

Issuance Date: December 15, 2015  
Effective Date: January 1, 2016  
Expiration Date: December 31, 2020

**National Pollutant Discharge Elimination System  
Waste Discharge Permit No. WA0003727**

State of Washington  
Department of Ecology

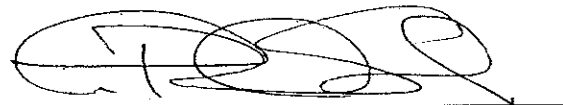
Industrial Section  
PO Box 47600  
Olympia, WA 98504-7600

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

Agrium U.S., Inc.  
Kennewick Fertilizer Operations  
Finley Facility  
227515 East Bowles Road  
Kennewick, WA 99337

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

<u>Facility Location:</u> 231610 East Game Farm Road Kennewick, Washington 99337	<u>Receiving Water:</u> Columbia River at mile 321.5
<u>Treatment Type:</u> Direct Discharge	<u>SIC Codes:</u> 5191, 2873
<u>Industry Type:</u> Ammonia storage and transfer	<u>NAICS Code:</u> 424910, 325311



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Industrial Section Manager  
Waste 2 Resources Program

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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
S1.E	Notification and Procedure for Heat Exchanger Cleaning	As necessary	
S3.A	Discharge Monitoring Report – Outfall 001	Monthly	February 15, 2016
S3.A	Discharge Monitoring Report – irrigation water	Annually	January 15, 2017
S3.F	Reporting Permit Violations	As necessary	
S3.G	Other Reporting	As necessary	
S4.A	Operations and Maintenance Manual Update	1/permit cycle	July 1, 2016
S4.A	Modification to Operations and Maintenance Manual	As necessary	
S5.C	Solid Waste Control Plan	1/permit cycle	July 1, 2016
S5.C	Solid Waste Control Plan Update	1/permit cycle	July 1, 2020
S5.C	Modification to Solid Waste Plan	As necessary	
S6	Application for Permit Renewal	1/permit cycle	July 1, 2020
S7	Non-Routine and Unanticipated Discharges	As necessary	
S8.A	Spill Control Plan Update	1/permit cycle	July 1, 2016
S8.A	Modification to Spill Control Plan	As necessary	
S9.A	Stormwater Pollution Prevention Plan Update	1/permit cycle	July 1, 2016
S9.A	Modification to Stormwater Pollution Prevention Plan	As necessary	
S10	Irrigation and Crop Management Plan	Annually	June 1, 2016
S11	Outfall Evaluation	1/permit cycle	July 1, 2020
S12	AKART Study Report	1/permit cycle	January 1, 2017
S13	Land Application Engineering Report	1/permit cycle	June 1, 2018
S14.B	CWIS Information and Compliance Report	1/permit cycle	July 1, 2020
S15.B	Groundwater Monitoring and Remediation Plan	1/permit cycle	June 1, 2016

<b>Permit Section</b>	<b>Submittal</b>	<b>Frequency</b>	<b>First Submittal Date</b>
S15.C	Updates to Groundwater Monitoring and Remediation Plan	Annually	June 1, 2017
S16.A	Plan of Study	1/permit cycle	December 31, 2017
S16.B	Effluent Mixing Report	1/permit cycle	December 31, 2018
G1	Notice of Change in Authorization	As necessary	
G4	Permit Application for Substantive Changes to the Discharge	As necessary	
G5	Engineering Report for Construction or Modification Activities	As necessary	
G7	Notice of Permit Transfer	As necessary	
G10	Duty to Provide Information	As necessary	
G13	Payment of Fees	As assessed	
G21	Compliance Schedules	As necessary	

## Special Conditions

### S1. Discharge Limits

#### S1.A. Non-Contact Cooling Water Discharges

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

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

Beginning on the effective date of this permit, the Permittee is authorized to discharge non-contact cooling water to the Columbia River at the permitted location subject to complying with the following limits:

<b>Effluent Limits: Outfall 001</b>		
<b>Latitude 46.15586 Longitude -119.00502</b>		
<b>Parameter</b>	<b>Minimum Daily <sup>a</sup></b>	<b>Maximum Daily <sup>b</sup></b>
pH	6.0 standard units (SU)	9.0 SU
a	Minimum daily effluent limit is the lowest allowable daily discharge.	
b	Maximum daily effluent limit is the highest allowable daily discharge.	

#### S1.B. Irrigation Water Discharges

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 recovered nitrate-contaminated groundwater from the Kennewick facility and the Finley facility and recycled process water from the Kennewick facility via spray irrigation to the designated land treatment sites, not to exceed the agronomic rates for nitrogen and water and any other wastewater constituents to protect background water quality.

The Permittee is authorized to apply nitrate-contaminated groundwater and recycled process water for final treatment on the following designated land treatment sites:

Fields A through E - approximately 160 acres located approximately 7 miles southeast of the city of Kennewick, Washington, at the east end of East Game Farm Road: lower left corner of NW ¼ SW ¼ Section 24 (Field A), S ½ NE ¼ SE ¼ Section 23 and north one-third of SE ¼ SE ¼ Section 23 (Field B), south two-thirds of SE ¼ SE ¼ Section 23 (Field C), NE ¼ NE ¼ Section 26 (Field D), and N ½ N ½ NW ¼ Section 25 (Field E) of Township 8 N, Range 30 E in the Willamette Meridian.

Total nitrogen and water applied to the irrigation lands must not exceed the crop requirements as determined by the Permittee's Irrigation and Crop Management Plan (see Special Condition S10, "Irrigation and Crop Management Plan").

