Issuance Date: XXX XX, 2021
Effective Date: XXX XX, 2021
Expiration Date: XXX XX, 2021

State Waste Discharge Permit Number ST0501318

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,

GWI Holdings, Inc. / GACO Western
1000 First Avenue, Suite 2201
Seattle, Washington 98104

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

Facility Location: 18700 Southcenter Parkway Tukwila, WA 98188 Treatment Type: Phytoremediation Industry Type: Independent Cleanup & Remediation site	Discharge Location: Same as Facility Location Legal Description: NE¼, SW¼, Section 35, T23N, R04E WM SIC Code: 4225 NAICS Code: 493110, 562910 Categorical Industry: General Warehousing and Remediation of contaminated groundwater

Rachel McCrea
Water Quality Section Manager
Northwest Regional Office
Washington State Department of Ecology

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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.

Beginning on the effective date, the Permittee is authorized to apply extracted contaminated groundwater to the designated land treatment site via drip irrigation not to exceed the hydraulic loading rate for water, and at rates for any other wastewater constituents to protect background groundwater quality. The Permittee must reduce wastewater application seasonally from November to March. The Permittee must request in writing any changes to the application season and must comply with the flow limits below until Ecology approves the request.

The Permittee is authorized to apply contaminated groundwater for final treatment on the following designated land treatment sites:

Approximately 6,750 square feet (ft^2) located at 18700 Southcenter Parkway in Tukwila, and the NE¼, SW¼, Section 35, T23N, R04E WM.

The Permittee must operate the drip irrigation system in such a manner as to:

1. Protect the existing and future beneficial uses of both groundwater and surface water.
2. Not contribute to further degradation of the groundwater (standards in chapter 173-200 WAC) or violate the surface water quality standards (chapter 173-201A WAC).

Discharges are subject to the following limits:

Table 1: Effluent Limits

Outfall # 001[a]		
Latitude: 47°26'5.98"	**Longitude: 122°15'48.36"W**	
Parameter	**Average Monthly [b]**	**Maximum Daily [c]**
Flow (growing season)	1,200 gallons per day (gpd)	2,000 gpd
Flow (dormant period)	100 gpd	100 gpd
Oil sheen		No visible sheen
	Minimum	**Maximum**
pH [d]	6.5	8.5

a	Outfall #001 is at the splitter box that leads to the drip lines.
b	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.
c	Maximum daily effluent limit means the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. For pollutants with limits expressed in units of mass, calculate the daily discharge as the total mass of the pollutant discharged over the day. For other units of measurement, the daily discharge is the average measurement of the pollutant over the day. This does not apply to pH.
d	Values are in standard units.

S1.B. Groundwater early warning values (EWVs)

Groundwater below the treatment area is subject to the following early warning values. The point of compliance is monitoring wells MW-2 and MW-3 beneath the drip irrigation system. Two consecutive exceedances of an early warning value for the same parameter at the same well may indicate a change in conditions and will require further investigation to address. Exceedance of EWVs does not constitute a violation of the permit, but must be reported under Special Condition S3.G.

Table 2: Groundwater Early Warning Levels

Monitoring Point MW-2 & MW-3 Latitude: 47°26'5.98"N Longitude: 122°15'48.36"W		
Parameter	**Units [a]**	**Daily Maximum [b]**
1,2-Dichloroethane	µg/L	0.05
Benzene	µg/L	3.70
cis-1,2-Dichloroethene	µg/L	0.14
Ethylbenzene	µg/L	3.72
Vinyl Chloride	µg/L	0.125
m,p-Xylene	µg/L	10.72
o-Xylene	µg/L	2.84

a	All values are in micrograms per liter (µg/L).
b	Maximum daily effluent limit means the highest allowable daily discharge. The daily discharge means the maximum discharge of a pollutant measured during a calendar day. For pollutants with limits expressed in units of mass, calculate the daily discharge as the total mass of the pollutant discharged over the day. For other units of measurement, the daily discharge is the average measurement of the pollutant over the day. This does not apply to pH.

