pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0060372**
Facility Type	**Municipal**	APS ID	**944792**
Major / Minor	**Minor**	Authorization ID	**1188949**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Factoryville Borough & Clinton Township Wyoming County Joint Municipal Sewer Authority (FCJMSA)**	Facility Name	**Factoryville WWTP a.k.a. FCJMSA WWTP**
Applicant Address	PO Box 277 161 College Avenue Factoryville, PA 18419-0277	Facility Address	156 Creek Road Factoryville, PA 18419
Applicant Contact	Dan Engler (Chairman)	Facility Contact	Mike Hester
Applicant Phone	(570) 945-7484	Facility Phone	(570) 396-0275
Client ID	266613	Site ID	262443
Ch 94 Load Status	Not Overloaded	Municipality	Clinton Township (Filed under Factoryville Borough)
Connection Status	No Limitations	County	Wyoming
Date Application Received	June 29, 2017	EPA Waived?	Yes
Date Application Accepted	June 30, 2017	If No, Reason	-
Purpose of Application	Renewal of NPDES Permit.		

Summary of Review

This is a 0.185 MGD FCJMSA POTW facility discharging to the South Branch Tunkhannock Creek (TSF; Stream Code# 28799).

Background:

- **WQM Permit No. 6616401 (unbuilt Replacement Sewage Sludge Storage Lagoon): Expires 10/21/2021 per WQM Standard Condition No. 6 unless construction begins by that date.**
- **Annual Average Daily Flows**: 0.091 MGD (2014), 0.099 MGD (2015), 0.096 (2017) with highest monthly flow of 0.125 MGD (February 2017). The 2018 Chapter 94 Report estimated 0.131 MGD annual average flow, with high flow of 0.184 MGD in November 2018.
- **Operator**: 6/30/2017 Completeness call clarified that the JMSA is the “operator with financial control”. The Authority indicated it took over the facility circa 2010. Therefore, the client number was updated from Factoryville Borough to the FCJMSA (to whom the previous NPDES Permit had been issued to).
- **Service Area**: 90% Factoryville Borough and 10% Clinton Township.
- **Storm Drain Outfall No. 400**: This is an existing stormwater outfall associated with this facility in E-facts which appears near to the WWTP in Clinton Township. Authority indicated no knowledge of this outfall and indicates Factoryville Borough has a MS4 waiver. Clinton Township MS4 NPDES permit No. PAG132310.
- **Existing Chesapeake Bay (CB) Limits:** CB Mass cap limits due to previous rerating from 0.086 MGD to 0.185 MGD (~2008). This is 0.185 MGD Chesapeake Bay facility with existing Annual Mass Caps per EDMR. The prior 12/10/2012 NPDES Permit No. PA0060372 (as issued) did not include Chesapeake Bay Limits or monitoring. Receiving stream is not impaired for nutrients.
- **Existing Sludge Storage Lagoon/Impoundment Liner Failure: This ~30 years-old lagoon experienced liner failure in 2015 as documented in the January 11, 2016 NOV and Authority submittals. Additional liner failure**

Approve	Deny	Signatures	Date
X		James D. Berger (signed) James D. Berger, P.E. / Environmental Engineer	June 25, 2020
X		Amy M. Bellanca, P.E. / Environmental Engineer Manager	

Summary of Review

(tears) were noted in the 2019 DEP Inspection Report. The facility has had a 2016 WQM Permit for a new replacement Sewage Sludge Storage Lagoon/Impoundment (smaller & in same location) but has not constructed it or proposed any alternative sludge handling provisions.