The Permittee must operate the sprayfields 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).

#### **S1.C. Mixing Zone Authorization**

##### **Mixing Zone for Outfall 001**

The paragraphs below define the maximum boundaries of the mixing zones.

##### **Chronic Mixing Zone**

The length of the chronic mixing zone extends 328 feet downstream and 100 feet upstream of the outfall. The mixing zone extends from the bottom to the top of the water column. The concentration of pollutants at the edge of the chronic zone must meet chronic aquatic life criteria and human health criteria.

##### **Acute Mixing Zone**

The length of the acute mixing zone extends 32 feet downstream and 10 feet upstream of the outfall. The mixing zone extends from the bottom to the top of the water column. The concentration of pollutants at the edge of the chronic zone must meet chronic aquatic life criteria and human health criteria.

#### **S1.D. Sanitary System Discharges**

Sanitary wastes from the facility are treated on site and discharged to a drainfield. The treatment works was designed to manage domestic waste from a much larger labor force than has been recently employed at the plant. Significant increases in numbers of personnel at the plant are not anticipated. The design capacity of the drainfield at 8,600 gallons per day and 35 gallons per minute shall not be exceeded.

#### **S1.E. Heat Exchanger Cleaning**

The heat exchangers are cleaned approximately every 12 to 18 months. After the heat exchangers are chemically cleaned, they are double rinsed and the rinsate is pH adjusted to a range of 6.5 to 7.5 standard units. This cleaning procedure shall be regulated as follows.

The pH adjusted rinsate solution may be discharged through Outfall 001 once in a 12 month time period. The discharge shall be limited to a rate not to exceed 35 gallons per minute. The procedure proposed by the Permittee to clean the heat exchangers shall be submitted to the Department for approval 30 days prior to initiating the procedure.



## S2. Monitoring Requirements

### S2.A. Non-Contact Cooling Water Discharge Monitoring Schedule

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

Parameter	Units & Speciation	Minimum Sampling Frequency <sup>a</sup>	Sample Type <sup>b</sup>
<b>(1) Influent</b>			
Ammonia as N	milligrams/liter (mg/L)	Monthly	Grab
Flow <sup>c</sup>	million gallons/day	1/Day – recorded but not reported	Metered
<b>(2) Non-contact Cooling Water Discharge</b>			
Ammonia as N <sup>d</sup>	mg/L	Monthly	Grab
Temperature <sup>e</sup>	degrees Fahrenheit	Monthly	Grab
pH <sup>f</sup>	standard units	Monthly	Metered
Alkalinity	mg/L as CaCO <sub>3</sub>	4/Permit cycle	Grab
<b>(3) Permit Renewal Application Requirements – Non-contact Cooling Water Discharge</b>			
Other parameters required by the permit renewal forms must also be sampled and reported in the permit renewal application.			
<b>(4) Outfall Evaluation</b>			
As specified in Special Condition S11.			
<b>(5) Cooling Water Intake Structure Report</b>			
As specified in Special Condition S14.			
a	<p>Monthly means once per calendar month.</p> <p>1/Day – recorded but not reported means flow is continuously monitored but only the average and maximum monthly flow values are reported.</p> <p>4/Permit cycle means once per month in January 2020, April 2020, July 2020, and October 2020. Report results with monthly discharge monitoring report (DMR).</p>		
b	<p>Grab means an individual sample collected over a fifteen (15) minute, or less, period.</p> <p>Metered means a metered recording device.</p>		
c	<p>Influent flow is monitored instead of the effluent discharge. Partial pipe flow does not allow for accurate metering at Outfall 001.</p> <p>As allowed in Special Condition S3.E, the Permittee is not required to include the results of the continuous flow meter monitoring on the influent water in the calculation and reporting of the data submitted in the Permittee's DMR. The Permittee must report the average and maximum monthly flow values.</p>		

Parameter	Units & Speciation	Minimum Sampling Frequency <sup>a</sup>	Sample Type <sup>b</sup>
d	If the ammonia as N is detected in the effluent and the result is greater than 0.1 mg/L of the influent concentration, the Permittee must sample for ammonia as N in the effluent and influent again within seven days of receiving the sample results from the laboratory. If ammonia as N is detected in the following effluent sample and the result is greater than 0.1 mg/L of the influent concentration, the Permittee must investigate the cause of the ammonia as N detection in the discharge. The Permittee must take action to reduce the ammonia as N in the discharge. The Permittee must report in the DMR a summary of the investigation findings and the actions taken to reduce the ammonia as N in the discharge.		
e	Temperature grab sampling must occur when the effluent is at or near its daily maximum temperature, which usually occurs in the late afternoon. If the Permittee monitors temperature more frequently than once a month, the individual temperature results must be reported in the DMR.		
f	If the Permittee monitors pH more frequently than once a month, the individual pH results must be reported in the DMR.  As allowed in Special Condition S3.E, the Permittee is not required to include results of continuous pH meter monitoring on the non-contact cooling water discharge in the calculation and reporting of the data submitted in the Permittee's DMR.		

**S2.B. Irrigation Water Discharge Monitoring Schedule**

The Permittee must sample at locations that best represent the discharge pumped and applied to the sprayfields. The sampling points for the irrigation wastewater are located at: the Kennewick facility groundwater collection line (near the combined flow filter), the Finley facility groundwater collection line (north of the Finley facility), and various locations for recycled process water. The Permittee must report results required by this section in an annual DMR and the annual Irrigation and Crop Management Plan (see Special Condition S10, "Irrigation and Crop Management Plan").

