Issuance Date: September 1, 2017
Effective Date: October 1, 2017
Expiration Date: September 31, 2022

State Waste Discharge Permit Number ST0007285

State of Washington
DEPARTMENT OF ECOLOGY
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

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

HANNEGAN PROPERTIES LLC
6069 Hannegan Road
Bellingham, WA 98226

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

Facility Location: 6069 Hannegan Road Bellingham, WA 98226 Whatcom County Treatment Type: Screening, DAF, land application Industry Type: Seafood Processing	Discharge Location: Latitude: 48.859799 Longitude: -122.444258 Legal Description : NE ¼ of NE ¼, Section 20, Range 3E, Township 39N W.M. SIC Code: 2091, 2092 NAICS Code: 311710

Mark Henley, P.E.
Water Quality Section Manager
Northwest 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
S3.A	Discharge monitoring report (DMR)	Monthly	November 28, 2017
S3.F	Reporting permit violations	As necessary	
S4.A	Operations and maintenance manual update	1/permit cycle	By January 1, 2018
S4.A	Operations and maintenance manual updates	As needed	
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S5.C	Solid waste control plan update	1/permit cycle	By March 1, 2018
S5.C	Solid waste control plan updates	As needed	
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Special Conditions

S1. Discharge limits

S1.A. Effluent 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.

The Permittee is authorized to apply process wastewater to the designated land treatment site via spray irrigation not to exceed the agronomic rates for nitrogen and water, and at rates for any other wastewater constituents to protect background groundwater quality. The Permittee may only apply wastewater seasonally from April to October. Application rates shall be based on the groundwater levels and soil conditions. The Permittee must request in writing any changes to the application season and must not discharge outside of the permitted seasonal range until Ecology approves the request.

The Permittee is authorized to apply process wastewater for final treatment on the following designated land treatment site:

> Approximately 10 acres located north of the city of Bellingham, southwest of the intersection of Hemmi Road and Hannegan Road, and the NE ¼ of the NE ¼ of Section 20, T. 39 N, R. 3 E WM.

Total nitrogen and water applied to the land treatment site must not exceed the crop requirements as determined by the Permittee's Irrigation and Crop Management Plan, Special Condition S9.

The Permittee must operate the spray field in such a manner as to:

1. Protect the existing and future beneficial uses of both groundwater and surface water.
2. Not cause a violation of the groundwater standards (chapter 173-200 WAC) or the surface water quality standards (chapter 173-201A WAC).
3. Alter the existing infiltration capacity of the soils within the infiltration site.

Discharges are subject to the following limits:

Effluent Limits: Outfall # 001 (Pump house to spray field) Latitude: 48.860895 Longitude: -122.445464			
Parameter	**Units**	**Average Monthly [a]**	**Maximum Daily [b]**
Flow [c]	Gallons per day		25,000
Chloride	Milligrams per liter	20	40
Total Dissolved Solids (TDS)	mg/L	207	234
Total Suspended Solids (TSS)	mg/L	29	444
Oil & Grease	mg/L	44	--
		Minimum	**Maximum**
pH	Standard Units	6.0	9.0
[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] Maximum daily effluent limit means the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. The daily discharge is the average measurement of the pollutant over the day. This does not apply to pH.			
[c] 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.			

Groundwater at the northeast boundary of the spray field is subject to the following limits. The point of compliance is at monitoring wells MW-4, MW-5, and MW-6. Two consecutive exceedances of an enforcement limit for the same parameter at the same well is a violation.

Groundwater Enforcement Limits			
Parameter	**Unit**	**Limit [a]**	
Chloride	mg/L	11	
Nitrate [b]	mg/L as N	6	
Total Dissolved Solids (TDS)	mg/L	207	
		Minimum	**Maximum**
pH	Standard Units	6.5	8.5
[a] Groundwater Enforcement Limits are based on calculation of the average monthly concentration at the 95th percentile level using groundwater collected from the up gradient well MW-3. See the Fact Sheet for details on the calculation method.			
[b] Groundwater Enforcement Limit for nitrate is are based on calculation of the daily maximum concentration at the 95th percentile level using groundwater collected from the up gradient well MW-7.			

