

Issue Date: November 29, 2016
Effective Date: January 1, 2017
Expiration Date: December 31, 2021
Amendment Date: February 1, 2018
Amendment (2) Date: December 30, 2019

State Waste Discharge Permit Number ST0008121

State of Washington
DEPARTMENT OF ECOLOGY
Eastern Regional Office
4601 N. Monroe Street
Spokane, Washington 99205-1265

In compliance with the provisions of the
State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington, as amended,

REC Solar Grade Silicon, LLC
3322 Road "N" NE
Moses Lake, Washington 98837

is authorized to discharge wastewater in accordance with the special and general conditions which follow.

Facility Location: 3322 Road "N" NE, Moses Lake, WA 98837	SIC Code: 2819 and 3339 NAICS Code: 325180 and 331410
Industry Type: High purity polysilicon and silane plant POTW Receiving Discharge: City of Moses Lake, Dunes Treatment Plant	Significant Industrial User

X *Adriane P. Borgias*

Adriane P. Borgias
Water Quality Section Manager
Eastern Regional Office
Washington State Department of Ecology

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Summary of Permit Report Submittals

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

Permit Section	Submittal	Frequency	First Submittal Date
All permit required submittals must be submitted electronically through the WQWebPortal.			
S3.A	Discharge Monitoring Report (DMR)	Monthly	February 15, 2017
S3.A	Discharge Monitoring Report (DMR)	Quarterly	April 15, 2017
S3.A	Discharge Monitoring Report (DMR)	Annually	January 15, 2018
S3.A	Permit Renewal Application Monitoring Data	Once	December 31, 2020
S3.A	DMR - Metals - Single Sample Data	Annually	January 15, 2018
S3.F	Reporting Permit Violations	As necessary	-
S4.A	O&M Manual Update or Review Confirmation Letter	Annually	April 15, 2017
S4.B	Reporting Bypasses	As necessary	-
S7.C	Solid Waste Control Plan Update	1/permit cycle	December 31, 2020
S8.	Application for Permit Renewal	1/permit cycle	December 31, 2020
S11.	Spill Plan	1/permit cycle	December 31, 2020
S12.	Slug Discharge Control Plan	1/permit cycle	December 31, 2020
S13.1	Groundwater Well Redevelopment Plan	1/permit cycle	April 1, 2017
S13.2	Surface Water and Groundwater Study Plan	1/permit cycle	July 1, 2017
S13.	Surface Water and Groundwater Summary Report	2/permit cycle	December 31, 2018 & December 31, 2020
S14..	Leak Detection Plan	Once	October 1, 2017
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	-

Permit Section	Submittal	Frequency	First Submittal Date
G10.	Duty to Provide Information	As necessary	-

Special Conditions

S1. Discharge limits

All discharges and activities authorized by this permit must comply with the terms and conditions of this permit. The discharge of any of the following pollutants more frequently than, or at a concentration in excess of, that authorized by this permit violates the terms and conditions of this permit.

S1.A. Outfall 001 – City of Moses Lake POTW

Beginning on the effective date, the Permittee is authorized to discharge **Low Chloride Process Wastewater** to the City of Moses Lake, Dunes Treatment Plant sewer system subject to the following limits:

Effluent Limits: Outfall 001		
Latitude 47.1345031829971 N Longitude -119.20109101733 W		
Parameter	Average Monthly ^a	Maximum Daily ^b
Flow, gpd	210,000	300,000
Total Dissolved Solids (TDS), lbs/day	3,240	4,560
Chloride, lbs/day	63	90
Sodium, lbs/day	558	558
Fluoride, lbs/day	28	46
Oil and Grease (HEM), mg/L	-	100
Biochemical Oxygen Demand (BOD ₅), mg/L	-	300
Total Suspended Solids (TSS), mg/L	350	-
Color, color units	-	100
Parameter	Minimum	Maximum
pH	6.0	11.0

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

S1.B. Outfall 004 – Process Wastewater Evaporation Ponds

Beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge **High Chloride and High Sodium, High Silicate (HSHS) Process Wastewaters** to evaporation ponds, including the two 21 million gallon off-site evaporation ponds located at 13583 E. Wheeler Road, within the SW¼ of Section 20, Township 19 N., Range 29 E.WM. The Permittee must not discharge either high chloride or high sodium, high silicate wastewaters (HSHS) to either outfalls 001 or 003, or in any manner to surface water of the State or to the City of Moses Lake’s wastewater treatment plant.

S1.C. Outfall 005 - Stormwater

Beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge site stormwater to lined evaporation ponds for evaporation and designated infiltration areas. The Permittee must not discharge site stormwater to outfalls 001 or 003, or in any manner to surface water of the State or to the City of Moses Lake’s wastewater treatment plant.

S1.D. Outfall 005 - Stormwater/Service Water

Beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge stormwater/service water from process sumps to lined stormwater ponds for evaporation subject to the following limits:

Effluent Limits: Outfall 005	
Lat: 47.135180125561 N Long: -119.205098237598 W	
Parameter	Sump Maximum ^a
Conductivity, µmhos/cm	500

a	Sump Maximum effluent limit means the highest allowable discharge from an individual sump.
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S2. Monitoring requirements

The Permittee must monitor in accordance with the following schedule and the requirements specified in **Appendix A**.

S2.A. Outfall 001 – City of Moses Lake POTW (Dunes Treatment Plant) Monitoring

The Permittee must monitor the wastewater at the Outfall 001 metering manhole sump prior to discharge to the City of Moses Lake POTW.