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

Parameter	Units & Speciation	Minimum Sampling Frequency <sup>a</sup>	Sample Type
<b>(1) The Kennewick Facility Groundwater Collection Line (near the combined flow filter)</b>			
Flow	million gallons/day (MGD)	2/Month	Calculated <sup>b</sup>
Nitrate/nitrite as N	milligrams/liter (mg/L)	2/Month	Grab <sup>c</sup>
Nitrate/nitrite as N	pounds/day (lbs/day)	2/Month	Calculated <sup>d</sup>

Parameter	Units & Speciation	Minimum Sampling Frequency <sup>a</sup>	Sample Type
<b>(2) The Finley Facility Groundwater Collection Line (north of the Finley facility)</b>			
Flow	MGD	2/Month	Calculated <sup>b</sup>
Nitrate/nitrite as N	mg/L	2/Month	Grab <sup>c</sup>
Nitrate/nitrite as N	lbs/day	2/Month	Calculated <sup>d</sup>
<b>(3) Recycled Process Water from the Kennewick facility</b>			
Flow	MGD	Once per defined event	Calculated <sup>e</sup>
Nitrate/nitrite as N	mg/L	Once per defined event	Grab <sup>c</sup>
Nitrate/nitrite as N	lbs/day	Once per defined event	Calculated <sup>d</sup>
<b>(4) Permit Renewal Application Requirements – Irrigation Discharge</b>			
The Permittee must submit the State Application – Industrial Wastewater to Groundwater (Form 040-179, available at <a href="http://www.ecy.wa.gov/programs/wq/permits/forms.html#state_forms">http://www.ecy.wa.gov/programs/wq/permits/forms.html#state_forms</a> ) for the permit renewal application requirements for the irrigation discharge in this permit.			
a	2/Month means twice per calendar month where samples are taken in different weeks during the months the irrigation system is in use. Flow must be reported for the days nitrate/nitrite as N is sampled. Once per defined event means anytime recycled process water is used to irrigate the sprayfields.		
b	Calculated using the following formula: Amount of water since last meter reading (in million gallons) / Number of days since last meter reading (in days) = average MGD.		
c	Grab means an individual sample collected over a fifteen (15) minute, or less, period.		
d	Calculated using the following formula: Concentration (in mg/L) X Average flow (in MGD) X Conversion Factor (8.34) = average lbs/day.		
e	Calculated based on tank geometry and meter readings for a specific amount of recycled process water.		

### S2.C. Groundwater Monitoring Schedule

The Permittee must monitor the groundwater at monitoring wells F-6, F-7, F-9, F-20, F-23, F-27, F-28, and F-29 beginning in 2016 in accordance with the following schedule and the requirements specified in **Appendix A**. The Permittee must report results required by this section in the annual Irrigation and Crop Management Plan (see Special Condition S10, “Irrigation and Crop Management Plan”) and with the AKART engineering report as required by Special Condition S13.

Parameter	Units & Speciation	Minimum Sampling Frequency <sup>a</sup>	Sample Type <sup>b</sup>
Nitrate/nitrite as N	milligrams/liter (mg/L)	Twice per year	Grab
pH	standard units	Once in the first two years	Grab
Barium (Total)	mg/L	Once in the first two years	Grab
Cadmium (Total)	mg/L	Once in the first two years	Grab
Chromium (Total)	mg/L	Once in the first two years	Grab
Copper (Total)	mg/L	Once in the first two years	Grab
Iron (Total)	mg/L	Once in the first two years	Grab
Lead (Total)	mg/L	Once in the first two years	Grab
Magnesium (Total)	mg/L	Once in the first two years	Grab
Mercury (Total)	mg/L	Once in the first two years	Grab
Selenium (Total)	mg/L	Once in the first two years	Grab
Silver (Total)	mg/L	Once in the first two years	Grab
Zinc (Total)	mg/L	Once in the first two years	Grab
Chloride	mg/L	Once in the first two years	Grab
Fluoride	mg/L	Once in the first two years	Grab
Sulfate	mg/L	Once in the first two years	Grab
Total Dissolved Solids	mg/L	Once in the first two years	Grab
Measured Depth to Groundwater	feet (nearest 0.01)	Once in the first two years	Measurement
a	Twice per year means collecting samples at a time that best represents groundwater conditions at the beginning and at the end of the crop-growing season. Once in the first two years means collecting samples in 2016 or 2017.		
b	Grab means an individual sample collected over a fifteen (15) minute, or less, period. Measurement means the parameter is measured in the field or on site at the point of discharge with a field kit, ruler, etc.		

**S2.D. Soil Monitoring Schedule**

The Permittee must monitor soil on each field A through E as follows:

1. At a minimum, monitor once in 2016 or 2017. The soil monitoring must be sufficient to calculate balances for nitrogen and water as required by Special Condition S13.
2. Locate sampling sites so they represent each field.
3. Report approximate sampling locations.

4. Submit results and information with the AKART engineering report as required by Special Condition S13.
5. Composite a minimum of four (4) core samples for each field at each of the two depth increments as defined in the table below.