S1.B. Early Warning Values

Early warning values are established for constituents that may have a reasonable potential to pollute groundwater. However, these constituents are at levels that do not require an enforcement limit but do require monitoring to indicate any potential changes in groundwater conditions.

Effluent Early Warning Values: Outfall # 001 (Pump house to spray field) Latitude: 48.860895 Longitude: -122.445464			
Parameter	**Unit**	**Average Monthly [a]**	**Maximum Daily [b]**
Biochemical Oxygen Demand	mg/L	12	17
Nitrate + Nitrite	mg/L as N	5	8
Specific Conductivity	micromohos/cm (µmohos/cm)	400	667
a	Average monthly 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	Maximum daily means the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. The daily discharge is the average measurement of the pollutant over the day.		

Groundwater Early Warning Values			
Parameter	**Unit**	**Average Monthly [a]**	**Maximum Daily [b]**
Specific Conductivity	µmohos/cm	371	458
a	Average monthly 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	Maximum daily means the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. The daily discharge is the average measurement of the pollutant over the day.		

S1.C. Additional discharge prohibitions

The Permittee must comply with the following Best Management Practices to prevent pollution to waters of the State:

1. Do not commingle process wastewater streams with sanitary (domestic) sewage.
2. Do not discharge in excess of the hydraulic capacity of the spray field to avoid the creation of ponding or overland flow conditions.
3. Do not discharge priority pollutants (listed in CFR 423, Appendix A), dangerous wastes (as defined by WAC-173-303), or toxics (as defined in WAC 173-221A) in toxic amounts.
4. Allow sufficient time between applications for the soil column to dry out and aerate to avoid the creation of anaerobic conditions beneath the infiltration field.

S2. Monitoring requirements

S2.A. Irrigation wastewater monitoring

The Permittee must sample at a location that best represents the discharge pumped and applied to the spray field. The sampling point for the irrigated wastewater is at the irrigation pump station(s) located in the irrigation pump house. The Permittee must report results as detailed in Section S3. Results must also be summarized in the annual Irrigation and Crop Management Plan; Section S9.

The Permittee must monitor and report in discharge monitoring reports in accordance with the following schedule and the requirements specified in Appendix A.

Parameter	Units & Speciation	Sampling Frequency	Sample Type
Flow	Gallons/day (gpd)	Record Daily / Report Monthly	Metered
BOD_5	mg/L	Monthly	Grab
Conductivity	µmhos/cm	Monthly	Grab
TDS	mg/L	Monthly	Grab
TSS	mg/L	Monthly	Grab
pH	Standard Units	Monthly	Grab
Chloride	mg/L	Monthly	Grab
Ammonia – N	mg/L as N	Monthly	Grab
Nitrate plus Nitrite Nitrogen	mg/L as N	Monthly	Grab
Total Kjeldahl Nitrogen (TKN)	mg/L as N	Monthly	Grab
Total Nitrogen	mg/L	Monthly	Calculated

Flow measurements are to be collected once per day, but each daily measurement only need be reported once per month.

S2.B. Groundwater monitoring

The Permittee must monitor the groundwater at monitoring wells MW-2, MW-3, MW-4, MW-5, and MW-6 in accordance with the following schedule and the requirements specified in Appendix A. The Permittee must report results as detailed in Section S3. Results must also be summarized annually and can be reported in the annual Irrigation and Crop Management Plan specified in Section S11 or in a separate groundwater monitoring report.