S1.C Best management practices/pollution prevention

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 treatment area soils so that overflow occurs.
3. Do **not** introduce chemicals not identified in the permit application into the treatment system.

S2. Monitoring requirements

S2.A. Irrigation wastewater monitoring

The Permittee must sample at a location that best represents the discharge applied to the land treatment site. The sampling point for the irrigated wastewater is at the irrigation headwork's pump station. The Permittee must also report results in the annual summary report detailed in Section S8.

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

Table 3: Irrigation Wastewater Monitoring - Outfall 001

Parameter	Units & Speciation	Sampling Frequency	Sample Type
Flow	gallons/day (gpd)	Continuous [a]	Metered [b]
Oil Sheen	Presence/absence [c]	Monthly / Quarterly [d]	Visual [e]
pH	Standard Units	Monthly / Quarterly	Measurement [f]
Benzene	ng/L [g]	Monthly / Quarterly	Grab [h]
Vinyl Chloride	ng/L	Monthly / Quarterly	Grab
1,1-Dichloroethene	ng/L	Monthly / Quarterly	Grab
1,2-Dichloroethene	ng/L	Monthly / Quarterly	Grab
cis-1,2-Dichloroethene	ng/L	Monthly / Quarterly	Grab
trans-1,2-Dichloroethene	ng/L	Monthly / Quarterly	Grab
Acrylonitrile	ng/L	Monthly / Quarterly	Grab
Ethylbenzene	ng/L	Monthly / Quarterly	Grab
Toluene	ng/L	Monthly / Quarterly	Grab
m, p-Xylene	ng/L	Monthly / Quarterly	Grab
o-Xylene	ng/L	Monthly / Quarterly	Grab
Total Xylene	ng/L	Monthly / Quarterly	Grab
Alkalinity	mg/L as $CaCO_3$	Semi-Annually [i]	Grab
Hardness	mg/L as $CaCO_3$	Semi-Annually	Grab
Chloride	mg/L	Semi-Annually	Grab
Nitrate + Nitrite	mg/L	Semi-Annually	Grab
Sulfate	mg/L	Semi-Annually	Grab
Calcium (Total)	mg/L	Semi-Annually	Grab
Iron (Total)	mg/L	Semi-Annually	Grab
Manganese (Total)	mg/L	Semi-Annually	Grab
Magnesium (Total)	mg/L	Semi-Annually	Grab
Potassium (Total)	mg/L	Semi-Annually	Grab
Sodium (Total)	mg/L	Semi-Annually	Grab

a	Continuous means a recording instrument, such as a totalizing flow meter, makes measurements continuously.
b	Metered means the value is collected using a calibrated meter of some type (e.g., flow meter).
c	Presence/absence means the parameter is evaluated for the presence or absence of an oil sheen on the water discharged or within the irrigation water-holding tank.
d	Monthly / Quarterly means samples are to be sample month permit years one and two. Frequency then goes to quarterly for permit years three through five.
e	Visual means the measurement is made by visual observation of the water discharged or within the irrigation water-holding tank.
f	Measurement means the value is collected in the field using a calibrated instrument (e.g., a pH meter).
g	ng/L = nanograms per liter.
h	Grab means an individual sample collected over a fifteen (15) minute, or less, period.
i	Semi-Annually means samples are two times a year, once during the period January to June and once during the period July to December.

S2.B. Groundwater monitoring

The Permittee must monitor the groundwater at the monitoring wells MW-1, MW-2, and MW-3 in accordance with the following schedule and the requirements specified in Appendix A.