Parameter	Units	Sampling Frequency	Sample Type
001 - Low Chloride Process Wastewater			
Flow	gpd	Continuous ^a	Meter
pH ^b	s.u.	“	“
Conductivity	µmhos/cm	“	“
Temperature	°F	“	“
Total Suspended Solids (TSS)	mg/L	5/week	24-Hour Composite ^d
Total Dissolved Solids (TDS)	mg/L; lbs/day ^e	“	24-Hour Composite ^d ; Calculated
Chloride	“	“	“
Fluoride	“	“	“
Sulfate	“	“	“
Biochemical Oxygen Demand (BOD ₅)	mg/L	1/week	24-Hour Composite ^d
Oil and Grease	mg/L	1/week	Grab ^c
NO ₃ (as N)	“	1/week	24-Hour Composite ^d
Magnesium	“	1/month	“
Potassium	“	“	“
Manganese	“	“	“
Calcium	“	“	“

Total Alkalinity	“	“	“
NH ₃ Nitrogen(as N)	“	“	“
Total Phosphorus (as P)	“	“	“
Color	Color Units	“	“
Sodium ^f	mg/L; lbs/day ^e	“	24-Hour Composite ^d Calculated
Parameter	Units	Sampling Frequency	Sample Type

001P - Low Chloride Process Wastewater

Permit Renewal Application Requirements (sampling must be done in June 2020, submit data by December 31, 2020 as specified in Special Condition S3.A.8.d)

Cyanide	µg/L	Once	Grab ^c
Total Phenolic Compounds	µg/L	“	“
Priority Pollutants (PP) – Total Metals	µg/L; ng/L for mercury	“	24-Hour Composite ^d Grab ^c for mercury
PP – Volatile Organic Compounds	µg/L	“	Grab ^c
PP – Acid-extractable Compounds	µg/L	“	24-Hour Composite ^d
PP – Base-neutral Compounds	µg/L	“	“
PP - Dioxin	pg/L	“	“
PP – Pesticides/PCBs	µg/L	“	“

001A – Low Chloride Process Wastewater - Effluent Characterization

Metals – Total Metals; Arsenic, Cadmium, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium & Zinc	µg/L	Once per year	24-Hour Composite ^d
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a	Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The time interval for the associated data logger must be no greater than 30 minutes. The Permittee must sample once per day when continuous monitoring is not possible.
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b	The Permittee must report the instantaneous maximum and minimum pH monthly. Do not average pH values.
c	Grab means an individual sample collected over a 15 minute, or less, period.
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	$\text{lbs/day} = (\text{concentration, mg/L}) \times \left(\frac{\text{flow, gpd}}{1,000,000} \right) \times 8.34$
f	REC must notify the Department and the City of Moses Lake in the event that production of polysilicon resumes. At such time, Ecology may modify this permit to increase monitoring frequency for sodium. This permit modification will be subject to normal public review process prior to finalization.

S2.B Outfall 004 – Process Wastewater Evaporation Pond Monitoring

The sampling point for the **High Chloride** wastestream is at the treatment system clarifier prior to discharge to the evaporation pond system; and at the point of withdrawal from the evaporation pond system. The sampling point for the **High Sodium High Silicate (HSHS) Wastewaters** is at the treatment system equalization tank prior to discharge to the evaporation pond system.

The Permittee must monitor the **High Chloride and High Sodium High Silicate (HSHS) Wastewaters** according to the following schedule:

Parameter	Units	Sampling Frequency	Sample Type
004 - High Chloride Wastewater – High Chloride Clarifier Discharge			
Flow	gpd	Continuous ^a	Meter
Parameter	Units	Sampling Frequency	Sample Type
004A - High Sodium High Silicate (HSHS) – HSHS Equalization Tank Discharge			
Flow	gpd	Continuous ^a	Meter
Parameter	Units	Sampling Frequency	Sample Type
004B - High Chloride – Offsite High Chloride Evaporation Ponds			
Flow	gpd	Daily	Estimate

a	Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The time interval for the associated data logger must be no greater than 30 minutes. The Permittee must sample once per day when continuous monitoring is not possible.
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S2.C. Outfall 005 - Stormwater/Service Water

The Permittee must sample stormwater/service water from process sumps transferred to lined stormwater evaporation ponds according to the following schedule:

Parameter	Units	Sampling Frequency	Sample Type
005 - Stormwater/Service Water			
Flow	gallons	Once per batch	Estimate
Conductivity	umhos/cm	"	Grab ^a
a	Grab means an individual sample collected over a 15 minute, or less, period.		

S2.D. Groundwater monitoring

The Permittee must monitor the groundwater at monitoring wells MW2, MW3, MW4, MW6, MW11, MW12, according to the following schedule.

Parameter	Units	Sampling Frequency	Sample Type
Groundwater Wells MW2, MW3, MW4, MW6, MW11, MW12, ^a			
Depth to Ground Water	Feet (nearest 0.01 ft relative to mean sea level)	Once/month ^b	Field Measurement
pH	s.u.	"	"
Total Dissolved Solids (TDS)	mg/L	"	Grab
Total Organic Carbon	"	"	"
Iron (Total)	"	"	"
Nitrate plus Nitrite Nitrogen (as N)	"	"	"
Sodium	"	"	"
Magnesium	"	"	"

Parameter	Units	Sampling Frequency	Sample Type
Groundwater Wells MW2, MW3, MW4, MW6, MW11, MW12, ^a			
Manganese	"	"	"
Chloride	"	"	"
Sulfate	"	"	"
Total Alkalinity	"	"	"
Copper	"	"	"
^a	Per Permit Condition S14.A., the Permittee must submit a plan for redeveloping and testing groundwater monitoring wells by April 1, 2017 and have completed the redevelopment of the groundwater monitoring wells by July 1, 2017.		
^b	Once per month beginning on July 1, 2017 and lasting through June 2018. Afterwards, the sampling frequency is once/quarter. Quarterly sampling periods are January through March, April through June, July through September, and October through December. The Permittee must begin quarterly monitoring for the quarter beginning on July 1, 2018.		