The Permittee must monitor the soils in each of the fields according to the following schedule:

Parameter	Units & Speciation	Sample Point <sup>a</sup>	Soil Composite
<b>(1) Shallow (1 to 2 feet) soil composite</b>			
Nitrate/nitrite as N	milligram/kilogram (mg/Kg)	Each field	Four core samples
pH	standard units (SU)	Each field	Four core samples
Cation Exchange Capacity	milliequivalents/100 grams of soil (meq/100g)	Each field	Four core samples
Sodium (total)	meq/100g	Each field	Four core samples
Moisture Content	percent (%)	Each field	Four core samples
<b>(2) Deep (3 to 5 feet) soil composite</b>			
Nitrate/nitrite as N	mg/Kg	Each field	Four core samples
pH	SU	Each field	Four core samples
Cation Exchange Capacity	meq/100g	Each field	Four core samples
Sodium (total)	meq/100g	Each field	Four core samples
Moisture Content	%	Each field	Four core samples
a	Each field means fields A through E as defined in Special Condition S1.B. Samples must be representative of the entire field area and include soil samples from each sprayfield.		

### S2.E. Crop Monitoring Schedule

The Permittee must:

1. At a minimum, monitor the crops for the parameters listed below on each field A through E once in 2016 or 2017 for one harvest during the year in which sampling occurs. The crop monitoring must be sufficient to calculate balances for nitrogen and water as required by Special Condition S13.
2. Comprise composite samples of at least ten (10) random samples collected from each field. Samples must be representative of the entire field area and include crop samples from each sprayfield.
3. Submit results with the AKART engineering report as required by Special Condition S13.

Parameter	Units, Speciation, & Measurement Basis
Crop production	dry tons/acre
Moisture content	percent (%)
Crude Protein	%
Total Kjeldahl Nitrogen	%
Nitrate/nitrite nitrogen	milligram/kilogram (mg/Kg) as N (dry weight)
Phosphorus	%
Solids (total fixed) (ash weight)	mg/Kg (dry weight)
Sodium	mg/Kg (dry weight)
Magnesium	mg/Kg (dry weight)
Potassium	mg/Kg (dry weight)
Calcium	mg/Kg (dry weight)

**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.

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

**S2.G. 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 and the manufacturer’s recommendation for that type of device.
3. Calibrate continuous monitoring instruments weekly unless it can demonstrate a longer period is sufficient based on monitoring records. The Permittee:
  - a. May calibrate apparatus for continuous monitoring of dissolved oxygen by air calibration.

- b. Must calibrate continuous 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.
- c. Must calibrate continuous chlorine measurement instruments using a grab sample analyzed in the laboratory within 15 minutes of sampling.
4. Calibrate micro-recording temperature devices, known as thermistors, using protocols from Ecology's Quality Assurance Project Plan Development Tool (*Standard Operating Procedures for Continuous Temperature Monitoring of Fresh Water Rivers and Streams Version 1.0 10/26/2011*). This document is available online at:  
[http://www.ecy.wa.gov/programs/eap/qa/docs/ECY\\_EAP\\_SOP\\_Cont\\_Temp\\_Mon\\_Ambient\\_v1\\_0EAP080.pdf](http://www.ecy.wa.gov/programs/eap/qa/docs/ECY_EAP_SOP_Cont_Temp_Mon_Ambient_v1_0EAP080.pdf)  
Calibration as specified in this document is not required if the Permittee uses recording devices certified by the manufacturer.
5. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
6. Establish a calibration frequency for each device or instrument in the Operations and Maintenance manual that conforms to the frequency recommended by the manufacturer.
7. 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. The Permittee must obtain accreditation for conductivity and pH if it must receive accreditation or registration for other parameters.

#### **S2.I. Request for Reduction in Monitoring**

The Permittee may request a reduction of the sampling frequency after two (2) years 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 DMR form provided by Ecology within the Water Quality Permitting Portal. Include data for each of the parameters tabulated in Special Condition S2 and as required by the form. Report a value for each day sampling occurred (unless specifically exempted in the permit) and for the summary values (when applicable) included on the electronic form.  
To find out more information and to sign up for the Water Quality Permitting Portal go to: <http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html>.
2. Enter the “No Discharge” reporting code for an entire DMR, for a specific monitoring point, or for a specific parameter as appropriate, if the Permittee did not discharge wastewater or a specific pollutant during a given monitoring period.
3. Report single analytical values below detection as “less than the detection level (DL)” by entering < followed by the numeric value of the detection level (e.g. < 2.0) on the DMR. If the method used did not meet the minimum DL and quantitation level (QL) identified in the permit, report the actual QL and DL in the comments or in the location provided.
4. Report the test method used for analysis in the comments if the laboratory used an alternative method not specified in the permit and as allowed in **Appendix A**.
5. Calculate average values and calculated total values (unless otherwise specified in the permit) using:
  - a. The reported numeric value for all parameters measured between the agency-required detection value and the agency-required quantitation value.
  - b. One-half the detection value (for values reported below detection) if the lab detected the parameter in another sample from the same monitoring point for the reporting period.
  - c. Zero (for values reported below detection) if the lab did not detect the parameter in another sample for the reporting period.
6. Report single-sample grouped parameters (for example: priority pollutants, PAHs, pulp and paper chlorophenolics, TTOs) on the WQWebDMR form and



include: sample date, concentration detected, detection limit (DL) (as necessary), and laboratory quantitation level (QL) (as necessary).

The Permittee must also submit an electronic copy of the laboratory report as an attachment using WQWebDMR. The contract laboratory reports must also include information on the chain of custody, QA/QC results, and documentation of accreditation for the parameter.

