**Appendix D.2**

**Quality Assurance Plan Template**

**\*\*\***

**Quality Assurance Plan for
NPDES Permit Number WAG1300XX**

< Facility Name >

<Tribe / Agency >

Effective date of the Plan: <MM DD, YYYY>

<Facility Name> Quality Assurance Plan Approval

*This Table should include the individual(s) responsible for reviewing and approving the Quality Assurance Plan (QAP).*

|  |  |  |  |
| --- | --- | --- | --- |
| ***Name*** | ***Title*** | ***Signature*** | ***Date*** |
|  | *(ex) Facility Manager* |  |  |
|  | *(ex) QA Manager* |  |  |
|  | *(ex) Field Sampler* |  |  |
|  | *(ex) On-Site Lab Manager* |  |  |

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# NPDES Project Management

## Distribution List

Example Language

The following individuals will need copies of the approved QAP and any subsequent revisions:

*All personnel involved in the project should retain or have access to the current version of the QA Plan. This may include the Project Manager, laboratory manager, field team leader, modeler, QA Manager, data reviewers, and any essential contractor and subcontractor personnel involved with the facility. Use tribe/agency or facility-specific titles as appropriate.*

|  |  |
| --- | --- |
| **Personnel** | **Title** |
|  | (ex) Natural Resource Program Manager / Quality Assurance Manager |
|  | (ex) Facility Manager |
|  | (ex) Field Sampler / Facility Staff |

## Project/Task Organization

Example Language

The following individuals will be participating in the QAP:

*Combine the responsibilities of the Facility Manager and Quality Assurance (QA) Manager if the Facility Manager performs the duties of the QA Manager.*

|  |  |  |
| --- | --- | --- |
| **Personnel** | **Position** | **Responsibility** |
|  | (ex) Facility Manager | (ex) Preparing and transmitting completed Discharge Monitoring Reports (DMRs) and Annual Reports. |
|  | (ex) Quality Assurance (QA) Manager | (ex) Verifying accuracy and completeness of data reported in DMRs and Annual Reports. |
|  | (ex) Facility Staff | (ex) Collecting and shipping water samples to analytical lab(s). |
| <Laboratory Name> | Address & Telephone # | (ex) Testing and analyzing water samples and providing results. |

## Problem Definition/Background

*Select the appropriate example language below based on the facility production and feed levels (CAAP or Non-CAAP)*

**[CAAP Facilities Only]** Example Language

Production and feed levels at <Facility Name> meet the minimum threshold levels established in Appendix C to 40 CFR part 122 and the facility is considered a concentrated aquatic animal production (CAAP) facility. This QAP describes how the CAAP facility will collect the necessary information to meet the General NPDES Permit WAG130000 monitoring and reporting requirements for effluent flow, total suspended solids, settleable solids, total residual chlorine, and temperature (as applicable), in accordance with Tables 1 through 4 below.

**[Non-CAAP Facilities Only]** Example Language

Production and feed levels at <Facility Name> do not meet the minimum threshold levels established in Appendix C to 40 CFR part 122 to be considered a CAAP facility, however, the facility discharges pollutants by pipe(s), ditch(es), or channel(s), and is considered a point sources as defined under 33 U.S.C. §1362(14). This QAP describes how the non-CAAP facility will collect the necessary information to meet the General NPDES Permit WAG130000 monitoring and reporting requirements for effluent flow, total suspended solids, settleable solids, total residual chlorine, and temperature (as applicable), in accordance with Tables 5 through 8 below.

## Monitoring Requirements

*Select the appropriate example language based on the facility production and feed levels (CAAP or Non-CAAP)*

**[CAAP Facilities Only]** Example Language

Table 1 includes facility effluent limitations and monitoring requirements. Table 2 includes effluent limitations and monitoring requirements for discharges from Off-Line Settling Basins (OLSBs). Table 3 includes effluent limitations and monitoring requirements for discharges from raceways or rearing ponds during drawdown for fish release, and Table 4 includes effluent limitations and monitoring requirements applicable during vessel disinfection