Table 4: Groundwater Monitoring

Parameter	Units & Speciation	Sampling Frequency	Sample Type
Measured Depth to Groundwater	Feet (nearest 0.01 ft.)	Monthly / Quarterly [g]	Field Measurement [b]
pH	Standard Units	Monthly / Quarterly	Field Measurement
Conductivity	Micromhos/cm	Monthly / Quarterly	Field Measurement
Dissolved Oxygen	mg/L	Monthly / Quarterly	Field Measurement
Oxidation Reduction Potential	millivolts	Monthly / Quarterly	Field Measurement
Temperature	Degrees C	Monthly / Quarterly	Field Measurement
Turbidity	NTU [c]	Monthly / Quarterly	Field Measurement
Oil Sheen	Presence/absence [d]	Monthly / Quarterly	Visual [e]
1,1-Dichloroethene	ng/L [f]	Monthly / Quarterly	Grab [g]
1,2-Dichloroethene	ng/L	Monthly / Quarterly	Grab
Acrylonitrile	ng/L	Monthly / Quarterly	Grab
Benzene	ng/L	Monthly / Quarterly	Grab
cis-1,2-Dichloroethene	ng/L	Monthly / Quarterly	Grab
Ethylbenzene	ng/L	Monthly / Quarterly	Grab
Toluene	ng/L	Monthly / Quarterly	Grab
Vinyl Chloride	ng/L	Monthly / Quarterly	Grab
m, p-Xylene	ng/L	Monthly / Quarterly	Grab
o-Xylene	ng/L	Monthly / Quarterly	Grab
Total Xylene	ng/L	Monthly / Quarterly	Grab
Alkalinity	mg/L as $CaCO_3$	Semi-Annually [h]	Grab
Hardness	mg/L as $CaCO_3$	Semi-Annually	Grab
Chloride	mg/L	Semi-Annually	Grab
Nitrate + Nitrite	mg/L	Semi-Annually	Grab
Sulfate	mg/L	Semi-Annually	Grab
Calcium (Total)	mg/L	Semi-Annually	Grab
Iron (Total)	mg/L	Semi-Annually	Grab
Manganese (Total)	mg/L	Semi-Annually	Grab
Magnesium (Total)	mg/L	Semi-Annually	Grab
Potassium (Total)	mg/L	Semi-Annually	Grab
Sodium (Total)	mg/L	Semi-Annually	Grab

[a]	Monthly / Quarterly means samples are to be sample month permit years one and two. Frequency then goes to quarterly for permit years three through five.
[b]	Field Measurement means this parameter is measured at the well (e.g., in the field) with a calibrated instrument.
[c]	NTU = Nephelometric Turbidity Units.

Parameter	Units & Speciation	Sampling Frequency	Sample Type
d	Presence/absence means the parameter is evaluated for the presence or absence of an oil sheen on the water discharged or within the irrigation water-holding tank.		
e	Visual means the measurement is made by visual observation of the water discharged or within the irrigation water-holding tank.		
f	ng/L = nanograms per liter.		
g	Grab means an individual sample collected over a fifteen (15) minute, or less, period.		
h	Semi-Annually means samples are two times a year, once during the period January to June and once during the period July to December.		

S2.C Vadose zone monitoring

The sampling point for the treated wastewater is directly below the root zone and prior to entry into the groundwater.

The Permittee must monitor the wastewater/percolate according to the following schedule:

Table 5: Vadose Zone Monitoring

Parameter	Units & Speciation	Sampling Frequency	Sample Type
Moisture Content	Percent	Biweekly / Monthly [a]	Measurement [b]
Matric Potential	kPa [c]	Biweekly / Monthly	Measurement / Calculated [d]
a	Biweekly/Monthly means measurements are to be collected and reported every other week during permit years one and two. Sampling frequency then goes to once per month.		
b	Measurement means the value is collected using a calibrated instrument. Method is SM 2540B (Soils).		
c	kPa = kilopascals.		
d	Calculated means the value can be calculated from other measured data.		

S2.D. 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).

S2.E. 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 waste stream.
3. Calibrate continuous monitoring instruments weekly unless it can demonstrate a longer period is sufficient based on monitoring records. The Permittee:
    a. May calibrate apparatus for continuous monitoring of dissolved oxygen by air calibration.
    b. Must calibrate continuous pH measurement instruments using a grab sample analyzed in the lab with a pH meter calibrated with standard buffers and analyzed within 15 minutes of sampling.
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.
7. Maintain calibration records for at least three years.