7. Ensure that DMRs are electronically submitted no later than the dates specified below, unless otherwise specified in this permit.
8. Submit DMRs for parameters with the monitoring periods specified in S2 (monthly, quarterly, annual, etc.) at the reporting schedule identified below. The Permittee must:
  - a. Submit **monthly** DMRs by the 15<sup>th</sup> day of the following month.
  - b. Submit **annual** DMRs by January 15<sup>th</sup> for the previous calendar year. The annual sampling period is the calendar year.
  - c. Submit permit renewal application monitoring data in WQWebDMR as required in Special Condition S2 by July 1, 2020.

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

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

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

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

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

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

### **S3.D. Recording of Results**

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

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

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

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

**S3.F. Reporting Permit Violations**

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

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

**a. Immediate Reporting**

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

- Collection system overflows discharging to a water body used as a source of drinking water.
- Plant bypasses discharging to a waterbody used as a source of drinking water.

Ecology Central Regional Office	509-575-2490
Department of Health, Drinking	800-521-0323 (business hours)
Water Program	877-481-4901 (after business hours)

The Permittee must also notify the Ecology Industrial Section permit manager by telephone for any of the above situations. Outside of normal working hours, a voice mail notification to the Industrial Section permit manager or their designated backup will meet this requirement.

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

The Permittee must report the following occurrences of noncompliance by telephone, to Ecology at the telephone numbers listed above, within 24 hours

from the time the Permittee becomes aware of any of the following circumstances:

1. Any noncompliance that may endanger health or the environment, unless previously reported under immediate reporting requirements.
2. Any unanticipated bypass that causes an exceedance of any effluent limit in the permit (see Special Condition S4.B, "Bypass Procedures").
3. Any upset that causes an exceedance of an effluent limit in the permit (see General Condition G15, "Upset").
4. Any violation of a maximum daily or instantaneous maximum discharge limit for any of the pollutants in Special Condition 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. The period of noncompliance, including exact dates and times.
3. The estimated time the Permittee expects the noncompliance to continue if not yet corrected.
4. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
5. If the noncompliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow.

**d. Waiver of Written Reports**

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

**e. All Other Permit Violation Reporting**

The Permittee must report all permit violations, which do not require immediate or within 24 hours reporting, when it submits monitoring reports for S3.A ("Discharge Monitoring Reports"). 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 Finley facility or Kennewick facility and make it available upon request to Ecology inspectors.

## **S4. Operation and Maintenance**

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

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

### **S4.A. Operations and Maintenance Manual**

The Permittee may maintain one operations and maintenance (O&M) manual for all facilities in the Kennewick Fertilizer Operations but must address each facility separately.

#### **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 by July 1, 2016.

2. Submit to Ecology for review substantial changes or updates to the O&M Manual whenever it incorporates them into the manual.
3. Keep the approved O&M Manual at the permitted facility.
4. Follow the instructions and procedures of this manual.

**b. O&M Manual Components**

In addition to the requirements of WAC 173-240-150, the O&M Manual must be consistent with the guidance in Table G1-3 in the *Criteria for Sewage Works Design* (Orange Book) 2008. The O&M Manual must include:

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

**S4.B. Bypass Procedures**

A bypass is the intentional diversion of waste streams from any portion of a treatment facility. Diversion of uncommingled stormwater is not considered a bypass. The Permittee may bypass for essential maintenance to ensure efficient operation provided it does not cause violations of limits or other conditions of this permit, or adversely impact public health. The Permittee is not required to notify Ecology for bypasses for essential maintenance that meet the above conditions. For any other type of anticipated bypass, the Permittee must submit prior notice, if possible, at least thirty (30) days before the date of the anticipated bypass.

**a. Prohibited Bypasses**

This permit prohibits all bypasses except for bypasses for essential maintenance as defined above and for those bypasses determined to meet the requirements of Special Condition S4.B.b. Ecology may take enforcement

action against a Permittee for a prohibited bypass, unless all three of the following circumstances apply:

1. The 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. Severe property damage does not mean economic loss caused by delays in production.
2. No feasible alternatives to the bypass exist, such as:
  - i. The use of auxiliary treatment facilities.
  - ii. Retention of untreated wastes.
  - iii. Stopping production.
  - iv. 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 which occurred during normal periods of equipment downtime or preventative maintenance.
  - v. Transport of untreated wastes to another treatment facility.
3. The Permittee has properly notified Ecology of the bypass as required in Special Condition S3.F or Special Condition S4.B of this permit.

**b. Anticipated Bypasses for Non-essential Maintenance and Bypasses which may Cause Permit Violations**

1. If a bypass for non-essential maintenance or a bypass which may cause violations of limits or other conditions of this permit, or adversely impact public health is anticipated, the Permittee must notify Ecology, if possible, 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.
2. 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 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.
  3. Ecology will determine if the Permittee has met the conditions of Special Condition S4.B.b 1 and 2 and consider the following prior to issuing a determination letter, an administrative order, or a permit modification as appropriate for an anticipated 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.

Ecology will give the public an opportunity to comment on bypass incidents of significant duration, to the extent feasible.

#### **S4.C. Irrigation Land Application Best Management Practices**

The Permittee must:

1. Operate the sprayfield system to protect the existing and future beneficial uses of the groundwater, and not cause a violation of the groundwater standards.
2. Use recognized good practices, and all available and reasonable procedures to control odors from the land application system.
3. Implement measures to reduce odors to a reasonable minimum when notified by Ecology.
4. 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.
5. Maintain a viable and healthy cover crop on all fields that receive wastewater.
  6. 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 its control.
  7. Not allow windy conditions to transport any amount of wastewater away from the land application sprayfields.
  8. Meet the leaching requirement using precipitation and/or fresh water whenever leaching is required to control soil salinity.
  9. Perform regular inspections of the irrigation system and recovery wells to ensure proper operation of the land application system.
  10. Immediately inform Ecology in writing of any proposed changes to existing irrigation agreements.
  11. Not apply wastewater during the months of November through March when conditions do not allow for normal land application operations.