|  |
| --- |
| Table 1. Effluent Limitations and Monitoring Requirements for CAAP Facility Discharges1 |
| **Parameter** | **Units** | **Effluent Limitations** | **Monitoring Requirements** |
| **Maximum Daily** | **Average Monthly** | **Instantaneous Maximum** | **Sample Frequency** | **Sample Type** | **Sample Location** |
| Effluent Flow2 | Gallons per Day | -- | -- | -- | Monthly | Flow meter, calibrated weir, or other approved method | Effluent3, 4 |
| Net Total Suspended Solids (TSS)2, 5 | mg/L | -- | 5 | 15 | Quarterly | Composite6 | Influent & Effluent3 |
| Net Settleable Solids2, 5 | mL/L | -- | 0.1 | -- | Quarterly | Grab | Influent & Effluent3 |
| Total Residual Chlorine7 – into fresh water | µg/L | 188, 9 | 9.08 | -- | Monthly | Grab | Effluent3 |
| Total Residual Chlorine7 – into marine water | µg/L | 12.38, 9 | 6.18 | -- | Monthly | Grab | Effluent3 |
| Temperature10 (temperature impaired receiving waters only) | °C | -- | -- | -- | Continuous (2 years) | Meter | Upstream & Effluent3 |
| Nutrient Parameters11, 12 (DO impaired receiving waters only) | 12 | -- | -- | -- |  Annually13  | Composite6 | Effluent3 |
| Polychlorinated biphenyl (PCBs)14(Within Spokane Reservation only) | ng/L | -- | -- | Report | Annually15 | Grab | Effluent |
| Footnotes:1 - These effluent limitations and monitoring requirements do not apply to discharges from raceways or rearing pond systems during drawdown; limits and monitoring for which are included in Table 3. Note, additional effluent limitations and monitoring requirements applicable to discharges from off-line settling basins (OLSBs) are included in Table 2.2 - All influent and effluent samples and flow measurements must be taken on the same day.3 - Effluent samples must be collected from the effluent stream after the last unit prior to discharge into the receiving waters or to subsequent mixing with other water flows. If OLSB effluent combines with raceway flows, at least one quarter of the grab samples that go into a composite sample must be collected when the OLSB is discharging.4 - If the facility is operating in a steady state (no drawdown nor filling up), the flow may be monitored at the influent or the effluent.5 - Net concentration = effluent concentration – influent concentration. Net TSS and settleable solids determinations will require influent analysis in addition to effluent analysis unless the Permittee chooses to assume that the pollutant concentration in the influent is zero. Influent samples must be collected prior to collection of effluent samples; and net TSS and settleable solids will be determined by subtracting the influent concentrations from the effluent concentrations (see Appendix C). EPA may require additional sampling to prove substantial similarity between influent and effluent solids, where indicated.6 - Composite samples must consist of four or more discrete samples taken at one-half hour intervals or greater over a 24-hour period; for facilities that clean raceways periodically, at least one fourth of the samples must be taken during quiescent zone or raceway cleaning. Facilities with multiple effluent discharge points and/or influent points must composite samples from all points proportionally to their respective flows. Only the composite sample must be analyzed.7 - Total residual chlorine must be monitored only when chlorine or Chloramine-T are being used, giving consideration to retention times in the facility. Monitoring for chlorine must be conducted during each calendar month if chlorine or Chloramine-T are used at any time during the month, but sampling does not need to occur more than once per month.8 - Chlorine limits and monitoring requirements only apply when chlorine or Chloramine-T is being used. Monitoring for chlorine must be conducted during each calendar month if chlorine or Chloramine-T is used at any time during the month, but sampling does not need to occur more than once per month. The Permittee will be in compliance with the effluent limitations for total residual chlorine, provided the total residual chlorine levels are at or below the compliance evaluation level of 50 µg/L. Chlorine monitoring is not required if chlorine is allowed to dry at the location of use.9 - Reporting is required within 24 hours of a maximum daily limit violation for total residual chlorine (see Part VIII.G).10 - Monitoring requirements apply only to certain facilities that discharge to waters impaired for temperature (see Part V.C). The Permittee may use representative upstream receiving water data from an existing third-party gauge (e.g., United States Geological Survey [USGS]), if available, to satisfy the upstream receiving water monitoring requirement.11 - Monitoring requirements apply only to certain facilities that discharge to waters impaired for dissolved oxygen (see Part V.C).12 - Nutrient parameter monitoring includes the following parameters and sample units: Phosphorous, Total (as P) (µg/L); Total Kjeldahl Nitrogen (mg/L); Nitrate + Nitrite Nitrogen (as N) (µg/L); and BOD5 (mg/L)13 – Nutrient monitoring must be conducted once per year within 1 month prior to anticipated peak biomass. Reporting of nutrient monitoring results is required once per year on or before January 20th (see Part V.C.2).14 – Facilities within the Spokane Reservation must monitor for PCBs annually during the calendar month of maximum feeding, using Method 1668C. Monitoring must be conducted during the first full calendar year of permit coverage, and annually thereafter. Reporting of PCB monitoring results to EPA and the Spokane Tribe of Indians is required once per year on or before January 20th (see Part V.C.3.) 15 – Annual PCB monitoring must take place during the calendar month of maximum feeding. |

| Table 2. Effluent Limitations and Monitoring Requirements for CAAP Facility Discharges from Off-line Settling Basins1 |
| --- |
| **Parameter** | **Units** | **Effluent Limitations** | **Monitoring Requirements** |
| **Maximum Daily** | **Sample Frequency** | **Sample Type** | **Sample Location** |
| Effluent Flow2 | Gallons per Day | -- | Monthly | Flow meter, calibrated weir, or other approved method | Effluent3 |
| Total Suspended Solids (TSS) | mg/L | 100 | Monthly | Grab4 | Effluent3 |
| Settleable Solids | mL/L | 1.0 | Monthly | Grab4 | Effluent3 |
| Footnotes:1 - Effluent limitations and monitoring requirements apply only to OLSB effluents that discharge directly to waters of the United States. If the discharge combines with other process wastewaters, these additional OLSB limits and monitoring requirements do not apply.2 - All effluent samples and flow measurements must be taken on the same day. 3 - Effluent samples must be collected from the effluent stream after the last unit prior to discharge into the receiving waters.4 - Facilities with multiple effluent discharge points must composite grab samples from all points proportionally to their respective flows. Only the composite sample must be analyzed. |