S2.F. 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 process control parameters, which do not require preparation by an accredited laboratory. However, 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.

S.2.G. 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 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.A 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 go to: 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. Ensure that DMRs are electronically submitted no later than the dates specified below, unless otherwise specified in this permit.

7. DMRs data is reported in micrograms per liter (µg/L). If laboratory data is reported in other units (e.g. nanograms per liter [ng/L]) it must be converted before reporting on the DMR.

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 **continuous** DMRs by the 28th day of the following month. Continuous data reports as the maximum value for each day of the month.

   b. Submit **monthly** DMRs by the 28th day of the following month. The monthly DMR must include the measured parameters that are sampled on a continuous, biweekly or monthly basis.

   c. Submit **quarterly** DMRs, unless otherwise specified in the permit, by the 28th 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 XX,XX, 2021, for the quarter beginning on XX.XX, 2021.

   d. Submit **semiannual** DMRs, unless otherwise specified in the permit, by July 28 and January 28 of each year. Semiannual 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 waterbody used as a source of drinking or irrigation water.

Northwest Regional Office	425-649-7000

b. Twenty-four-hour reporting

The Permittee must report the following occurrences of noncompliance by telephone, to Ecology at the telephone number listed above, 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. This requirement does not include industrial process wastewater overflows to impermeable surfaces which are collected and routed to the treatment works.

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: 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.

c. Early warning value reporting

Exceedances of the early warning values in Special Condition S1.B and any subsequent exceedance that immediately follows a previous exceedance for the same constituent at the same well or discharge point, must be reported to Ecology within ten calendar days of receiving the monitoring results. In response to the exceedances, Ecology may require the Permittee to take any of the actions specified in WAC 173-200-070(6)(b).

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 an operation logbook (paper or electronic), adequate laboratory controls and appropriate quality assurance procedures.

S4.A. Operations and maintenance (O&M) manual

a. O&M manual submittal and requirements

The Permittee must:

1. Prepare an O&M manual that meets the substantive requirements of 173-240-150 WAC and submit it to Ecology by XX,XX,2021. 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.
3. Submit to Ecology for review substantial changes or updates to the O&M manual whenever it incorporates them into the manual.
4. Keep a copy of the current 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 substantive requirements of WAC 173-240-150, the O&M manual should be consistent with the guidance in Table G1-3 in the Criteria for Sewage Works Design (Orange Book), 2008 as applicable. 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 groundwater monitoring network, vadose zone, and soil sampling and testing.

c. Treatment system operating plan

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

The Permittee must update and submit this plan, as necessary, to include requirements for any major modifications of the treatment system.

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

1. A baseline operating condition, which describes the operating parameters and procedures, used to meet the effluent limits of S1 at the production levels used in developing these limits.
2. In the event of production rates, which are below the baseline levels used to establish these limits, the plan must describe the operating procedures and conditions needed to maintain design treatment efficiency. The monitoring and reporting must be described in the plan.
3. In the event of an upset, due to plant maintenance activities, severe storm water events, startups or shut downs, or other causes, the plan must describe the operating procedures and conditions employed to mitigate the upset. The monitoring and reporting must be described in the plan.
4. A description of any regularly scheduled maintenance or repair activities at the facility which would affect the volume or character of the wastes discharged to the wastewater treatment system and a plan for monitoring and treating/controlling the discharge of maintenance-related materials (such as cleaners, degreasers, solvents, etc.).

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.

To prevent the release of untreated wastewater to the ground before starting any maintenance or other action that may require a bypass, the treatment system should be shut down or placed in stand-by status.

