five (5) tests for Total Suspended Solids, 7-day average on 7/31/15 at 25.733 while permitted limit is 22.5 mg/L; then two (2) tests on October 31, 2016 - one monthly average @ 16.25 mg/L, while permit limit is 15 and one 7-day average @ 28.3 mg/L, while permit limit is 22.5 mg/L; and two (2) tests on November 30, 2016 - monthly average 24.39 mg/L, permit limit 15.0 mg/L and 7-day average of 39.83 mg/L, while permit limit 22.5 mg/L.
- 3) One (1) test of Ammonia Nitrogen September 30, 2017, 7-day average 5.267 mg/L, while permit limit is 5.2 mg/L.
- 4) Three (3) tests for Residual Chlorine -

Residual Chlorine	<0.2 mg/L	7/31/15	Permit Limit	0.033 mg/L
Residual Chlorine	0.7 mg/L	5/31/17	Permit Limit	0.033 mg/L
Residual Chlorine	0.06 mg/L	9/30/17	Permit Limit	0.033 mg/L
- 5) Twenty-One (21) tests for Fecal Coliform failed one 7-day test on 9/30/15; one test 7/31/16; both tests failed on 10/31/16, 11/30/16 and 12/31/16; then the 7-day test failed on 2/28/17; both tests failed on 1/31/17, 3/31/17, 4/30/17, 5/31/17, 6/30/17, and 7/31/17.

SUSPECTED CAUSES FOR TEST FAILURES:

The new tertiary pumping equipment was completed and replacement of the tertiary filters media was also completed about that time, and both were placed back in service in late 2016.

Two of the final clarifiers' shafts were twisted off in the fourth quarter of 2017.

Two of the three (3) pumps failed in the primary pumping station, which caused a disproportionate amount of wastewater to be pumped into the flow regulation pond.

Also, it is believed that the chlorination system rotometers have worn out and combined with the chlorination controls indicating erratic operations was the probable reason for the chlorine test failures.

It is also believed that sludge being pulled back from the flow regulating pond and the final clarifiers' performance being affected possibly by dragging scraper arms allowing sludge fluctuation in the final clarifiers before breaking and the operators getting temporary pumping going to move the sludge to the sludge digesters/thickeners and pulling solids back from flow regulating pond, all could have possibly caused blips in dissolved oxygen, ammonia nitrogen and total suspended solids' tests.

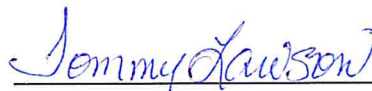
ACTIONS TO BE TAKEN:

1. Installing new tertiary pumping equipment and new filter media in tertiary filters, then placing back in service late 2016.
2. Replacing the two worn out pumps in the primary pumping station putting more wastewater through the treatment plant rather than into the flow regulating pond. Additionally, the Department has obtained sludge pumping and sludge separation box for removing the sludge from flow regulating pond.
3. Securing new gear drive assemblies for the two final clarifiers, drawing down wastewater and sludge removal, and then making repairs.
4. Securing new rotometers and new 4-20mA signal controllers to get the indicated amount of chlorine delivered when set on the chlorinators.

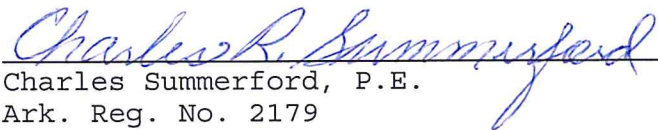
Milestone/Schedule for completing necessary work at plant to stay in compliance with discharge limits for the plant.

- a) Installation of new tertiary pumping system and replacing media in tertiary filters - completed late 2016.
- b) One pump for the Primary Pumping Station has been received, installed and placed in service. The manager has been told by the supplier that the second new pump will be delivered March 23, 2018. His crew has already put in new pump stand; therefore, it is believed that about one work day after pump arrives, the pump can be installed and operating by March 30, 2018.
- c) Because the existing chlorinators are Wallace & Tiernan brand that are obsolete, parts are hard to find. However, they are scheduled to be delivered the week of March 26th. Once they are on hand, scheduling repairman, installing, and placing in service will be accomplished by April 10, 2018.

d) The two final clarifiers require a much greater effort and expense. We must go before the City Council April 3rd for approval to spend the money to make these repairs. The cost for two (2) gear drive assemblies are quoted at \$75,000.00 plus any applicable taxes and freight. After purchase order is received, estimated shipment is 16 weeks. Because there are no valves in place to isolate either clarifier, we must somehow install an 18" valve or 24" valve(s) to stop the wastewater flow thru the clarifier. The department has an 18" gate valve on hand and a 24" valve is quoted at \$16,000.00 each with about two weeks delivery. Once the clarifier is isolated, almost a half million gallons of wastewater must be pumped back to head of plant. Any sludge left in clarifier tank must be removed and put in sludge thickener, followed by washdown, to allow personnel to get inside the clarifier for inspection to determine what repairs are necessary, if any, to scraper frame; if it needs painting; or if additional parts are necessary; etc. Once the new gear drive assemblies are on hand, we must secure a heavy crane to set the bridge that sits across the 70-foot diameter clarifier; to set it aside; to remove the old gear drive; and install the new one. Once the repairs are made, the heavy crane must come back and put the bridge in place and be secured. This work must be repeated for the 2nd clarifier. We estimate the work will require about 10 months from the City Council meeting April 3rd or until February 1, 2019.



Tommy Lawson, Manager
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