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**National Pollutant Discharge Elimination System  
Waste Discharge Permit No. WA0000809**

State of Washington  
Department of Ecology  
Olympia, Washington 98504-7600  
Industrial Section  
PO Box 47600  
Olympia, WA 98504-7600

In compliance with the provisions of  
The State of Washington Water Pollution Control Law  
Chapter 90.48 Revised Code of Washington  
and  
The Federal Water Pollution Control Act  
(The Clean Water Act)  
Title 33 United States Code, Section 1342 et seq.

**Cosmo Specialty Fibers, Inc.**  
**1701 1st Street**  
**Cosmopolis, WA 98537**

is authorized to discharge in accordance with the Special and General Conditions that follow.

|  |  |
|--|--|
| Facility Location:<br>Cosmopolis, Washington   | Receiving Water:<br>Grays Harbor, Chehalis River |
| Treatment Type:<br>Primary, secondary          | SIC Code: 2611<br>NAICS Code: 322110             |
| Industry Type:<br>Magnesium-based sulfite mill | Categorical Industry:<br>40 CFR 430 Subpart D    |



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Solid Waste Management Program

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## Summary of Permit Report Submittals

Refer to the Special and General Conditions of this permit for additional submittal requirements.

| <b>Permit Section</b> | <b>Submittal</b>                             | <b>Frequency</b>                               | <b>First Submittal Date</b>  |
|-----------------------|--|--|--|
| S2.A                  | Priority Pollutants Scan                     | 1/every 2 years                                | December 1, 2016   |
| S3.A                  | Discharge Monitoring Report                  | Monthly  | January 15, 2016   |
| S3.A                  | Discharge Monitoring Report                  | Quarterly                                      | April 15, 2016   |
| S3.A                  | Discharge Monitoring Report                  | Annual   | January 15, 2017   |
| S3.F                  | Reporting Permit Violations                  | As necessary                                   |  |
| S3.F                  | Shellfish Protection                         | As necessary                                   |  |
| S3.G                  | Other Reporting                              | As necessary                                   |  |
| S4.A                  | Operations and Maintenance Manual Update     | As necessary                                   |  |
| S4.A                  | Treatment System Operating Plan Update       | 1/permit cycle, updates submitted as necessary | June 1, 2016   |
| S4.B                  | Reporting Bypasses                           | As necessary                                   |  |
| S5.C                  | Solid Waste Control Plan Update              | 1/permit cycle                                 | December 1, 2016   |
| S5.C                  | Modification to Solid Waste Plan             | As necessary                                   |  |
| S6                    | Application for Permit Renewal               | 1/permit cycle                                 | June 1, 2020   |
| S7                    | Non-Routine and Unanticipated Discharges     | As necessary                                   |  |
| S8                    | Spill Plan Update                            | 1/permit cycle, updates submitted as necessary | November 30, 2016  |
| S9                    | Stormwater Pollution Prevention Plan         | 1/permit cycle                                 | June 1, 2016   |
| S9                    | Stormwater Pollution Prevention Plan Update  | As necessary                                   |  |
| S11                   | Clarifier Efficiency Study                   | 1/permit cycle                                 | October 1, 2018  |
| S12                   | Total Chlorine Free (TCF) Study              | 1/permit cycle                                 | November 30, 2016  |
| S13.A                 | Mixing Study Plan                            | 1/permit cycle                                 | November 30, 2017  |
| S13.B                 | Effluent Mixing Report                       | 1/permit cycle                                 | Within 12 months after Ecology's approval of the Mixing Study Plan |
| S14.A                 | Sediment Baseline Sampling and Analysis Plan | 1/permit cycle                                 | November 30, 2016  |

| <b>Permit Section</b> | <b>Submittal</b>   | <b>Frequency</b> | <b>First Submittal Date</b>                       |
|-----------------------|--|------------------|---|
| S14.B                 | Sediment Data Report   | 1/permit cycle   | 90 days after completion of the sediment sampling |
| S15                   | Outfall Evaluation   | 1/permit cycle   | June 1, 2020                                      |
| S16.C                 | Acute Toxicity: Compliance Monitoring Report                   | Quarterly        | April 30, 2016                                    |
| S16.D                 | Acute Toxicity: Response to Noncompliance Report               | As necessary     |   |
| S16.D                 | Acute Toxicity: TI/RE Plan                                     | As necessary     |   |
| S17.C                 | Chronic Toxicity: Compliance Monitoring Report                 | Quarterly        | April 30, 2016                                    |
| S17.D                 | Chronic Toxicity: Response to Noncompliance Report             | As necessary     |   |
| S17.D                 | Chronic Toxicity: TI/RE Plan                                   | As necessary     |   |
| S17.D                 | TI/RE Plan Update  | Annual           | March 1, 2016                                     |
| G1                    | Notice of Change in Authorization                              | As necessary     |   |
| G4                    | Permit Application for Substantive Changes to the Discharge    | As necessary     |   |
| G5                    | Engineering Report for Construction or Modification Activities | As necessary     |   |
| G7                    | Notice of Permit Transfer                                      | As necessary     |   |
| G10                   | Duty to Provide Information                                    | As necessary     |   |
| G13                   | Payment of Fees  | As assessed      |   |
| G21                   | Compliance Schedules   | As necessary     |   |

## Special Conditions

### S1. Discharge Limits

#### S1.A. Wastewater Discharges

All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

The discharge of any of the following pollutants more frequently than, or at a level in excess of that identified and authorized by this permit violates the terms and conditions of this permit.

Beginning on the effective date of this permit, the Permittee is authorized to discharge treated process wastewater from Outfall 001 to Grays Harbor.

Beginning on the effective date of this permit, the Permittee is authorized to discharge stormwater, water from truck wash overflow, and filter plant backwash water from Outfall 002 to the Chehalis River.

The discharges are at the permitted locations subject to complying with the following limits:

| <b>Effluent Limits: Outfall 001</b><br><b>Latitude: 46.9542 Longitude: -123.8500</b>     |                                     |                                   |
|--|-------------------------------------|-----------------------------------|
| <b>Parameter</b>   | <b>Average Monthly <sup>a</sup></b> | <b>Maximum Daily <sup>b</sup></b> |
| Biochemical oxygen demand (5-day) (BOD <sub>5</sub> ) – Production Level I <sup>c</sup>  | 23,288 lbs/day                      | 44,834 lbs/day                    |
| Biochemical oxygen demand (5-day) (BOD <sub>5</sub> ) – Production Level II <sup>d</sup> | 29,040 lbs/day                      | 55,880 lbs/day                    |
| Total suspended solids (TSS) – Production Level I <sup>c</sup>                           | 36,224 lbs/day                      | 67,259 lbs/day                    |
| Total suspended solids (TSS) – Production Level II <sup>d</sup>                          | 41,855 lbs/day                      | 77,715 lbs/day                    |
| Absorbable Organic Halides (AOX)   | 2,180 lbs/day                       | 2,720 lbs/day                     |
| 2,3,7,8- tetrachloro-dibenzo-p-dioxin (TCDD) <sup>g</sup>                                | -                                   | 0.28 mg/day                       |
| <b>Parameter</b>   | <b>Minimum</b>                      | <b>Maximum</b>                    |
| pH <sup>f</sup>  | 5.0 standard units                  | 9.0 standard units                |

| Parameter  | Monthly Geometric Mean  | Maximum Daily <sup>b</sup> |
|--|---|----------------------------|
| Fecal coliform bacteria <sup>e</sup>   | 42,000 FC/100 mL<br><b>No more than 10 percent of samples obtained for calculating the monthly geometric mean exceeding 128,000 FC/100 mL</b>   | -                          |
| <b>Effluent Toxicity Limit: Outfall 001</b>                                  |   |                            |
| Acute toxicity   | No acute toxicity detected in a test concentration representing the acute critical effluent concentration (ACEC). See S16 for more information. |                            |
| Chronic toxicity   | No toxicity detected in a test concentration representing the chronic critical effluent concentration (CCEC). See S17 for more information.     |                            |
| <b>Effluent Limits: Outfall 002<br/>Latitude 46.9589 Longitude -123.7556</b> |   |                            |
| Parameter  | Average Monthly <sup>a</sup>  | Maximum Daily <sup>b</sup> |
| BOD <sub>5</sub>   | -   | 500 lbs/day                |
| Parameter  | Minimum   | Maximum                    |
| pH <sup>f</sup>  | 5.0 standard unit   | 9.0 standard unit          |
| <b>Effluent Limits: Bleach Plant</b>   |   |                            |
| Parameter  | Average Monthly <sup>a</sup>  | Maximum Daily <sup>b</sup> |
| 2,3,7,8- Tetrachloro-dibenzo-p-dioxin (TCDD) <sup>h</sup>                    | -   | < 10 pg/L                  |
| 2,3,7,8- Tetrachlorodibenzofuran (TCDF) <sup>h</sup>                         | -   | < 10 pg/L                  |
| Trichlorosyringol <sup>h</sup>   | -   | < 2.5 µg/L                 |
| 3,4,5-Trichlorocatechol <sup>h</sup>   | -   | < 5.0 µg/L                 |
| 3,4,6-Trichlorocatechol <sup>h</sup>   | -   | < 5.0 µg/L                 |
| 3,4,5-Trichloroguaiacol <sup>h</sup>   | -   | < 2.5 µg/L                 |
| 3,4,6-Trichloroguaiacol <sup>h</sup>   | -   | < 2.5 µg/L                 |
| 4,5,6-Trichloroguaiacol <sup>h</sup>   | -   | < 2.5 µg/L                 |
| 2,4,5-Trichlorophenol <sup>h</sup>   | -   | < 2.5 µg/L                 |



|  |   |            |
|--|---|------------|
| 2,4,6-Trichlorophenol <sup>h</sup>     | - | < 2.5 µg/L |
| Tetrachlorocatechol <sup>h</sup>       | - | < 5.0 µg/L |
| Tetrachloroguaiacol <sup>h</sup>       | - | < 5.0 µg/L |
| 2,3,4,6-Tetrachlorophenol <sup>h</sup> | - | < 2.5 µg/L |
| Pentachlorophenol <sup>h</sup>         | - | < 5.0 µg/L |

<sup>a</sup> Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured.

<sup>b</sup> Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. For pollutants with limits expressed in units of mass, calculate the daily discharge as the total mass of the pollutant discharged over the day. This does not apply to pH or temperature.

<sup>c</sup> Production Level I limits for BOD<sub>5</sub> and TSS are effective except when Level II limits are in effect.

<sup>d</sup> Production Level II limits for BOD<sub>5</sub> and TSS are effective during the calendar month in which: 1) off-the-machine monthly average pulp production is greater than 529.0 air-dried short tons per day; or 2) acetate grade production is fifteen (15) consecutive days or longer; or (3) acetate production is twenty (20) or more non-consecutive days in a calendar month. If the period of continuous acetate production spans two calendar months, Level II will be effective for the month within which the 15<sup>th</sup> day of acetate run occurs.

<sup>e</sup> Discharge of fecal coliform exceeding the Department of Health trigger of 113,000 FC/100 mL, daily geomean is considered a permit violation.

<sup>f</sup> When pH is continuously monitored, excursions between 4.0 and 5.0, or 9.0 and 10.0 are not considered violations if no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 26 minutes per month. Any excursions below 4.0 and above 10.0 at any time are violations.

<sup>g</sup> 2,3,7,8-TCDD at the bleach plant effluent shall show compliance with the limit of 0.28 mg/day for the final effluent at Outfall 001. The Permittee shall report 2,3,7,8 TCDD concentration and the bleach plant flow in MGD.

<sup>h</sup> Compliance with the limit is established at the minimum level. Minimum level is defined as the level at which the analytical system gives recognizable signals and an acceptable calibration point.

**S1.B. Outfall 001 Mixing Zone Authorization**

The following paragraphs define the maximum boundaries of the mixing zones:

**Outfall 001 Chronic Mixing Zone**

The mixing zone is a circle with radius of 207 feet (63 meters) measured from the center of each discharge port. The mixing zone extends from the discharge ports to the top of the water surface. The concentration of pollutants at the edge of the chronic zone must meet chronic aquatic life criteria and human health criteria.

**Outfall 001 Acute Mixing Zone**

The acute mixing zone is a circle with radius of 20.7 feet (6.3 meters) measured from the center of each discharge port. The mixing zone extends from the discharge port to the top of the water surface. The concentration of pollutants at the edge of the acute zone must meet acute aquatic life criteria.

**Outfall 001 Fecal Coliform Extended Mixing Zone**

The extended mixing zone is 4300 feet (1300 meters) upstream and downstream of the diffuser and a width of 400 feet (123 meters) at the farthest downstream point of the extended mixing zone.

| <b>Criteria</b>                        | <b>Dilution factor</b> |
|--|------------------------|
| Acute Aquatic Life Criteria            | 9                      |
| Chronic Aquatic Life Criteria          | 74                     |
| Human Health Criteria - Carcinogen     | 74                     |
| Human Health Criteria - Non-carcinogen | 74                     |
| Fecal coliform, Shellfish Harvest      | 250                    |

**S1.C. Outfall 002 Mixing Zone Authorization**

The following paragraphs define the mixing zones:

**Outfall 002 Chronic Mixing Zone**

The mixing zone boundary is 210 feet radius from the point of discharge.

**Outfall 002 Acute Mixing Zone**

The mixing zone boundary is 21 feet from the point of discharge.