S4.C. Irrigation land application best management practices

The Permittee must:

1. Operate the irrigation system to protect the existing and future beneficial uses of the groundwater, and not cause a violation of the groundwater standards.
2. Not allow irrigation practices to result in runoff of wastewater to any surface waters of the state or to any land not owned by or under its control.
3. Use recognized good practices, and all available and reasonable procedures to control odors from the land application system.
4. Implement measures to reduce odors to a reasonable minimum when notified by Ecology.
5. Not apply wastewater to the land treatment sites 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 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.
6. 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.
7. Immediately inform Ecology in writing of any proposed changes to existing irrigation agreements.
8. Maintain a viable and healthy cover crop on all fields that receive wastewater.
9. Use supplemental water or precipitation to meet the leaching requirement to control soil salinity.
10. Adjust irrigation plans during high precipitation events to minimize percolate losses.
11. Discontinue operation during periods of heavy or prolonged rainfall to prevent ground saturation and runoff.

S4.D. Best management practices\pollution prevention program

The Permittee must comply with the following best management practices (BMPs) at all times during operation.

1. Where treatment chemicals, including treatment formulation precursors (except uncontaminated water) are received, stored, processed or otherwise handled, appropriate containment, drainage control and/or diversionary structures must be provided to prevent storm water run-on and

contamination. Such structures may include roofs, covers, curbing, culverts, gutters or similar structures to prevent the contact of uncontaminated storm water with process wastewater or process pollutants.

2. All liquid chemical storage and process areas must have secondary containment sufficient to contain the capacity of the largest single tank or vessel plus 10 percent. Secondary containment systems must be sufficiently impervious to contain spilled chemicals until they can be removed or treated.
3. Storm water originating from areas outside the treatment area must be diverted away from the land treatment area.
4. The use of detergents and emulsifiers for equipment cleaning, maintenance, and repair, which results in a direct discharge to waters of the state, is prohibited.

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.

S6. Application for permit renewal or modification for facility changes

The Permittee must submit an application for renewal of this permit by XX,XX,XXXX.

The Permittee must also submit a new application or addendum at sixty (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.

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 parameter deemed necessary by Ecology. All discharges must comply with the effluent limits as established in Special Condition S1 of this permit, water quality standards, and any other limits imposed by Ecology.

3. The Permittee must limit the discharge rate, as referenced in subpart 1.g, above, so it will not cause erosion of ditches or structural damage to culverts and their entrances or exits.

4. The discharge cannot proceed until Ecology has reviewed the information provided and has authorized the discharge by letter to the Permittee or by an Administrative Order. Once approved and if the proposed discharge is to a municipal storm drain, the Permittee must obtain prior approval from the municipality and notify it when it plans to discharge.

S8. Industrial storm water discharges

The Permittee must apply for coverage under the NPDES Industrial Stormwater General Permit if they operate any type of operation requiring that permit coverage for storm water exposed to industrial activities that discharges to surface waters or a storm sewer system that drains to surface water.

Facilities are eligible for a conditional no exposure (CNE) exemption if there is “no exposure” of industrial materials and activities to rain, snow, snow melt, and/or runoff. To obtain a CNE exemption, the Permittee must submit an online No Exposure Certification Form to Ecology.

Information about the permit and CNE and application forms are available at Industrial-stormwater-general-permit .

S9. Summary irrigation report

The Permittee must submit a summary irrigation report annually by **March 1st of each year** for Ecology review. The report must be reviewed by a person with knowledge of the system operations and treatment objectives soil scientist and must generally conform to the *Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*, Ecology 1993.

The summary irrigation report must include an annual summary of operations for the previous year and an irrigation schedule for the upcoming year as described in the sections below.

S9.A. Annual summary of operations for previous year

The annual summary must include:

1. For each crop grown, the total acreage, tree height and diameter at breast height, and quantity harvested.
2. Calculated balances for nutrients, TDS, and petroleum hydrocarbon contaminants. The calculations must include crop consumptive use, wastewater loadings of nutrients, TDS, and petroleum hydrocarbon contaminants, contributions from commercial fertilizers applied, and supplemental water.
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 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, fixed dissolved solids, (other parameters) loads, and the leaching fractions for each field to the estimated values presented in the previous year's irrigation and crop plan.
5. A summary and evaluation of the **crop testing results**, if any trees are harvested.
6. A summary of groundwater monitoring test results and an evaluation of whether the current operation of the land treatment site is improving and protecting groundwater quality.
7. A detailed list of changes or improvements in the management of the land treatments practices 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 such as:
    g. Cultivation and harvesting requirements.
    h. Expected crop yields.
    i. Methods for establishing a crop.
2. Irrigation management information such as:

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.