- **Existing Lagoon Description and History**:
  - **1/16/1987 WQM Permit No. 6686401**: This was the original 0.065 MGD Factoryville Borough STP consisting of aerated facultative treatment lagoon and chlorinated disinfection. The single 37,000 square foot (1,829,000 gallon) lagoon was to have 3 cells and one (1) 36 mil Chlorinated Polyethylene liner. No groundwater monitoring system was apparently approved or installed per available DEP files.
  - **11/12/2008 WQM Permit No. 6608401**: This permit was issued to the Authority to expand the facility to 0.185 MGD with replacement treatment process (no lagoon treatment). It expanded the plant which went to a different non-lagoon treatment process. **The existing treatment lagoon was converted into a Sewage Sludge Storage Impoundment/Lagoon** retained to hold Waste-Activated Sludge (WAS) & Clarifier scum from new aeration basin/clarifier system for storage prior to offsite disposal (no onsite treatment). The Sewage Sludge Storage Lagoon/Impoundment retained blowers to deal with short-term odor problems only. At 0.185 MGD design flow, the lagoon was estimated to require cleaning on an annual basis to prevent it filling more than about 6-feet deep. The existing lagoon was not modified to allow for easy annual sludge removal without endangering the old in-place liner.
  - **2015**: Authority reported liner failure.
  - **6/18/2016**: **The Department received the Authority's consultant (Mr. Brian Oram, PG of BF Environmental Consultant, Inc.) "initial assessment" and "work plan":**
    - **The PG recommended a groundwater assessment be conducted directly under the existing lagoon when the lagoon is being rebuilt/reconstructed.**
      - **Any observable contamination should be removed and groundwater conditions documented.**
      - **The Report noted that the depth to water table is variable and "portions" (not all) of the area are capped by a clay-rich deposit that restricts the vertical movement of the water.** NOTE: This means that there might be portions under the liner without this benefit.
    - **There was evidence of increased concentrations of nitrate around Test Pits 7 & 8.**
    - An underdrain or lagoon relocation was recommended.
    - If PADEP requires installation of monitoring wells, the Report recommended they should be installed at the time the lagoon is being constructed.
    - **The Final report was to be prepared upon receiving comments from the client and project engineer, and after receiving a base map for the project. No copy of this Final Report was found in the available DEP files. When the Department asked for a copy of any groundwater assessment report in 2020, the Authority provided a copy of the 6/18/2016 submittal.**
    - The Report Figure showed water wells near the lagoon (i.e. potential for impact exists).

    NOTE: Any 2016 Groundwater Assessment is outdated due to subsequent liner deterioration (visible tears, age, stresses from annual sludge cleanouts, etc.).
  - **10/21/2016 WQM Permit No. 6616401**:
    - Replacement Aerated Sewage Sludge Storage Lagoon approved (same location as old deteriorating lagoon, with less than half the capacity). The replacement lagoon will be 13-feet deep, 42-feet bottom width (120-feet top width), 150-feet bottom length (228-feet top length). The new lagoon will have a 50 mil LLDPE Liner with 12-inch underdrain leak detection zone. Reliant Lagoon Master System for aeration and mixing @ 4.73 lb/O2/hour. Estimated sludge wasting rate of 7,920 GPD. WQM Special condition A required underdrain sampling for TKN, Nitrate-Nitrite as N, chlorides, Total and Fecal Coliform in event of underdrain discharge. **The October 21, 2016 WQM Permit No. 6616401 expires on October 21, 2021 if no construction has begun as of that date (Standard Condition 5)**.
    - **The WQM Permit did not authorize any continued usage of the old (failed) Sewage Sludge Storage Lagoon. It was not to be repaired but replaced in whole. Please note the following factors apply**:

Summary of Review

- The WQM permit application General Information Form indicated the replacement Sewage Sludge Storage Lagoon would be constructed in 2016. No extended delay was foreseen that would allow for additional liner failure and leakage with consequent impacts on the waters of the Commonwealth.
- Lagoon liners have a limited design/service life before they must be completely replaced.
  - The 2015 liner failure and 2019-documented existing liner tears are evidence that the liner has exceeded its original design life.
  - This ~30-year old liner will have likely exceeded its original design life in any event (which did not consider future use as a sewage sludge storage lagoon subject to annual liner stresses due to required annual cleanouts).
  - Groundwater contamination is a likely result of liner failure.
- Proper O&M requires a replacement lagoon/impoundment/Unit. "Replacement-in-kind" does not apply due to changes in applicable industry liner system state-of-the-art since 1987, changes in regulatory standards (Chapter 285 Sewage Sludge Storage Impoundment/lagoon) since 1987, changes in DEP technical design guidance since 1987, and site-specific issues such as potential groundwater contamination.
- The WQM Permit was issued on the assumption that the Authority would implement its PG-proposed Work Plan as submitted to the Department (except as minor refinements might have allowed by the Department).

- **8/16/2019**: Authority (Milnes) Letter indicated the sludge storage lagoon construction might start in Spring/Summer 2020, with the Authority seeking funding. Please note the original letter has been located (it had been misfiled).
- **11/25/2019**: The DEP Inspection documented additional liner tears (i.e. liner failure) in the visible portion of the existing sludge storage lagoon liner. To date, no schedule for replacement of the failed sludge storage lagoon has been provided.