**S2. Monitoring Requirements**

**S2.A. Monitoring Schedule**

The Permittee must monitor in accordance with the following schedule and the requirements specified in **Appendix A**. For periods of curtailment, certain monitoring frequencies below may be reduced, as specified in Condition S2.F

| Parameter                                     | Units & Speciation | Minimum Sampling Frequency | Sample Type                  |
|---|--------------------|----------------------------|------------------------------|
| <b>(1) Outfall 001</b>                        |                    |                            |                              |
| Flow <sup>a</sup>                             | MGD                | Continuous <sup>b</sup>    | Metered/recorded             |
| pH <sup>c,d</sup>                             | Std. unit          | Continuous <sup>b</sup>    | Metered/recorded             |
| Temperature <sup>e</sup>                      | °C                 | Continuous <sup>b</sup>    | Metered/recorded             |
| BOD <sub>5</sub> <sup>f</sup>                 | mg/L               | Daily                      | 24-hr composite <sup>g</sup> |
| BOD <sub>5</sub> <sup>f</sup>                 | lb/day             | Daily                      | Calculated <sup>h</sup>      |
| TSS   | mg/L               | Daily                      | 24-hr composite <sup>g</sup> |
| TSS   | lb/day             | Daily                      | Calculated <sup>h</sup>      |
| Fecal coliform, by MF method <sup>i</sup>     | #/100mL            | Daily                      | Grab <sup>i,k</sup>          |
| Enterococci <sup>j</sup>                      | #/100 mL           | 4/week                     | Grab <sup>k</sup>            |
| Absorbable Organic Halides (AOX) <sup>l</sup> | mg/L               | Weekly                     | 24-hr composite <sup>g</sup> |
| AOX <sup>l</sup>                              | lb/day             | Weekly                     | Calculated <sup>h</sup>      |
| Chemical oxygen demand (COD)                  | mg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| 2,3,7,8- TCDD <sup>n</sup>                    | pg/L               | Annual                     | 24-hr composite <sup>g</sup> |
| 2,3,7,8-TCDD <sup>n</sup>                     | mg/day             | Annual                     | Calculated <sup>h</sup>      |
| 2,3,7,8- TCDF <sup>n</sup>                    | pg/L               | Annual                     | 24-hr composite <sup>g</sup> |
| 2,3,7,8-TCDF <sup>n</sup>                     | mg/day             | Annual                     | Calculated <sup>h</sup>      |
| <b>(2) Outfall 002</b>                        |                    |                            |                              |
| Flow <sup>a</sup>                             | MGD                | Continuous <sup>b</sup>    | Metered/recorded             |
| pH <sup>c,d</sup>                             | Std. unit          | Continuous <sup>b</sup>    | Metered/recorded             |
| BOD <sub>5</sub>                              | mg/L               | Daily                      | 24-hr composite <sup>g</sup> |
| BOD <sub>5</sub>                              | lb/day             | Daily                      | Calculated <sup>h</sup>      |
| TSS   | mg/L               | Quarterly <sup>o</sup>     | 24-hr composite <sup>g</sup> |
| <b>(3) Bleach Plant Effluent</b>              |                    |                            |                              |
| Flow  | MGD                | Continuous <sup>b</sup>    | Metered/recorded             |
| Trichlorosyringol <sup>p</sup>                | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| 3,4,5-Trichlorocatechol <sup>p</sup>          | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| 3,4,6-Trichlorocatechol <sup>p</sup>          | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| 3,4,5-Trichloroguaiacol <sup>p</sup>          | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| 3,4,6-Trichloroguaiacol <sup>p</sup>          | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| 4,5,6-Trichloroguaiacol <sup>p</sup>          | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| 2,4,5-Trichlorophenol <sup>p</sup>            | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| 2,4,6-Trichlorophenol <sup>p</sup>            | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| Tetrachlorocatechol <sup>p</sup>              | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| Tetrachloroguaiacol <sup>p</sup>              | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| 2,3,4,6-Tetrachlorophenol <sup>p</sup>        | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| Pentachlorophenol <sup>p</sup>                | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |
| AOX <sup>k</sup>                              | µg/L               | Monthly <sup>m</sup>       | 24-hr composite <sup>g</sup> |

| Parameter   | Units & Speciation | Minimum Sampling Frequency                                       | Sample Type                  |
|---|--------------------|--|------------------------------|
| Chloroform <sup>q</sup>   | mg/L               | Monthly <sup>m</sup>   | 24-hr composite <sup>q</sup> |
| 2,3,7,8-TCDD <sup>n</sup>   | pg/L               | Quarterly <sup>o</sup>   | 24-hr composite <sup>g</sup> |
| 2,3,7,8-TCDF <sup>n</sup>   | pg/L               | Quarterly <sup>o</sup>   | 24-hr composite <sup>g</sup> |
| <b>(4) Sludge <sup>r</sup></b>  |                    |  |                              |
| 2,3,7,8-TCDD  | ng/L, ppt          | Annual   | Grab <sup>k</sup>            |
| 2,3,7,8-TCDF  | ng/L, ppt          | Annual   | Grab <sup>k</sup>            |
| <b>(5) Priority Pollutant (PP) scan – Final effluent to Outfall 001 and Outfall 002 <sup>s</sup></b>            |                    |  |                              |
| Cyanide   | µg/L               | Once every 2 years   | Grab <sup>k</sup>            |
| Total phenolic compounds  | µg/L               | Once every 2 years   | Grab <sup>k</sup>            |
| PP – Total metals, except Hg  | µg/L               | Once every 2 years   | 24-hr composite <sup>g</sup> |
| PP- Mercury (Hg), total   | ng/L               | Once every 2 years   | Grab <sup>k</sup>            |
| PP - Volatile organic compounds   | µg/L               | Once every 2 years   | Grab <sup>k</sup>            |
| PP - Acid extractable compounds   | µg/L               | Once every 2 years   | 24-hr composite <sup>g</sup> |
| PP - Base-neutral compounds   | µg/L               | Once every 2 years   | 24-hr composite <sup>g</sup> |
| PP – Dioxin   | pg/L               | Once every 2 years   | 24-hr composite <sup>g</sup> |
| PP - Pesticides/PCBs  | µg/L               | Once every 2 years   | 24-hr composite <sup>g</sup> |
| <b>(6) Permit Renewal Application Requirements – Final effluent to Outfall 001 and Outfall 002 <sup>s</sup></b> |                    |  |                              |
| Cyanide   | µg/L               | Once within one year of the permit renewal application submittal | Grab <sup>k</sup>            |
| Total phenolic compounds  | µg/L               | Once within one year of the permit renewal application submittal | Grab <sup>k</sup>            |
| PP - Total metals, except Hg  | µg/L               | Once within one year of the permit renewal application submittal | 24-hr composite <sup>g</sup> |

| Parameter  | Units & Speciation | Minimum Sampling Frequency                                       | Sample Type                  |
|--|--------------------|--|------------------------------|
| PP - Mercury (Hg), total                                   | ng/L               | Once within one year of the permit renewal application submittal | Grab <sup>k</sup>            |
| PP - Volatile organic compounds                            | µg/L               | Once within one year of the permit renewal application submittal | Grab <sup>k</sup>            |
| PP - Acid extractable compounds                            | µg/L               | Once within one year of the permit renewal application submittal | 24-hr composite <sup>g</sup> |
| PP - Base-neutral compounds                                | µg/L               | Once within one year of the permit renewal application submittal | 24-hr composite <sup>g</sup> |
| PP – Dioxin  | pg/L               | Once within one year of the permit renewal application submittal | 24-hr composite <sup>g</sup> |
| PP - Pesticides/PCBs                                       | µg/L               | Once within one year of the permit renewal application submittal | 24-hr composite <sup>g</sup> |
| <b>(7) Production</b>                                      |                    |  |                              |
| Air-dried bleached pulp, average                           | tons/day           | Daily  | Measured                     |
| Air-dried bleached pulp, maximum                           | tons/day           | Daily  | Measured                     |
| Air-dried acetate grade pulp, average                      | tons/day           | Daily  | Measured                     |
| Consecutive days of acetate grade pulp production, maximum | days               | Daily  | Measured                     |
| <b>(8) Whole effluent toxicity testing – Outfall 001</b>   |                    |  |                              |
| Acute Toxicity Testing                                     | -                  | Quarterly <sup>o</sup>   | 24-hr composite <sup>g</sup> |
| Chronic Toxicity Testing                                   | -                  | Quarterly <sup>o</sup>   | 24-hr composite <sup>g</sup> |

| Parameter   | Units & Speciation | Minimum Sampling Frequency | Sample Type |
|---|--------------------|----------------------------|-------------|
| Additional requirements and TI/RE submittal are specified in Special Conditions S16 and S17.  |                    |                            |             |
| <b>(9) Sediment Study</b>   |                    |                            |             |
| As specified in Special Condition S14   |                    |                            |             |
| <sup>a</sup> Ecology uses the flow data submitted in the application to set permit fees. The Permittee must report to Ecology when actual flows exceed the values reported on the permit application.   |                    |                            |             |
| <sup>b</sup> Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The Permittee must sample once every 6 hours when continuous monitoring is not possible.   |                    |                            |             |
| <sup>c</sup> The Permittee must report the instantaneous maximum and minimum pH monthly. Do not average pH values.  |                    |                            |             |
| <sup>d</sup> The Permittee must record and report the: <ul style="list-style-type: none"> <li>• Number of minutes the pH value measured between 4.0 and 5.0 and between 9.0 and 10.0 for each day.</li> <li>• Total minutes for the month.</li> <li>• Monthly instantaneous maximum and minimum pH.</li> </ul> If multiple excursions occur during the day, note the duration for each excursion. If submitting electronic DMRs, include this additional information in the parameter notes.  |                    |                            |             |
| <sup>e</sup> The Permittee must determine and report a daily maximum from half-hour measurements in a 24-hour period. Continuous monitoring instruments must achieve an accuracy of 0.2°C and the Permittee must verify accuracy annually. For brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance, the Permittee must sample once every 6 hours and, as applicable, a sample must occur during when the effluent is at or near its daily maximum temperature which usually occurs in the late afternoon.                      |                    |                            |             |
| <sup>f</sup> Take effluent samples for the BOD <sub>5</sub> analysis before or after the disinfection with hypochlorite. If taken after, dechlorinate and reseed the sample.  |                    |                            |             |
| <sup>g</sup> 24-hour composite means a series of individual samples collected over a 24-hour period into a single container, and analyzed as one sample.  |                    |                            |             |
| <sup>h</sup> Calculated means figured concurrently with the respective sample, using the following formula: Concentration × Flow Rate × Conversion Factor = Mass pollutant discharged per day   |                    |                            |             |
| <sup>i</sup> Report a numerical value for fecal coliforms following the procedures in Ecology’s Information Manual for Wastewater Treatment Plant Operators, Publication Number 04-10-020 available at: <a href="https://fortress.wa.gov/ecy/publications/publications/0410020.pdf">https://fortress.wa.gov/ecy/publications/publications/0410020.pdf</a> . Do not report a result as too numerous to count (TNTC). Analysis must be conducted using the membrane filter method. Ecology provides directions to calculate the monthly and the 7-day geometric mean in the manual. |                    |                            |             |
| <sup>j</sup> The Permittee must submit for Ecology’s approval a monitoring plan for enterococci within 6 months of the permit effective date. Ninety (90) days following the approval, the Permittee shall implement the monitoring according to the approval plan. When  |                    |                            |             |

| Parameter   | Units & Speciation | Minimum Sampling Frequency | Sample Type |
|---|--------------------|----------------------------|-------------|
| <p>Grays Harbor County Water Testing Lab is closed and there are no other accredited laboratories to analyze sample within the holding time, monitoring frequency may be less than 4/week for the week, provided the Permittee submit samples on days when the laboratory is available. If Cosmo receives accreditation for and operates an in-house laboratory for sample analysis, the laboratory must be available as necessary to complete sample analysis on a 4/week schedule.</p>  |                    |                            |             |
| <p><sup>k</sup> Grab means an individual sample collected over a fifteen (15) minute period, or less.</p>   |                    |                            |             |
| <p><sup>l</sup> AOX is defined as absorbable organic halides. Analyses must be conducted in accordance with Method 1650: Absorbable Organic Halides by Absorption and Coulometric Titration, Appendix A to 40 CFR Part 430, April 15, 1998.</p>   |                    |                            |             |
| <p><sup>m</sup> Monthly means once every calendar month during alternate weeks.</p>   |                    |                            |             |
| <p><sup>n</sup> 2,3,7,8-TCDD is defined as 2,3,7,8-tetrachlorodibenzo-p-dioxin and 2,3,7,8-TCDF is 2,3,7,8-tetrachlorodibenzofuran. Analyses must be conducted in accordance with Method 1613: Tetra- through Octa- Chlorinated Dioxins and Furans by Isotopic Dilution HRG/HRMS, US EPA Office of Water, Engineering and Analysis Division, Revision B of an approved equivalent. When the analytical results are below minimum level (quantitation level), the Permittee must report the result as less than the minimum level. In the event that the sample minimum level is equal to or greater than 10 ppq due to matrix effects, the Permittee must re-initiate sample collection and analyze for permit compliance as defined above. The original sample(s) must be discarded.</p> |                    |                            |             |
| <p><sup>o</sup> Quarterly sampling periods are January through March, April through June, July through September, and October through December.</p>   |                    |                            |             |
| <p><sup>p</sup> Analysis must be conducted in accordance with Method 1653: Chlorinated Phenolics in Wastewater by In Situ Acetylation and GCMS, Appendix A to 40 CFR Part 430. When the analytical results are below minimum level (quantitation level), the Permittee must report the result as less than the minimum level.</p>   |                    |                            |             |
| <p><sup>q</sup> The composite sample for chloroform must be taken every 6 hours and quantitatively composited in the laboratory. The Permittee must include a detailed description of the method used to composite the sample with the first report, and with subsequent reports if the compositing method has been modified. If an automated continuous or grab compositing device is used, the report include of the system and the name of the manufacturer.</p>   |                    |                            |             |
| <p><sup>r</sup> The sludge is defined as secondary treatment activated solids sampled at the waste sludge line. The Permittee must conduct the analysis and QA/QC in accordance with Method 1613: Tetra- through Oct- Chlorinated Dioxins and Furans by Isotopic Dilution HRGC/HRMS, US EPA Office of Water, Engineering and Analysis Division Revision B of an approved equivalent.</p>  |                    |                            |             |
| <p><sup>s</sup> Final Effluent means wastewater exiting, or that has exited, the last treatment process or operation. Typically, this is after or at the exit from the chlorine contact chamber or other disinfection process. See Appendix A to identify priority pollutants with their corresponding methods and reporting limits.</p>  |                    |                            |             |

## **S2.B. Sampling and Analytical Procedures**

Samples and measurements taken to meet the requirements of this permit must represent the volume and nature of the monitored parameters, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality.