S2.E. 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 water and wastewater monitoring requirements specified in this permit must conform to the latest revision of the following rules and documents unless otherwise specified in this permit or approved in writing by Ecology.

- Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136
- Standard Methods for the Examination of Water and Wastewater (APHA)

S2.F. Flow measurement, field measurement, and continuous monitoring devices

The Permittee must:

1. Select and use appropriate flow measurement, field 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, the manufacturer's recommendation, and approved O&M manual procedures for the device and the medium.
3. Calibrate continuous pH monitoring instruments weekly unless it can demonstrate a longer period is sufficient based on monitoring records/calibration checks.
4. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
5. Establish a calibration frequency for each device or instrument in the O&M manual that conforms to the frequency recommended by the manufacturer.
6. Calibrate flow-monitoring devices at a minimum frequency of at least one calibration per year or as otherwise recommended by the manufacturer.
7. Maintain calibration records for at least three years.

S2.G. 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.

S2.H. Request for reduction in monitoring

The Permittee may request a reduction of the sampling frequency after 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.

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. Discharge monitoring reports

The first monitoring period begins on the effective date of the permit (unless otherwise specified).

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 the Water Quality Permitting Portal. 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 the [Water Quality Permitting Portal](https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance) go to <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance>.

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 and calculated total 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 from the same monitoring point 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 copy of the laboratory report as an attachment using WQWebDMR. 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.
8. 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 15th 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.

The Permittee must submit the first quarterly DMR on April 15, 2017 for the quarter beginning on January 1, 2017.

- 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 **permit renewal application monitoring data** as required in Special Condition S2 **by December 31, 2020**.

S3.B. Permit Submittals and Schedules

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 **Water Quality Program, Department of Ecology, Eastern Regional Office, 4601 N. Monroe Street, Spokane, WA 99205-1265**.

S3.C. Records retention

The Permittee must retain records of all monitoring information for a minimum of three 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 in writing.

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 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 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 30 days of sampling.

a. Immediate reporting

The Permittee must immediately report the following occurrences of noncompliance to the Department of Ecology's Regional Office 24-hour number at (509) 329-3400:

1. Any noncompliance that may endanger health or the environment.
2. Any unanticipated bypass that causes an exceedance of an 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. 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.

4. Any violation of a maximum daily or instantaneous maximum discharge limit for any of the pollutants in Section S1 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. This requirement does not include industrial process wastewater overflows to impermeable surfaces which are collected and routed to the treatment works.

b. Report within five days

The Permittee must also submit a written report within five days of the time that the Permittee becomes aware of any reportable event under subpart a, 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.

c. Waiver of written reports

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

d. All other permit violation reporting

The Permittee must report all permit violations, which do not require immediate reporting, when it submits monitoring reports for S3.A ("Discharge monitoring reports"). The reports must contain the information listed in subpart b, 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.

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 chapter 173-303-145 on the [Ecology Report a Spill](https://ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue/Report-a-spill) webpage at <https://ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue/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.

S3.I. Dangerous waste discharge notification

The Permittee must notify the publicly owned treatment works (POTW) and Ecology in writing of the intent to discharge into the POTW any substance designated as a dangerous waste in accordance with the provisions of WAC 173-303-070. It must make this notification at least 90 days prior to the date that it proposes to initiate the discharge.

The Permittee must not discharge this substance until authorized by Ecology and the POTW. It must also comply with the notification requirements of Special Condition S8 and General Condition G4.

S3.J. Spill notification

The Permittee must notify the POTW immediately (as soon as discovered) of all discharges that could cause problems to the POTW, such as process spills and unauthorized discharges (including slug discharges).

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 includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

S4.A. Operations and maintenance manual

a. O&M manual submittal and requirements

The Permittee must:

1. **Review the O&M Manual** at least annually and confirm this review by letter to Ecology **by April 15** of each year.
2. Submit to Ecology for review and approval substantial changes or updates to the O&M Manual whenever it incorporates them into the manual.
3. Keep the approved O&M Manual at the permitted facility.
4. Follow the instructions and procedures of this manual.
5. Submit reviews, changes, and updates through the WQWebPortal.

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 event of wastewater system upset, spill, failure, or demand by the publicly owned treatment works (POTW) treating the discharge.
2. Irrigation system operational controls and procedures.
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. Protocols and procedures for ground water monitoring network, and soil sampling and testing.
9. Protocols and procedures for leak detection and monitoring at the 60 million gallon storage pond, and the High Chloride and High Sodium High Silicate evaporation pond system (see **Permit Condition S15. Leak Detection Plan**).

S4.B. Bypass procedures

This permit prohibits a bypass, defined as the intentional diversion of wastestreams from any portion of the Permittee's treatment facilities (Outfalls 001, 003, 004, and 005). 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 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.
 - c. The Permittee has properly notified Ecology of the bypass as required in Condition S3.E 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 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 the project planning and design process. The project-specific engineering report or facilities plan as well as the plans and specifications must include details of probable construction bypasses 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. Prohibited discharges

The Permittee must comply with these General and Specific Prohibitions.

S5.A. General prohibitions

The Permittee must not introduce into the POTW pollutant(s), which cause Pass Through or Interference.