## **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 may maintain one solid waste control plan for all facilities in the Kennewick Fertilizer Operations but must address each facility separately.

#### **a. Submittal Requirements**

The Permittee must:



1. Submit a solid waste control plan to Ecology by July 1, 2016.
2. Submit to Ecology any proposed revision or modification of the solid waste control plan for review and approval at least 30 days prior to implementation.
3. Comply with the plan and any modifications.
4. Submit an update of the solid waste control plan by July 1, 2020.

**b. Solid Waste Control Plan Content**

The solid waste control plan must:

1. Follow Ecology's guidance for preparing a solid waste control plan ([www.ecy.wa.gov/biblio/0710024.html](http://www.ecy.wa.gov/biblio/0710024.html)) and address all solid wastes generated by the Permittee.
2. Include at a minimum a description, source, generation rate, and disposal methods of these solid wastes.
3. Not conflict with local or state solid waste regulations.

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

The Permittee must submit an application for renewal of this permit by July 1, 2020.

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

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

1. Beginning on the effective date of this permit, the Permittee is authorized to discharge non-routine wastewater 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 Permittee must also analyze for: ammonia as N. All discharges must comply with the effluent limits as established in Special Condition S1, 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 may maintain one spill control plan for all facilities in the Kennewick Fertilizer Operations but must address each facility separately.

The Permittee must:

1. Submit an update to the existing spill control plan to Ecology by July 1, 2016.
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.

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

The spill control plan must include the following:

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

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

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

The Permittee must develop and follow the stormwater pollution prevention plan (SWPPP) for the permitted facility. The SWPPP must specify the Standard Operating Procedures (SOPs), Best Management Practices (BMPs), and work practices necessary to:

- Provide all known, available, and reasonable methods of prevention, control, and treatment (AKART) of stormwater pollution.
- Ensure that stormwater discharges from the site do not cause or contribute to a violation of the Water Quality Standards.
- Comply with applicable federal technology-based treatment requirements under 40 CFR 125.3.
- Be consistent with the *Stormwater Management Manual for Eastern Washington* (2004 edition) or later editions or provide an equivalent level of pollution prevention approved by Ecology. The SWPPP must document that BMPs selected are demonstrably equivalent to practices contained in stormwater technical manuals approved by Ecology.

### **S9.A. SWPPP Submittals**

The Permittee may maintain one SWPPP for all facilities in the Kennewick Fertilizer Operations but must address each facility separately.

The Permittee must:

1. Review, and if necessary update, the SWPPP in accordance with the *Guidance Manual for Preparing/Updating a Stormwater Pollution Prevention Plan for Industrial Facilities* (Ecology Publication No. 04-10-030). The Permittee must submit the SWPPP to Ecology for review by July 1, 2016.
2. Evaluate the SWPPP at least annually and update the plan as needed.
3. Submit to Ecology for review substantial changes or modifications to the SWPPP whenever the Permittee incorporates them into the manual.
4. Keep the approved SWPPP at the permitted facility.
5. Follow the plan and any modifications.

### **S9.B. SWPPP Evaluation**

Every year, the Permittee must evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate and properly implemented in accordance with the terms of the permit or whether additional controls are needed. A record must be maintained summarizing the results of the SWPPP inspections

and must include a certification, in accordance with General Condition G1.4 of this permit, that the facility is in compliance with the plan and in compliance with this permit. The record must identify any incidents of noncompliance.

#### **S9.C. SWPPP Modifications**

The Permittee must modify the SWPPP if the Permittee or Ecology determine during inspections or investigations that existing BMPs are, or would be, ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The Permittee must modify the plan as necessary to include additional or modified BMPs designed to correct problems identified.

The Permittee must modify the SWPPP whenever there is a change in design, construction, operation or maintenance at the facility that significantly changes the nature of pollutants discharged in stormwater from the facility or significantly increases the quantity of pollutants discharged, or which causes the SWPPP to be less effective in controlling pollutants.

Whenever the description of potential pollutant sources or the pollution prevention measures and controls identified in the SWPPP are inadequate, the SWPPP must be modified, as appropriate, within thirty (60) days of such determination. The proposed modifications to the SWPPP must be submitted to Ecology at least thirty (30) days in advance of implementing the proposed changes in the plan unless Ecology approves immediate implementation. The Permittee must provide for implementation of any modifications to the SWPPP in a timely manner.

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

#### **S9.D. SWPPP Inspections**

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

The Permittee must conduct the wet season inspection during a rainfall event. The inspection must include observations of the presence of any floating materials, suspended solids, oil and grease, discolorations, turbidity, odor, etc. in stormwater runoff throughout the facility that could contribute to a discharge off-site.

The dry season inspection must determine the presence of unpermitted non-stormwater discharges such as sanitary wastewater, non-contact cooling water, process wastewater, and drainage from to the stormwater drainage system. If an unpermitted, non-stormwater discharge is discovered, the Permittee must immediately notify Ecology.

Inspections must be conducted by personnel who are knowledgeable and trained in the application of BMPs and stormwater pollution prevention activities at the

facility. Personnel must be trained in the requirements of the SWPPP and be able to verify that: the description of potential pollutant sources required under this permit is accurate, the site map required in the SWPPP has been updated or otherwise modified to reflect current conditions, and the controls to reduce pollutants in stormwater runoff from the facility are being implemented and are adequate.