Sampling and analytical methods used to meet the monitoring requirements specified in this permit must conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136 (or as applicable in 40 CFR subchapters N [Parts 400–471] or O [Parts 501-503]) unless otherwise specified in this permit. Ecology may only specify alternative methods for parameters without limits and for those parameters without an EPA approved test method in 40 CFR Part 136.

## **S2.C. Flow Measurement and Continuous Monitoring Devices**

The Permittee must:

1. Select and use appropriate flow measurement and continuous monitoring devices and methods consistent with accepted scientific practices.
2. Install, calibrate, and maintain these devices to ensure the accuracy of the measurements is consistent with the accepted industry standard and the manufacturer's recommendation for that type of device.
3. Calibrate continuous monitoring instruments weekly unless it can demonstrate a longer period is sufficient based on monitoring records. The Permittee:
  - a. May calibrate apparatus for continuous monitoring of dissolved oxygen by air calibration.
  - b. Must calibrate continuous chlorine measurement instruments using a grab sample analyzed in the laboratory within 15 minutes of sampling.
4. Calibrate micro-recording temperature devices, known as thermistors, using protocols from Ecology's Quality Assurance Project Plan Development Tool (*Standard Operating Procedures for Continuous Temperature Monitoring of Fresh Water Rivers and Streams Version 1.0 10/26/2011*). Find more information online at: <https://ecology.wa.gov/About-us/How-we-operate/Scientific-services/Quality-assurance>.  
  
Calibration as specified in this document is not required if the Permittee uses recording devices certified by the manufacturer.
5. Maintain calibration records for at least three years.

## **S2.D. Laboratory Accreditation**

The Permittee must ensure that all monitoring data required by Ecology for permit specified parameters is prepared by a laboratory registered or accredited under the provisions of chapter 173-50 WAC, Accreditation of Environmental Laboratories.



Flow, temperature, settleable solids, conductivity, pH, and internal process control parameters are exempt from this requirement. The Permittee must obtain accreditation for conductivity and pH if it must receive accreditation or registration for other parameters.

**S2.E. Request for Reduction in Monitoring**

The Permittee may request a reduction of the sampling frequency after twelve (12) months of monitoring. Ecology will review each request and at its discretion grant the request when it reissues the permit or by a permit modification.

The Permittee must:

1. Provide a written request.
2. Clearly state the parameters for which it is requesting reduced monitoring.
3. Clearly state the justification for the reduction.

**S2.F Reduced Monitoring During Curtailment**

For the purposes of monitoring, curtailment is defined as an extended period where there is no pulp production activities and no discharge of process wastewater. Maintenance outages or emergency shut down for repairs do not qualify as curtailment. During curtailment, the discharge to Outfall 001 consists of stormwater, gland water, and/or excess freshwater from the city and the discharge to Outfall 002 will continue to consist of stormwater and filter plant backwash.

The Permittee shall notify Ecology of the start and end dates of the curtailment, including the date when the Permittee ceased pulp production. The notification must be included as part of the respective monthly DMR.

During curtailment, the monitoring frequencies specified in S2.A may be reduced as follows. All other required monitoring and other requirements in S2.A remain in effect.

| Outfall | Parameter                                 | Units            | Reduced Sampling Frequency <sup>a</sup>   | Sample Type  |
|---------|---|------------------|---|--|
| 001     | BOD <sub>5</sub>                          | mg/L and lbs/day | Weekly/Quarterly <sup>b</sup>   | 24-hr composite (mg/L) <sup>c</sup><br>Calculated (lbs/day) <sup>d</sup> |
| 001     | TSS                                       | mg/L and lbs/day | Weekly/Quarterly <sup>b</sup>   | 24-hr composite (mg/L) <sup>c</sup><br>Calculated (lbs/day) <sup>d</sup> |
| 001     | Fecal coliform, by MF method <sup>e</sup> | #/100mL          | Daily for the first two after ceasing pulp production. Weekly/Monthly <sup>c</sup> , with the following exceptions: | Grab <sup>f</sup>  |

| Outfall | Parameter   | Units   | Reduced Sampling Frequency <sup>a</sup>   | Sample Type       |
|---------|-------------|---------|---|-------------------|
|         |             |         | <ul style="list-style-type: none"> <li>• Daily monitoring will resume if fecal coliform test results show more than 50,000 cfu/100 mL. Daily monitoring shall remain in place until results are less than 50,000 cfu/100 mL for three consecutive days, at which time the reduced frequency monitoring above will be allowed, starting with weekly monitoring.</li> <li>• Daily monitoring is required for any day when the discharge is not continuously disinfected with hypochlorite.</li> <li>• Daily monitoring is required when the discharge contains flow from Westport Pond D for more than 45 minutes.</li> </ul> |                   |
| 001     | Enterococci | #/100mL | Daily/Weekly/Monthly <sup>c</sup> , with the following exceptions: <ul style="list-style-type: none"> <li>• 4/week monitoring will resume if fecal coliform test results show more than 50,000 cfu/100 mL daily monitoring shall remain in place until results are less than 50,000 cfu/100 mL for three consecutive days, at which time the reduced frequency</li> </ul>   | Grab <sup>f</sup> |

| Outfall | Parameter               | Units            | Reduced Sampling Frequency <sup>a</sup>   | Sample Type  |
|---------|-------------------------|------------------|---|--|
|         |                         |                  | <p>monitoring above will be allowed, starting with weekly monitoring.</p> <ul style="list-style-type: none"> <li>• Daily monitoring is required for any day when the discharge is not continuously disinfected with hypochlorite.</li> <li>• Daily monitoring is required for any day when Pond D is being drained. Draining occurs when Pond D flow discharges to the outfall for longer than 45 minutes.</li> </ul> |  |
| 001     | AOX                     | mg/L and lbs/day | Quarterly   | 24-hr composite (mg/L) <sup>d</sup><br>Calculated (lbs/day) <sup>e</sup> |
| 001     | Temperature             | °C               | No monitoring required  | N/A  |
| 001     | COD                     | mg/L             | No monitoring required  | N/A  |
| 001     | Whole Effluent Toxicity | N/A              | No monitoring for acute or chronic toxicity required if the first quarterly tests after curtailment shows compliance with toxicity limits in S16 and S17.   | 24-hr composite <sup>d</sup>   |
| 002     | BOD <sub>5</sub>        | mg/L and lbs/day | <p>Weekly <sup>h</sup>, when red liquor is stored on-site.</p> <p>No monitoring is required if the Permittee does not store red liquor at the site during curtailment.</p>  | 24-hr composite (mg/L) <sup>c</sup><br>Calculated (lbs/day) <sup>e</sup> |

- Reduced monitoring frequency becomes effective two weeks after all pulping operations have ceased.
- Weekly means one (1) time during each calendar week. Weekly samples must be collected on a rotational basis throughout the days of the week, except weekends and holidays, when possible.

Quarterly means once every calendar quarter. Quarterly monitoring is allowed if 3 consecutive weeks of the weekly sample results demonstrate that the pollutant loading is less than 80% of the respective average monthly limit for BOD<sub>5</sub> and TSS.

- c. Daily means one (1) time per day. Weekly means one (1) time during each calendar week. Weekly samples must be collected on a rotational basis throughout the days of the week, except weekends and holidays, when possible. Monthly means once every calendar month. Monthly samples must be collected during alternative weeks of the month, when possible. Weekly monitoring is allowed if 14 consecutive days of daily sampling over a two week-period demonstrates that fecal coliform is less than 50,000 cfu/100 mL. Monthly monitoring is allowed if 3 consecutive weeks of weekly sample results demonstrate that fecal coliform is less than 10,000 cfu/100 mL.
- d. 24-hour composite means a series of individual samples collected over a 24-hour period into a single container, and analyzed as one sample.
- e. Calculated means figured concurrently with the respective sample, using the following formula:  $\text{Concentration} \times \text{Flow Rate} \times \text{Conversion Factor} = \text{Mass of pollutant discharged per day}$ .
- f. Report a numerical value for fecal coliforms following the procedures in Ecology's Information Manual for Wastewater Treatment Plant Operators, Publication Number 04-10-020 available at: <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance>. Do not report a result as too numerous to count (TNTC). Analysis must be conducted using the membrane filter method. Ecology provides directions to calculate the monthly and the 7-day geometric mean in publication No. 04-10-020, Information Manual for Treatment Plant Operators available online at: <https://fortress.wa.gov/ecy/publications/documents/0410020.pdf>.
- g. Grab means an individual sample collected over a fifteen (15) minute period, or less.
- h. Weekly means one (1) time during each calendar week and on a rotational basis throughout the days of the week, except weekends and holidays.

### **S3. Reporting and Recording Requirements**

The Permittee must monitor and report in accordance with the following conditions. Falsification of information submitted to Ecology is a violation of the terms and conditions of this permit.

#### **S3.A. Reporting**

The first monitoring period begins on the effective date of the permit. The Permittee must:

1. Summarize, report, and submit monitoring data obtained during each monitoring period on the electronic Discharge Monitoring Report (DMR) form provided by Ecology within WQWebDMR. Include data for each of the parameters tabulated in Special Condition S2 and as required by the form. Report a value for each day sampling occurred (unless specifically exempted in the permit) and for the summary values (when applicable) included on the electronic form.

To find out more information and to sign up for WQWebDMR go to:  
<https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance>.

The Permittee may submit DMRs on the paper form provided by Ecology until March 1, 2016.

2. Enter the “no discharge” reporting code for an entire DMR, for a specific monitoring point, or for a specific parameter as appropriate, if the Permittee did not discharge wastewater or a specific pollutant during a given monitoring period.
3. Report single analytical values below detection as “less than the detection level (DL)” by entering < followed by the numeric value of the detection level (e.g. < 2.0) on the DMR. If the method used did not meet the minimum DL and quantitation level (QL) identified in the permit, report the actual QL and DL in the comments or in the location provided.
4. Report the test method used for analysis in the comments if the laboratory used an alternative method not specified in the permit and as allowed in Appendix A.
5. Calculate average values (unless otherwise specified in the permit) using:
  - a. The reported numeric value for all parameters measured between the agency-required detection value and the agency-required quantitation value.
  - b. One-half the detection value (for values reported below detection) if the lab detected the parameter in another sample for the reporting period.
  - c. Zero (for values reported below detection) if the lab did not detect the parameter in another sample for the reporting period.
6. Report single-sample grouped parameters (for example priority pollutants, PAHs, pulp and paper chlorophenolics, TTOs) on the WQWebDMR form and include: sample date, concentration detected, detection limit (DL) (as necessary), and laboratory quantitation level (QL) (as necessary). The Permittee must also submit an electronic PDF copy of the laboratory report using WQWebDMR.

If the Permittee has obtained a waiver from electronic reporting or if submitting prior to the compliance date, the Permittee must submit a paper copy of the laboratory report providing the following information: date sampled, sample location, date of analysis, parameter name, CAS number, analytical method/number, detection limit (DL), laboratory quantitation level (QL), reporting units, and concentration detected.

The contract laboratory reports must also include information on the chain of custody, QA/QC results, and documentation of accreditation for the parameter.

7. Ensure that DMRs are electronically submitted no later than the dates specified below, unless otherwise specified in this permit.

Until the compliance date identified in S3.A.1 or if the Permittee has obtained a waiver, it must ensure that paper forms are postmarked or received by Ecology no later than the dates specified below, unless otherwise specified in this permit.
8. Ensure that DMR forms are postmarked or electronically submitted to Ecology no later than the dates specified below, unless otherwise specified in this permit.

