

National Pollutant Discharge Elimination System (NPDES) Permit Program

F A C T S H E E T

Regarding an NPDES Permit to Discharge to Waters of the State of Ohio
for the **Olentangy Environmental Control Center (OECC)**

Public Notice No.: 195230

Public Notice Date: February 2, 2024

Comment Period Ends: March 3, 2024

OEPA Permit No.: **4PK00001*ND**

Application No.: **OH0054339**

Name and Address of Applicant:

**Delaware County Board of Commissioners
Delaware County Courthouse
91 North Sandusky Street
Delaware, Ohio 43015**

Name and Address of Facility Where

Discharge Occurs:

**Olentangy Environmental Control Center
10333 Olentangy River Road
Powell, OH 43065
Delaware County**

Receiving Water: **Olentangy River**

Subsequent Stream Network: **Scioto River to Ohio River**

Introduction

Development of a Fact Sheet for NPDES permits is mandated by Title 40 of the Code of Federal Regulations (CFR), Section 124.8 and 124.56. This document fulfills the requirements established in those regulations by providing the information necessary to inform the public of actions proposed by the Ohio Environmental Protection Agency (Ohio EPA), as well as the methods by which the public can participate in the process of finalizing those actions.

This Fact Sheet is prepared in order to document the technical basis and risk management decisions that are considered in the determination of water quality based NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, instream biological, chemical and physical conditions, and the relative risk of alternative effluent limitations. This Fact Sheet details the discretionary decision-making process empowered to the Director by the Clean Water Act (CWA) and Ohio Water Pollution Control Law (Ohio Revised Code [ORC] 6111). Decisions to award variances to Water Quality Standards (WQS) or promulgated effluent guidelines for economic or technological reasons will also be justified in the Fact Sheet where necessary.

Antidegradation provisions in Ohio Administrative Code (OAC) Chapter 3745-1 describe the conditions under which water quality may be lowered in surface waters. An antidegradation review was necessary in this case, and in accordance with the antidegradation rule, OAC 1-3745-1-05, it was determined that a lowering of water quality in Olentangy River is necessary.

Effluent limits based on available treatment technologies are required by Section 301(b) of the CWA. Many of these have already been established by the United States Environmental Protection Agency (U.S. EPA) in the effluent guideline regulations (a.k.a. categorical regulations) for industry categories in 40 CFR Parts 405-499. Technology-based regulations for publicly-owned treatment works are listed in the Secondary Treatment Regulations (40 CFR Part 133). If regulations have not been established for a category of dischargers, the director may establish technology-based limits based on best professional judgment (BPJ).

Ohio EPA reviews the need for water-quality-based limits on a pollutant-by-pollutant basis. Wasteload allocations (WLAs) are used to develop these limits based on the pollutants that have been detected in the discharge, and the receiving water's assimilative capacity. The assimilative capacity depends on the flow in the water receiving the discharge, and the concentration of the pollutant upstream. The greater the upstream flow, and the lower the upstream concentration, the greater the assimilative capacity is. Assimilative capacity may represent dilution (as in allocations for metals), or it may also incorporate the break-down of pollutants in the receiving water (as in allocations for oxygen-demanding materials).

The need for water-quality-based limits is determined by comparing the WLA for a pollutant to a measure of the effluent quality. The measure of effluent quality is called Projected Effluent Quality (PEQ). This is a statistical measure of the average and maximum effluent values for a pollutant. As with any statistical method, the more data that exists for a given pollutant, the more likely that PEQ will match the actual observed data. If there is a small data set for a given pollutant, the highest measured value is multiplied by a statistical factor to obtain a PEQ; for example if only one sample exists, the factor is 6.2, for two samples - 3.8, for three samples - 3.0. The factors continue to decline as samples sizes increase. These factors are intended to account for effluent variability, but if the pollutant concentrations are fairly constant, these factors may make PEQ appear larger than it would be shown to be if more sample results existed.