| Table 3. Effluent Limitations and Monitoring Requirements for CAAP Facility Discharges from Raceways or Rearing Ponds during Drawdown for Fish Release |
| --- |
| **Parameter** | **Units** | **Effluent Limitations** | **Monitoring Requirements** |
| **Maximum Daily** | **Average Monthly** | **Sample Frequency** | **Sample Type** | **Sample Location** |
| Total Suspended Solids (TSS) | mg/L | 100 | -- | Once per Drawdown | Grab1 | Effluent |
| Settleable Solids | mL/L | 1.0 | -- | Once per Drawdown | Grab1 | Effluent |
| Total Residual Chlorine2 – into fresh water | µg/L | 181, 3 | 9.0 | Once per Drawdown | Grab1 | Effluent |
| Total Residual Chlorine2 – into marine water | µg/L | 12.31, 3 | 6.1 | Once per Drawdown | Grab1 | Effluent |
| Footnotes:1 - Drawdown samples must be collected during the last quarter of each drawdown event. If the drawdown is a continuous event that involves more than one rearing pond or raceway discharging directly to waters of the United States, the Permittee may composite grab samples from each rearing pond or raceway proportionally to their respective flows, each taken in the last quarter of its drawdown; the combined sample may be analyzed instead of separately analyzing grab samples from each of the rearing ponds or raceways. If the discharge is to a settling pond, the facility must estimate when the final quarter of the discharge is being released to the settling pond, delay the monitoring by the residence time calculated for the pond, and then monitor as the effluent discharges from the pond to the receiving water. If multiple drawdown events are sequential or on different days, a separate grab sample must be analyzed for each event.2 - Chlorine limits and monitoring requirements only apply when chlorine or Chloramine-T is being used. The Permittee will be in compliance with the effluent limitations for total residual chlorine, provided the total residual chlorine residual levels are at or below the compliance evaluation level of 50 µg/L. Chlorine monitoring is not required if chlorine is allowed to dry at the location of use.3 - Reporting is required within 24 hours of a maximum daily limit violation for total residual chlorine (see Part VIII.G). |

| Table 4. Effluent Limitations and Monitoring Requirements for CAAP Facility Rearing Vessel Disinfection Water1 |
| --- |
| **Parameter** | **Units** | **Effluent Limitations** | **Monitoring Requirements** |
| **Maximum Daily** | **Average Monthly** | **Sample Frequency** | **Sample Type** | **Sample Location** |
| Total Residual Chlorine2 – into fresh water | µg/L | 183 | 9.0 | Once per Discharge | Grab | Effluent |
| Total Residual Chlorine2 – into marine water | µg/L | 12.33 | 6.1 | Once per Discharge | Grab | Effluent |
| Footnotes:1 - Effluent limitations and monitoring requirements apply when rearing vessels are disinfected with chlorine. Chlorine monitoring is not required if rearing vessels are allowed to dry completely and there is no discharge of chlorine.2 - The Permittee will be in compliance with the effluent limit for total residual chlorine, provided the total residual chlorine levels are at or below the compliance evaluation level of 50 µg/L. 3 - Reporting is required within 24 hours of a maximum daily limit violation for total residual chlorine (see Part VIII.G). |

**[Non-CAAP Facilities Only]** Example Language

Table 5 includes monitoring requirements and action thresholds for facility discharges. Table 6 includes monitoring requirements and action thresholds for discharges from Off-Line Settling Basins (OLSBs). Table 7 includes monitoring requirements and action thresholds for discharges from raceways or rearing ponds during drawdown for fish release, and Table 8 includes monitoring requirements and action thresholds applicable during vessel disinfection.