Part C Special Conditions:

- **Part C.I: Standard Chesapeake Bay conditions due to existing annual mass cap limits and to allow for nutrient trading options. They plan to trade for TP credits without using alum TP treatment.**
- **Part C.II: New standard Solids Management conditions (including additional sewage sludge storage lagoon language).**
- Parts C.III.A, B, & C: Standard conditions (stormwater prohibition; necessary property rights; proper management of residuals)
- Part C.III.D: **Updated** Chlorine Minimization condition.
- **Part C.III.E: New Sewage Sludge Storage Impoundment Condition to address existing Sludge Lagoon failure and delays in implementing replacement and additional groundwater assessment requirements.**

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.185
Latitude	41º 33' 52.60"	Longitude	-75º 47' 48.29"
Quad Name	Factoryville	Quad Code	0639 (2.20.2)
Wastewater Description:	Sewage Effluent		
Receiving Waters	South Branch Tunkhannock Creek (TSF, MF)	Stream Code	28799
NHD Com ID	66404897	RMI	0.4100
Drainage Area	80.9	Yield (cfs/mi^2)	0.0266
Q_{7-10} Flow (cfs)	2.16	Q_{7-10} Basis	USGS PAStreamstats
Elevation (ft)	790 (stream; Center of plant at 804 Feet)	Slope (ft/ft)	-
Watershed No.	4-F	Chapter 93 Class.	TSF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	PATHOGENS		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	-	Name	-

Background/Ambient Data:		Data Source:
pH (SU)	6.9	7/15/2004 Biologist Sampling (10/4/2004 DEP Biologist Memo: Point of First Aquatic Use/Cause Effect Survey: Factoryville Borough STP: Upstream sampling point SBR01).
Temperature (°C)	19.2	See above
Hardness (mg/L)	68	See above
Aluminum (ug/l)	<200	See above
Copper (ug/l)	28.00	See above
Lead (ug/l)	<1.0	See above
Zinc (ug/l)	67.00	See above
Fecal Coliform (#/100 ml)	1100	See above

Nearest Downstream Public Water Supply Intake		PA AMER WATER CO NESBITT DIV ID# 101800 (West Pittston, Luzerne County) per E-maps	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	>10 miles

Changes Since Last Permit Issuance: **Pathogen impairment of receiving stream**. Facility “Sewage Disposal Pond” designation visible on USGS Topography.

Other Comments:

CB Limits: This is 0.185 MGD Chesapeake Bay Phase 5 (non-significant) facility with existing Annual Mass Caps due to ~2008 WWTP expansion.

Upstream impairment of watershed due to Stormwater impacts in Ackerly Creek (Urban Runoff/Storm Sewers – Siltation; Pathogen impaired), but no E-maps indicated impairment of the receiving stream and no receiving stream sampling point found prior to confluence with impaired Ackerly Creek.

- There is a Factoryville Storm Drain Outfall No. 400 shown on E-maps but not included in the NPDES Permit Renewal Application.
- Clinton Township has MS4 NPDES Permit No. PAG132310.
- Factoryville Borough as a MS4 NPDES Permit No. PAG132241.