Procedures for Participation in the Formulation of Final Determinations

The proposed modification is tentative but shall become final on the effective date unless (1) an adjudication hearing is requested, (2) the Director withdraws and revises the proposed modification after consideration of the record of a public meeting or written comments, or (3) upon disapproval by the Administrator of the U.S. Environmental Protection Agency.

Within thirty (30) days of publication of this notice, any person may submit written comments, a statement as to why the proposed modification should be changed, a request for a public meeting on the proposed modification and/or a request for notice of further actions concerning the modification. All communications timely received will be considered in the final formulation of the modification. If significant public interest is shown a public meeting will be held prior to finalization of the modification.

Within thirty (30) days of the issuance of the proposed modification any officer of an agency of the state or of a political subdivision, acting in his representative capacity or any person aggrieved or adversely affected by issuance of it may request an adjudication hearing by submitting a written objection in accordance with Ohio Revised Code Section 3745.07. Since all other conditions of the permit remain in effect, a hearing may not be requested on any issues other than the proposed modification. If an adjudication hearing is requested, the existing NPDES permit will remain in effect until the hearing is resolved. Following the finalization of the modification by the Director, any person who was a party to an adjudication hearing may appeal to the Environmental Review Appeals Commission.

Requests for public meetings shall be in writing and shall state the action of the Director objected to, the questions to be considered, and the reasons the action is contested. Such requests should be emailed to HClerk@epa.ohio.gov or mailed to:

**Legal Records Section
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, Ohio 43216-1049**

Interested persons are invited to submit written comments upon the discharge permit. Comments should be submitted by email to epa.dswcomments@epa.ohio.gov (preferred method) or delivered in person or by mail no later than 30 days after the date of this Public Notice. Deliver or mail all comments to:

**Ohio Environmental Protection Agency
Attention: Division of Surface Water
Permits Processing Unit
P.O. Box 1049
Columbus, Ohio 43216-1049**

The Ohio EPA permit number and Public Notice numbers should appear on each page of any submitted comments. All comments received no later than 30 days after the date of the Public Notice will be considered.

Citizens may conduct file reviews regarding specific companies or sites. Appointments are necessary to conduct file reviews, because requests to review files have increased dramatically

in recent years. The first 250 pages copied are free. For requests to copy more than 250 pages, there is a five-cent charge for each page copied. Payment is required by check or money order, made payable to Treasurer State of Ohio.

For additional information about this fact sheet or the draft permit, contact John Owen at (614) 728-3849 or at John.Owen@epa.ohio.gov.

Location of Discharge/Receiving Water Use Classification

The Olentangy Environmental Control Center (OECC) discharges to the Olentangy River at River Mile 13.4 in Delaware County. Figure 1 shows the approximate location of the facility.

This segment is further identified by Ohio EPA River Code: 02-400 and U.S. EPA River Reach Code: 05060001-11-02, County: Delaware. This section of the Olentangy River is in the Eastern Corn Belt Plains Ecoregion. The following designated uses under Ohio's WQS (OAC 3745-1-09) are applicable to this section of the Olentangy River: Exceptional Warmwater Habitat (EWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS), and primary contact recreation (PCR).

Use designations define the goals and expectations of a waterbody. These goals are set for aquatic life protection, recreation use and water supply use, and are defined in the Ohio WQS (OAC 3745-1-07). The use designations for individual waterbodies are listed in rules -08 through -32 of the Ohio WQS. Once the goals are set, numeric WQS are developed to protect these uses. Different uses have different water quality criteria.

Use designations for aquatic life protection include habitats for coldwater fish and macroinvertebrates, warmwater aquatic life and waters with exceptional communities of warmwater organisms. These uses all meet the goals of the federal CWA. Ohio WQS also include aquatic life use designations for waterbodies which cannot meet the CWA goals because of human-caused conditions that cannot be remedied without causing fundamental changes to land use and widespread economic impact. The dredging and clearing of some small streams to support agricultural or urban drainage is the most common of these conditions. These streams are given Modified Warmwater or Limited Resource Water designations.