9. Submit DMRs for parameters with the monitoring frequencies specified in S2 (monthly, quarterly, annual, etc.) at the reporting schedule identified below. The Permittee must:
  - a. Submit **monthly** DMRs by the 15<sup>th</sup> day of the following month.
  - b. Submit **quarterly** DMRs, unless otherwise specified in the permit, by the 15th day of the month following the monitoring period. Quarterly sampling periods are January through March, April through June, July through September, and October through December.
  - c. Submit **annual** DMRs, unless otherwise specified in the permit, by January 15 for the previous calendar year. The annual sampling period is the calendar year.
  - d. Submit the first priority pollutant scan no later than December 1, 2016, the second priority pollutant scan no later than December 1, 2018, and the third priority pollutant scan with the permit renewal application on June 1, 2020.
  - e. Submit permit renewal application monitoring data in WQWebDMR as required in Special Condition S2 by June 1, 2020. If the Permittee has obtained a waiver from Ecology, it must submit the permit renewal application monitoring data in a report by the date approved by Ecology.
10. Submit reports to Ecology online using Ecology's electronic WQWebDMR submittal forms (electronic DMRs) as required above. Send paper reports to Ecology at:

Water Quality Permit Coordinator  
Department of Ecology  
Industrial Section  
P.O. Box 47600  
Olympia, WA 98504-7600

### **S3.B. Permit Submittals and Schedules**

By March 1, 2016, the Permittee must use the Water Quality Permitting Portal – Permit Submittals application (unless otherwise specified in the permit) to submit all other written permit-required reports by the date specified in the permit.

When another permit condition requires submittal of a paper (hard-copy) report, the Permittee must ensure that it is postmarked or received by Ecology no later than the dates specified by this permit. Send these paper reports to Ecology at the address above.

### **S3.C. Records Retention**

The Permittee must retain records of all monitoring information for a minimum of three (3) years. Such information must include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. The Permittee must extend this period of retention during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

**S3.D. Recording of Results**

For each measurement or sample taken, the Permittee must record the following information:

1. The date, exact place, method, and time of sampling or measurement
2. The individual who performed the sampling or measurement
3. The dates the analyses were performed
4. The individual who performed the analyses
5. The analytical techniques or methods used
6. The results of all analyses

**S3.E. Additional Monitoring by the Permittee**

If the Permittee monitors any pollutant more frequently than required by Special Condition S2 of this permit, then the Permittee must include the results of such monitoring in the calculation and reporting of the data submitted in the Permittee's DMR unless otherwise specified by Special Condition S2.

**S3.F. Reporting Permit Violations**

The Permittee must take the following actions when it violates or is unable to comply with any permit condition:

1. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem.
2. If applicable, immediately repeat sampling and analysis. Submit the results of any repeat sampling to Ecology within thirty (30) days of sampling.

**a. Immediate Reporting**

The Permittee must immediately report to Ecology and the Department of Health, Shellfish Program (at the numbers listed below), all:

- 1) Failures of the disinfection system.
- 2) Collection system overflows discharging to marine surface waters.
- 3) Plant bypasses discharging to marine surface waters.
- 4) Discharge fecal coliform level exceeding the Department of Health criteria for shellfish harvesting.

Southwest Regional Office : (360) 407-6300

Department of Health, Shellfish Program: (360) 236-3330 (business hours)

(360) 789-8962 (after business hours)

The Department of Health trigger for closure of downstream shellfish harvesting is 113,000 FC/100 mL daily geomean. Exceedance of the 113,000 FC/100 mL daily geomean trigger is considered a permit violation.

**b. Twenty-Four-Hour Reporting**

The Permittee must report the following occurrences of noncompliance by telephone, to Ecology at the telephone numbers listed above, within 24 hours from the time the Permittee becomes aware of any of the following circumstances:

1. Any noncompliance that may endanger health or the environment, unless previously reported under immediate reporting requirements.
2. Any unanticipated bypass that causes an exceedance of any effluent limit in the permit (See Part S4.B., "Bypass Procedures").
3. Any upset that causes an exceedance of an effluent limit in the permit (See G.15, "Upset").
4. Any violation of a maximum daily or instantaneous maximum discharge limit for any of the pollutants in Section S1.A of this permit.
5. Any overflow prior to the treatment works, whether or not such overflow endangers health or the environment or exceeds any effluent limit in the permit.

**c. Report within Five Calendar Days**

The Permittee must also submit a written report within five calendar days of the time that the Permittee becomes aware of any reportable event under subparts a or b, above. The report must contain:

1. A description of the noncompliance and its cause.
2. The period of noncompliance, including exact dates and times.
3. The estimated time the Permittee expects the noncompliance to continue if not yet corrected.
4. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
5. If the noncompliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow.

**d. Waiver of Written Reports**

Ecology may waive the written report required in subpart c, above, on a case-by-case basis upon request if the Permittee has submitted a timely oral report.

**e. All Other Permit Violation Reporting**

The Permittee must report all permit violations, which do not require immediate or within 24 hours reporting, when it submits monitoring reports for S3.A ("Reporting"). The reports must contain the information listed in subpart c, above. Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.



**f. Report Submittal**

The Permittee must submit reports to the address listed in S3.

**S3.G. Other Reporting**

**a. Spills of Oil or Hazardous Materials**

The Permittee must report a spill of oil or hazardous materials in accordance with the requirements of RCW 90.56.280 and WAC 173-303-145. You can obtain further instructions at the following website: <https://ecology.wa.gov/Report-a-spill>.

**b. Failure to Submit Relevant or Correct Facts**

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to Ecology, it must submit such facts or information promptly.

**S3.H. Maintaining a Copy of This Permit**

The Permittee must keep a copy of this permit at the facility and make it available upon request to Ecology inspectors.

**S4. Operation and Maintenance**

The Permittee must, at all times, properly operate and maintain all facilities or systems of treatment and control (and related appurtenances), which are installed to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes keeping a daily operation logbook (paper or electronic), adequate laboratory controls, and appropriate quality assurance procedures. This provision of the permit requires the Permittee to operate backup or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of this permit.

The Permittee must schedule any facility maintenance, which might require interruption of wastewater treatment and degrade effluent quality, during non-critical water quality periods and carry this maintenance out in a manner approved by Ecology.

**S4.A. Operations and Maintenance (O&M) Manual**

**a. O&M Manual Submittal and Requirements**

The Permittee must:

1. Update the O&M Manual that meets the requirements of WAC 173-240-150.
2. Keep the approved O&M Manual at the permitted facility.
3. Follow the instructions and procedures of this manual.

**b. O&M Manual Components**

In addition to the requirements of WAC 173-240-150, the O&M Manual must include:

1. Emergency procedures for plant shutdown and cleanup in the event of a wastewater system upset or failure.
2. A review of system components which if failed could pollute surface water or could impact human health. Provide a procedure for a routine schedule of checking the function of these components.
3. Wastewater system maintenance procedures that contribute to the generation of process wastewater.
4. Any directions to maintenance staff when cleaning, or maintaining other equipment or performing other tasks which are necessary to protect the operation of the wastewater system (for example, defining maximum allowable discharge rate for draining a tank, blocking all floor drains before beginning the overhaul of a stationary engine.)
5. Wastewater sampling protocols and procedures for compliance with the sampling and reporting requirements in the wastewater discharge permit.
6. Minimum staffing adequate to operate and maintain the treatment processes and carry out compliance monitoring required by the permit.
7. Treatment plant process control monitoring schedule.
8. Specify other items on case-by-case basis such as O&M for any pump stations, lagoon liners, etc.

**c. Treatment System Operating Plan**

The Permittee must summarize the following information in the initial chapter of the O&M Manual entitled the "Treatment System Operating Plan." For the purposes of this permit, a Treatment System Operating Plan (TSOP) is a concise summary of specifically defined elements of the O&M Manual.

The Permittee must submit an updated Treatment System Operating Plan to Ecology by June 1, 2016. The Permittee must update and submit this plan, as necessary, to include requirements for any major modifications of the treatment system.

The TSOP must not conflict with the O&M Manual and must include the following information:

1. A baseline operating condition, which describes the operating parameters and procedures, used to meet the effluent limits of S1 at the production levels used in developing these limits.
2. In the event of production rates, which are below the baseline levels used to establish these limits, the plan must describe the operating procedures and conditions needed to maintain design treatment efficiency. The monitoring and reporting must be described in the plan.
3. In the event of an upset, due to plant maintenance activities, severe stormwater events, startups or shut downs, or other causes, the plan must describe the operating procedures and conditions employed to mitigate the upset. The monitoring and reporting must be described in the plan.

4. A description of any regularly scheduled maintenance or repair activities at the facility which would affect the volume or character of the wastes discharged to the wastewater treatment system and a plan for monitoring and treating/controlling the discharge of maintenance-related materials (such as cleaners, degreasers, solvents, etc.).
5. Procedures to minimize odors associated with the wastewater treatment system.
6. Procedures for public notification during periods when odor is expected as a result of the wastewater treatment system maintenance activities.
7. Sludge management procedures for the wastewater treatment system. The Permittee must include procedures for sludge recycling, sludge processing and combustion, and the management of sludge excess accumulation in the wastewater treatment units.

#### **S4.B. Bypass Procedures**

This permit prohibits a bypass, which is the intentional diversion of waste streams from any portion of a treatment facility.

Ecology may take enforcement action against a Permittee for a bypass unless one of the following circumstances (1, 2, or 3) applies:

1. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

This permit authorizes a bypass if it allows for essential maintenance and does not have the potential to cause violations of limits or other conditions of this permit, or adversely impact public health as determined by Ecology prior to the bypass. The Permittee must submit prior notice, if possible, at least ten (10) days before the date of the bypass.

2. Bypass is unavoidable, unanticipated, and results in noncompliance of this permit.

This permit authorizes such a bypass only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.
- b. No feasible alternatives to the bypass exist, such as:
  - The use of auxiliary treatment facilities.
  - Retention of untreated wastes.
  - Stopping production.
  - Maintenance during normal periods of equipment downtime, but not if the Permittee should have installed adequate backup equipment in the exercise of reasonable engineering judgment to prevent a bypass.
  - Transport of untreated wastes to another treatment facility or preventative maintenance), or transport of untreated wastes to another treatment facility.

- c. The Permittee has properly notified Ecology of the bypass as required in Special Condition S3.F of this permit.
3. If bypass is anticipated and has the potential to result in noncompliance of this permit.
    - a. The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:
      - A description of the bypass and its cause.
      - An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
      - A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
      - The minimum and maximum duration of bypass under each alternative.
      - A recommendation as to the preferred alternative for conducting the bypass.
      - The projected date of bypass initiation.
      - A statement of compliance with SEPA.
      - A request for modification of water quality standards as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated.
      - Details of the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.
    - b. For probable construction bypasses, the Permittee must notify Ecology of the need to bypass as early in the planning process as possible. The Permittee must consider the analysis required above during preparation of the engineering report or facilities plan and plans and specifications and must include these to the extent practical. In cases where the Permittee determines the probable need to bypass early, the Permittee must continue to analyze conditions up to and including the construction period in an effort to minimize or eliminate the bypass.
    - c. Ecology will consider the following prior to issuing an administrative order for this type of bypass:
      - If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
      - If feasible alternatives to bypass exist, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
      - If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve or deny the request.

Ecology will give the public an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Ecology will approve a request to bypass by issuing an administrative order under RCW 90.48.120.

**S5. Solid Wastes**

**S5.A. Solid Waste Handling**

The Permittee must handle and dispose of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

**S5.B. Leachate**

The Permittee must not allow leachate from its solid waste material to enter state waters without providing all known, available, and reasonable methods of treatment, nor allow such leachate to cause violations of the State Surface Water Quality Standards, Chapter 173-201A WAC, or the State Ground Water Quality Standards, Chapter 173-200 WAC. The Permittee must apply for a permit or permit modification as may be required for such discharges to state ground or surface waters.

**S5.C. Solid Waste Control Plan**

The Permittee must submit all proposed revisions or modifications to the solid waste control plan to Ecology. The Permittee must comply with the approved solid waste control plan and any modifications once approved. The Permittee must submit an update of the solid waste control plan by December 1, 2016. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).

**S6. Application for Permit Renewal or Modification for Facility Changes**

The Permittee must submit an application for renewal of this permit by at least 180 days before the expiration of the permit. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).

The Permittee must also submit a new application or supplement at least one hundred eighty (180) days prior to commencement of discharges, resulting from the activities listed below, which may result in permit violations. These activities include any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility.

**S7. Non-Routine and Unanticipated Discharges**

1. Beginning on the effective date of this permit, the Permittee is authorized to discharge non-routine wastewater on a case-by-case basis if approved by Ecology. Prior to any such discharge, the Permittee must contact Ecology and at a minimum provide the following information:
  - a. The proposed discharge location
  - b. The nature of the activity that will generate the discharge
  - c. Any alternatives to the discharge, such as reuse, storage, or recycling of the water
  - d. The total volume of water it expects to discharge

- e. The results of the chemical analysis of the water
  - f. The date of proposed discharge
  - g. The expected rate of discharge discharged, in gallons per minute
2. The Permittee must analyze the water for all constituents limited for the discharge and report them as required by subpart 1.e above. The Permittee must also analyze for copper and zinc. The analysis must also include any parameter deemed necessary by Ecology. All discharges must comply with the effluent limits as established in Special Condition S1 of this permit, water quality standards, and any other limits imposed by Ecology.
  3. The Permittee must limit the discharge rate, as referenced in subpart 1.g above, so it will not cause erosion of ditches or structural damage to culverts and their entrances or exits.
  4. The discharge cannot proceed until Ecology has reviewed the information provided and has authorized the discharge by letter to the Permittee or by an Administrative Order. Once approved and if the proposed discharge is to a municipal storm drain, the Permittee must obtain prior approval from the municipality and notify it when it plans to discharge.