Treatment Facility Summary

Treatment Facility Name: Factoryville WWTP

WQM Permit No.	Issuance Date	Scope
6616401*	10/21/2016	Aerated sludge storage lagoon approved (same location as old deteriorating lagoon, with less than half the capacity). The replacement lagoon will be 13-feet deep, 42-feet bottom width (120-feet top width), 150-feet bottom length (228-feet top length). The new lagoon will have a 50 mil LLDPE Liner with 12-inch underdrain leak detection zone. Reliant Lagoon Master System for aeration and mixing @ 4.73 lb/O_2/hour. Special condition for semi-annual monitoring of lagoon underdrain if there is a watershed discharge from the underdrain system for TKN, Nitrate-Nitrite-N, chlorides, Total & Fecal Coliform. Estimated sludge wasting rate of 7,920 GPD. Special condition required underdrain sampling for TKN, Nitrate-Nitrite as N, chlorides, Total and Fecal Coliform. **Expires 10/21/2021 per WQM Standard Condition No. 6 unless construction begins by that date.**
6608401*	11/12/2008	New WWTP (with upgrade to 0.185 MGD), including new influent Mechanical Screen; new influent pump station; new valve vault; new Biolac 370,000-gallon extended aeration treatment system (tank); alum feed system; 47,000-gallon Biolac clarifier; and UV disinfection (chlorine contact tank converted to effluent flow meter pit). Existing lagoon retained to hold Waste-Activated Sludge (WAS) from new aeration basin/clarifier system for storage prior to offsite disposal. At 0.185 MGD design flow, the lagoon was estimated to require cleaning on an annual basis to prevent it filling more than about 6-feet deep.
6695401	4/27/1995	Sewage Treatment Plant rerating from 0.065 MGD to 0.086 MGD. No changes to treatment plant units or piping or operational changes. Lagoon Freeboard requirement reduced to 2 feet freeboard minimum (previously 3 feet).
6686401	1/16/1987	0.065 MGD STP consisting of aerated facultative lagoon and chlorinated disinfection. The single 37,000 square foot (1,829,000 gallon) lagoon was to have 3 cells. 36 mil Chlorinated Polyethylene liner.

*Issued to the Authority.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Activated Sludge extended aeration	Ultraviolet	0.185

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.185	463	Not Overloaded	Sludge Lagoon*	Landfill

*See Compliance History Section for failure to build the permitted sludge storage lagoon and continued usage of deteriorated (replaced) facultative lagoon with known liner failure issues since 2015 for sludge storage.

Changes Since Last Permit Issuance: **Additional existing lagoon liner tears documented by 2019 Inspection Report. New replacement sludge holding lagoon permitted in 2016 with no construction as of March 2020.**

Other Comments:

NPDES Permit Application Description: Influent screen; influent pump station; Biolac Aeration Basin; clarifier; UV disinfection and discharge; Sewage Sludge Storage Lagoon onsite; Alum (coagulant) and Caustic (pH control) used onsite. Alum is not presently being used for TP control, with facility buying nutrient credits instead. Facility has not current plans to modify facility to otherwise reduce TP discharges.

Sludge: Hauled to Wyoming Valley Sanitary Authority as ~14.5 tons per year.

BOD5/TSS Reduction: Application data indicates overall compliance with 85% minimum reduction requirement.

Constituent	Influent Average	Effluent Average	Reduction
BOD5	217 mg/l (97 samples)	<5 mg/l CBOD5 (92 samples)	>85% reduction
TSS	122 mg/l (97 samples)	<6 mg/l (94 samples)	>85% reduction

2018 Chapter 94 Report Information (Milnes Engineering help prepare report):

- Report Items 1, 2, 3, and 9: No projected organic or hydraulic overload.
    - They missed the May 2018 influent BOD5 sample and input 183 lbs/day for that month as the highest value in the previous four (4) years.
    - They noted Keystone College is planning development projects. Estimated flows given and Sewer concept drawings attached to Report. One project will involve LPS pump station (low flows but higher organic loading due to lack of dilution).
- Report Item 5 (sewer system):
    - Report indicated good condition, but Facilities information indicated I&I problem occurred in 2018.
    - No mention of replacement aerated sludge holding lagoon unit replacement (10/17/2016 WQM Permit No. 6616401 and was tentatively scheduled for completion in summer 2018 per NPDES Renewal Application).
- Report Item 7 (Pump Stations): Service area includes one (1) pump station for Keystone College. Design capacity of 170 GPM (~0.2448 MGD) @ 91 Feet TDH at peak flow rate.
- Report Form Item 8 (Industrial Waste Section): Item was left blank on Report Form. NPDES Renewal Application list included businesses including Aqua PA water filtering station, an “O-ring factory”, Keystone College, and other businesses.
- Report Form Item 10 (Sewage Sludge Management): Item was left blank. NPDES Permit Part B.I.C.4.c required a Solids Management Inventory including total volume of sludge wasted, average solids concentrations of return or waste sludge flow (mg/l) and total sludge or biosolids generated (wet or dry tons). This information was required.
- Report Form Item 12 (Calibration Report): Item claimed calibration report found in Attachment 4, but no Attachment 4 located in Chapter 94 Report Copy. Cover letter to Chapter 94 Report indicated they did not do the 2018 flow meter calibration, blaming it on transition to new operator at the plant, and transition to new calibration contractor. They expected to forward the 2019 calibration results circa April 2019.