Recreation uses are defined by the depth of the waterbody and the potential for wading or swimming. Uses are defined for bathing waters, swimming/canoeing (Primary Contact Recreation) and wading only (Secondary Contact which are generally waters too shallow for swimming or canoeing).

Water supply uses are defined by the actual or potential use of the waterbody. Public Water Supply designations apply near existing water intakes so that waters are safe to drink with

standard treatment. Most other waters are designated for agricultural water supply and industrial water supply.

FACILITY DESCRIPTION

The OECC is an advanced treatment facility with an average design flow of 6.0 million gallons per day (MGD). The treatment plant was originally constructed in 1980, with the most recent major upgrade occurring in 2009. The treatment plant serves the City of Powell, portions of Dublin, and Liberty, Orange, Berlin, and Concord Townships in Delaware County. The current treatment plant processes and/or equipment include:

- Influent pumping;
- Bar screen;
- Comminution;
- Activated sludge – conventional;
- Combined biological nitrification and BOD removal;
- Biological denitrification;
- Secondary clarification with ferric chloride addition;
- Mixed media filter;
- Ultraviolet disinfection; and
- Post-aeration.

On October 11, 2022, Permit to Install (PTI) No.: 1481990 was issued to Delaware County for the OECC Headworks and Aeration Upgrades project, for which construction is currently underway. The project was to make improvements to the Olentangy Environmental Control Center utilizing a Design-Build delivery method. The general improvements plan includes upsizing and renovation of the existing influent pump station, construction of a new influent screenings facility, replacement of the biological treatment equipment and conversion to 4/5-Stage Bardenpho biological nutrient removal process during dry weather for influent flows less than 13 to 18.5 MGD (depending on influent loadings. For wet weather influenced flows, improvements to the plant will allow for the transition into a contact stabilization-based mode of operation to retain mixed liquor within the treatment system. The wet weather "mode" will increase the process capacity to approximately 24 MGD of influent flow. Additionally, the project will allow for the conversion of the existing tertiary sand filters to cloth disk filters, and provide upgrades to the solids thickening, storage, and dewatering facilities. See Figures 4 and 5 below for the upgraded plant flow diagrams. Once the final improvements have been completed, a closing PTI application will be submitted that will outline what final improvement were installed.

Currently OECC has a manual bypass that can re-route all or a portion of flow around both the tertiary filters and disinfection. In this alignment, all plant flow is bypassed around tertiary and disinfection treatments before flowing through post aeration and the sampling and monitoring stations, ultimately discharging via 001.

This bypass may only be used during filter and UV maintenance November through April, after notice is given to Ohio EPA and Ohio EPA has agreed to the bypass. This diversion is allowed,

granted that effluent limits are met, that sampling for total suspended solids, ammonia-N, total phosphorus, E. coli and 5-day CBOD is done at Outfall 001 during the diversion and reported in eDMR. Bypassing disinfection is prohibited May through October, and if it occurs Delaware County Regional Sewer District shall follow the guidelines set forth in Part III 11.A. and III 12.B. of the permit. During bypass events, sampling shall be reported at station 602 as described in Part I of the permit.

Additionally, OECC automatically diverts a portion of flow around tertiary filters at set flow rates. Diverted flow is then combined with filtered flow, disinfected (May through October), and discharged to the Olentangy River through Outfall 001. The filter diversion is allowed to ensure efficient operation as long as effluent limits are met and that sampling at Outfall 001 for total suspended solids, ammonia-N, total phosphorus, E. coli, and 5-day CBOD is done and reported on the eDMR.

During bypass events, sampling is reported at station 602. A special condition is included in Part II and part III of the permit to describe bypass conditions.

OECC has an approved pretreatment program. OECC has two categorical users that discharge 0.070 MGD of flow.