## **S10. Irrigation and Crop Management Plan**

The Permittee must submit an Irrigation and Crop Management Plan annually by June 1<sup>st</sup> of each year beginning in 2016 for Ecology review and approval. 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 Publication No. 93-36).

The Irrigation and Crop Management Plan must include the agronomic rates for all crops or vegetation to be grown. The Permittee must include any assumptions, literature references, and calculations used to determine the agronomic rates. The term agronomic rate is defined in the *Implementation Guidance for the Ground Water Quality Standards* (Ecology Publication No. 96-02).

The Irrigation and Crop Management Plan must include annual updates to the groundwater monitoring and remediation plan beginning in 2017 as required by Special Condition S15.

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.

The Permittee must report the latitude and longitude in decimal format (nearest to the 0.00001 degree; NAD83/WGS84 datum) of each sampling point for the irrigation water in the Irrigation and Crop Management Plan.

### **S10.A. Annual Summary of Land Application Operations for Previous Year**

The annual summary must include:

1. For each crop grown, the total acreage and quantity harvested.
2. A comparison of the actual total net nitrogen and water monitored as required by Special Condition S2.B to the estimated values presented in the previous year's Irrigation and Crop Management Plan.
3. A summary of groundwater monitoring test results and an evaluation of whether the current operation of the land treatment site is protecting groundwater quality.
4. A detailed list of changes or improvements in the management of the land treatments practices to comply with agronomic rates.

### **S10.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 nitrate-contaminated groundwater and supplemental irrigation water application (including harvest and non-harvest periods).
  - b. Recommended rest cycles for nitrate-contaminated groundwater application where organic or hydraulic loading is of concern.
3. The estimated annual total net nitrogen and water load based on the estimated nitrate-contaminated groundwater discharge, supplemental irrigation water application, fertilizer application, and planned crop rotation.

### **S11. Outfall Evaluation**

The Permittee must inspect the submerged portion of the outfall line and diffuser to document its integrity and continued function. If conditions allow for a photographic verification, the Permittee must include such verification in the report. The Permittee must perform this evaluation in the 4<sup>th</sup> or 5<sup>th</sup> year of the permit cycle. By July 1, 2020, the Permittee must submit the inspection report to Ecology through the Water Quality Permitting Portal – Permit Submittals application. The Permittee must submit hard-copies of any video files to Ecology as required by Special Condition S3.B. The Portal does not support submittal of video files. The Permittee may prepare one outfall evaluation report for all facilities in the Kennewick Fertilizer Operations but must address each facility separately.

The inspector must at minimum:

1. Assess the physical condition of the outfall pipe, diffuser, and associated couplings.
2. Determine the extent of sediment accumulation in the vicinity of the diffuser.
3. Ensure diffuser ports are free of obstructions and are allowing uniform flow.
4. Confirm physical location (latitude/longitude) and depth (at 7Q10) of the diffuser section of the outfall.

## **S12. AKART Study**

The Permittee must prepare and submit an AKART Study report to Ecology for review and approval by January 1, 2017.

The report must describe how the Permittee demonstrates compliance with the AKART standard for the non-contact cooling water discharges. The report must include:

1. An evaluation of existing best management practices (BMPs) to determine if existing BMPs are adequate to keep pollutants and non-contact cooling water separate.
2. Recommendations and implementation schedules for changes to existing BMPs if existing BMPs are not adequate to keep pollutants and non-contact cooling water separate.
3. Recommendations and implementation schedules for new BMPs if changes to existing BMPs are not adequate to keep pollutants and non-contact cooling water separate.

The Permittee may prepare one AKART Study report that addresses non-contact cooling water discharges to the Columbia River for all facilities in the Kennewick Fertilizer Operations but must address each facility separately.

## **S13. Land Application Engineering Report**

The Permittee must prepare and submit an AKART engineering report for land application discharges to Ecology for review and approval by June 1, 2018.

The report must describe how the Permittee demonstrates compliance with the AKART standard for the land application discharges to the sprayfields including, but not limited to, demonstrating that the land application system adequately treats the nitrate-contaminated groundwater and recycled process water with minimal leaching of contaminants below the root zone. Groundwater, soil, and crop monitoring must be sufficient to calculate balances for nitrogen and water.

The AKART engineering report must include the following:

1. Calculated balances for nitrogen. The calculations must include crop consumptive use, nitrate-contaminated groundwater loadings of nitrogen, contributions from commercial fertilizers applied, and supplemental water.
2. 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 A through E.

3. A summary of irrigation water results from 2016 and 2017 as required by Special Condition S2.B.
4. A summary of groundwater monitoring test results from 2016 and 2017 as required by Special Condition S2.C and an evaluation of whether the current operation of the land treatment site is protecting groundwater quality.
5. A summary and evaluation of soil testing results as required by Special Condition S2.D.
6. A summary and evaluation of crop testing results as required by Special Condition S2.E.
7. A detailed list of changes or improvements in the management of the land treatments practices to comply with agronomic rates and leaching requirements.

The Permittee must include in the report the design, operation, and maintenance of the land treatment system, including the irrigation system.

The Permittee must include in the report any assumptions, data, literature references, and calculations used to determine if the land application discharges meet AKART.

The report must contain any appropriate requirements as described in *Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems* (Ecology Publication No. 93-36).