Parameter	Units	Sampling Frequency	Sample Type
Depth to Groundwater	Feet (nearest 0.01 ft.)	Monthly	Field Measurement
Conductivity	µmhos/cm	Monthly	Field Measurement
pH	S.U.	Monthly	Field Measurement
Oxidation Reduction Potential	milliVolts	Monthly	Field Measurement
Temperature	Degrees C	Monthly	Field Measurement
Total Dissolved Solids	mg/L	Monthly	Grab
Chloride	mg/L	Monthly	Grab
Nitrate	mg/L	Monthly	Grab
Bicarbonate Alkalinity	mg/L as $CaCO_3$	Semi-Annually	Grab
Hardness	mg/L	Semi-Annually	Grab
Sulfate	mg/L	Semi-Annually	Grab
Total Calcium	mg/L	Semi-Annually	Grab
Total Iron	mg/L	Semi-Annually	Grab
Total Manganese	mg/L	Semi-Annually	Grab
Total Magnesium	mg/L	Semi-Annually	Grab
Total Potassium	mg/L	Semi-Annually	Grab
Total Sodium	mg/L	Semi-Annually	Grab

One semi-annual sample shall be collected during the first calendar quarter (January – March), the second sample shall be collected during August 1 – October 31. Samples must be separated by at least 60 calendar days.

The Permittee must monitor the groundwater at monitoring wells MW-7 and MW-8 in accordance with the following schedule and the requirements specified in Appendix A.

Parameter	Units & Speciation	Sampling Frequency	Sample Type
Depth to Groundwater	Feet (nearest 0.01 ft.)	Monthly	Field Measurement
Conductivity	µmhos/cm	Semi-Annually	Field Measurement
pH	S.U.	Semi-Annually	Field Measurement
Oxidation Reduction Potential	mV	Semi-Annually	Field Measurement
Temperature	Degrees C	Semi-Annually	Field Measurement
Total Dissolved Solids	mg/L	Semi-Annually	Grab
Chloride	mg/L	Semi-Annually	Grab
Bicarbonate Alkalinity	mg/L as $CaCO_3$	Semi-Annually	Grab
Hardness	mg/L	Semi-Annually	Grab
Nitrate – Nitrogen	mg/L as N	Semi-Annually	Grab
Sulfate	mg/L	Semi-Annually	Grab
Total Calcium	mg/L	Semi-Annually	Grab
Total Iron	mg/L	Semi-Annually	Grab
Total Manganese	mg/L	Semi-Annually	Grab
Total Magnesium	mg/L	Semi-Annually	Grab
Total Potassium	mg/L	Semi-Annually	Grab
Total Sodium	mg/L	Semi-Annually	Grab

One semi-annual sample shall be collected during the first calendar quarter (January – March), the second sample shall be collected during August 1 – October 31. Samples must be separated by at least 60 calendar days.

The Permittee must monitor the groundwater at monitoring wells MW-1 in accordance with the following schedule and the requirements specified in Appendix A.

Parameter	Units & Speciation	Sampling Frequency	Sample Type
Depth to Groundwater	Feet (nearest 0.01 ft.)	Monthly	Field Measurement

S2.C. Ditch monitoring

The Permittee must sample the water in the ditch along the North side of the application field. The sampling point for the ditch water is just upstream of the intersection between the North ditch and the East ditch (along Hannegan Road). The Permittee must report results as detailed in Section S3. Results must also be summarized in the annual Irrigation and Crop Plan; Section S9.

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

Parameter	Units & Speciation	Sampling Frequency	Sample Type
Flow	gpm	Monthly	Measured
Conductivity	µmhos/cm	Monthly	Field Measurement
pH	S.U.	Monthly	Field Measurement
Chloride	mg/L	Monthly	Grab
Total Kjeldahl Nitrogen (TKN)	mg/L as N	Monthly	Grab
Nitrate plus Nitrite Nitrogen	mg/L as N	Monthly	Grab
Ammonia – N	mg/L as N	Monthly	Grab

S2.D. Soil monitoring

The Permittee must monitor soil on the land treatment site as follows; the Permittee must:

1. Monitor twice per year for this permit cycle.
2. Collect samples at a time that best represents soil conditions at the beginning and the end of the crop-growing season. Collect the beginning of the growing season sample during April / May or before the first wastewater application, whichever is earlier. Collect the end of the growing season sample during October / November or after the last cutting, whichever is later.
3. Locate sampling sites so they represent the land treatment site or as identified in the crop management plan.
4. Locate sampling sites in the same vicinity each year if possible.
5. Test soil at each sampling site on one-foot soil increments.
6. Submit results along with a schematic drawing showing the locations where sampling occurred and locations appropriately labeled annually with the Irrigation and Crop Management Plan.
7. Collect soil samples from five locations within the spray field. Sampling sites will include one-site in the center of the spray field and four randomly selected locations.
8. Composite a minimum of five (5) core samples at the depth increments as defined in the table below (or until auger refusal).
9. Assemble composite samples for the spray field to yield one sample set for the spray field consisting of two or four samples (one for each depth):
    - One composite sample consisting of the five core samples collected at the 0”-12” depth.
    - One composite sample consisting of the five core samples collected at the 12”-24” depth.
    - One composite sample consisting of the five core samples collected at the 24”-36” depth.
    - One composite sample consisting of the five core samples collected at the 36”-48” depth.

The Permittee must monitor the soils in the spray field according to the following schedule:

Parameter	Units & Speciation	Sample Point	Depth Increments [a]
Exchangeable Sodium Percentage	percent	Each field	1, 4
Organic Matter	percent	Each field	1, 4
Moisture Content	percent	Each field	1, 2, 3, 4
Sodium Absorption Ratio	percent	Each field	1, 4
Cation Exchange Capacity	meq/100g	Each field	1, 2, 3, 4
Conductivity	µmhos/cm	Each field	1, 2, 3, 4
pH	S.U.	Each field	1, 2, 3, 4
Total Kjeldahl Nitrogen (TKN)	mg/Kg as N	Each field	1, 4
Nitrate plus Nitrite Nitrogen	mg/Kg as N	Each field	1, 2, 3, 4
Ammonia – N	mg/Kg as N	Each field	1, 4
Total Nitrogen	mg/Kg as N	Each field	1, 4
Total Nitrogen	lb/ac	Each field	1, 4
Chloride	mg/Kg	Each field	1, 2, 3, 4
Sulfate	mg/Kg	Each field	1, 4
Sodium	mg/Kg	Each field	1, 2, 3, 4

[a]	Depth increment (ft.) vs. Depth (inches) for composite samples: [b]	DMR Monitoring Designation
Increment 1	0 -12 inches	S1
Increment 2	12-24 inches	S2
Increment 3	24-36 inches	S3
Increment 4	36-48 inches	S4
Increment 5	48-60 inches	S5
Increment 6	60-72 inches	S6

[b]	Depth (inches) vs. Depth increment (ft.) for composite samples: 0 -12" (1ft); 12-24" (2ft); 24-36" (3ft); 36-48" (4ft); 48-60" (5ft); 60-72" (6ft)

S2.E. Crop monitoring

The Permittee must:

1. Monitor the crops for the parameters listed below once per harvest.
2. Comprise composite samples of at least ten (10) random samples collected from the hand-line fields.
3. Submit results annually with the Irrigation and Crop Management Plan specified in Section S9.

Parameter	Units	Measurement Basis
Crop Production	dry tons/acre	Once per harvest / cutting
Moisture Content	percent	Once per harvest / cutting
Total Nitrogen	percent	Once per harvest / cutting
Solids (Total Fixed) (Ash Weight)	mg/Kg (dry weight)	Once per harvest / cutting

S2.F. 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.

Groundwater sampling must conform to the latest protocols in the *Implementation Guidance for the Ground Water Quality Standards*, (Ecology 2005).

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).

The Permittee must conduct and report all soil analysis in accordance with the Western States Laboratory Plant, Soil and Water Analysis Manual, *Soil, Plant and Water Reference Methods for The Western Region, 3rd Edition*, 2005. You can find more information at: http://isnap.oregonstate.edu/WERA_103/Soil_Methods.htm.