Compliance History

DMR Data for Outfall 001 (from June 1, 2018 to May 31, 2019)

Parameter	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18	JUN-18
Flow (MGD) Average Monthly	0.1231	0.1492	0.1316	0.1331	0.1291	0.1301	0.1841	0.1239	0.141	0.1822	0.0982	0.09553
Flow (MGD) Daily Maximum	0.2015	0.2188	0.2043	0.1951	0.3626	0.2974	0.2998	0.1688	0.2737	0.6547	0.2117	0.144
pH (S.U.) Minimum	6.38	6.57	6.37	6.53	6.45	6.54	6.54	6.58	6.41	6.74	6.82	6.76
pH (S.U.) Maximum	6.92	7.64	6.84	7.11	6.86	6.84	6.89	6.84	7.14	7.3	7.10	7.09
DO (mg/L) Minimum	6.71	6.42	5.74	6.24	6.39	6.09	6.41	6.05	6.04	6.20	6.22	6.24
CBOD5 (lbs/day) Average Monthly	< 2.1	3.9	3.7	3.9	< 4.0	< 2.0	< 3.0	< 3.0	< 2.0	< 3.0	< 2.0	< 2.0
CBOD5 (lbs/day) Weekly Average	< 3.2	5.0	6.6	5.1	12	3.0	< 4.0	4.0	< 4.0	< 6.0	< 3.0	< 48
CBOD5 (mg/L) Average Monthly	< 2.0	3.5	3.0	3.5	< 2.5	< 2.3	< 2.2	< 2.4	< 2.0	< 2.0	< 2.0	< 2.0
CBOD5 (mg/L) Weekly Average	2.0	5.0	4.0	5.0	4.0	3.0	< 2.0	4.0	< 2.0	2.0	< 2.0	< 2.0
TSS (lbs/day) Average Monthly	< 3.1	< 4.2	< 3.9	3.9	< 4.0	< 3.0	< 5.0	< 4.0	< 4.0	< 4.0	< 3.0	< 3.0
TSS (lbs/day) Weekly Average	< 4.9	5.0	6.6	5.1	9.0	3.0	< 6.0	5.0	< 5.0	< 9.0	4.0	< 72.0
TSS (mg/L) Average Monthly	< 3.0	< 3.8	< 3.3	3.5	< 3.0	< 3.0	< 3.0	< 3.2	< 3.0	< 3.0	3.0	< 3.0
TSS (mg/L) Weekly Average	3.0	5.0	4.0	5.0	3.0	3.0	< 3.0	4.0	< 3.0	< 3.0	< 3.0	< 3.0
Fecal Coliform (CFU/100 ml) Geometric Mean	< 2.0	< 1.0	1.0	1.0	< 3.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1.0	< 2.0
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	10.0	4.0	10	8	138	< 1.0	3.0	1.0	2.0	7	< 1.0	11.0
Nitrate-Nitrite (mg/L) Average Monthly	**14.9**	**18.2**	**16.6**	**17**	**19**	**19.8**	**16.3**	**0.28**	**13.0**	**13.2**	**17.1**	**14.9**

Nitrate-Nitrite (lbs) Total Monthly	450	548	494	14.4	523	534	22.0	11.0	17	395	377	341.0
Total Nitrogen (mg/L) Average Monthly	< 16.0	19.9	< 17.8	19	< 20.2	20.9	< 17.3	19.6	< 14.0	< 14.2	< 18.1	< 15.9
Total Nitrogen (lbs) Effluent Net Total Monthly	< 481	599	< 529	545	< 556	564	< 699	679.0	< 544	< 426	< 399	< 364.0
Total Nitrogen (lbs) Total Monthly	< 481	599	< 529	16.6	< 556	564	< 699	679	< 18.0	< 426	< 399	< 364.0
Total Nitrogen (lbs) Effluent Net Total Annual									< 5325			
Total Nitrogen (lbs) Total Annual									< 5325			
Ammonia (mg/L) Average Monthly	**0.17**	**0.24**	**0.66**	**0.35**	**< 0.1**	**< 0.13**	**0.1**	**11.0**	**< 0.13**	**0.17**	**0.14**	**0.14**
Ammonia (lbs) Total Monthly	450.0	7	20	0.4	< 3.0	< 4.0	4.0	11.0	< 0.2	5.0	3	3.0
Ammonia (lbs) Total Annual									< 429			
TKN (mg/L) Average Monthly	< 1.03	1.73	< 1.19	2.19	1.22	1.1	< 1.0	1.51	< 1.0	< 1.0	< 1.02	< 1.0
TKN (lbs) Total Monthly	< 31.0	52	< 35	3.0	33	30	< 40.0	57.0	< 1.0	< 30.0	< 22.0	< 23.0
Total Phosphorus (mg/L) Average Monthly	4.1	3.38	3.45	2	2.38	2.7	3.1	3.8	3.2	3.9	5.9	5.0
Total Phosphorus (lbs) Effluent Net Total Monthly	123	102	103	67	65	72	123	142	125	118	128	114.0
Total Phosphorus (lbs) Total Monthly	123	102	103	2	65	72	123	142.0	4.0	118	128	114.0
Total Phosphorus (lbs) Effluent Net Total Annual									974			
Total Phosphorus (lbs) Total Annual									1279.0			