## **S8. Spill Control Plan**

### **S8.A. Spill Control Plan Submittals and Requirements**

The Permittee must:

1. Submit to Ecology an update to the existing spill control plan by November 30, 2016. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).
2. Review the plan at least annually and update the spill plan as needed.
3. Send changes of the plan to Ecology.
4. Follow the plan and any supplements throughout the term of the permit.

### **S8.B. Spill Control Plan Components**

The spill control plan must include the following:

1. A list of all oil and petroleum products and other materials used and/or stored on-site, which when spilled, or otherwise released into the environment, designate as Dangerous Waste (DW) or Extremely Hazardous Waste (EHW) by the procedures set forth in WAC 173-303-070. Include other materials used and/or stored on-site which may become pollutants or cause pollution upon reaching state's waters.
2. A description of preventive measures and facilities (including an overall facility plot showing drainage patterns) which prevent, contain, or treat spills of these materials.
3. A description of the reporting system the Permittee will use to alert responsible managers and legal authorities in the event of a spill.
4. A description of operator training to implement the plan.

The Permittee may submit plans and manuals required by 40 CFR Part 112, contingency plans required by Chapter 173-303 WAC, or other plans required by other agencies, which meet the intent of this section.

## **S9. Stormwater Pollution Prevention Plan**

### **S9.A. General Requirements**

1. The Permittee must prepare the Stormwater Pollution Prevention Plan (SWPPP) and all modifications in accordance with the guidance provided in the *Stormwater Pollution Prevention Planning for Industrial Facilities* and must be consistent with the *Stormwater Management Manual* for Western Washington (2019 edition)
2. The plan must contain the following elements:
  - a. Assessment and description of existing and potential pollutant sources
  - b. Description of the operational BMPs
  - c. Description of selected source-control BMPs
  - d. When necessary, a description of erosions and sediment control BMPs
  - e. When necessary, a description of treatment BMPs
  - f. An implementation schedule
3. Submission, Retention, and Availability

The Permittee must submit the SWPPP on or before June 1, 2016. The Permittee must retain the SWPPP onsite or within reasonable access to the site. The SWPPP and all of its modifications must be signed in accordance with General Condition G1.

#### 4. Modifications

The Permittee must modify the SWPPP whenever there is a change in design, construction, operation, or maintenance, which causes the SWPPP to be less effective in controlling the pollutants. Whenever the description of potential pollutant sources of the pollution prevention measures and controls identified in the SWPPP are inadequate, the Permittee must modify the SWPPP, as appropriate, within two (2) weeks of such determination. The Permittee must submit proposed modifications to the SWPPP to Ecology at least 30 days in advance of implementing the proposed changes in the plan unless Ecology approves immediate implementation. The Permittee must provide for implementation of any modifications to the SWPPP in a timely manner.

5. The Permittee may incorporate applicable portions of plans prepared for other purposes. Plans or portions of plans incorporated into the SWPPP become enforceable requirements of the permit.

### **S9.B. Implementation**

The Permittee must conduct two inspections per year, one during the wet season (October 1 to April 30) and the other during the dry season (May 1 to September 30).

1. Wet season inspection: The personnel named in the SWPPP must conduct the wet season inspection during a rainfall event to verify that the description of potential pollutant sources required under this permit is accurate, the site map has been updated or otherwise modified to reflect current conditions, the controls to reduce pollutants in the stormwater discharges associated with industrial activities are being implemented and are adequate. The wet-weather inspection must include any observations of the presence of floating materials, suspended solids, oil and grease, discoloration, turbidity, odor, etc. in the stormwater discharge(s).
2. Dry season inspection: The personnel named in the SWPPP must conduct the dry season inspection. The dry season inspection shall determine the presence of unpermitted discharges such as domestic wastewater, non-contact cooling water or process wastewater (including leachate) to the stormwater drainage system. If an unpermitted, non-stormwater discharge is discovered, the Permittee must immediately notify the Department and submit a written report within 30 days of discover of the discharge.

### **S9.C. Plan Evaluation**

The Permittee must evaluate whether measures to reduce pollutant loading identified in the SWPPP are adequate and properly implemented in accordance with the terms of the permit or whether additional controls are needed. The Permittee must maintain record summarizing the results of inspections and a certification, in accordance with General Condition G1, that the facility is in compliance with the plan and this permit and identifying any incidents of non-compliance.

### **S10. Fecal Coliform and Odor Best Management Practice (BMP)**

The Permittee is authorized to pump water from the sedimentation area before the dam at Outfall 002 into any of the secondary treatment system aeration basins (“bioponds”) during startup or shut down of any bioponds to prevent odors and to control fecal coliform in future discharges from bioponds.

### **S11. Clarifier Efficiency Study**

The Permittee must prepare and submit to Ecology an efficiency study to evaluate the clarifier no. 2 performance following the retrofit and its efficient operation. The Permittee must submit the efficiency study no later than October 1, 2018. The study must evaluate the effect of the retrofit in the following areas:

- Recycle activated sludge (RAS) flow and concentrations;
- Mix liquor suspended solids (MLSS);
- Sludge volume index (SVI);
- Sludge blanket depth; and
- TSS removal efficiency.

TSS removal efficiency must be determined from influent and effluent sampling conducted during four (4) separate 24-hour composite sampling periods.



Two (2) of the sampling periods must be conducted when the effluent plant is primarily processing dry weather flow; the other two periods must be conducted when the effluent plant is primarily processing wet weather flow. Minor precipitation events during dry weather sampling should be recorded if they occur. Each of the two dry weather and wet weather sampling intervals must be spaced at least one month apart. Samples must be collected when the wastewater treatment system is in relatively steady state (no peak flows, upsets, or maintenance turnarounds). The TSS sampling should be timed so that influent sampling events correspond with effluent sampling events in order to effectively estimate removal efficiencies across the system.

The efficiency study must also include monthly average and peak flow rates, and calculated rates for clarifier no. 2. The study must evaluate impacts of the flow rates to ensure efficient removal of TSS.

### **S12. Total Chlorine Free (TCF) Study**

Within 12 months after the effective date of the permit, the Permittee must submit to Ecology a comprehensive analysis of converting to a totally chlorine free (TCF) bleaching process. This analysis must include complete technology conversion description, itemized cost to convert, detailed market outlook/viability for TCF product. The analysis must specify the capital cost to convert and the predicted product sales impacts and long term economic viability, resulting from the conversion.

### **S13. Mixing Study**

#### **S13.A. General Requirements**

The Permittee must:

1. Submit a Plan of Study to Ecology for review by November 30, 2017, prior to initiation of the effluent mixing study. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).
2. Determine the degree of mixing during critical conditions, as defined in WAC 173-201A-020 Definitions - "Critical Condition," or as close to critical conditions as reasonably possible.
3. Use the *Guidance for Conducting Mixing Zone Analyses* (Ecology, 2008) to establish the critical condition scenarios.
4. Measure the dilution ratio in the field with dye using study protocols specified in the Guidance, Section 5.0 "Conducting a Dye Study," as well as other protocols listed in Subpart C "Protocols." The Permittee may use mixing models as an acceptable alternative or adjunct to a dye study if:
  - a. The critical ambient conditions necessary for model input are known or will be established with field studies.
  - b. If the diffuser is visually inspected for integrity or has been recently tested for performance by the use of tracers.
5. Consult the Guidance mentioned above when choosing the appropriate model.

6. Use models if critical condition scenarios that need to be examined are quite different from the set of conditions present during the dye study.
7. Must conduct validation/calibration in accordance with the Guidance mentioned above, in particular, Subsection 5.2 “Quantify Dilution” if it determines it needs to validate (and possibly calibrate) a model.
8. Apply the resultant dilution ratios for acute and chronic boundaries in accordance with directions found in Ecology’s *Permit Writer’s Manual* (2010), Chapter VI and Appendix 6. You can obtain a copy of the manual at:  
<https://fortress.wa.gov/ecy/publications/summarypages/92109.html>.

### **S13.B. Reporting Requirements**

The Permittee must:

1. Include the results of the effluent mixing study in the Effluent Mixing Report and submit it to Ecology for approval within 12 months after Ecology’s approval of the Plan of Study. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).
2. Submit to Ecology any available information it has regarding background physical conditions or background concentrations of chemical substances in the receiving water (for which there are criteria in chapter 173-201A WAC) as part of the Effluent Mixing Report.
3. Locate the outfall and mixing zone boundaries with GPS coordinates and identify the accuracy of station locations in the report.

If the results of the mixing study, toxicity tests, and chemical analysis indicate that the concentration of any pollutant(s) exceeds or has a reasonable potential to exceed the state water quality standards, chapter 173-201A WAC, Ecology may issue an administrative order to require a reduction of pollutants or modify this permit to impose effluent limits to meet the water quality standards.

### **S13.C. Protocols**

The Permittee must determine the dilution ratio using protocols outlined in the following references, approved modifications thereof, or by another method approved by Ecology:

1. Akar, P.J. and G.H. Jirka, Cormix2: An Expert System for Hydrodynamic Mixing Zone Analysis of Conventional and Toxic Multiport Diffuser Discharges, USEPA Environmental Research Laboratory, Athens, GA, Draft, July 1990.
2. Baumgartner, D.J., W.E. Frick, P.J.W. Roberts, and C.A. Bodeen, *Dilution Models for Effluent Discharges*, USEPA, Pacific Ecosystems Branch, Newport, OR, 1993.
3. Doneker, R.L. and G.H. Jirka, Cormix1: An Expert System for Hydrodynamic Mixing Zone Analysis of Conventional and Toxic Submerged Single Port Discharges, USEPA, Environmental Research Laboratory, Athens, GA, EPA/600-3-90/012, 1990.
4. Ecology, *Permit Writer’s Manual*, Water Quality Program, Department of Ecology, Olympia, WA 98504, revised November 2010, including most current addenda.

5. Ecology, *Guidance for Conducting Mixing Zone Analyses, Permit Writer's Manual*, (Appendix 6.1), Water Quality Program, Department of Ecology, Olympia, WA 98504, October 1996.
6. Kilpatrick, F.A., and E.D. Cobb, *Measurement of Discharge Using Tracers, Chapter A16, Techniques of Water-Resources Investigations of the USGS*, Book 3, Application of Hydraulics, USGS, U.S. Department of the Interior, Reston, VA, 1985.
7. Wilson, J.F., E.D. Cobb, and F.A. Kilpatrick, *Fluorometric Procedures for Dye Tracing, Chapter A12. Techniques of Water-Resources Investigations of the USGS, Book 3, Application of Hydraulics*, USGS, U.S. Department of the Interior, Reston, VA, 1986.

## **S14. Sediment Monitoring**

### **S14.A. Sediment Sampling and Analysis Plan**

The Permittee must submit to Ecology for review and approval a sediment sampling and analysis plan for sediment monitoring at outfall 001 and outfall 002 by November 30, 2016. The Permittee must submit two paper copies and an electronic copy (preferably as a PDF). The plan is to recharacterize sediment (the nature and extent of chemical contamination and biological toxicity) quality in the vicinity of the Permittee's discharge locations. The Permittee must follow the guidance provided in the *Sediment Source Control Standards User Manual, Appendix B: Sediment Sampling and Analysis Plan* (Ecology, 2008).

### **S14.B. Sediment Data Report**

Following Ecology approval of the sediment sampling and analysis plan, the Permittee must collect sediments between August 15<sup>th</sup> and September 15<sup>th</sup>.

The Permittee must submit to Ecology a Sediment Data Report containing the results of the sediment sampling and analysis no later than 90 days after the sediment sampling. The Permittee must submit two paper copies and an electronic copy (preferably as a PDF). The sediment data report must conform to the approved sediment sampling and analysis plan.

In addition to a Sediment Data Report, the sediment chemical and biological data must be submitted to Ecology's EIM database (<https://www.ecology.wa.gov/eim>). Ecology's MyEIM tools must be used to confirm the accuracy of the submitted data (<http://www.ecology.wa.gov/eim/MyEIM.htm>).

## **S15. Outfall Evaluation**

The Permittee must inspect Outfall(s) 001 in the fourth year of this permit term. The inspection must include the submerged portion of the outfall line and diffuser to document its integrity and continued function. If conditions allow for a photographic verification, the Permittee must include such verification in the report. The Permittee must submit the inspection report to Ecology by June 1, 2020 with the permit renewal application.

The inspector must at minimum:

- Assess the physical condition of the outfall pipe, diffuser, and associated couplings.
- Determine the extent of sediment accumulation in the vicinity of the diffuser.
- Ensure diffuser ports are free of obstructions and are allowing uniform flow.
- Confirm physical location (latitude/longitude) and depth (at MLLW) of the diffuser section of the outfall.
- Assess physical condition of the submarine line, including side sewer laterals up to the ordinary high water line.
- Assess physical condition of anchors used to secure the submarine line.

## **S16. Acute Toxicity**

### **S16.A. Effluent Limit for Acute Toxicity**

**The effluent limit for acute toxicity is:**

**No acute toxicity detected in a test concentration representing the acute critical effluent concentration (ACEC).**

The ACEC means the maximum concentration of effluent during critical conditions at the boundary of the acute mixing zone, defined in Section S1.B of this permit. The ACEC equals 11.11% effluent.