S2.G. Flow measurement and field measurement 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 and the manufacturer's recommendation, and approved O&M manual procedures for the device and the waste stream.
3. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
4. Establish a calibration frequency for each device or instrument in the O&M manual that conforms to the frequency recommended by the manufacturer.
5. Calibrate flow monitoring devices at a minimum frequency of at least one calibration per year.
6. Maintain calibration records for at least three years.

S2.H. 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.

Crops and soils data are considered process control parameters, which do not require preparation by an accredited laboratory. The Permittee must obtain this data from a reputable agricultural test lab that is an active participant in a nationally recognized agricultural laboratory proficiency testing program such as the North American Proficiency Testing Program. You can find more information at: http://www.naptprogram.org/.

S.2.I. 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.

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 November 28, 2017 (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 WQWebDMR go to: http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html
2. If the Permittee did not discharge wastewater or a specific pollutant during a given monitoring period, then enter the "no discharge" reporting code for the entire DMR, specific monitoring point, or specific parameter as appropriate.
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 Section S2.F and 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, 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 28th day of the following month.
    b. Submit **semi-annual DMRs**, unless otherwise specified in the permit, by July 28 and January 28 of each year. Semi-annual sampling periods are January through June, and July through December.

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 Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

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.

The Permittee must retain all records pertaining to the monitoring of sludge for a minimum of five years.

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 the Department of Ecology and the Department of Health, Drinking Water Program (at the numbers listed below), all:

- Overflows or leaks of transmission or irrigation pipelines that discharge to a water body used as a source of drinking or irrigation water.

Northwest Regional Office	425-649-7000
Department of Health, Drinking Water Program	800-521-0323 (business hours) 877-481-4901 (after business hours)
Whatcom Co. Health District	360-676-6724

b. Twenty-four-hour reporting

The Permittee must report the following occurrences of noncompliance by telephone, to Ecology at 425-649-7000, within 24 hours from the time the Permittee becomes aware of any of the following circumstances. The Permittee must report:

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 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.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.
6. When a monitoring well exceeds an enforcement limit for the same parameter in two consecutive sampling events.

c. 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 subparts a or b, above. The report must contain:

1. A description of the noncompliance and its cause.
2. Maps, drawings, aerial photographs, or pictures to show the location and cause(s) of the non-compliance.
3. The period of noncompliance, including exact dates and times.

4. The estimated time the Permittee expects the noncompliance to continue if not yet corrected.
5. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
6. 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.

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. You can obtain further instructions at the following website: http://www.ecy.wa.gov/programs/spills/other/reportaspill.htm .

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 requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a Permittee when the operation is necessary to achieve compliance with the conditions of this permit.

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 173-240-150 WAC and submit it to Ecology for review by January 1, 2018. The Permittee must submit a paper copy and an electronic copy (preferably in a portable document format (PDF)).
2. Review the O&M Manual at least annually and confirm this review by letter to Ecology by April 1st of each year.
3. Submit to Ecology for review substantial changes or updates to the O&M Manual whenever the Permittee incorporates them into the manual. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).
4. Keep the most current approved O&M Manual at the permitted facility.
5. Follow the instructions and procedures of this manual.

b. O&M manual components

In addition to the requirements of WAC 173-240-080 (1) through (5), the O&M Manual must be consistent with the guidance in Table G1-3 in the *Criteria for Sewage Works Design* (Ecology, 2008). The O&M Manual must include:

1. Emergency procedures for plant shutdown and cleanup in the event of a wastewater system upset or failure including pipeline leaks.
2. Irrigation system operational controls and procedures.
3. Wastewater system maintenance procedures that contribute to the generation of 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. Treatment plant process control monitoring schedule.
6. Wastewater sampling protocols and procedures for compliance with the sampling and reporting requirements in the wastewater discharge permit.
7. Minimum staffing adequate to operate and maintain the treatment processes and carry out compliance monitoring required by the permit.
8. Protocols and procedures for sampling of the groundwater monitoring network and soil sampling and testing.

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 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.

   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 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.