Compliance History

Effluent Violations for Outfall 001, from: July 1, 2018 To: May 31, 2019

Parameter*	Date	SBC	DMR Value	Units	Limit Value	Units
Total Phosphorus**	09/30/18	Total Annual	1279	lbs	974	lbs
Total Phosphorus	09/30/19	Total Annual	1177	lbs	974	lbs

*4/2018 and 5/2018 Noncompliance due to TSS exceedances blamed on I&I problems. CHECK 6/2018 DMR Supplemental forms as flagged for violation despite no DMR reported exceedance per Facilities Screen.
**2017 noncompliance with Phosphorus limit per Facilities Screen.

Summary of Inspections:

CLIENT	INSP ID	INSPECTED DATE	INSP TYPE	INSPECTION RESULT DESC	INSPECTOR ID	INSPECTOR	# OF VIOLATIONS
FACTORYVILLE BORO & CLINTON TWP WYOMING CNTY JT MUNI SEW AUTH	2521468	01/11/2016	Routine/Partial Inspection	Violation(s) Noted	00512922	MILLER, JEREMY	2
FACTORYVILLE BORO & CLINTON TWP WYOMING CNTY JT MUNI SEW AUTH	2643943	08/01/2017	Compliance Evaluation	No Violations Noted	00512922	MILLER, JEREMY	0
FACTORYVILLE BORO & CLINTON TWP WYOMING CNTY JT MUNI SEW AUTH	2969335	11/25/2019	Routine/Partial Inspection	No Violations Noted*	00470330	GOLOBEK, DAVID	0
FACTORYVILLE BORO WYOMING CNTY	2377116	04/30/2015	Compliance Evaluation	No Violations Noted	00512922	MILLER, JEREMY	0

*11/15/2019 Partial Compliance Inspection looked at lagoon and documented two (2) visible lagoon liner tears.

Other Comments:

NPDES Permit Renewal Application was timely, with NPDES Permit administratively extended.

Existing Lagoon:

- This lagoon was originally a permitted waste stabilization treatment lagoon, and subsequently replaced as a treatment unit by an aeration basin. It was to have been replaced by a new Aerated Sludge Storage Lagoon (smaller but in same location) per 2016 WQM permit.