For potable water, the OECC service area uses both surface water from the Olentangy River (Delco Water Company) and groundwater from private wells.

OECC has 100% separated sewers in the collection system which include 10 lift stations.

OECC currently utilizes the following sewage sludge treatment processes (Figure 3):

- Mechanical Thickening (Recently upgraded per PTI No. 1481990)
- Polymer, Lime, ferric-chloride, alum addition
- Mechanical Dewatering via centrifuge
- Landfilling
- Hauling to another facility for treatment

However, as discussed above, improvement to the sludge management are currently underway and will include improvements to the solids thickening (which has since been constructed and is operational), additional storage, and dewatering facilities.

Basis of the Modification

Total Inorganic Nitrogen

In the most recent NPDES renewal permit (version *MD), final effluent limits (concentrations and loadings) were included for total inorganic nitrogen (TIN) (STORET parameter code 00640) to replace the final effluent limitations for nitrate + nitrite (STORET parameter code 00630) from the *LD permit version at the request of Delaware County. The nitrate + nitrite final effluent limitations were originally based on existing effluent quality from the OECC discharge during the late 1990's and were not correlated to any denitrification design standards or WQ criteria. Compliance with both seasonal ammonia-nitrogen (STORET 00610) and the nitrate + nitrite limitations proved challenging.

The Delaware County Regional Sewer District (DCRSD) (permittee) submitted an NPDES permit modification request on August 7, 2023. The permittee requested that the seasonal TIN concentration limits of 5.36 mg/L in the summer and 5.86 mg/L winter, and associated loadings, be revised to a single monthly average concentration of 10 mg/L, with the corresponding loading limitation based on an average daily design flow of 6.0 MGD, which is 227.1 kg/day. Ohio EPA evaluated the request and supporting documentation submitted by the permittee, and found the results demonstrate that a limit of 10 mg/L for this parameter will not violate water quality standards. The proposed modification would revise the seasonal TIN effluent limits to a monthly average concentration value of 10 mg/L, with a corresponding loading limit at 227.1 kg/day, at station 001.