| Table 5. Action Thresholds and Monitoring Requirements for Non-CAAP Facility Discharges1 |
| --- |
| **Parameter** | **Units** | **Action Thresholds2** | **Monitoring Requirements** |
| **Maximum Daily** | **Average Monthly** | **Instantaneous Maximum** | **Sample Frequency** | **Sample Type** | **Sample Location** |
| Effluent Flow3 | Gallons per Day | -- | -- | -- | Monthly | Flow meter, calibrated weir, or other approved method | Effluent4, 5 |
| Net Total Suspended Solids (TSS)3,6 | mg/L | -- | 5 | 15 | Twice per Permit Term7 | Composite8 | Influent & Effluent4 |
| Net Settleable Solids3,6 | mL/L | -- | 0.1 | -- | Twice Per Permit Term7 | Grab | Influent & Effluent4 |
| Total Residual Chlorine9 – into fresh water | µg/L | 1810 | 9.010 | -- | Monthly | Grab | Effluent4 |
| Total Residual Chlorine9 – into marine water | µg/L | 12.310 | 6.110 | -- | Monthly | Grab | Effluent4 |
| Eugenol11 (fish sampling programs only) | mg/L | 0.97 | -- | -- | Daily14 | Calculate12 | Effluent |
| Temperature13 (temperature impaired receiving waters only) | °C | -- | -- | -- | Continuous (2 Years) | Meter | Upstream & Effluent4 |
| Polychlorinated biphenyl (PCBs)14(Within Spokane Reservation only) | -- | -- | -- | Report | Annually15 | Grab | Effluent |
| Footnotes:1 - These action thresholds and monitoring requirements do not apply to discharges from raceways or rearing pond systems during drawdown; thresholds and monitoring requirements for which are included in Table 7. Note, additional action thresholds and monitoring requirements applicable to discharges from off-line settling basins (OLSBs) are included in Table 6.2 - Action thresholds are not effluent limitations, but pollutant concentrations above which EPA Region 10 has determined represent a level of concern and require further evaluation of the Permittee’s BMP Plan to determine whether BMPs are effectively controlling pollutant concentrations in the discharge (see Part V.B.1). Reporting is required within 24 hours of any maximum daily action threshold exceedance for total residual chlorine or eugenol (see Part VIII.G).3 - All influent and effluent samples and flow measurements must be taken on the same day.4 - Effluent samples must be collected from the effluent stream after the last unit prior to discharge into the receiving waters or to subsequent mixing with other water flows. If OLSB effluent combines with raceway flows, at least one quarter of the grab samples that go into a composite sample must be collected when the OLSB is discharging.5 - If the facility is operating in a steady state (no drawdown nor filling up), the flow may be monitored at the influent or the effluent.6 - Net concentration = effluent concentration – influent concentration. Net TSS and settleable solids determinations will require influent analysis in addition to effluent analysis unless the Permittee chooses to assume that the pollutant concentration in the influent is zero. Influent samples must be collected prior to collection of effluent samples; and net TSS and settleable solids will be determined by subtracting the influent concentrations from the effluent concentrations (see Appendix C). EPA may require additional sampling to prove substantial similarity between influent and effluent solids, where indicated.7 - Monitoring shall be conducted twice within the first four years of permit coverage, when the facility is near peak biomass. Results shall be reported in the corresponding Annual Reports.8 - Composite samples must consist of four or more discrete samples taken at one-half hour intervals or greater over a 24-hour period; for facilities that clean raceways periodically, at least one fourth of the samples must be taken during quiescent zone or raceway cleaning. Facilities with multiple effluent discharge points and/or influent points must composite samples from all points proportionally to their respective flows. Only the composite sample must be analyzed.9 - Total residual chlorine must be monitored only when chlorine or Chloramine-T are being used, giving consideration to retention times in the facility. Monitoring for chlorine must be conducted during each calendar month if chlorine or Chloramine-T are used at any time during the month, but sampling does not need to occur more than once per month.10 - Chlorine action thresholds and monitoring requirements only apply when chlorine or Chloramine-T is being used. Monitoring for chlorine must be conducted during each calendar month if chlorine or Chloramine-T is used at any time during the month, but sampling does not need to occur more than once per month. The Permittee will be in compliance with the action thresholds for total residual chlorine, provided the total residual chlorine levels are at or below the compliance evaluation level of 50 µg/L. Chlorine monitoring is not required if chlorine is allowed to dry at the location of use.11 - The eugenol action threshold applies only to fish passage facilities. This action threshold, or the requirement to utilize Aqui-S20E as opposed to other approved fish anesthetics such as MS-222 in accordance with Parts IV.A.6 and VII.B. of the permit, does not apply to aquaculture facilities collecting adult fish for broodstock. 12 - The Environmental Introduction Concentration (EIC) shall be calculated on each day that water treated with Aqui-S20E is discharged to waters of the United States. The EIC should be calculated following the procedures in the Treatment Use Reporting Log Sheet in Appendix F.13 - Monitoring requirements apply only to certain facilities that discharge to waters impaired for temperature (see Part V.C). The Permittee may use representative upstream receiving water data from an existing third-party gauge (e.g., USGS), if available, to satisfy the upstream receiving water monitoring requirement. These requirements do not apply to discharges to waters impaired for temperature from fish sampling programs.14 – Facilities within the Spokane Reservation must monitor for PCBs annually during the calendar month of maximum feeding, using Method 1668C. Monitoring must be conducted during the first full calendar year of permit coverage, and annually thereafter. Reporting of PCB monitoring results to EPA and the Spokane Tribe of Indians is required once per year on or before January 20th (see Part V.C.3.) 15 – Annual PCB monitoring must take place during the calendar month of maximum feeding. |

|  |
| --- |
| Table 6. Action Thresholds and Monitoring Requirements for Non-CAAP Facility Discharges from Off-line Settling Basins1 |
| **Parameter** | **Units** | **Action Thresholds2** | **Monitoring Requirements** |
| **Maximum Daily** | **Sample Frequency** | **Sample Type** | **Sample Location** |
| Effluent Flow3 | Gallons per Day | -- | Monthly | Flow meter, calibrated weir, or other approved method | Effluent4 |
| Total Suspended Solids (TSS) | mg/L | 100 | Twice per Permit Term5 | Grab6 | Effluent4 |
| Settleable Solids | mL/L | 1.0 | Twice per Permit Term5 | Grab6 | Effluent4 |
| Footnotes:1 - Monitoring requirements and action thresholds apply only to OLSB effluents that discharge directly to waters of the United States. If the discharge combines with other process wastewaters, these additional OLSB action thresholds and monitoring requirements do not apply.2 - Action thresholds are not effluent limitations, but pollutant concentrations above which EPA Region 10 has determined represent a level of concern and require further evaluation of the Permittee’s BMP Plan to determine whether BMPs are effectively controlling pollutant concentrations in the discharge (see Part V.B.1).3 - All effluent samples and flow measurements must be taken on the same day.4 - Effluent samples must be collected from the effluent stream after the last unit prior to discharge into the receiving waters.5 - Monitoring shall be conducted twice within the first four years of permit coverage, when the facility is near peak biomass. Results shall be reported in the corresponding Annual Reports.6 - Facilities with multiple effluent discharge points must composite grab samples from all points proportionally to their respective flows. Only the composite sample must be analyzed. |