S5.B. Specific prohibitions

In addition, the Permittee must not introduce the following into the POTW:

1. Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, waste streams with a closed cup flashpoint of less than 60 degrees C (140 degrees F) using the test methods specified in 40 CFR 261.21
2. Solid or viscous pollutants in amounts, which will cause obstruction to the flow in the POTW resulting in interference
3. Any pollutant (including oxygen-demanding pollutants (BOD₅, etc.), released in a discharge at a flow rate and/or pollutant concentration that will cause interference with the POTW
4. Heat in amounts which will inhibit biological activity in the POTW resulting in interference, but in no case heat in such quantities that the temperature at the POTW collection system exceeds 40 degrees C (104 degrees F) unless the approval authority, upon request of the POTW, approves alternative temperature limits
5. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through
6. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems

7. Any trucked or hauled pollutants, except at discharge points designated by the POTW
8. Pollutants that will cause corrosive structural damage to the POTW

S5.C. Prohibited unless approved

Any of the following discharges are prohibited unless approved by Ecology under extraordinary circumstances (such as a lack of direct discharge alternatives due to combined sewer service or a need to augment sewage flows due to septic conditions):

1. Noncontact cooling water in significant volumes
2. Storm water and other direct inflow sources
3. Wastewaters significantly affecting system hydraulic loading, which do not require treatment or would not be afforded a significant degree of treatment by the system
4. The discharge of dangerous wastes as defined in Chapter 173-303 WAC (Unless specifically authorized in this permit)

S6. Dilution prohibited

The Permittee must not dilute the wastewater discharge with stormwater or increase the use of potable water, process water, noncontact cooling water, or, in any way, attempt to dilute an effluent as a partial or complete substitute for adequate treatment to achieve compliance with the limits contained in this permit.

S7. Solid waste disposal

S7.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.

S7.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.

S7.C. Solid waste control plan

The Permittee must submit all proposed revisions or modifications to the solid waste control plan to Ecology for review and approval at least 30 days prior to implementation. Once approved, the Permittee must comply with any plan modifications. The Permittee must submit an update of the solid waste control plan **by December 31, 2020**.

S8. Application for permit renewal or modification for facility changes

The Permittee must submit an application for renewal of this permit **by December 31, 2020**.

Mail the **original, signed application** to the Water Quality Permit Coordinator, Eastern Regional Office, Department of Ecology, 4601 N. Monroe Street, Spokane, Washington 99205. Send an electronic copy of the application (preferably as a PDF) by email to the Permit Coordinator at stra461@ecy.wa.gov. Scan any attachments to the application and submit them with the application.

The Permittee must also submit a new application or addendum at least 60 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.

S9. Engineering documents for evaporation pond liner system replacements

The Permittee must consider the use of a double membrane liner system with leak detection and recovery when replacing an existing liner system for any process wastewater evaporation pond.

For replacement of an existing liner system for any process wastewater evaporation pond the Permittee must prepare and submit an approvable **engineering report and plans and specifications** in accordance with chapter 173-240 WAC to Ecology for review and approval at least 30 days prior to the planned start of construction.

In addition to electronic copies required by Special Condition S3.B, the Permittee must submit one full size paper copy to Ecology for its use to the address listed in Special Condition S3.B. If the Permittee wants Ecology to provide a stamped approved copy it must submit an additional paper copy (total of two paper copies).

S10. 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 to the sanitary sewer if approved by Ecology and the POTW. 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 day
 - h. The expected rate of discharge in gallons per minute for discharges greater than 20,000 gallons
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 analysis must also include hardness, any metals that are limited by water quality standards, and any other parameter deemed necessary by Ecology. All discharges must comply with the effluent limits as established in Condition S1 of this permit and any other limits imposed by Ecology.
 3. 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.

S11. Spill control plan

S11.A. Spill control plan submittals and requirements

The Permittee must:

1. Review the plan at least annually and update the spill plan as needed.
2. Send changes to the plan to Ecology.
3. Follow the plan and any supplements throughout the term of the permit.
4. Submit to Ecology an update to the existing spill control plan **by December 31, 2020.**

S11.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.

S12. Slug discharge control plan

S12.A. Slug discharge control plan submittal and requirements

The Permittee must:

1. Review its slug discharge plan and update it as needed.
2. Submit all revisions or updates of this plan to Ecology for review and approval.
3. Keep the current approved plan on the plant site and make it readily available to facility personnel.
4. Follow the approved plan and any approved supplements throughout the term of the permit.
5. Submit an update of the slug discharge control plan, or a certification that it is current **by December 31, 2020**.

S12.B. Slug discharge control plan components

The slug discharge control plan must include the following information and procedures relating to the prevention of unauthorized slug discharges; it must include:

1. A description of a reporting system the Permittee will use to immediately notify facility management, the POTW operator, and appropriate state, federal, and local authorities of any slug discharges, and provisions to provide a written follow-up report within five days.
2. A description of operator training, equipment, and facilities (including overall facility plan) for preventing, containing, or treating slug discharges.
3. Procedures to prevent adverse impact from accidental spills including:
 - a. Inspection and maintenance of storage areas
 - b. Handling and transfer of materials
 - c. Loading and unloading operations

- d. Control of plant site run-off
 - e. Worker training
 - f. Building of containment structures or equipment
 - g. Measures for containing toxic organic pollutants (including solvents)
 - h. Measures and equipment for emergency response
4. A list of all raw materials, products, chemicals, and hazardous materials used, processed, or stored at the facility; the normal quantity maintained on the premises for each listed material; and a map showing where they are located.
 5. A description of discharge practices for batch and continuous processes under normal and non-routine circumstances.
 6. A brief description of any unauthorized discharges which occurred during the 36-month period preceding the effective date of this permit and subsequent measures taken by Permittee to prevent or to reduce the possibility of further unauthorized discharges.
 7. An implementation schedule including additional operator training and procurement and installation of equipment or facilities required to properly implement the plan.

S13. Surface water and groundwater study plan/annual report

The Permittee must collect information on the quality of surface water streams that enter and exit the plant site boundaries. Ecology will use this information to evaluate potential surface water/groundwater quality interactions.

S13.A. Groundwater well redevelopment plan

The Permittee must submit a plan for redeveloping and testing groundwater monitoring wells at the site as listed in **Permit Condition S2.F by April 1, 2017** for Ecology review. The Permittee must have redeveloped the groundwater monitoring wells according to the plan **by July 1, 2017**.