Figure 1. Location of the Olentangy Environmental Control Center

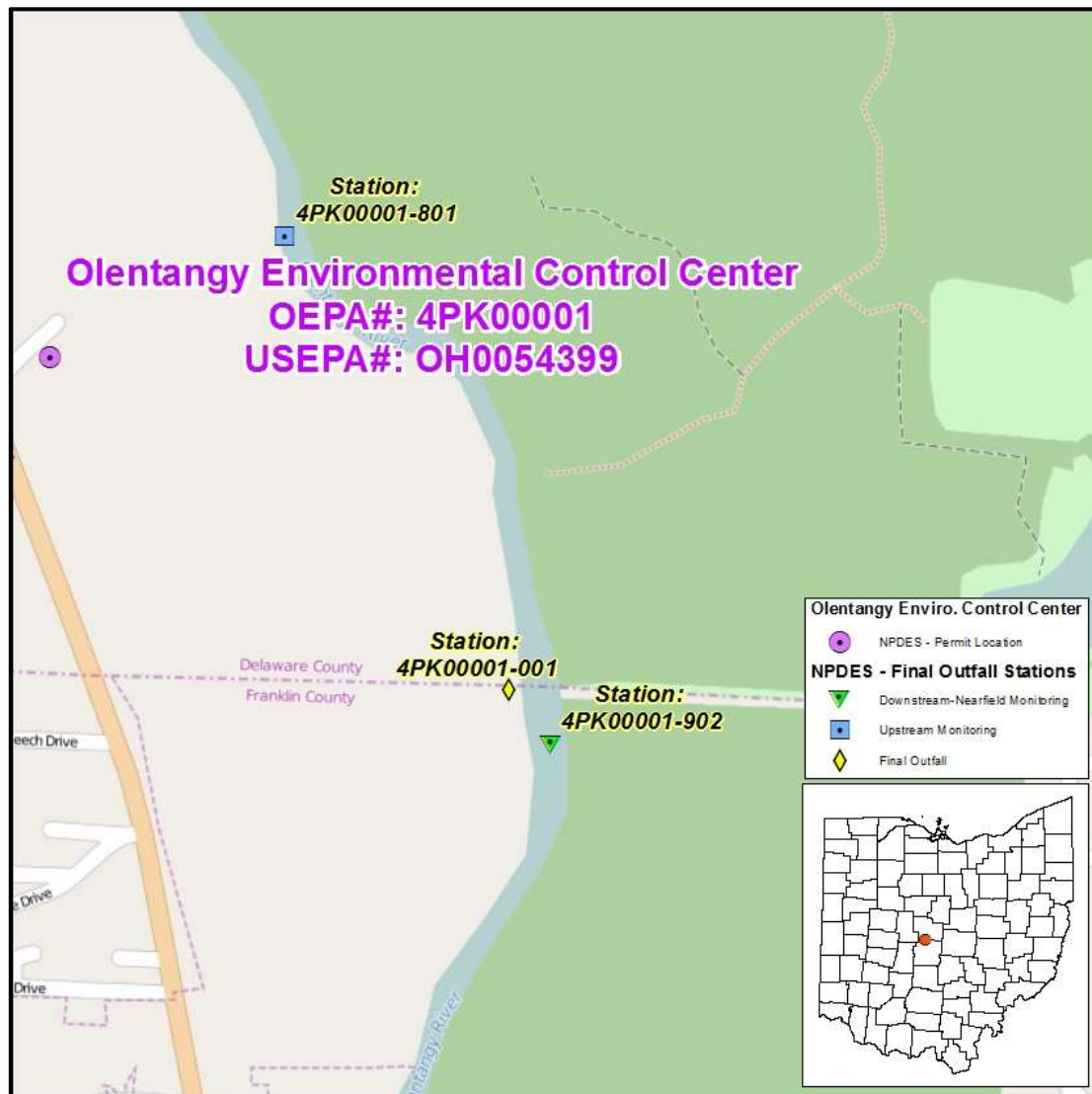


Figure 2. Current OECC Wastewater