NOTE TO POTWS USING THIS MODEL: This document cannot be used “as is” but must be adjusted to fit your local Pretreatment Program needs. Review the “notes” listed through out the document, as well as the Comprehensive Guide, and remember to remove all “notes to POTWs using this Model” before you finalize your LTMP or STMP.

A. Sampling Points (See Figure 1)

NOTE TO POTWS USING THIS MODEL: Uncontrollable sampling is not required, but is recommended. You may need to add other locations, such as trickling filters, primary clarifier effluent, multiples biological units, anaerobic digester, etc.

1 - Influent - prior to mixing with side streams - use regular composite sample collected for NPDES monitoring

NOTE TO POTWS USING THIS MODEL: Influent means all wastewaters coming into your WWTP from all sources. This includes residential commercial, industrial, septage, and anything else that comes into your WWTP. It does not include any return or recycle wastestream generated by the WWTP itself, for example, return sludge, waste sludge, sludge dewatering, dewatering returns, filter backwash, etc. One of the purposes of the WWTP diagram is to clarify that the influent location is true influent. If your regular composite sample collected for NPDES monitoring is not true influent, there are a number of options for addressing this. Please see the XXX guidance document on the PERCS webiste for more details.two options.

1) use a different sampling point that is true influent for all LTMP influent sampling.

2) Sample the "other wastestreams" separately and add or subtract that load as appropriate. For example, if your NPDES influent sampling location includes filter backwash, add quarterly LTMP sampling location for filter backwash

2 - Effluent - after all treatment including chlorination - use regular composite sample collected for NPDES monitoring

3 - Activated Sludge Basin - collect a grab sample from each basin - combine these into one sample using a portion of each according to volume of WWTP flow

4 - Sludge to Disposal - sample sludge going to final disposal

5 - SIUs – locations described in IUPs

6 - Uncontrollable – collect composite samples at point in collection system that serves residential, commercial (including dentists and other medical), and any unpermitted non-SIUs. If more than one location is needed to ensure representative data, sampling will be rotated

B. Pollutants of Concern (P.O.C.) Reason for Inclusion:

NPDES - POTW NPDES Permit limit

Sludge - 40 CFR 503 Sludge Land Application

EPA - EPA Required

IUP - SIU Industrial User Permit Limit

NOTE TO POTWS USING THIS MODEL: Adjust this table to fit your local POTW conditions, adding/deleting parameters or reasons for inclusion.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| POC  List | NPDES  Required  Pollutants | 40 CFR 503 Sludge  Required  Pollutants | EPA, NC  Required  Pollutants | SIU  Limited  Pollutants |
| Flow | Flow |  |  | Flow |
| BOD5 | BOD5 |  |  |  |
| TSS | TSS |  |  |  |
| NH3 |  |  |  |  |
| As |  | As |  |  |
| Cd |  | Cd | Cd |  |
| Cr |  |  | Cr |  |
| Cu |  | Cu | Cu |  |
| CN |  |  |  |  |
| Pb |  | Pb | Pb |  |
| Hg |  | Hg |  |  |
| Mo |  | Mo |  |  |
| Ni |  | Ni | Ni |  |
| Ag |  |  |  |  |
| Se |  | Se |  |  |
| Zn |  | Zn | Zn |  |
| TP | TP |  |  |  |
| Oil & Grease |  |  |  |  |
| % Solids |  | % Solids |  |  |
| Sludge to disposal flow |  | Sludge to disposal flow |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

C. Flow

Flow monitoring points are indicated on the attached facility diagram, see Figure 1. Flow at effluent (Pt. 2) and SIUs (Pt. 5) will be monitored during sampling events. Flow or volume of sludge to disposal (Pt. 4) can either be monitored or calculated.

NOTE TO POTWS USING THIS MODEL: The Division does not recommend POTWs attempt to collect paired influent and effluent data. If you wish to attempt this, see Section 3 of the Removal Rate guidance on HWA web-page, and then contact your Division Pretreatment Contact to discuss your situation.

D. SIU Monitoring

Significant Industrial User monitoring will be conducted per industrial user permit (IUP). Additionally, extra SIU sampling will be performed such that all SIUs are sampled for all LTMP **(or STMP)** POCs at least once per year.

**NOTE TO POTWS USING THIS MODEL: Choose one of the “Frequency” examples below. Add or delete locations as per Section A. Typically Full Programs need 12 or more influent and effluent datapoints to develop removal rates. Choosing Option 1 or similar means using three years of LTMP (and DMR) data in your HWA. Choosing Option 2 allows you to use data from just the most recent year. Less frequent monitoring may be approved for parameters consistently below detection at influent and effluent locations.**

E. LTMP Sampling Frequency (for Full Programs – Option 1)

|  |  |
| --- | --- |
| Sampling Point | Frequency |
| 1- Influent | Quarterly on a Workday and per NPDES requirement |
| 2 – Effluent | Quarterly on a Workday and per NPDES requirement |
| 3 – Activated Sludge Basin | Once per six months |
| 4 - Sludge to Disposal | Per Sludge Permit and 503 regulations |
| 5 - SIU’s | Per SIU Permit and all POC's once per year |
| 6 – Uncontrollable | Quarterly |