### **S16.B. Compliance with the Effluent Limit for Acute Toxicity**

Compliance with the effluent limit for acute toxicity means the results of the testing specified in Subsection C show no statistically significant difference in survival between the control and the ACEC.

If the test results show a statistically significant difference in survival between the control and the ACEC, the test does not comply with the effluent limit for acute toxicity. The Permittee must then immediately conduct the additional testing described in Subsection D. The Permittee will comply with the requirements of this section by meeting the requirements of Subsection D.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in survival between the control and the ACEC is less than 10%, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

### **S16.C. Compliance Testing for Acute Toxicity**

The Permittee must:

1. Perform the acute toxicity tests using a full dilution series of at least five concentrations. The series of dilution must include the ACEC, the 100% effluent, and a control.

2. Conduct quarterly acute toxicity testing on the final effluent. Testing must begin by March 31, 2016. Quarters means January through March, April through June, July through September, and October through December.
3. Submit a quarterly written report to Ecology within 45 days of sampling and starting no later than April 30, 2016. Each subsequent report is due on April 30th, July 30th, October 30th, and January 30th of each year. Further instructions on testing conditions and test report content are in Subsection E below.
4. The Permittee must perform compliance tests using each of the species and protocols listed below on a rotating basis:

| Acute Toxicity Tests                       | Species   | Method           |
|--|---|------------------|
| Fathead minnow 96-hour static-renewal test | Pimephales promelas                                 | EPA-821-R-02-012 |
| Daphnid 48-hour static test                | Ceriodaphnia dubia, Daphnia pulex, or Daphnia magna | EPA-821-R-02-012 |

<sup>a</sup> The Permittee must choose one of the three species and use it consistently throughout effluent characterization.

#### **S16.D. Response to Noncompliance with the Effluent Limit for Acute Toxicity**

If a toxicity test conducted under Subsection C determines a statistically significant difference in response between the ACEC and the control, using the statistical test described in Subsection B, the Permittee must begin additional testing within one week from the time of receiving the test results. The Permittee must:

1. Conduct one additional test each week for four consecutive weeks, using the same test and species as the failed compliance test.
2. Test at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the ACEC. The results of the test at the ACEC will determine compliance with the effluent limit for acute toxicity as described in Subsection B.
3. Return to the original monitoring frequency in Subsection C after completion of the additional compliance monitoring.

**Anomalous test results:** If a toxicity test conducted under Subsection C indicates noncompliance with the acute toxicity limit and the Permittee believes that the test result is anomalous, the Permittee may notify Ecology that the compliance test result may be anomalous. The Permittee may take one additional sample for toxicity testing and wait for notification from Ecology before completing the additional testing. The Permittee must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this section. Or,

If the one additional sample fails to comply with the effluent limit for acute toxicity, then the Permittee must complete all of the additional monitoring required in this section. Or, If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result.

If all of the additional testing in this section complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

- a. Operating records
- b. Monitoring results
- c. Inspection records
- d. Spill reports
- e. Weather records
- f. Production records
- g. Raw material purchases
- h. Pretreatment records, etc.

If any toxicity test conducted under Subsection D.1 shows a statistically significant difference in response between the ACEC and the control, using the statistical test described in Subsection B, than the test result is a violation of the permit. The Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology within sixty (60) days after the sample date [WAC 173-205-100(2)].

#### **S16.E. Sampling and Reporting Requirements**

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain bench sheets and reference toxicant results for test methods.

If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.

2. The Permittee must collect 24-hour composite effluent samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.
3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.
4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Subsection C and the Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.

5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Section A or pristine natural water of sufficient quality for good control performance.
6. The Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.

## **S17. Chronic Toxicity**

### **S17.A. Effluent Limit for Chronic Toxicity**

**The effluent limit for chronic toxicity is:**

**No toxicity detected in a test concentration representing the chronic critical effluent concentration (CCEC).**

The CCEC means the maximum concentration of effluent during critical conditions at the boundary of the mixing zone, defined in Section S1.B of this permit. The CCEC equals 1.35% effluent.

### **S17.B. Compliance with the Effluent Limit for Chronic Toxicity**

Compliance with the effluent limit for chronic toxicity means the results of the testing specified in Subsection C show no statistically significant difference in response between the control and the CCEC.

If the test results show a statistically significant difference in response between the control and the CCEC, the test does not comply with the effluent limit for chronic toxicity. The Permittee must then immediately conduct the additional testing described in Subsection D. The Permittee will comply with the requirements of this section by meeting the requirements of Subsection D.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in response between the control and the CCEC is less than 20%, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

Ecology will reevaluate the need for the chronic toxicity limit in future permits. Therefore, the Permittee must also conduct this same hypothesis test (Appendix H, EPA/600/4-89/001) to determine whether a statistically significant difference in response exists between the acute critical effluent concentration (ACEC) and the control.

### **S17.C. Compliance Testing for Chronic Toxicity**

The Permittee must:

1. Perform the chronic toxicity tests using a full dilution series of at least five concentrations. The series of dilution must include the ACEC, the CCEC, and a control.
2. Conduct quarterly chronic toxicity testing on the final effluent. Testing must begin by March 31, 2016. Quarters means January through March, April through June, July through September, and October through December.

3. Submit a quarterly written report to Ecology within 45 days of sampling and starting no later than April 30, 2016. Each subsequent report is due on April 30th, July 30th, October 30th, and January 30th of each year. Further instructions on testing conditions and test report content are in Subsection E below.
4. Perform compliance tests using the following species on a rotating basis and the most recent version of the following protocols:

| Saltwater Chronic Test                  | Species  | Method           |
|---|--|------------------|
| Topsmelt survival and growth            | Atherinops affinis                             | EPA/600/R-95/136 |
| Mysid shrimp survival and growth        | Americamysis bahia (formerly Mysidopsis bahia) | EPA-821-R-02-014 |
| Oyster/ Mussel Survival and development | Crassostrea gigas/Mytilus sp.                  | EPA/600/R-95/136 |

The laboratory must conduct the Pacific oyster and mussel tests in accordance with EPA/600/R-95/136 and the bivalve development test conditions in the most recent version of Ecology Publication No. WQ-R-95-80, Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria. The laboratory must use whichever one of the two species that will give a valid result in each particular test.

**S17.D. Response to Noncompliance with the Effluent Limit for Chronic Toxicity**

If a toxicity test conducted under Subsection C determines a statistically significant difference in response between the CCEC and the control using the statistical test described in Subsection B, the Permittee must begin additional testing within one week from the time of receiving the test results. The Permittee must:

1. Conduct additional testing each month for three consecutive months using the same test and species as the failed compliance test.
2. Use a series of at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the CCEC. The results of the test at the CCEC will determine compliance with the effluent limit for chronic toxicity as described in Subsection A.
3. Return to the original monitoring frequency in Subsection B after completion of the additional compliance monitoring.

**Anomalous test results:** If a toxicity test conducted under Subsection C indicates noncompliance with the chronic toxicity limit and the Permittee believes that the test result is anomalous, the Permittee may notify Ecology that the compliance test result may be anomalous. The Permittee may take one additional sample for toxicity testing and wait for notification from Ecology before completing the additional testing. The Permittee must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.



If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this section. Or,

If the one additional sample fails to comply with the effluent limit for chronic toxicity, then the Permittee must complete all of the additional monitoring required in this section. Or,

If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result.

If all of the additional testing required by this section complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

- a. Operating records
- b. Monitoring results
- c. Inspection records
- d. Spill reports
- e. Weather records
- f. Production records
- g. Raw material purchases
- h. Pretreatment records, etc.

If any toxicity test conducted under subsection D.1. shows a statistically significant difference in response between the CCEC and the control, using the statistical test described in Subsection B, then the test result is a violation of the permit. The Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology within 60 days after the sample date.

The Permittee must submit an update the TI/RE Plan for chronic bivalve toxicity by March 1, 2016. The TI/RE updates must be submitted annually.

#### **S17.E. Sampling and Reporting Requirements**

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.
2. The Permittee must collect 24-hour composite effluent samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.
3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.

4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Section C. and the Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.
5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Subsection C or pristine natural water of sufficient quality for good control performance.
6. The Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.
7. The Permittee may choose to conduct a full dilution series test during compliance testing in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the CCEC and the ACEC. The CCEC and the ACEC may either substitute for the effluent concentrations that are closest to them in the dilution series or be extra effluent concentrations. The CCEC equals 1.35% effluent. The ACEC equals 11.11% effluent.
8. All whole effluent toxicity tests that involve hypothesis testing must comply with the chronic statistical power standard of 39% as defined in WAC 173-205-020.

If the test does not meet the power standard, the Permittee must repeat the test on a fresh sample with an increased number of replicates to increase the power.

## **General Conditions**

### **G1. Signatory Requirements**

1. All applications, reports, or information submitted to Ecology must be signed and certified.
  - a. In the case of corporations, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
    - A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or
    - The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

- In the case of a partnership, by a general partner.
- In the case of sole proprietorship, by the proprietor.
- In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

Applications for permits for domestic wastewater facilities that are either owned or operated by, or under contract to, a public entity shall be submitted by the public entity.

2. All reports required by this permit and other information requested by Ecology must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described above and submitted to Ecology.
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
3. Changes to authorization. If an authorization under paragraph G1.2, above, is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph G1.2, above, must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under this section must make the following certification:

“I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

## **G2. Right of Inspection and Entry**

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

1. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.
2. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.

3. To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
4. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

**G3. Permit Actions**

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the Permittee) or upon Ecology's initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

1. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
  - a. Violation of any permit term or condition.
  - b. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.
  - c. A material change in quantity or type of waste disposal.
  - d. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination.
  - e. A change in any condition that requires either a temporary or permanent reduction, or elimination of any discharge or sludge use or disposal practice controlled by the permit.
  - f. Nonpayment of fees assessed pursuant to RCW 90.48.465.
  - g. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.
2. The following are causes for modification but not revocation and reissuance except when the Permittee requests or agrees:
  - a. A material change in the condition of the waters of the state.
  - b. New information not available at the time of permit issuance that would have justified the application of different permit conditions.
  - c. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.
  - d. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.
  - e. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.
  - f. Ecology has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.

- g. Incorporation of an approved local pretreatment program into a municipality's permit.
3. The following are causes for modification or alternatively revocation and reissuance:
  - a. When cause exists for termination for reasons listed in 1.a through 1.g of this section, and Ecology determines that modification or revocation and reissuance is appropriate.
  - b. When Ecology has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G7) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new Permittee.

**G4. Reporting Planned Changes**

The Permittee must, as soon as possible, but no later than one hundred eighty (180) days prior to the proposed changes, give notice to Ecology of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in:

1. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b)
2. A significant change in the nature or an increase in quantity of pollutants discharged.
3. A significant change in the Permittee's sludge use or disposal practices. Following such notice, and the submittal of a new application or supplement to the existing application, along with required engineering plans and reports, this permit may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

**G5. Plan Review Required**

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications must be submitted to Ecology for approval in accordance with chapter 173-240 WAC. Engineering reports, plans, and specifications must be submitted at least one hundred eighty (180) days prior to the planned start of construction unless a shorter time is approved by Ecology. Facilities must be constructed and operated in accordance with the approved plans.

**G6. Compliance with Other Laws and Statutes**

Nothing in this permit excuses the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

**G7. Transfer of this Permit**

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the Permittee must notify the succeeding owner or controller of the existence of this permit by letter, a copy of which must be forwarded to Ecology.

1. Transfers by Modification

Except as provided in paragraph (2) below, this permit may be transferred by the Permittee to a new owner or operator only if this permit has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

2. Automatic Transfers

This permit may be automatically transferred to a new Permittee if:

- a. The Permittee notifies Ecology at least thirty (30) days in advance of the proposed transfer date.
- b. The notice includes a written agreement between the existing and new Permittees, containing a specific date transfer of permit responsibility, coverage, and liability between them.
- c. Ecology does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under this subparagraph may also be minor modification under 40 CFR 122.63.

If this notice is not received, the transfer is effective on the date specified in the written agreement.

**G8. Reduced Production for Compliance**

The Permittee, in order to maintain compliance with its permit, must control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

**G9. Removed Substances**

Collected screenings, grit, solids, sludge, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

**G10. Duty to Provide Information**

The Permittee must submit to Ecology, within a reasonable time, all information which Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology upon request, copies of records required to be kept by this permit.

**G11. Other Requirements of 40 CFR**

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

**G12. Additional Monitoring**

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

**G13. Payment of Fees**

The Permittee must submit payment of fees associated with this permit as assessed by Ecology.

**G14. Penalties for Violating Permit Conditions**

Any person who is found guilty of willfully violating the terms and conditions of this permit is deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars (\$10,000) and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit may incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars (\$10,000) for every such violation. Each and every such violation is a separate and distinct offense, and in case of a continuing violation, every day's continuance is deemed to be a separate and distinct violation.

**G15. Upset**

Definition – “Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limits if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the Permittee can identify the cause(s) of the upset.
2. The permitted facility was being properly operated at the time of the upset.
3. The Permittee submitted notice of the upset as required in Special Condition S3.F.
4. The Permittee complied with any remedial measures required under S3.F. of this permit.