S13.B. Surface water sampling and quality assurance plan

The Permittee must:

1. Submit a sampling and quality assurance plan for Ecology review and approval **by July 1, 2017**. Prepare all quality assurance plans in accordance with the guidelines given in [Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies](https://fortress.wa.gov/ecy/publications/documents/0403030.pdf), Ecology Publication 04-03-030 online at <https://fortress.wa.gov/ecy/publications/documents/0403030.pdf>.
2. Conduct all sampling and analysis in accordance with the approved quality assurance project plan.

- a. Use sampling station accuracy requirements of ± 20 meters.
 - b. Follow sampling techniques appropriate for the parameter and target detection level in accordance with the following:

Clean sampling techniques (Method 1669: 'Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels', EPA Publication No. 821-R-95-034, April 1995).

Standard Operating Procedures (SOPs) for sampling, auditing, and field methodology from [Ecology's Environmental Assessment Program webpage](https://ecology.wa.gov/About-us/How-we-operate/Scientific-services/Quality-assurance) at <https://ecology.wa.gov/About-us/How-we-operate/Scientific-services/Quality-assurance>.

[Water-Quality Sampling by the U.S. Geological Survey: Standard Protocols and Procedures](https://pubs.usgs.gov/fs/2010/3121/fs2010-3121.pdf) located online at <https://pubs.usgs.gov/fs/2010/3121/fs2010-3121.pdf>.
 - c. Collect surface water samples on at least a quarterly basis and analyze the samples for total suspended solids, temperature, pH, conductivity, total dissolved solids (TDS), total organic carbon, iron (total), nitrate plus nitrite nitrogen (as N), sodium, calcium, manganese, chloride, sulfate, total alkalinity, and copper (total).
 - d. Conduct all chemical analysis using the methods and the detection levels identified in Appendix A.
3. Submit a report summarizing the results of the surface water/groundwater monitoring data to Ecology twice during this permit cycle; **by December 31, 2018** (which must include sampling results collected through June 2018); and with the permit renewal application **due on December 31, 2020**. These summaries must include time-series graphs and trend analysis for surface water data collected under this Section and groundwater monitoring well data as required under **Permit Condition S2.F**. Groundwater analysis must begin with the August 2010 data for monitoring wells MW-2, MW-3, MW-4, MW-6, MW-11, MW-12, MW-13 and MW-14.

S14. Leak detection plan

The Permittee must **submit a Leak Detection Plan** for Ecology review **by October 1, 2017**. This plan must describe how the Permittee will monitor, test, and report the membrane liner integrity for all wastewater impoundments on a routine basis.

Selection of electronic leak detection methods must follow ASTM D6747, 'Standard Guide for Selection of Techniques for Electrical Detection of Potential Leaks in Geomembranes'. The Permittee must submit results from any leak detection survey, with documented repairs for leaks discovered during the survey.

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:
 - i. 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
 - ii. 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.
 - b. In the case of a partnership, by a general partner.
 - c. In the case of sole proprietorship, by the proprietor.
 - d. 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 entry

Representatives of Ecology have the right to enter at all reasonable times in or upon any property, public or private, for the purpose of inspecting and investigating conditions relating to the pollution or the possible pollution of any waters of the state. Reasonable times include normal business hours; hours during which production, treatment, or discharge occurs; or times when Ecology suspects a violation requiring immediate inspection. Representatives of Ecology must be allowed to have access to, and copy at reasonable cost, any records required to be kept under terms and conditions of the permit; to inspect any monitoring equipment or method required in the permit; and to sample the discharge, waste treatment processes, or internal waste streams.

G3. Permit actions

This permit is subject to modification, suspension, or termination, in whole or in part by Ecology for any of the following causes:

1. Violation of any permit term or condition;
2. Obtaining a permit by misrepresentation or failure to disclose all relevant facts;
3. A material change in quantity or type of waste disposal;
4. A material change in the condition of the waters of the state; or

5. Nonpayment of fees assessed pursuant to RCW 90.48.465.

Ecology may also modify this permit, including the schedule of compliance or other conditions, if it determines good and valid cause exists, including promulgation or revisions of regulations or new information.

G4. Reporting a cause for modification

The Permittee must submit a new application, or a supplement to the previous application, along with required engineering plans and reports, whenever a new or increased discharge or change in the nature of the discharge is anticipated which is not specifically authorized by this permit. This application must be submitted at least 60 days prior to any proposed changes. Submission of this application does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

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 should be submitted at least 30 days prior to the planned start of construction. Facilities must be constructed and operated in accordance with the approved plans.

G6. Compliance with other laws and statutes

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

G7. Transfer of this permit

This permit is automatically transferred to a new owner or operator if:

1. A written agreement between the old and new owner or operator containing a specific date for transfer of permit responsibility, coverage, and liability is submitted to Ecology;
2. A copy of the permit is provided to the new owner and;
3. Ecology does not notify the Permittee of the need to modify the permit.

Unless this permit is automatically transferred according to Section 1. above, this permit may be transferred only if it is modified to identify the new Permittee and to incorporate such other requirements as determined necessary by Ecology.

G8. Reduced production for compliance

The Permittee must control production or discharge to the extent necessary to maintain compliance with the terms and conditions of this permit upon reduction of efficiency, loss, or failure of its treatment facility until the treatment capacity 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 for the treatment facility is reduced, lost, or fails.

G9. Removed substances

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

G10. Payment of fees

The Permittee must submit payment of fees associated with this permit as assessed by Ecology. Ecology may revoke this permit if the permit fees established under Chapter 173-224 WAC are not paid.

G11. Penalties for violating permit conditions

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

Any person who violates the terms and conditions of a waste discharge permit incurs, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars 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 a separate and distinct violation.