|  |
| --- |
| Table 7. Action Thresholds and Monitoring Requirements for Non-CAAP Facility Discharges from Raceways or Rearing Ponds during Drawdown for Fish Release |
| **Parameter** | **Units** | **Action Thresholds1** | **Monitoring Requirements** |
| **Maximum Daily** | **Average Monthly** | **Sample Frequency** | **Sample Type** | **Sample Location** |
| Total Suspended Solids (TSS) | mg/L | 100 | -- | Once per Drawdown | Grab2 | Effluent |
| Settleable Solids | mL/L | 1.0 | -- | Once per Drawdown | Grab2 | Effluent |
| Total Residual Chlorine3 – into fresh water | µg/L | 18 | 9.0 | Once per Drawdown | Grab2 | Effluent |
| Total Residual Chlorine3 – into marine water | µg/L | 12.3 | 6.1 | Once per Drawdown | Grab2 | Effluent |
| Footnotes:1 - Action thresholds are not effluent limitations, but pollutant concentrations above which EPA Region 10 has determined represent a level of concern and require further evaluation of the Permittee’s BMP Plan to determine whether BMPs are effectively controlling pollutant concentrations in the discharge (see Part V.B.1). Reporting is required within 24 hours of any maximum daily action threshold exceedance for total residual chlorine (see Part VIII.G).2 - Drawdown samples must be collected during the last quarter of each drawdown event. If the drawdown is a continuous event that involves more than one rearing pond or raceway discharging directly to waters of the United States, the Permittee may composite grab samples from each rearing pond or raceway proportionally to their respective flows, each taken in the last quarter of its drawdown; the combined sample may be analyzed instead of separately analyzing grab samples from each of the rearing ponds or raceways. If the discharge is to a settling pond, the facility must estimate when the final quarter of the discharge is being released to the settling pond, delay the monitoring by the residence time calculated for the pond, and then monitor as the effluent discharges from the pond to the receiving water. If multiple drawdown events are sequential or on different days, a separate grab sample must be analyzed for each event.3 - Chlorine action thresholds and monitoring requirements only apply when chlorine or Chloramine-T is being used. The Permittee will be in compliance with the action thresholds for total residual chlorine, provided the total residual chlorine residual levels are at or below the compliance evaluation level of 50 µg/L. Chlorine monitoring is not required if chlorine is allowed to dry at the location of use. |

| Table 8. Action Thresholds and Monitoring Requirements for Non-CAAP Facility Rearing Vessel Disinfection Water1 |
| --- |
| **Parameter** | **Units** | **Action Thresholds2** | **Monitoring Requirements** |
| **Maximum Daily** | **Average Monthly** | **Sample Frequency** | **Sample Type** | **Sample Location** |
| Total Residual Chlorine – into fresh water | µg/L | 183 | 9.0 | 1/Discharge | Grab | Effluent |
| Total Residual Chlorine – into marine water | µg/L | 12.33 | 6.1 | 1/Discharge | Grab | Effluent |
| Footnotes:1 - Action thresholds and monitoring requirements apply when rearing vessels are disinfected with chlorine. The Permittee will be in compliance with the action thresholds for total residual chlorine, provided the total residual chlorine residual levels are at or below the compliance evaluation level of 50 µg/L. Chlorine monitoring is not required if rearing vessels are allowed to dry completely and there is no discharge of chlorine.2 - Action thresholds are not effluent limitations, but pollutant concentrations above which EPA Region 10 has determined represent a level of concern and require further evaluation of the Permittee’s BMP Plan to determine whether BMPs are effectively controlling pollutant concentrations in the discharge (see Part V.B.1). 3 - Reporting is required within 24 hours of any maximum daily action threshold exceedance for total residual chlorine (see Part VIII.G). |

**[Both CAAP and Non-CAAP Facilities]**

*Write a paragraph here explaining where the influent source for the Facility originates, and where it will be sampled.*

Example Language

The influent fresh water source for the \_\_\_\_\_\_\_\_\_\_\_\_ Facility originates from the \_\_\_\_\_\_\_\_\_ River. The \_\_\_\_\_\_\_\_\_ River Pump Station conveys water through a pipeline to the \_\_\_\_\_\_\_\_ Reservoir. Freshwater influent samples will be taken at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The facility also uses seawater, which is pumped from \_\_\_\_\_\_\_\_\_\_. Seawater effluent samples will be taken at the facility outlet. Effluent monitoring will occur in the facility outlet, in the main portion of the flume.\*\*

*\*\*Add map here showing influent sources in relation to facility.\*\**

## Quality Objectives and Criteria

Example Language

Performance criteria are clearly defined in General NPDES Permit WAG130000. This QAP describes how required information is collected to meet the permit monitoring and reporting requirements for effluent flow, total suspended solids, settleable solids, total residual chlorine, and temperature (as applicable), in accordance with Tables 1 through 4 above.