In any enforcement action the Permittee seeking to establish the occurrence of an upset has the burden of proof.

**G16. Property Rights**

This permit does not convey any property rights of any sort, or any exclusive privilege.

**G17. Duty to Comply**

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

**G18. Toxic Pollutants**

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

**G19. Penalties for Tampering**

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two (2) years per violation, or by both.

If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment shall be a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or by both.

**G20. Reporting Requirements Applicable To Existing Manufacturing, Commercial, Mining, and Silvicultural Dischargers**

The Permittee belonging to the categories of existing manufacturing, commercial, mining, or silviculture must notify Ecology as soon as they know or have reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels:"
  - a. One hundred micrograms per liter (100 µg/L).
  - b. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2, 4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony.
  - c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
  - d. The level established by the Director in accordance with 40 CFR 122.44(f).



2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following “notification levels:”
  - a. Five hundred micrograms per liter (500µg/L).
  - b. One milligram per liter (1 mg/L) for antimony.
  - c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
  - d. The level established by the Director in accordance with 40 CFR 122.44(f).

**G21. Compliance Schedules**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than fourteen (14) days following each schedule date.

## Appendix A

### List of Pollutants with Analytical Methods, Detection Limits and Quantitation Levels

The Permittee must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table for permit and application required monitoring unless:

- Another permit condition specifies other methods, detection levels, or quantitation levels.
- The method used produces measurable results in the sample and EPA has listed it as an EPA-approved method in 40 CFR Part 136.

If the Permittee uses an alternative method, not specified in the permit and as allowed above, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.

If the Permittee is unable to obtain the required DL and QL in its effluent due to matrix effects, the Permittee must submit a matrix-specific detection limit (MDL) and a QL to Ecology with appropriate laboratory documentation.

When the permit requires the Permittee to measure the base neutral compounds in the list of priority pollutants, it must measure all of the base neutral pollutants listed in the table below. The list includes EPA required base neutral priority pollutants and several additional polynuclear aromatic hydrocarbons (PAHs). The Water Quality Program added several PAHs to the list of base neutrals below from Ecology’s Persistent Bioaccumulative Toxics (PBT) List. It only added those PBT parameters of interest to Appendix A that did not increase the overall cost of analysis unreasonably.

Ecology added this appendix to the permit in order to reduce the number of analytical “non-detects” in permit-required monitoring and to measure effluent concentrations near or below criteria values where possible at a reasonable cost.

#### **CONVENTIONAL PARAMETERS**

| <b>Pollutant &amp; CAS No. (if available)</b> | <b>Recommended Analytical Protocol</b> | <b>Detection (DL)<sup>1</sup> µg/L unless specified</b> | <b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b> |
|---|--|---|--|
| Biochemical Oxygen Demand                     | SM5210-B                               |   | 2 mg/L   |
| Soluble Biochemical Oxygen Demand             | SM5210-B <sup>3</sup>                  |   | 2 mg/L   |
| Chemical Oxygen Demand                        | SM5220-D                               |   | 10 mg/L  |
| Total Organic Carbon                          | SM5310-B/C/D                           |   | 1 mg/L   |
| Total Suspended Solids                        | SM2540-D                               |   | 5 mg/L   |
| Total Ammonia (as N)                          | SM4500-NH3-B and C/D/E/G/H             |   | 20   |
| Flow  | Calibrated device                      |   |  |
| Dissolved oxygen                              | SM4500-OC/OG                           |   | 0.2 mg/L   |

| <b>Pollutant &amp; CAS No. (if available)</b> | <b>Recommended Analytical Protocol</b>                              | <b>Detection (DL)<sup>1</sup> µg/L unless specified</b> | <b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b> |
|---|---|---|--|
| Temperature (max. 7-day avg.)                 | Analog recorder or Use micro-recording devices known as thermistors |   | 0.2° C   |
| pH  | SM4500-H <sup>+</sup> B   | N/A   | N/A  |

**NONCONVENTIONAL PARAMETERS**

| <b>Pollutant &amp; CAS No. (if available)</b> | <b>Recommended Analytical Protocol</b>                              | <b>Detection (DL)<sup>1</sup> µg/L unless specified</b> | <b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b> |
|---|---|---|--|
| Total Alkalinity                              | SM2320-B  |   | 5 mg/L as CaCO <sub>3</sub>                                      |
| Chlorine, Total Residual                      | SM4500 Cl G   |   | 50.0   |
| Color   | SM2120 B/C/E  |   | 10 color units   |
| Fecal Coliform                                | SM 9221E,9222   | N/A   | Specified in method - sample aliquot dependent                   |
| Fluoride (16984-48-8)                         | SM4500-F E  | 25  | 100  |
| Nitrate + Nitrite Nitrogen (as N)             | SM4500-NO <sub>3</sub> -E/F/H                                       |   | 100  |
| Nitrogen, Total Kjeldahl (as N)               | SM4500-N <sub>org</sub> B/C and SM4500NH <sub>3</sub> -B/C/D/EF/G/H |   | 300  |
| Soluble Reactive Phosphorus (as P)            | SM4500- PE/PF   | 3   | 10   |
| Phosphorus, Total (as P)                      | SM 4500 PB followed by SM4500-PE/PF                                 | 3   | 10   |
| Oil and Grease (HEM)                          | 1664 A or B   | 1,400   | 5,000  |
| Salinity                                      | SM2520-B  |   | 3 practical salinity units or scale (PSU or PSS)                 |
| Settleable Solids                             | SM2540 -F   |   | 100  |
| Sulfate (as mg/L SO <sub>4</sub> )            | SM4110-B  |   | 200  |
| Sulfide (as mg/L S)                           | SM4500-S <sup>2</sup> F/D/E/G                                       |   | 200  |
| Sulfite (as mg/L SO <sub>3</sub> )            | SM4500-SO <sub>3</sub> B  |   | 2000   |
| Total Coliform                                | SM 9221B, 9222B, 9223B  | N/A   | Specified in method - sample aliquot dependent                   |
| Total dissolved solids                        | SM2540 C  |   | 20 mg/L  |
| Total Hardness                                | SM2340B   |   | 200 as CaCO <sub>3</sub>   |

| <b>Pollutant &amp; CAS No. (if available)</b>          | <b>Recommended Analytical Protocol</b> | <b>Detection (DL)<sup>1</sup> µg/L unless specified</b> | <b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b> |
|--|--|---|--|
| Aluminum, Total (7429-90-5)                            | 200.8                                  | 2.0   | 10   |
| Barium Total (7440-39-3)                               | 200.8                                  | 0.5   | 2.0  |
| BTEX (benzene +toluene + ethylbenzene + m,o,p xylenes) | EPA SW 846<br>8021/8260                | 1   | 2  |
| Boron Total (7440-42-8)                                | 200.8                                  | 2.0   | 10.0   |
| Cobalt, Total (7440-48-4)                              | 200.8                                  | 0.05  | 0.25   |
| Iron, Total (7439-89-6)                                | 200.7                                  | 12.5  | 50   |
| Magnesium, Total (7439-95-4)                           | 200.7                                  | 10  | 50   |
| Molybdenum, Total (7439-98-7)                          | 200.8                                  | 0.1   | 0.5  |
| Manganese, Total (7439-96-5)                           | 200.8                                  | 0.1   | 0.5  |
| NWTPH Dx <sup>4</sup>                                  | Ecology NWTPH Dx                       | 250   | 250  |
| NWTPH Gx <sup>5</sup>                                  | Ecology NWTPH Gx                       | 250   | 250  |
| Tin, Total (7440-31-5)                                 | 200.8                                  | 0.3   | 1.5  |
| Titanium, Total (7440-32-6)                            | 200.8                                  | 0.5   | 2.5  |

***PRIORITY POLLUTANTS***

| <b>Pollutant &amp; CAS No. (if available)</b> | <b>Recommended Analytical Protocol</b> | <b>Detection (DL)<sup>1</sup> µg/L unless specified</b> | <b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b> |
|---|--|---|--|
| <b>METALS, CYANIDE &amp; TOTAL PHENOLS</b>    |  |   |  |
| Antimony, Total (7440-36-0)                   | 200.8                                  | 0.3   | 1.0  |
| Arsenic, Total (7440-38-2)                    | 200.8                                  | 0.1   | 0.5  |
| Beryllium, Total (7440-41-7)                  | 200.8                                  | 0.1   | 0.5  |
| Cadmium, Total (7440-43-9)                    | 200.8                                  | 0.05  | 0.25   |
| Chromium (hex) dissolved (18540-29-9)         | SM3500-Cr EC                           | 0.3   | 1.2  |
| Chromium, Total (7440-47-3)                   | 200.8                                  | 0.2   | 1.0  |
| Copper, Total (7440-50-8)                     | 200.8                                  | 0.4   | 2.0  |
| Lead, Total (7439-92-1)                       | 200.8                                  | 0.1   | 0.5  |

| <b>Pollutant &amp; CAS No. (if available)</b>                    | <b>Recommended Analytical Protocol</b> | <b>Detection (DL)<sup>1</sup> <math>\mu\text{g/L}</math> unless specified</b> | <b>Quantitation Level (QL)<sup>2</sup> <math>\mu\text{g/L}</math> unless specified</b> |
|--|--|---|--|
| Mercury, Total (7439-97-6)                                       | 1631E                                  | 0.0002  | 0.0005   |
| Nickel, Total (7440-02-0)  | 200.8                                  | 0.1   | 0.5  |
| Selenium, Total (7782-49-2)                                      | 200.8                                  | 1.0   | 1.0  |
| Silver, Total (7440-22-4)  | 200.8                                  | 0.04  | 0.2  |
| Thallium, Total (7440-28-0)                                      | 200.8                                  | 0.09  | 0.36   |
| Zinc, Total (7440-66-6)  | 200.8                                  | 0.5   | 2.5  |
| Cyanide, Total (57-12-5)   | 335.4                                  | 5   | 10   |
| Cyanide, Weak Acid Dissociable                                   | SM4500-CN I                            | 5   | 10   |
| Cyanide, Free Amenable to Chlorination (Available Cyanide)       | SM4500-CN G                            | 5   | 10   |
| Phenols, Total   | EPA 420.1                              |   | 50   |
| <b>ACID COMPOUNDS</b>  |  |   |  |
| 2-Chlorophenol (95-57-8)   | 625                                    | 1.0   | 2.0  |
| 2,4-Dichlorophenol (120-83-2)                                    | 625                                    | 0.5   | 1.0  |
| 2,4-Dimethylphenol (105-67-9)                                    | 625                                    | 0.5   | 1.0  |
| 4,6-dinitro-o-cresol (534-52-1)<br>(2-methyl-4,6,-dinitrophenol) | 625/1625B                              | 1.0   | 2.0  |
| 2,4 dinitrophenol (51-28-5)                                      | 625                                    | 1.0   | 2.0  |
| 2-Nitrophenol (88-75-5)  | 625                                    | 0.5   | 1.0  |
| 4-nitrophenol (100-02-7)   | 625                                    | 0.5   | 1.0  |
| Parachlorometa cresol (59-50-7)<br>(4-chloro-3-methylphenol)     | 625                                    | 1.0   | 2.0  |
| Pentachlorophenol (87-86-5)                                      | 625                                    | 0.5   | 1.0  |
| Phenol (108-95-2)  | 625                                    | 2.0   | 4.0  |
| 2,4,6-Trichlorophenol (88-06-2)                                  | 625                                    | 2.0   | 4.0  |

**PRIORITY POLLUTANTS (continued)**

| <b>Pollutant &amp; CAS No. (if available)</b>                                       | <b>Recommended Analytical Protocol</b> | <b>Detection (DL)<sup>1</sup> µg/L unless specified</b> | <b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b> |
|---|--|---|--|
| <b>VOLATILE COMPOUNDS</b>   |  |   |  |
| Acrolein (107-02-8)   | 624                                    | 5   | 10   |
| Acrylonitrile (107-13-1)  | 624                                    | 1.0   | 2.0  |
| Benzene (71-43-2)   | 624                                    | 1.0   | 2.0  |
| Bromoform (75-25-2)   | 624                                    | 1.0   | 2.0  |
| Carbon tetrachloride (56-23-5)  | 624/601 or SM6230B                     | 1.0   | 2.0  |
| Chlorobenzene (108-90-7)  | 624                                    | 1.0   | 2.0  |
| Chloroethane (75-00-3)  | 624/601                                | 1.0   | 2.0  |
| 2-Chloroethylvinyl Ether (110-75-8)   | 624                                    | 1.0   | 2.0  |
| Chloroform (67-66-3)  | 624 or SM6210B                         | 1.0   | 2.0  |
| Dibromochloromethane (124-48-1)   | 624                                    | 1.0   | 2.0  |
| 1,2-Dichlorobenzene (95-50-1)   | 624                                    | 1.9   | 7.6  |
| 1,3-Dichlorobenzene (541-73-1)  | 624                                    | 1.9   | 7.6  |
| 1,4-Dichlorobenzene (106-46-7)  | 624                                    | 4.4   | 17.6   |
| Dichlorobromomethane (75-27-4)  | 624                                    | 1.0   | 2.0  |
| 1,1-Dichloroethane (75-34-3)  | 624                                    | 1.0   | 2.0  |
| 1,2-Dichloroethane (107-06-2)   | 624                                    | 1.0   | 2.0  |
| 1,1-Dichloroethylene (75-35-4)  | 624                                    | 1.0   | 2.0  |
| 1,2-Dichloropropane (78-87-5)   | 624                                    | 1.0   | 2.0  |
| 1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) (542-75-6) <sup>6</sup> | 624                                    | 1.0   | 2.0  |
| Ethylbenzene (100-41-4)   | 624                                    | 1.0   | 2.0  |
| Methyl bromide (74-83-9) (Bromomethane)   | 624/601                                | 5.0   | 10.0   |
| Methyl chloride (74-87-3) (Chloromethane)   | 624                                    | 1.0   | 2.0  |

| <b>Pollutant &amp; CAS No. (if available)</b>               | <b>Recommended Analytical Protocol</b> | <b>Detection (DL)<sup>1</sup> µg/L unless specified</b> | <b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b> |
|---|--|---|--|
| <b>VOLATILE COMPOUNDS</b>                                   |  |   |  |
| Methylene chloride (75-09-2)                                | 624                                    | 5.0   | 10.0   |
| 1,1,2,2-Tetrachloroethane (79-34-5)                         | 624                                    | 1.9   | 2.0  |
| Tetrachloroethylene (127-18-4)                              | 624                                    | 1.0   | 2.0  |
| Toluene (108-88-3)  | 624                                    | 1.0   | 2.0  |
| 1,2-Trans-Dichloroethylene (156-60-5) (Ethylene dichloride) | 624                                    | 1.0   | 2.0  |
| 1,1,1-Trichloroethane (71-55-6)                             | 624                                    | 1.0   | 2.0  |
| 1,1,2-Trichloroethane (79-00-5)                             | 624                                    | 1.0   | 2.0  |
| Trichloroethylene (79-01-6)                                 | 624                                    | 1.0   | 2.0  |
| Vinyl chloride (75-01-4)                                    | 624/SM6200B                            | 1.0   | 2.0  |