S4.C. Irrigation land application best management practices

The Permittee must:

1. Not apply wastewater between the months of November to March.
2. Operate the spray field system to protect the existing and future beneficial uses of the groundwater, and not cause a violation of the groundwater standards.
3. Not apply wastewater if the groundwater level is within five feet (5 ft.) of the ground surface.
4. Not allow spray irrigation practices to result in runoff of wastewater to any surface waters of the state or to any land not owned by or under control of the Permittee.
5. Discontinue application during periods of heavy or prolonged rainfall to prevent ground saturation and runoff.
6. Not load BOD_5 to the fields in excess of 100 lbs/acre/day.
7. Use recognized good practices, and all available and reasonable procedures to control odors from the land application system.
8. Implement measures to reduce odors to a reasonable minimum when notified by Ecology.
9. Not apply wastewater to the land treatment site in quantities that:
    a. Significantly reduce or destroy the long-term infiltration rate of the soil.
    b. Would cause long-term anaerobic conditions in the soil.
    c. Would cause ponding of wastewater and produce objectionable odors or support insects or other vectors.
    d. Would cause leaching losses of constituents of concern beyond the treatment zone or in excess of the approved design. Constituents of concern are constituents in the wastewater, partial decomposition products, or soil constituents that would alter groundwater quality in amounts that would affect current and future beneficial uses.
    e. Would cause severe damage or death to the field cover crop.
10. Maintain all irrigation agreements for lands not owned for the duration of the permit cycle. Any reduction in irrigation lands by termination of any irrigation agreements may result in permit modification or revocation.
11. Immediately inform Ecology in writing of any proposed changes to existing irrigation agreements.
12. Maintain a viable and healthy cover crop on all fields that receive wastewater.
13. Use fresh supplemental water or precipitation to meet the leaching requirement to control soil salinity.
14. Adjust irrigation plans during high precipitation events to minimize percolate losses.

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 for review at least 30 days prior to implementation. The Permittee must comply with the solid waste control plan and any modifications once submitted. The Permittee must submit an update of the solid waste control plan by March 1, 2018.

1. Keep the most current approved Solid Waste Control Plan at the permitted facility.

S6. Application for permit renewal or modification for facility changes

The Permittee must submit an application for renewal of this permit by March 1, 2021. 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 wastewater

1. Beginning on the effective date of this permit, the Permittee is authorized to discharge non-routine wastewater or unanticipated wastewater and therefore not listed on the permit application, 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 analysis must also include any additional parameters 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 September 1, 2018.
2. Review the plan at least annually and update the spill plan as needed.
3. Send changes to the plan to Ecology.
4. Follow the plan and any supplements throughout the term of the permit.
5. Keep the most current approved Spill Control Plan at the permitted facility.

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. Irrigation and crop management plan

The Permittee must submit an irrigation and crop management plan annually by March 1st of each year for Ecology review. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF). The plan must be prepared by a soil scientist and must generally conform to the *Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*, Ecology 1993.

The irrigation and crop management plan must include an annual summary of farm operations for the previous year and a cropping and irrigation schedule for the upcoming year as described in the sections below.

S9.A. Annual summary of farm operations for previous year

The annual summary must include:

1. For each crop grown, the total acreage, and quantity harvested.
2. Calculated balances for nutrients, salts, TDS, or other design limiting parameters. The calculations must include crop consumptive use, wastewater loadings of nutrients, salts, TDS, or other design limiting parameters, contributions from commercial fertilizers, and supplemental water applied.
3. A **water balance** including the following calculations:
    a. Irrigation system efficiency and application uniformity.
    b. The quantity of supplemental irrigation water and wastewater applied.
    c. Crop consumptive water use.
    d. Water stored in the soil profile outside the normal growing season.
    e. Salt leaching requirements.
    f. The leaching fraction for each field.
4. A comparison of the actual total net nitrogen, water, total dissolved solids, and BOD_5 loads, and the leaching fractions for each field to the estimated values presented in the previous year's irrigation and crop management plan.
5. A discussion of solids removal and disposal. This includes solids from screening and processing operations, and solids removed from any containment structure like a lagoon or settling tank.
6. A sketch map of the soil sampling locations.
7. A summary and evaluation of the **soil testing results**.