G12. 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.

G13. Duty to comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of chapter 90.48 RCW and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

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 quantitation limit (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.

The lists below include conventional pollutants (as defined in CWA section 502(6) and 40 CFR Part 122.), toxic or priority pollutants as defined in CWA section 307(a)(1) and listed in 40 CFR Part 122 Appendix D, 40 CFR Part 401.15 and 40 CFR Part 423 Appendix A), and nonconventionals. 40 CFR Part 122 Appendix D (Table V) also identifies toxic pollutants and hazardous substances which are required to be reported by dischargers if expected to be present. This permit appendix A list does not include those parameters.

Pollutant	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Conventional Pollutants				
Biochemical Oxygen Demand	---	SM5210-B	---	2 mg/L
Biochemical Oxygen Demand, Soluble	---	SM5210-B ³	---	2 mg/L
Fecal Coliform	---	SM 9221E,9222	N/A	Specified in method - sample aliquot dependent
Oil and Grease (HEM) (Hexane Extractable Material)	---	1664 A or B	1,400	5,000
pH	---	SM4500-H ⁺ B	N/A	N/A
Total Suspended Solids	---	SM2540-D	---	5 mg/L

Pollutant & CAS No. (if available)	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Nonconventional Pollutants				
Alkalinity, Total	---	SM2320-B	---	5 mg/L as CaCO ₃
Aluminum, Total	7429-90-5	200.8	2.0	10
Ammonia, Total (as N)	---	SM4500-NH ₃ -B and C/D/E/G/H	---	20
Barium Total	7440-39-3	200.8	0.5	2.0
BTEX (benzene + toluene + ethylbenzene + m,o,p xylenes)	---	EPA SW 846 8021/8260	1	2
Boron, Total	7440-42-8	200.8	2.0	10.0
Chemical Oxygen Demand	---	SM5220-D	---	10 mg/L
Chloride	---	SM4500-Cl B/C/D/E and SM4110 B	---	Sample and limit dependent
Chlorine, Total Residual	---	SM4500 Cl G	---	50.0
Cobalt, Total	7440-48-4	200.8	0.05	0.25
Color	---	SM2120 B/C/E	---	10 color units
Dissolved oxygen	---	SM4500-OC/OG	---	0.2 mg/L

Pollutant & CAS No. (if available)	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Nonconventional Pollutants				
E.coli	---	SM 9221B, 9221F, 9223B	N/A	Specified in method - sample aliquot dependent
Enterococci	---	SM 9230B, 9230C, 9230D	N/A	Specified in method - sample aliquot dependent
Flow	---	Calibrated device	---	
Fluoride	16984-48-8	SM4500-F E	25	100
Hardness, Total	---	SM2340B	---	200 as CaCO ₃
Iron, Total	7439-89-6	200.7	12.5	50
Magnesium, Total	7439-95-4	200.7	10	50
Manganese, Total	7439-96-5	200.8	0.1	0.5
Molybdenum, Total	7439-98-7	200.8	0.1	0.5
Nitrate + Nitrite Nitrogen (as N)	---	SM4500-NO ₃ - E/F/H	---	100
Nitrogen, Total Kjeldahl (as N)	---	SM4500-N _{org} B/C and SM4500NH ₃ - B/C/D/EF/G/H	---	300
NWTPH Dx ⁴	---	Ecology NWTPH Dx	250	250
NWTPH Gx ⁵	---	Ecology NWTPH Gx	250	250
Phosphorus, Total (as P)	---	SM 4500 PB followed by SM4500-PE/PF	3	10
Salinity	---	SM2520-B	---	3 practical salinity units or scale (PSU or PSS)
Settleable Solids	---	SM2540 -F	---	Sample and limit dependent
Soluble Reactive Phosphorus (as P)	---	SM4500-P E/F/G	3	10
Sulfate (as mg/L SO ₄)	---	SM4110-B	---	0.2 mg/L
Sulfide (as mg/L S)	---	SM4500-S ² F/D/E/G	---	0.2 mg/L
Sulfite (as mg/L SO ₃)	---	SM4500-SO ₃ B	---	2 mg/L
Temperature (max. 7- day avg.)	---	Analog recorder or Use micro- recording devices	---	0.2° C

Pollutant & CAS No. (if available)	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Nonconventional Pollutants				
		known as thermistors		
Tin, Total	7440-31-5	200.8	0.3	1.5
Titanium, Total	7440-32-6	200.8	0.5	2.5
Total Coliform	---	SM 9221B, 9222B, 9223B	N/A	Specified in method - sample aliquot dependent
Total Organic Carbon	---	SM5310-B/C/D	---	1 mg/L
Total Dissolved Solids	---	SM2540 C	---	20 mg/L

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Metals, Cyanide & Total Phenols					
Antimony, Total	114	7440-36-0	200.8	0.3	1.0
Arsenic, Total	115	7440-38-2	200.8	0.1	0.5
Beryllium, Total	117	7440-41-7	200.8	0.1	0.5
Cadmium, Total	118	7440-43-9	200.8	0.05	0.25
Chromium (HEX) Dissolved	119	18540-29-9	SM3500-Cr C	0.3	1.2
Chromium, Total	119	7440-47-3	200.8	0.2	1.0
Copper, Total	120	7440-50-8	200.8	0.4	2.0
Lead, Total	122	7439-92-1	200.8	0.1	0.5
Mercury, Total	123	7439-97-6	1631E	0.0002	0.0005
Nickel, Total	124	7440-02-0	200.8	0.1	0.5
Selenium, Total	125	7782-49-2	200.8	1.0	1.0
Silver, Total	126	7440-22-4	200.8	0.04	0.2
Thallium, Total	127	7440-28-0	200.8	0.09	0.36
Zinc, Total	128	7440-66-6	200.8	0.5	2.5
Cyanide, Total	121	57-12-5	335.4	5	10
Cyanide, Weak Acid Dissociable	121	---	SM4500-CN I	5	10
Cyanide, Free Amenable to Chlorination (Available Cyanide)	121	---	SM4500-CN G	5	10