3. The estimated annual total net water load capacity to each field based on the estimated wastewater discharge and planned crop rotation.

S10. Vadose zone monitoring

This permit requires the monitoring of moisture movement below the root zone in the irrigation area. The Permittee must:

1. Install moisture monitoring instrument(s) along the center axis of the irrigation area at one-third and two-thirds the irrigation area length (approximately 83 feet from either end).
2. The vadose zone shall be monitored at three depths:
   a. one foot below ground surface.
   b. the center of the root zone.
   c. one foot below the root zone.
3. Complete vadose zone equipment installation and commence sampling by 120 days from permit effective date.
4. Monitor these instruments on the frequency stated in Special Condition S2.C.

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 non-conventionals. 40 CFR Part 122 Appendix D (Table V) also identifies toxic pollutants and hazardous substances that are required to be reported by dischargers if expected to be present. This permit Appendix A list does not include those parameters.

POLLUTANT	Recommended Analytical Protocol	Detection (DL)[1] µg/L unless specified	Quantitation Level (QL)[2] µg/L unless specified
Alkalinity, Total	SM2320-B [3]		5 mg/L [4] as $CaCO_3$
BTEX (benzene +toluene + ethylbenzene + m,o,p xylenes)	EPA SW 846 [5] 8021/8260	1	2
Chloride	SM4500-Cl B/C/D/E and SM4110 B		Sample and limit dependent
Dissolved oxygen	SM4500-OC/OG		0.2 mg/L
Flow	Calibrated device		
Hardness, Total	SM2340B		200 as $CaCO_3$
Nitrate + Nitrite Nitrogen (as N)	SM4500-NO3- E/F/H		100
ORP	SM 2580 ORP		
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
Turbidity	SM 2130 B or EPA 180.1		

METALS

POLLUTANT	CAS [6] Number (if available)	Recommended Analytical Protocol	Detection (DL)[1] µg/L unless specified	Quantitation Level (QL) [2] µg/L unless specified
Calcium (Total)	7440-70-2	200.7		
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
Potassium (Total)	7440-09-7	200.7	300	--
Sodium (Total)	7440-23-5	200.7	30	--

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					
Acrylonitrile	3	107-13-1	3260C-SIN	1.0	2.0
Benzene	4	71-43-2	624.1	4.4	13.2
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-Dichloroethene		75-35-4	524.4	0.14	0.18
1,2-Dichloroethene			524.4	0.27	0.23
1,2-cis-Dichloroethene		156-59-2	524.4	0.083	0.21
1,2-trans-Dichloroethene		156-60-5	524.4	0.12	0.25
1,2-trans-Dichloroethylene (Ethylene dichloride)	30	156-60-5	624.1	1.6	4.8

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					
Ethylbenzene	38	100-41-4	624.1	7.2	21.6
Toluene	86	108-88-3	624.1	6.0	18.0
Vinyl chloride	88	75-01-4	624/SM6200B	1.0	2.0
Xylene (Total) [7]		[8]	524.4	0.11	0.30

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. SM = Standard Methods (for Examination of Water and Wastewater, current edition).
4. mg/L = milligrams per liter.
5. EPA SW 846 = Environmental Protection Agency, Office of Solid Waste, hazardous waste test methods.
6. CAS = Chemical Abstracts Service. A division of the American Chemical Society that produces and maintains a bibliographic database of chemcials.
7. Total xylene is the sum of the analytical results for m,p-xylene and o-xylene.
8. Each xylene has its own CAS No.; m – xylene is CAS No. 108-38-3, o – xylene is CAS No. 95-47-6, and p – xylene is CAS No. 106-42-3