For all effluent monitoring, <Facility Name> must use a sufficiently sensitive analytical method which meets the following:

* Parameters with an effluent limit: The method must achieve a minimum level (ML) less than the effluent limitation unless otherwise specified in Table 1 Effluent Limitations and Monitoring Requirements.

Parameters that do not have effluent limitations: The Permittee must use a method that detects and quantifies the level of the pollutant, or the Permittee must use a method that can achieve a maximum ML less than or equal to those specified in the following tables:

***Conventional Parameters***

| **Pollutant & CAS No. (if available)** | **Minimum Level (ML) µg/L unless specified** |
| --- | --- |
| Biochemical Oxygen Demand | 2 mg/L |
| Total Suspended Solids | 5 mg/L |
| Temperature  | +/- 0.2º C |

***Nonconventional Parameters***

|  |  |
| --- | --- |
| **Pollutant & CAS No. (if available)** | **Minimum Level (ML) µg/L unless specified** |
| Chlorine, Total Residual | 50.0 |
| Nitrate + Nitrite Nitrogen (as N) | 100 |
| Nitrogen, Total Kjeldahl (as N) | 300 |
| Phosphorus, Total (as P) | 10 |
| Settleable Solids | 500 (or 0.1 mL/L) |

For purposes of reporting on the DMR for a single sample, if a value is less than the Method Detection Limit (MDL), the Permittee must report “less than {numeric value of the MDL}” and if a value is less than the ML, the Permittee must report “less than {numeric value of the ML}.”

For purposes of calculating monthly averages, zero may be assigned for values less than the MDL, and the {numeric value of the MDL} may be assigned for values between the MDL and the ML. If the average value is less than the MDL, the Permittee must report “less than {numeric value of the MDL}” and if the average value is less than the ML, the Permittee must report “less than {numeric value of the ML}.” If a value is equal to or greater than the ML, the Permittee must report and use the actual value. The resulting average value must be compared to the compliance level, the ML, in assessing compliance

## Special Training/Certification

*Write the following paragraph based on tribal/federal requirements and actual education required and/or attained by those in relevant positions. Modify language, as appropriate, if the Facility Manager is also the Program Manager or QA Manager.*

Example Language

The Program Manager position, which is also the QA Manager for the Facility Water Quality Monitoring Program, requires a Bachelor of Science degree in a fisheries-related field. The current Salmon Enhancement Program Manager holds a bachelor’s degree in Fishery Resources from the University of Idaho. The Facility Manager and Assistant Facility Manager graduated from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_, and the facility staff members have high school diplomas. The QA Manager will provide training to all facility staff on water quality data collection methods and sampling procedures.

*\*\*Write a paragraph here explaining any staff training required by the permit or the tribal/federal program and describe how the training will be provided, documented, and maintained.\*\**

Example Language

All training records will be retained in personnel files on-site. The Facility Manager is responsible for ensuring all staff members are trained, and qualified, to perform their duties.

Training records are included in Attachment 2 (*Qualifications and Training of Personnel*) of this QAP.

## Documents and Records

Example Language

It is the responsibility of the Facility Manager/QA Manager to ensure that all personnel have access to, and understand, the most current approved version of the QAP. The Manager will notify all personnel of any changes to the QAP and will maintain a current version, either hard copy or electronic, in the office of the Facility Manager.

Data will be reported to EPA through monthly DMRs, and Annual Reports. The Annual Report Template can be found in Appendix G of the General NPDES Permit WAG130000.

Daily raw flow data and sampling dates and times will be recorded on bench sheets. Copies of the bench sheets, lab reports, and chain of custody documents are included in Attachment 3 (*Monitoring Data and Laboratory Documents*) of this QAP.

DMRs and Annual Reports will be kept in the Facility Manager’s office. Records will be retained for a period of at least five years.

# Data Generation and Acquisition

*\*\*In this section, for each parameter that requires monitoring, you will provide:*

**Parameters A** (example: TSS):

* Number of samples to collect;
* Types of sample containers to use;
* Sample preservation methods;
* Holding times;
* Analytical methods;
* Analytical detection and quantification limits for each parameter;
* Type and number of quality assurance field samples required;
* Precision and accuracy requirements;
* Sample preparation requirements;
* Sample shipping methods;
* Sampling locations;
* Sampling frequencies; and

Description of flow measuring devices used to measure influent and/or effluent flow, calibration procedures, and calculations used to convert to flow units.

**Parameters B** (example: chlorine):

* Number of samples to collect;
* Types of sample containers to use;
* Sample preservation methods;
* Holding times;
* Analytical methods;
* Analytical detection and quantification limits for each parameter;
* Type and number of quality assurance field samples required;
* Precision and accuracy requirements;
* Sample preparation requirements;
* Sample shipping methods;
* Sampling locations;
* Sampling frequencies; and

Description of flow measuring devices used to measure influent and/or effluent flow, calibration procedures, and calculations used to convert to flow units.