8. A summary and evaluation of the **crop testing results**.
9. A summary of **groundwater monitoring results** and an evaluation of whether the current operation of the land treatment site is protecting groundwater quality.
10. A detailed description of changes or improvements in the management of the land treatments practices, including those to comply with agronomic rates and leaching requirements.

S9.B. Cropping and irrigation schedule for upcoming year

This schedule must include:

1. Crop management information including:
   a. The proposed acreage for each crop.
   b. Cultivation and harvesting requirements
   c. Expected crop yields
   d. Methods for establishing a crop
   e. Proposed schedule for herbicide, pesticide, and fertilizer application
2. Irrigation management information including:
   a. The frequency and timing of wastewater and supplemental irrigation water application (including harvest and non-harvest periods)
   b. Recommended rest cycles for wastewater application
   c. An estimation of the leaching requirement for each field and the plan to meet the requirement
3. The estimated annual total net nitrogen and water load capacity, and the total dissolved solids and BOD_5 load to each field based on the estimated wastewater discharge and planned crop rotation.

General Conditions

G1. Signatory requirements

All applications, reports, or information submitted to Ecology must be signed as follows:

1. All permit applications must be signed by either a principal executive officer or ranking elected official.
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 the person described above and is submitted to Ecology at the time of authorization, and
   b. The authorization specifies 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 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 at least one hundred eighty 180 days before it wants to discharge more of any pollutant, a new pollutant, or more flow than allowed under this permit. The Permittee should use the State Waste Discharge Permit application, and submit required plans at the same time. Required plans include an Engineering Report, Plans and Specifications, and an Operations and Maintenance manual, (see Chapter 173-240 WAC). Ecology may waive these plan requirements for small changes, so contact Ecology if they do not appear necessary. The Permittee must obtain the written concurrence of the receiving POTW on the application before submitting it to Ecology. The Permittee must continue to comply with the existing permit until it is modified or reissued. Submitting a notice of dangerous waste discharge (to comply with Pretreatment or Dangerous Waste rules) triggers this requirement as well.

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 180 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. 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.

G9. 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 may be deemed 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.

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. 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 nonconventional pollutants. 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.

CONVENTIONAL POLLUTANTS

Pollutant	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL)[1] µg/L unless specified	Quantitation Level (QL)[2] µg/L unless specified
Biochemical Oxygen Demand		SM5210-B		2 mg/L
Biochemical Oxygen Demand, Soluble		SM5210-B [3]		2 mg/L
pH		SM4500-H^+ B	N/A	N/A
Total Suspended Solids		SM2540-D		5 mg/L

NON-CONVENTIONAL POLLUTANTS

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
Alkalinity, Total		SM2320-B		5 mg/L as CaCO3
Ammonia, Total (as N)		SM4500-NH3-B and C/D/E/G/H		20
Calcium, Total		200.7	1	
Chloride		SM4500-Cl B/C/D/E and SM4110 B		Sample and limit dependent
Flow		Calibrated device		
Hardness, Total		SM2340B		200 as CaCO3
Magnesium, Total	7439-95-4	200.7	10	50
Manganese, Total	7439-96-5	200.8	0.1	0.5
Nitrate + Nitrite Nitrogen (as N)		SM4500-NO3- E/F/H		100
Nitrogen, Total Kjeldahl (as N)		SM4500-N_{org}B/C and SM4500NH_3-B/C/D/EF/G/H		300
Potassium, Total		258.1	1	
Sodium, Total		200.7	3	
Sulfate (as mg/L SO_4)		SM4110-B		0.2 mg/L
Temperature (max. 7-day avg.)		Analog recorder or use micro-recording devices known as thermistors		0.2º C
Total Dissolved Solids		SM2540 C		20 mg/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 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.