- **10/29/2015**: FCJMSA Notification letter about indicators that the lagoon was in need of repairs. The Engineer was "currently troubleshooting and identifying alternatives to retire the existing lagoon. The need for a wasting area still exists and as such, the engineer is developing several scenarios for future sludge handling".
    - 7/8/2015 note was attached that indicated the operator had noted an area of water and muddy substance coming out of the ground on the creek side of the lagoon. The noted indicated he took a sample and contacted the DEP inspector on same day.
    - 7/9/2015 note was attached that indicated lab testing confirmed fecal coliform being present (@ 12,667/100 ml).
    - 7/10/2015 noted was attached indicated he was putting chlorine tablets into the area where water is collecting from the hole in the liner.
    - Lagoon decommissioning task costs was estimated at $120,000 – 125,000 range per attachment with other costs estimated for sludge handling units.
- **1/11/2016**: NOV (Chesapeake Bay noncompliance and unauthorized release from sewage sludge storage lagoon (lagoon liner failure).
- **7/20/2016**: Authority Professional Geologist (Brian Oram, P.G. of B.F. Environmental Consultants, Inc.) initial assessment. Assessment indicated no evidence of groundwater contamination (at that time), the depth to water table being variable with portions of area with clay-rich deposit that could restrict vertical movement of water. The PG recommendations included further assessment after existing lagoon is "rebuilt and reconstructed" (to include a recommended underdrain system).
- **10/17/2016**: WQM Permit for replacement aerated sludge storage lagoon "to replace its existing deteriorated structure". New sludge storage lagoon unit to be smaller than existing lagoon but in same general location. Application noted the 30-year old lagoon was deteriorating. Project was to start in Fall 2016. See Treatment Plant Section for additional details.
- **8/16/2019**: Authority (Milnes) Letter indicating Authority was seeking funding for sludge lagoon project, with potential construction start in Spring/Summer 2019.
- **11/25/2019**: Compliance (partial) Inspection. Inspector recommended that the facility continue to update the Department during the timeline required to plan and complete and necessary work regarding the sludge storage lagoon. Two (2) tears in the liner were observed, and the facility was drawing down the lagoon to assess liner integrity and determine the best course of action regarding liner repair. **Personnel were informed a certified contractor was required for all repairs or replacement work.**
- **1/2020 Biosolids Report Form:** 7,532,460 gallons liquid sewage sludge hauled offsite. No dry weight estimate provided. The liquid volume exceeds the facility's original design volume, and is therefore incorrect.

3/13/2020 WMS Query (Open violations by client number):

Permit: pa0060372
Client ID: 266613
Client: All

Open Violations: 0

No data was found using the criteria entered. Please revise your choices and try again

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .185
Latitude 41º 33' 54.00" **Longitude** -75º 47' 46.00"
Wastewater Description: Sewage Effluent

Permit Limits and Monitoring:

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
CBOD5	38.6 Lbs/d 61.7 Lbs/d 25.0 40.0 50.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing Technology limit (Chapter 92a.47) supported by water quality modeling. Application data was 36 mg/l max and <5 mg/l average (92 samples).
TSS	46.3 Lbs/d 69.4 Lbs/d 30.0 45.0 60.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing Technology limit (Chapter 92a.47) Application data was 32 mg/l max and <6 mg/l average (94 samples).
pH	6.0 – 9.0 SU	**Inst.** Min - **IMAX**	Existing Technology limit (Chapter 92a.47). **Application range was 6.8 to 9.98 SU (712 samples).**
Dissolved Oxygen (DO)	5.0	**Inst.** Minimum	Existing WQBEL supported by water quality modeling. Application data was 6.8 mg/l minimum and 7 mg/l average (712 samples).
Fecal Coliform (5/1 – 9/30)	200/100 ml 1,000/100 ml	Geo Mean IMAX	Existing Technology limit (Chapter 92a.47) Application data was 2420/100 ml max and <72/100 ml average.
Fecal Coliform (10/1 – 4/30)	2,000/100 ml 10,000 ml/100 ml	Geo Mean IMAX	See above
Total Residual Chlorine (TRC)	**0.50** **1.17**	**Monthly Average** **IMAX**	**UV disinfection is the approved method of disinfection. Part A chlorine limit has been added for emergency disinfection or other chlorine usage onsite. No application data.**
Ammonia-Nitrogen (May 1 - Oct 31)	**Report Lbs/d** **20.84** **Report** **41.68**	**Monthly Average** **Monthly Average** **Daily Max** **IMAX**	**New summer WQBEL per updated water quality modeling. Application data was 31 mg/l max and >5 mg/l average (96 samples). EDMR shows new limit can be met upfront (ranging from 0.14 to 11 mg/l monthly average).**
Ammonia-Nitrogen (Nov 1 - Apr 30)	**Report Lbs/d** **Report** **Report**	**Monthly Average** **Monthly Average** **Daily Max**	**See above.**
Total Phosphorus	**Report Lbs/d** **Report** **Report**	**Monthly Average** **Monthly Average** **Daily Max**	**Ongoing Chesapeake Bay monitoring requirement for facility with existing cap loads. For unknown reason the previous NPDES Permit did not include the CB limits/reporting requirements but facility has been reporting. Reporting per DEP Phase 2 Watershed Implementation Plan Supplement.**