Stream Treatment System

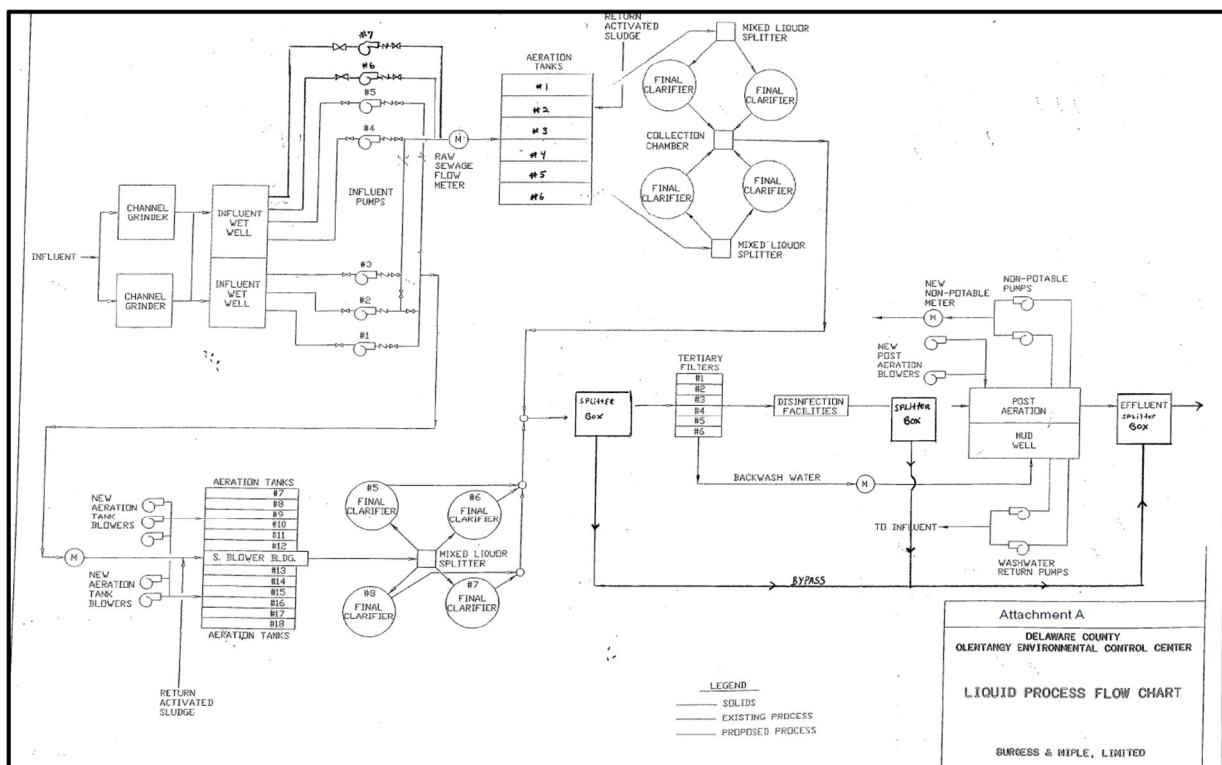


Figure 3. Current OECC Solids Treatment Path

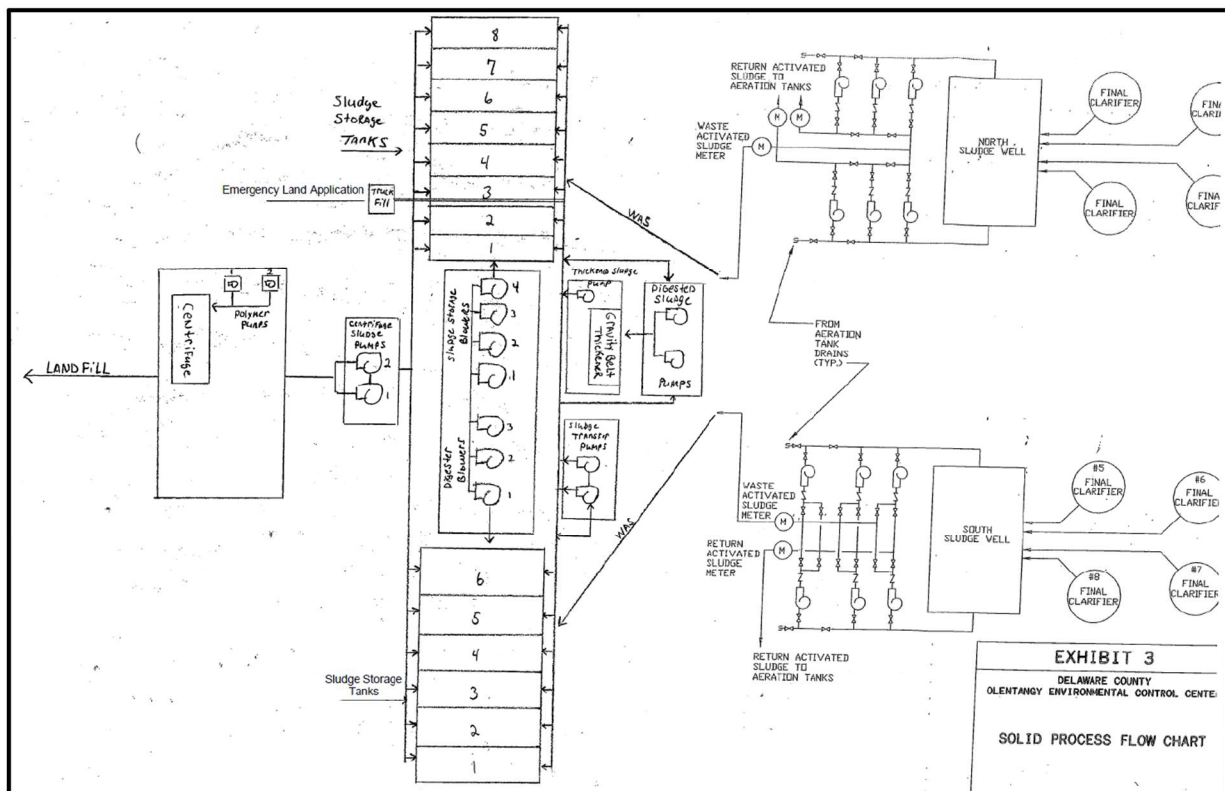