E. LTMP Sampling Frequency (for Full Programs – Option 2)

|  |  |  |
| --- | --- | --- |
| Sampling Point | Normal | 1 Year Before HWA |
| 1- Influent | Quarterly on a Workday and per NPDES requirement | Monthly on a Workday and per NPDES requirement |
| 2 – Effluent | Quarterly on a Workday and per NPDES requirement | Monthly on a Workday and per NPDES requirement |
| 3 – Activated Sludge Basin | Once per six months | Once per six months |
| 4 - Sludge to Disposal | Per Sludge Permit and  503 regulations | Per Sludge Permit and  503 regulations |
| 5 - SIU’s | Per SIU Permit  and all POC's once per year | Per SIU Permit  and all POC's once per year |
| 6 – Uncontrollable | Quarterly | Quarterly |

E. STMP Sampling Frequency (for Modified Programs)

|  |  |  |
| --- | --- | --- |
| Sampling Point | Year before HWA | Other years |
| 1- Influent | Quarterly on a Workday and per NPDES requirement |  |
| 2 – Effluent | Quarterly on a Workday and per NPDES requirement |  |
| 3 – Activated Sludge Basin | Once |  |
| 4 - Sludge to Disposal | Per Sludge Permit and 503 regulations |  |
| 5 - SIU’s | Per SIU Permit  And POC's once |  |
| 6 – Uncontrollable | Quarterly |  |

F. Sampling Plan

NOTE TO POTWs USING THIS MODEL: Add/delete parameters per Section B.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pollutant | Influent  (Pt. 1) | Effluent  (Pt. 2) | Aeration  (Pt. 3) | Sludge  (Pt. 4) | SIUs  (Pt. 5) | Uncontrollable  (Pt. 6) |
| BOD | X | X |  |  | X | X |
| TSS | X | X |  |  | X | X |
| NH3 as N | X | X | X |  | X | X |
| As | X | X | X | X | X | X |
| Cd | X | X | X | X | X | X |
| Cr | X | X | X |  | X | X |
| Cu | X | X | X | X | X | X |
| CN | X | X | X |  | X | X |
| Pb | X | X | X | X | X | X |
| Hg | X | X | X | X | X | X |
| Mo | X | X |  | X | X | X |
| Ni | X | X | X | X | X | X |
| Se | X | X |  | X | X | X |
| Ag | X | X | X | X | X | X |
| Zn | X | X | X | X | X | X |
| Oil & grease | X | X |  |  | X | X |
| Flow |  | X |  | X | X | X |
| %solids |  |  | X | X |  |  |

G. Detection Level and Sample Method

NOTE TO POTWs USING THIS MODEL: Add/delete parameters per Section B. Also, adjust Hg listings as needed.

|  |  |  |
| --- | --- | --- |
| P.O.C. | Detection Level (mg/l) \* | Sample Method \*\* |
| BOD | 2 | 24 hr Composite |
| TSS | 2.5 | 24 hr Composite |
| NH3 as N | 0.1 | 24 hr Composite |
| As | 0.01 | 24 hr Composite |
| Cd | 0.002 | 24 hr Composite |
| Cr | 0.005 | 24 hr Composite |
| Cu | 0.002 | 24 hr Composite |
| CN | 0.01 | Grab |
| Pb | 0.01 | 24 hr Composite |
| Hg-effluent | 1 ng/l (method 1631) | Grab |
| Hg-all other locations | 0.0002 (method 245.1) | 24 hr Composite |
| Mo | 0.1 | 24 hr Composite |
| Ni | 0.01 | 24 hr Composite |
| Se | 0.01 | 24 hr Composite |
| Ag | 0.005 | 24 hr Composite |
| Zn | 0.01 | 24 hr Composite |
| Oil & Grease | 5 | Grab |

Sampling, preservation, and analytical method must be from 40 CFR 136.

\* Graphite Furnace Determinations are required to attain the desired detection level for the metals. However, analysis of Aeration Basin and Sludge to Disposal samples often cannot meet these detection levels. In this case, analysis of these samples must obtain a detection level at least as stringent as the applicable inhibition criteria or sludge ceiling standard.

\*\* All Aeration Basin and Sludge to Disposal samples will be grab.

# WWTP Diagram

NOTE TO POTWS USING THIS MODEL: You must adjust this diagram to reflect your own WWTP. Hand drawn “box and line” type diagrams are acceptable.

**EXAMPLE DIAGRAM**

**Influent**

**1**

**Bar Screen**



**Filter**

**Backwash**

### Return Activated Sludge

**4**

## Sludge to Disposal

### Digester Supernatant

## Chlorine

## Disinfect

### Grit

### Removal

##### Sampling Points

1 – Influent **(prior to all side streams!)**

2 – Effluent (After Chlorination)

3 – Activated Sludge Basins

4 – Sludge to Disposal

**2**

## Clarifier

Aeration Basin

Aeration Basin

**3**

## Sludge

## Aerobic Digester

**Effluent**

**Filter**