			Application data was 9 mg/l max and 2 mg/l average (96 samples). Facility is not meeting annual TP mass caps, purchasing TP credits instead.
Total Nitrogen (Nitrate-Nitrite-N + TKN measured in same sample)	**Report Lbs/d Report Report**	**Monthly Average Monthly Average Daily Max**	**See above** Application data was 44 mg/l max and 19 mg/l average (96 samples). TKN: 40 mg/l max and <7 mg/l average (96 samples). Nitrate-Nitrite-N: 43 mg/l max and <12 mg/l average (96 samples). EDMR data shows lower range (0.28 – 19.8 mg/l monthly average).
TDS, Chlorides, Sulfates, and Bromide	Not Needed	-	Not needed per Reasonable Potential Analysis: TDS: 460 mg/l (1 sample) Chlorides: 168 mg/l (1 sample) Sulfates: 21.7 mg/l (1 sample) Bromides: 0.36 mg/l (1 sample).
Copper	**Report lb/d Report Report**	**Monthly Average Monthly Average Daily Max**	**Monitoring per Reasonable Potential Analysis (using default stream values): Copper: 0.008 mg/l (1 sample)**
Lead, Zinc	Not Needed	-	Not needed per Reasonable Potential Analysis (using default stream values): Lead: <0.001 mg/l (3 samples) Zinc: 0.045 mg/l (1 sample)
UV Intensity	**Report**	**Inst. Minimum**	**Daily monitoring and reporting now required.**
Aluminum	**Report lb/d Report Report**	**Monthly Average Monthly Average Daily Max**	**Monitoring upon request due to approved alum usage as coagulant/TP treatment chemical. Facility is presently buying TP credits.**
BOD5 Minimum % Removed	**85%**	**Minimum Monthly Average**	**Existing POTW requirement with reporting now required.**
TSS Minimum % Removed	**85%**	**Minimum Monthly Average**	**Existing POTW requirement with reporting now required.**

Comments:

- Outfall No. 101 (Internal Monitoring Point) created for BOD5/TSS Raw Sewage Influent sampling at headworks to allow for calculation of minimum monthly average reduction (existing POTW requirement).
- Grab sampling limits changed to instantaneous minimum and maximum. Fecal coliform units updated to #100 ml.
- Daily Max and mass loading reporting added to assorted constituents (no additional sampling required)
- **Monitoring frequency and 24-hour composite sampling updated to Chesapeake Bay minimum requirements with application indicating they are already doing 24-hour composite sampling) for nutrient trading and otherwise for standard monitoring frequencies.**
- **Reasonable Potential Analysis: Monitoring required for Total Copper per Reasonable Potential Analysis using DEP Biologist hardness value. Due to age of sampling data, stream data not used in PENTOXSD modeling. The facility has also had high historic Nitrate-Nitrite as N but there is no PWS intake within ten miles with existing TN mass cap limits with EDMR shows narrower range of values.**

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.7

Facility: **FCJMSA WWTP** NPDES Permit No.: **PA0060372** Outfall: **001**
Analysis Hardness (mg/L): **73.224** Discharge Flow (MGD): **0.185** Analysis pH (SU): **7**
Stream Flow, Q_{7-10} (cfs): **2.16**

Parameter	Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Total Dissolved Solids	460000	500000	No		
Chloride	168000	250000	No		
Bromide	360	N/A	No		
Sulfate	21700	250000	No		
1,4-Dioxane		N/A			
Total Copper	8	7.15	Yes	40.974	Monitor
Total Lead	1	2.14	No		
Total Zinc	45	92	No		

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
04F	28799	SOUTH BRANCH TUNKHANNOCK CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
1.660	FCJSA TP	PA0060372	0.185	CBOD5	25		
				NH3-N	20.84	41.68	
				Dissolved Oxygen			5

PENTOXSD Analysis Results

Recommended Effluent Limitations

SWP Basin	Stream Code:	Stream Name:
04F	28799	SOUTH BRANCH TUNKHANNOCK CREEK

RMI	Name	Permit Number	Disc Flow (mgd)
1.66	FCJSA STP	PA0060372	0.1850

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent WQBEL (µg/L)	Most Stringent WQBEL Criterion
COPPER	8	INPUT	12.481	40.974	AFC
LEAD	2	INPUT	3.12	17.764	CFC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9 — FCJMSA WWTP

2.16	= Q stream (cfs)	0.5	= CV Daily
0.185	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.681	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 1.659	1.3.2.iii	WLA cfc = 2.358
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.618	5.1d	LTA_cfc = 1.371

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	