Figure 4. Future OECC Wet Steam Treatment Path

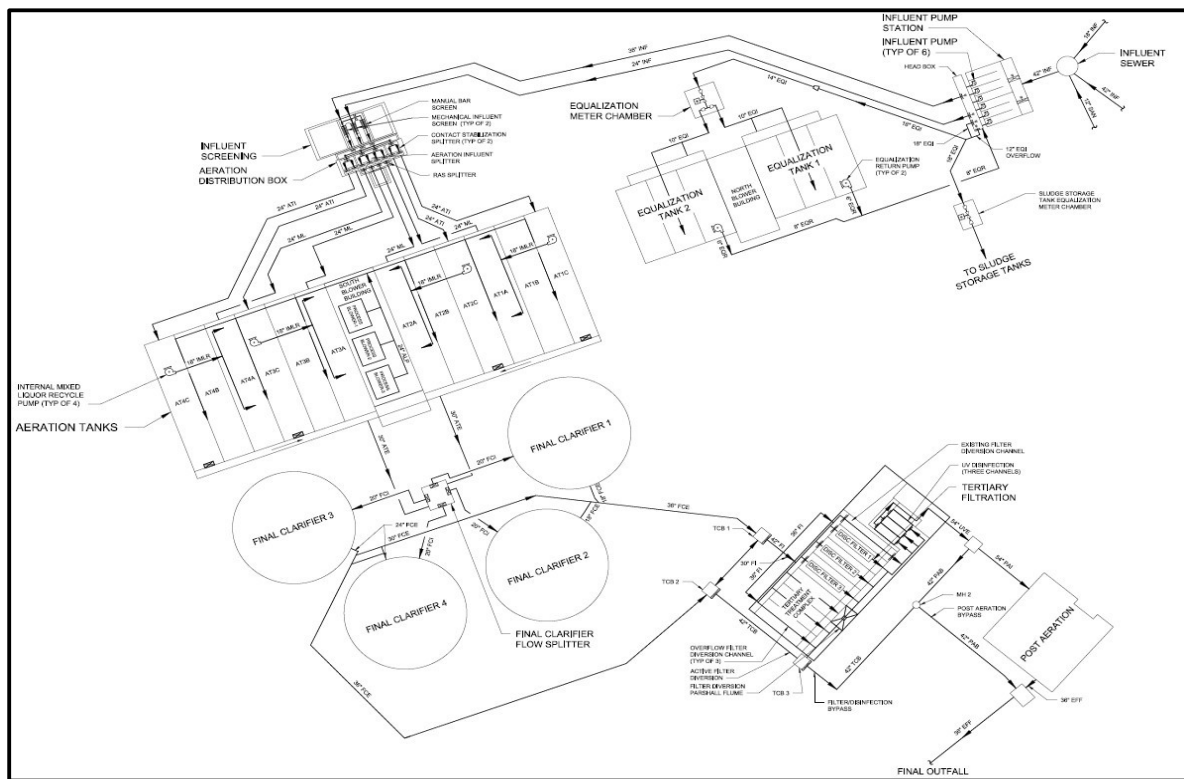


Figure 5. Future OECC Solids Treatment Path