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Metals, Cyanide & Total Phenols					
Phenols, Total	65	---	EPA 420.1	---	50

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Acid Compounds					
2-Chlorophenol	24	95-57-8	625.1	3.3	9.9
2,4-Dichlorophenol	31	120-83-2	625.1	2.7	8.1
2,4-Dimethylphenol	34	105-67-9	625.1	2.7	8.1
4,6-dinitro-o-cresol (2-methyl-4,6,-dinitrophenol)	60	534-52-1	625.1/1625B	24	72
2,4 dinitrophenol	59	51-28-5	625.1	42	126
2-Nitrophenol	57	88-75-5	625.1	3.6	10.8
4-Nitrophenol	58	100-02-7	625.1	2.4	7.2
Parachlorometa cresol (4-chloro-3-methylphenol)	22	59-50-7	625.1	3.0	9.0
Pentachlorophenol	64	87-86-5	625.1	3.6	10.8
Phenol	65	108-95-2	625.1	1.5	4.5
2,4,6-Trichlorophenol	21	88-06-2	625.1	2.7	8.1

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Volatile Compounds					
Acrolein	2	107-02-8	624	5	10
Acrylonitrile	3	107-13-1	624	1.0	2.0
Benzene	4	71-43-2	624.1	4.4	13.2
Bromoform	47	75-25-2	624.1	4.7	14.1
Carbon tetrachloride	6	56-23-5	624.1/601 or SM6230B	2.8	8.4
Chlorobenzene	7	108-90-7	624.1	6.0	18.0
Chloroethane	16	75-00-3	624/601	1.0	2.0

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Volatile Compounds					
2-Chloroethylvinyl Ether	19	110-75-8	624	1.0	2.0
Chloroform	23	67-66-3	624.1 or SM6210B	1.6	4.8
Dibromochloromethane (chlorodibromomethane)	51	124-48-1	624.1	3.1	9.3
1,2-Dichlorobenzene	25	95-50-1	624	1.9	7.6
1,3-Dichlorobenzene	26	541-73-1	624	1.9	7.6
1,4-Dichlorobenzene	27	106-46-7	624	4.4	17.6
Dichlorobromomethane	48	75-27-4	624.1	2.2	6.6
1,1-Dichloroethane	13	75-34-3	624.1	4.7	14.1
1,2-Dichloroethane	10	107-06-2	624.1	2.8	8.4
1,1-Dichloroethylene	29	75-35-4	624.1	2.8	8.4
1,2-Dichloropropane	32	78-87-5	624.1	6.0	18.0
1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) ⁶	33	542-75-6	624.1	5.0	15.0
Ethylbenzene	38	100-41-4	624.1	7.2	21.6
Methyl bromide (Bromomethane)	46	74-83-9	624/601	5.0	10.0
Methyl chloride (Chloromethane)	45	74-87-3	624	1.0	2.0
Methylene chloride	44	75-09-2	624.1	2.8	8.4
1,1,2,2-Tetrachloroethane	15	79-34-5	624.1	6.9	20.7
Tetrachloroethylene	85	127-18-4	624.1	4.1	12.3
Toluene	86	108-88-3	624.1	6.0	18.0
1,2-Trans-Dichloroethylene (Ethylene dichloride)	30	156-60-5	624.1	1.6	4.8
1,1,1-Trichloroethane	11	71-55-6	624.1	3.8	11.4
1,1,2-Trichloroethane	14	79-00-5	624.1	5.0	15.0
Trichloroethylene	87	79-01-6	624.1	1.9	5.7
Vinyl chloride	88	75-01-4	624/SM6200B	1.0	2.0

Priority Pollutant	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Base/Neutral Compounds (compounds in bold are Ecology PBTs)					
Acenaphthene	1	83-32-9	625.1	1.9	5.7
Acenaphthylene	77	208-96-8	625.1	3.5	10.5
Anthracene	78	120-12-7	625.1	1.9	5.7
Benzidine	5	92-87-5	625.1	44	132
Benzyl butyl phthalate	67	85-68-7	625.1	2.5	7.5
Benzo(a)anthracene	72	56-55-3	625.1	7.8	23.4
Benzo(b)fluoranthene (3,4-benzofluoranthene) ⁷	74	205-99-2	610/625.1	4.8	14.4
Benzo(j)fluoranthene⁷	---	205-82-3	625	0.5	1.0
Benzo(k)fluoranthene (11,12-benzofluoranthene) ⁷	75	207-08-9	610/625.1	2.5	7.5
Benzo(r,s,t)pentaphene	---	189-55-9	625	1.3	5.0
Benzo(a)pyrene	73	50-32-8	610/625.1	2.5	7.5
Benzo(ghi)Perylene	79	191-24-2	610/625.1	4.1	12.3
Bis(2-chloroethoxy)methane	43	111-91-1	625.1	5.3	15.9
Bis(2-chloroethyl)ether	18	111-44-4	611/625.1	5.7	17.1
Bis(2-chloro-1-methylethyl) Ether(Bis(2-chloroisopropyl)ether) ¹⁰	42	108-60-1	625.1	5.7	17.1
Bis(2-ethylhexyl)phthalate	66	117-81-7	625.1	2.5	7.5
4-Bromophenyl phenyl ether	41	101-55-3	625.1	1.9	5.7
2-Chloronaphthalene	20	91-58-7	625.1	1.9	5.7
4-Chlorophenyl phenyl ether	40	7005-72-3	625.1	4.2	12.6
Chrysene	76	218-01-9	610/625.1	2.5	7.5
Dibenzo (a,h)acridine	---	226-36-8	610M/625M	2.5	10.0
Dibenzo (a,j)acridine	---	224-42-0	610M/625M	2.5	10.0
Dibenzo(a-h)anthracene (1,2,5,6-dibenzanthracene)	82	53-70-3	625.1	2.5	7.5
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	28	91-94-1	605/625.1	16.5	49.5