## Flow Measuring Devices

### Influent flow measuring device

* Description –
* Calibration procedures –

Calculations used to convert to flow units –

### Effluent flow measuring device

* Description –
* Calibration procedures –

Calculations used to convert to flow units –

## Sampling Definitions

### Representative Sampling

[Explain what constitutes a representative sample.]

### Composite Sample

[Explain what constitutes a composite sample and the method of collecting a composite sample. An example of how flow proportional compositing is done can be found in Appendix E.]

### Grab Sample

[Explain what constitutes a grab sample and the method of collecting a grab sample.]

## Sampling Locations

Sampling locations are marked on the site map in Attachment 1 (*Site Map*) of this QAP.

## Sampling Procedures

### General Sampling Procedures (Example)

* Prevent cross-contamination of samples.
* Prevent contact between hands and water samples.

Keep samples on ice at all times until delivered for testing.

### Total Suspended Solids (Example)

* Required Materials:
* [text]
* [text]
* Sampling Procedures (Example)
* *[Prepare materials necessary for water sample collection...]*
* *[Take four water samples…]*
* *[When the last sample is taken…]*
* *[Store samples…]*

### Settleable Solids (Example)

* Required Materials
* [text]
* [text]
* Sampling Procedures
* [text]
* [text]

### Pond/Raceway Drawdown (Example)

* Required Materials
* [text]
* [text]
* Sampling Procedures
* [text]
* [text]

## Sampling Handling and Custody

Example Language

Sample handling and custody procedures are required in order to ensure that samples are stored and preserved in accordance with the regulatory method requirements and that the integrity of the sample is protected such that the reported data technically valid and legally defensible.

* Prevent contact between hands and water samples.
* Prevent cross-contamination of samples.
* Samples will be kept refrigerated until shipping. All samples will be shipped the day of collection by company vehicle.
* Samples will be handled in such as way as to prevent tampering from unauthorized personnel
* A chain of custody form will be filled out and accompany each sample shipment. Chain of custody documents will be provided by the lab. Attachment 3 (*Monitoring Data and Laboratory Documents*) of this QAP contains an example of a completed chain of custody form. A blank chain of custody form, along with other blank forms, can be found in Attachment 4 (*Blank Documents*) of this QAP.
* Sample bottles will be clearly labeled with the following information:
* Name of facility
* Date and time of sample collection
* Location of sample collection (e.g., facility effluent)
* Analysis to be done (e.g., total suspended solids)
* Indicate if the sample is from raceway or rearing pond drawdown, or rearing vessel disinfection

## Analytical Methods

The following analytical methods must be used for sample collection

| **Parameter** | **Method** | **Preservation Method** | **Holding Time** |
| --- | --- | --- | --- |
| Residue, Nonfilterable (TSS) | SM 2540 D-2015 | Cool, ≤6° C | 7 days |
| Residue, Settleable | SM 2540 F-2015 | Cool, ≤6° C | 48 hours |
| Chlorine, Total Residual | SM 4500-Cl G-2011 or Orion Residual Chlorine Electrode Model 97-70\* | Nonerequired | Analyze within 15 minutes |
| Temperature | SM 2550 B-2010 | None required | Analyze within 15 minutes |
| Phosphorus, Total | SM 4500-P B (5)-2011 | Cool, ≤6 °C, H2SO4 to pH <2 | 28 days |
| Nitrogen, Total Kjeldahl | SM 4500-Norg B-2011 or C-2011 and 4500-NH3 B-2011 | Cool, ≤6 °C, H2SO4 to pH <2 | 28 days |
| Nitrate + Nitrite (as N) | SM 4500-NO3- E-2016 | Cool, ≤6 °C, H2SO4 to pH <2 | 28 days |
| Biochemical Oxygen Demand (BOD5) | SM 5210 B-2016 | Cool, ≤6 °C | 48 hours |

## Quality Control

Example Language for parameters analyzed on site

* Water samples are duplicated in the field for one sample each month or quarter, as required in Tables 1 through 4 above. Duplication occurs at randomly selected locations and is recorded directly in the field log as a water quality duplicate. Representative water quality samples are measured and/or collected at every sample site. If a sample is collected that is not representative of the sample site, the lack of representativeness is recorded along with an explanation in the field book.

Statistics for data quality indicators are not systematically calculated. They are calculated on an as-needed basis and specific to the question being asked.

Example language for parameters analyzed at an outside lab

See [Attachment X] of this QA Plan for <Lab Name> manual and SOP for parameters tested.

## Laboratory Instrument/Equipment Inspection, Maintenance, and Testing

\*\*Insert a paragraph for each piece of laboratory and field testing equipment stating who inspects, maintains, and tests the equipment and how frequently.\*\*

## Laboratory Instrument/Equipment Calibration

\*\*For any parameter analyzed on site, insert a paragraph for each piece of laboratory equipment that requires calibration stating who calibrates the equipment and how frequently. For any parameter sampled on site, insert a paragraph for each piece of field testing equipment that requires calibration stating who calibrates the equipment and how frequently.