***PRIORITY POLLUTANTS (continued)***

| <b>Pollutant &amp; CAS No. (if available)</b>                          | <b>Recommended Analytical Protocol</b> | <b>Detection (DL)<sup>1</sup> µg/L unless specified</b> | <b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b> |
|--|--|---|--|
| <b>BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)</b>     |  |   |  |
| Acenaphthene (83-32-9)   | 625                                    | 0.2   | 0.4  |
| Acenaphthylene (208-96-8)  | 625                                    | 0.3   | 0.6  |
| Anthracene (120-12-7)  | 625                                    | 0.3   | 0.6  |
| Benzidine (92-87-5)  | 625                                    | 12  | 24   |
| Benzyl butyl phthalate (85-68-7)                                       | 625                                    | 0.3   | 0.6  |
| Benzo(a)anthracene (56-55-3)   | 625                                    | 0.3   | 0.6  |
| Benzo(b)fluoranthene (3,4-benzofluoranthene) (205-99-2) <sup>7</sup>   | 610/625                                | 0.8   | 1.6  |
| <b>Benzo(j)fluoranthene (205-82-3) <sup>7</sup></b>                    | 625                                    | 0.5   | 1.0  |
| Benzo(k)fluoranthene (11,12-benzofluoranthene) (207-08-9) <sup>7</sup> | 610/625                                | 0.8   | 1.6  |

| <b>Pollutant &amp; CAS No. (if available)</b>                      | <b>Recommended Analytical Protocol</b> | <b>Detection (DL)<sup>1</sup> <math>\mu\text{g/L}</math> unless specified</b> | <b>Quantitation Level (QL)<sup>2</sup> <math>\mu\text{g/L}</math> unless specified</b> |
|--|--|---|--|
| <b>BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)</b> |  |   |  |
| <b>Benzo(r,s,t)pentaphene (189-55-9)</b>                           | 625                                    | 0.5   | 1.0  |
| Benzo(a)pyrene (50-32-8)   | 610/625                                | 0.5   | 1.0  |
| Benzo(ghi)Perylene (191-24-2)                                      | 610/625                                | 0.5   | 1.0  |
| Bis(2-chloroethoxy)methane (111-91-1)                              | 625                                    | 5.3   | 21.2   |
| Bis(2-chloroethyl)ether (111-44-4)                                 | 611/625                                | 0.3   | 1.0  |
| Bis(2-chloroisopropyl)ether (39638-32-9)                           | 625                                    | 0.3   | 0.6  |
| Bis(2-ethylhexyl)phthalate (117-81-7)                              | 625                                    | 0.1   | 0.5  |
| 4-Bromophenyl phenyl ether (101-55-3)                              | 625                                    | 0.2   | 0.4  |
| 2-Chloronaphthalene (91-58-7)                                      | 625                                    | 0.3   | 0.6  |
| 4-Chlorophenyl phenyl ether (7005-72-3)                            | 625                                    | 0.3   | 0.5  |
| Chrysene (218-01-9)  | 610/625                                | 0.3   | 0.6  |
| <b>Dibenzo (a,h)acridine (226-36-8)</b>                            | 610M/625M                              | 2.5   | 10.0   |
| <b>Dibenzo (a,j)acridine (224-42-0)</b>                            | 610M/625M                              | 2.5   | 10.0   |
| Dibenzo(a-h)anthracene (53-70-3)(1,2,5,6-dibenzanthracene)         | 625                                    | 0.8   | 1.6  |
| Dibenzo(a,e)pyrene (192-65-4)                                      | 610M/625M                              | 2.5   | 10.0   |
| Dibenzo(a,h)pyrene (189-64-0)                                      | 625M                                   | 2.5   | 10.0   |
| 3,3-Dichlorobenzidine (91-94-1)                                    | 605/625                                | 0.5   | 1.0  |
| Diethyl phthalate (84-66-2)  | 625                                    | 1.9   | 7.6  |
| Dimethyl phthalate (131-11-3)                                      | 625                                    | 1.6   | 6.4  |
| Di-n-butyl phthalate (84-74-2)                                     | 625                                    | 0.5   | 1.0  |
| 2,4-dinitrotoluene (121-14-2)                                      | 609/625                                | 0.2   | 0.4  |



| <b>Pollutant &amp; CAS No. (if available)</b>                      | <b>Recommended Analytical Protocol</b> | <b>Detection (DL)<sup>1</sup> <math>\mu\text{g/L}</math> unless specified</b> | <b>Quantitation Level (QL)<sup>2</sup> <math>\mu\text{g/L}</math> unless specified</b> |
|--|--|---|--|
| <b>BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)</b> |  |   |  |
| 2,6-dinitrotoluene (606-20-2)                                      | 609/625                                | 0.2   | 0.4  |
| Di-n-octyl phthalate (117-84-0)                                    | 625                                    | 0.3   | 0.6  |
| 1,2-Diphenylhydrazine ( <i>as Azobenzene</i> ) (122-66-7)          | 1625B                                  | 5.0   | 20   |
| Fluoranthene (206-44-0)  | 625                                    | 0.3   | 0.6  |
| Fluorene (86-73-7)   | 625                                    | 0.3   | 0.6  |
| Hexachlorobenzene (118-74-1)                                       | 612/625                                | 0.3   | 0.6  |
| Hexachlorobutadiene (87-68-3)                                      | 625                                    | 0.5   | 1.0  |
| Hexachlorocyclopentadiene (77-47-4)                                | 1625B/625                              | 0.5   | 1.0  |
| Hexachloroethane (67-72-1)   | 625                                    | 0.5   | 1.0  |
| Indeno(1,2,3- <i>cd</i> )Pyrene (193-39-5)                         | 610/625                                | 0.5   | 1.0  |
| Isophorone (78-59-1)   | 625                                    | 0.5   | 1.0  |
| <b>3-Methyl cholanthrene (56-49-5)</b>                             | 625                                    | 2.0   | 8.0  |
| Naphthalene (91-20-3)  | 625                                    | 0.3   | 0.6  |
| Nitrobenzene (98-95-3)   | 625                                    | 0.5   | 1.0  |
| N-Nitrosodimethylamine (62-75-9)                                   | 607/625                                | 2.0   | 4.0  |
| N-Nitrosodi-n-propylamine (621-64-7)                               | 607/625                                | 0.5   | 1.0  |
| N-Nitrosodiphenylamine (86-30-6)                                   | 625                                    | 0.5   | 1.0  |
| <b>Perylene (198-55-0)</b>   | 625                                    | 1.9   | 7.6  |
| Phenanthrene (85-01-8)   | 625                                    | 0.3   | 0.6  |
| Pyrene (129-00-0)  | 625                                    | 0.3   | 0.6  |
| 1,2,4-Trichlorobenzene (120-82-1)                                  | 625                                    | 0.3   | 0.6  |
| <b>DIOXIN</b>  |  |   |  |
| 2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (176-40-16) (2,3,7,8 TCDD)    | 1613B                                  | 1.3 pg/L  | 5 pg/L   |

**PRIORITY POLLUTANTS (continued)**

| <b>Pollutant &amp; CAS No. (if available)</b> | <b>Recommended Analytical Protocol</b> | <b>Detection (DL)<sup>1</sup> µg/L unless specified</b> | <b>Quantitation Level (QL)<sup>2</sup> µg/L unless specified</b> |
|---|--|---|--|
| <b>PESTICIDES/PCBs</b>                        |  |   |  |
| Aldrin (309-00-2)                             | 608                                    | 0.025   | 0.05   |
| alpha-BHC (319-84-6)                          | 608                                    | 0.025   | 0.05   |
| beta-BHC (319-85-7)                           | 608                                    | 0.025   | 0.05   |
| gamma-BHC (58-89-9)                           | 608                                    | 0.025   | 0.05   |
| delta-BHC (319-86-8)                          | 608                                    | 0.025   | 0.05   |
| Chlordane (57-74-9) <sup>8</sup>              | 608                                    | 0.025   | 0.05   |
| 4,4'-DDT (50-29-3)                            | 608                                    | 0.025   | 0.05   |
| 4,4'-DDE (72-55-9)                            | 608                                    | 0.025   | 0.05 <sup>10</sup>   |
| 4,4' DDD (72-54-8)                            | 608                                    | 0.025   | 0.05   |
| Dieldrin (60-57-1)                            | 608                                    | 0.025   | 0.05   |
| alpha-Endosulfan (959-98-8)                   | 608                                    | 0.025   | 0.05   |
| beta-Endosulfan (33213-65-9)                  | 608                                    | 0.025   | 0.05   |
| Endosulfan Sulfate (1031-07-8)                | 608                                    | 0.025   | 0.05   |
| Endrin (72-20-8)                              | 608                                    | 0.025   | 0.05   |
| Endrin Aldehyde (7421-93-4)                   | 608                                    | 0.025   | 0.05   |
| Heptachlor (76-44-8)                          | 608                                    | 0.025   | 0.05   |
| Heptachlor Epoxide (1024-57-3)                | 608                                    | 0.025   | 0.05   |
| PCB-1242 (53469-21-9) <sup>9</sup>            | 608                                    | 0.25  | 0.5  |
| PCB-1254 (11097-69-1)                         | 608                                    | 0.25  | 0.5  |
| PCB-1221 (11104-28-2)                         | 608                                    | 0.25  | 0.5  |
| PCB-1232 (11141-16-5)                         | 608                                    | 0.25  | 0.5  |
| PCB-1248 (12672-29-6)                         | 608                                    | 0.25  | 0.5  |
| PCB-1260 (11096-82-5)                         | 608                                    | 0.13  | 0.5  |
| PCB-1016 (12674-11-2) <sup>9</sup>            | 608                                    | 0.13  | 0.5  |
| Toxaphene (8001-35-2)                         | 608                                    | 0.24  | 0.5  |

1. Detection level (DL) or detection limit - means the minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR part 136, Appendix B.
2. Quantitation Level (QL) also known as Minimum Level of Quantitation (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte.

It is equivalent to the concentration of the lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to  $(1, 2, \text{ or } 5) \times 10^n$ , where n is an integer. (64 FR 30417).

**ALSO GIVEN AS:**

The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency December 2007).

3. Soluble Biochemical Oxygen Demand method note: First, filter the sample through a Millipore Nylon filter (or equivalent) - pore size of 0.45-0.50 um (prep all filters by filtering 250 ml of laboratory grade deionized water through the filter and discard). Then, analyze sample as per method 5210-B.
4. NWTPH Dx - Northwest Total Petroleum Hydrocarbons Diesel Extended Range – see <https://fortress.wa.gov/ecy/publications/publications/97602.pdf>
5. NWTPH Gx - Northwest Total Petroleum Hydrocarbons Gasoline Extended Range – see <https://fortress.wa.gov/ecy/publications/publications/97602.pdf>
6. 1, 3-dichloroproylene (mixed isomers) - You may report this parameter as two separate parameters: cis-1, 3-dichloropropene (10061-01-5) and trans-1, 3-dichloropropene (10061-02-6).
7. Total Benzofluoranthenes - Because Benzo(b)fluoranthene, Benzo(j)fluoranthene and Benzo(k)fluoranthene co-elute you may report these three isomers as total benzofluoranthenes.
8. Chlordane - You may report alpha-chlordane (5103-71-9) and gamma-chlordane (5103-74-2) in place of chlordane (57-74-9). If you report alpha and gamma-chlordane, the DL/PQLs that apply are 0.025/0.050.
9. PCB 1016 & PCB 1242 - You may report these two PCB compounds as one parameter called PCB 1016/1242.