Priority Pollutant	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Base/Neutral Compounds (compounds in bold are Ecology PBTs)					
Diethyl phthalate	70	84-66-2	625.1	1.9	5.7
Dimethyl phthalate	71	131-11-3	625.1	1.6	4.8
Di-n-butyl phthalate	68	84-74-2	625.1	2.5	7.5
2,4-dinitrotoluene	35	121-14-2	609/625.1	5.7	17.1
2,6-dinitrotoluene	36	606-20-2	609/625.1	1.9	5.7
Di-n-octyl phthalate	69	117-84-0	625.1	2.5	7.5
1,2-Diphenylhydrazine (as Azobenzene)	37	122-66-7	1625B	5.0	20
Fluoranthene	39	206-44-0	625.1	2.2	6.6
Fluorene	80	86-73-7	625.1	1.9	5.7
Hexachlorobenzene	9	118-74-1	612/625.1	1.9	5.7
Hexachlorobutadiene	52	87-68-3	625.1	0.9	2.7
Hexachlorocyclopentadiene	53	77-47-4	1625B/625	2.0	4.0
Hexachloroethane	12	67-72-1	625.1	1.6	4.8
Indeno(1,2,3-cd)Pyrene	83	193-39-5	610/625.1	3.7	11.1
Isophorone	54	78-59-1	625.1	2.2	6.6
3-Methyl cholanthrene	---	56-49-5	625	2.0	8.0
Naphthalene	55	91-20-3	625.1	1.6	4.8
Nitrobenzene	56	98-95-3	625.1	1.9	5.7
N-Nitrosodimethylamine	61	62-75-9	607/625	2.0	4.0
N-Nitrosodi-n-propylamine	63	621-64-7	607/625	0.5	1.0
N-Nitrosodiphenylamine	62	86-30-6	625	1.0	2.0
Perylene	---	198-55-0	625	1.9	7.6
Phenanthrene	81	85-01-8	625.1	5.4	16.2
Pyrene	84	129-00-0	625.1	1.9	5.7
1,2,4-Trichlorobenzene	8	120-82-1	625.1	1.9	5.7

Priority Pollutant	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Dioxin					
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (2,3,7,8 TCDD)	129	1746-01-6	1613B	1.3 pg/L	5 pg/L

Priority Pollutant	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Pesticides/PCBs					
Aldrin	89	309-00-2	608.3	4.0 ng/L	12 ng/L
alpha-BHC	102	319-84-6	608.3	3.0 ng/L	9.0 ng/L
beta-BHC	103	319-85-7	608.3	6.0 ng/L	18 ng/L
gamma-BHC (Lindane)	104	58-89-9	608.3	4.0 ng/L	12 ng/L
delta-BHC	105	319-86-8	608.3	9.0 ng/L	27 ng/L
Chlordane ⁸	91	57-74-9	608.3	14 ng/L	42 ng/L
4,4'-DDT	92	50-29-3	608.3	12 ng/L	36 ng/L
4,4'-DDE	93	72-55-9	608.3	4.0 ng/L	12 ng/L
4,4' DDD	94	72-54-8	608.3	11ng/L	33 ng/L
Dieldrin	90	60-57-1	608.3	2.0 ng/L	6.0 ng/L
alpha-Endosulfan	95	959-98-8	608.3	14 ng/L	42 ng/L
beta-Endosulfan	96	33213-65-9	608.3	4.0 ng/L	12 ng/L
Endosulfan Sulfate	97	1031-07-8	608.3	66 ng/L	198 ng/L
Endrin	98	72-20-8	608.3	6.0 ng/L	18 ng/L
Endrin Aldehyde	99	7421-93-4	608.3	23 ng/L	70 ng/L
Heptachlor	100	76-44-8	608.3	3.0 ng/L	9.0 ng/L
Heptachlor Epoxide	101	1024-57-3	608.3	83 ng/L	249 ng/L
PCB-1242 ⁹	106	53469-21-9	608.3	0.065	0.195
PCB-1254	107	11097-69-1	608.3	0.065	0.195
PCB-1221	108	11104-28-2	608.3	0.065	0.195
PCB-1232	109	11141-16-5	608.3	0.065	0.195
PCB-1248	110	12672-29-6	608.3	0.065	0.195
PCB-1260	111	11096-82-5	608.3	0.065	0.195
PCB-1016 ⁹	112	12674-11-2	608.3	0.065	0.195
Toxaphene	113	8001-35-2	608.3	240 ng/L	720 ng/L

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, or 5) x 10ⁿ, 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 [Analytical Methods for Petroleum Hydrocarbons](https://fortress.wa.gov/ecy/publications/documents/97602.pdf) at <https://fortress.wa.gov/ecy/publications/documents/97602.pdf>.
5. NWTPH Gx - Northwest Total Petroleum Hydrocarbons Gasoline Extended Range - see [Analytical Methods for Petroleum Hydrocarbons](https://fortress.wa.gov/ecy/publications/documents/97602.pdf) at <https://fortress.wa.gov/ecy/publications/documents/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 14/42 ng/L.
9. PCB 1016 & PCB 1242 – You may report these two PCB compounds as one parameter called PCB 1016/1242.
10. Bis(2-Chloro-1-Methylethyl) Ether – This compound was previously listed as Bis(2-Chloroisopropyl) Ether (39638-32-9).