## Data Management

\*\*Insert paragraphs explaining how data is recorded, manipulated, managed, and stored. This section should also identify and describe the reporting requirements for laboratory data. Examples could include analytical sample data, quality control results, and chain of custody records.\*\*

# Assessments and Oversight

## Assessments and Response Actions

Example Language

The sampling frequency and sampling location for each required parameter are shown in Section A4 of this QAP. All testing except Net Settleable Solids will be done at Avocet Environmental Testing. The assay to determine the Net Settleable Solids will be run on site. Results of the assays will be sent or provided to the QA Manager for review.

The success criteria applied to the results will be the <effluent limitations or action thresholds> specified in <Tables 1 through 4 or Tables 5 through 8> of the General NPDES Permit WAG130000.

Any deficiencies in the data will be investigated by the QA Manager. Irregularities in the data will immediately trigger an investigation by the QA Manager to determine whether the sampling and testing procedures and chain of custody procedures were followed. If required, re-testing may be necessary to explain the irregularity in the data. The QA Manager will document all findings and provide a written explanation of the irregularities. This will be included in the monthly DMRs.

## Reports to Management

Example Language

DMRs will be prepared by the <QA Manager> and sent to EPA by the 20th day of the month following the reporting period, per the requirements in General Permit WAG1300000.

Annual reports will be completed by the QA Manager and sent to EPA by January 20th of each year. Any unanticipated bypass of treatment facilities or an upset that results in exceedance of effluent limits, or any exceedance of the applicable maximum daily limit for total residual chlorine, shall by reported by phone to EPA within 24 hours of becoming aware of the circumstances.

Oral Report to EPA at telephone 206-553-1846.

# Data Validation and Reliability

## Data Review

Example Language

The QA Manager will verify and validate all data received from the testing laboratory as well as data generated in-house, to include any field measurements, before submitting results to EPA.

## Verification and Validation Methods

Example Language

Water quality data is only entered into the field book if method and quality control (QC) activity criteria are met, or if data is entered that does not meet the method and QC activity criteria or is otherwise suspect, the data is clearly labeled as suspect along with the reason(s) in the field book. Suspect data is not entered into the spreadsheet until data quality is known and acceptable for inclusion in the spreadsheet. Once the quality of the suspect data is known, that information is recorded in the field book (with the initials of the person writing in the book and the date) with the suspect data, from which point the data may or may not be entered into the database.

The water quality sampler checks that all necessary information has been recorded for each sample site before leaving the sample site, and again at the end of the sample run. Any deficiencies are corrected and documented in the field book. The Facility Biologist reviews the sampling and QC activity data collected and recorded by the facility staff and vice versa if the Biologist performs the sampling. Data are reviewed for completeness and identification of any problems. If required, additional information will be recorded in the field book, with the additional information, dates and initials of person entering the data.

The Program Manager is responsible for ensuring all QA/QC protocols are followed. Where problems are detected and not resolved through standard practices or are of a larger nature than the staff conducting water quality sampling typically address (e.g., the method is no longer providing acceptable results) the Program Manager, Facility Managers, and Facility Staff will jointly develop an action plan to remedy the problem with clear roles, responsibilities, and timelines. The Facility Manager is also responsible for quantifying or qualifying data quality to data users.

# Worker Safety

\*\*Insert a paragraph about potential hazards for workers and how those would be mitigated.\*\* \*\*Note that this is not required, but is suggested\*\*

*—*
Site Map

**\*\***Ensure site map(s) indicate sampling locations.\*\*

*—*
Qualifications and Training of Personnel

**Personnel Training**

| **Employee** | **Training** | **Instructor** | **Date** |
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*—*
Monitoring Data and Laboratory Documents

*—*
Blank Documents

*—*
Example Flow Proportional Composite Sampling

1) For multiple discharge outfalls, determine the percent flow rate contribution of each:

Outfall 1: Flow = 30% of total

Outfall 2: Flow = 20% of total

Outfall 3: Flow = 50% of total

2) Determine initial (intermediate) and final volume required for the composite samples:

Volume of intermediate composite samples (one per outfall) = 1 Liter

Volume of final composite sample = 1 Liter

3) Based on the rules for flow proportional compositing: *“composite samples must consist of four or more discrete samples taken at least one-half hour intervals or greater over a 24-hour period”*.

Develop a schedule for discrete sample collection:

| **Outfall ID** | **Time of collection** | **Intermediate Composite**  |
| --- | --- | --- |
| **8 am** | **10 am** | **12 pm** | **2 pm** |
| Outfall #1 | 250 ml | 250 ml | 250 ml | 250 ml | 1 Liter |
| Outfall #2 | 250 ml | 250 ml | 250 ml | 250 ml | 1 Liter |
| Outfall #3 | 250 ml | 250 ml | 250 ml | 250 ml | 1 Liter |

4) Create a final “flow proportional” composite sample by combining measured portions of each intermediate composite based on their percent flow contribution:

|  |  |  |
| --- | --- | --- |
| Outfall 1: 300 ml (30%) | ----------------> | 1 Liter Composite for Lab Analysis |
| Outfall 2: 200 ml (20%) | ----------------> |
| Outfall 3: 500 ml (50%) | ----------------> |