## **S14. Cooling Water Intake Structure (CWIS)**

### **S14.A. Operations and Maintenance**

The Permittee must, at all time, properly operate and maintain the CWIS including any existing technologies used to minimize impingement and entrainment.

The Permittee must report any significant impingement or entrainment events to Ecology within 24 hours consistent with the requirements in Special Condition S3.F.

### **S14.B. Information and Compliance Report**

The Permittee must prepare an information and compliance report for the CWIS and submit it to Ecology for review and approval by July 1, 2020. The Permittee may prepare one CWIS information and compliance report for all facilities in the Kennewick Fertilizer Operations but must address each facility separately.

The information and compliance report must address the submittal requirements of 40 CFR 122.21(r)(2) and (3) and applicable provisions of paragraphs (4), (5), (6), (7), and (8).

### **S14.C. Endangered Species Act**

Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.



## **S15. Groundwater Monitoring and Remediation**

### **S15.A. Spills and Releases**

The Permittee must notify Ecology of all spills and releases from the facility that may impact groundwater. The Permittee must call the Ecology Central Regional Office Spills number (509-575-2490) and the Ecology Industrial Section permit manager within three working days of the spill or release. Outside of normal working hours, a voice mail notification to the Industrial Section permit manager or their designated backup will meet the Industrial Section notification requirement.

The Permittee must submit a report to the Industrial Section permit manager within 90 days of the spill or release that identifies the source and cause of the spill or release, the actions taken to respond to the spill or release, the actions taken to clean up the spill or release, and the corrective actions that have been taken or will be taken to prevent a similar spill or release from occurring in the future. If corrective actions are yet to be implemented, the Permittee must identify the timeframe when these actions will be initiated and completed.

The Permittee must determine if the existing groundwater monitoring well network is adequate to monitor the spill or release. If the existing groundwater monitoring well network is not adequate, the Permittee must propose locating a new groundwater monitoring well(s) in the report to Ecology and the timeline for installing this well(s). The Permittee must increase groundwater monitoring to quarterly for the 12 months following the spill or release at the existing and/or new wells downgradient of the source of the spill or release.

### **S15.B. Groundwater Monitoring and Remediation Plan**

The Permittee must prepare and follow an approved groundwater monitoring and remediation plan and annual updates to the plan to evaluate and manage nitrate-contaminated groundwater throughout the facility.

The groundwater monitoring and remediation plan must be submitted to Ecology for review and approval by June 1, 2016. The Permittee must include, at a minimum, the following information in the groundwater monitoring and remediation plan:

1. The groundwater wells used for remediation and whether they are used for monitoring, recovery, or both.
2. The frequency of groundwater monitoring for each groundwater well at or near the facility.
3. The parameters to be measured or sampled at each groundwater well at or near the facility.
4. A discussion on how the Permittee will evaluate whether existing recovery wells are located to adequately recover nitrate-contaminated groundwater.

5. The specific actions the Permittee will take to reduce the nitrate contamination in the groundwater, identified through groundwater monitoring, to a level at or below 10 milligrams/liter of nitrate as N.
6. A discussion on how the Permittee selects the pumping priority for recovery wells based on groundwater monitoring.
7. The latitude and longitude in decimal format (nearest to the 0.00001 degree; NAD83/WGS84 datum) of all monitoring and recovery wells.

The Permittee may prepare one groundwater monitoring and remediation plan for the Kennewick and Finley facilities but must address each facility separately.

#### **S15.C. Groundwater Monitoring and Remediation Annual Update**

Groundwater monitoring results and remediation evaluations must be submitted annually beginning in 2017 as a section in the Irrigation and Crop Management Plan required by Special Condition S10.

The annual update must include:

1. A discussion of any spills or releases that occurred in the previous year.
2. Identify any existing monitoring wells that were converted to recovery wells or any newly installed recovery wells.
3. All groundwater monitoring results obtained since June 1<sup>st</sup> of the previous year.
4. Maps showing:
  - a. Groundwater wells locations with an aerial view site layout.
  - b. Groundwater elevation contours.
  - c. Nitrate/nitrite as N results for each well sampled.
  - d. Nitrate/nitrite as N concentration contours.
  - e. Groundwater flow paths under pumping conditions for all recovery wells.
5. Groundwater monitoring results in tabular form showing:
  - a. Well number.
  - b. Date measured.
  - c. Groundwater elevation.
  - d. Data for each parameter analyzed.
6. An evaluation of whether existing recovery wells are located to adequately recover nitrate-contaminated groundwater based on the monitoring results obtained during the previous year. The evaluation must include all rationale and assumptions made.

7. A proposal for a new recovery well(s). If the evaluation in item 6 above shows that existing recovery wells are not located to adequately recover nitrate-contaminated groundwater, the Permittee must identify which existing monitoring wells(s) will be converted to a recovery well(s) or identify where the facility proposes to install a new recovery well(s) that will adequately recover nitrate-contaminated groundwater.
8. Any proposed changes to the approved groundwater monitoring and remediation plan. The Permittee must receive approval by Ecology before implementing proposed changes to the plan.

## **S16. Mixing Study**

### **S16.A. General Requirements**

The Permittee must:

1. Submit a Plan of Study to Ecology for review by December 31, 2017, prior to initiation of the effluent mixing study.
2. Determine the degree of mixing during critical conditions, as defined in WAC 173-201A-020 Definitions - "Critical Condition," or as close to critical conditions as reasonably possible.
3. Use the Guidance for Conducting Mixing Zone Analyses (Ecology, 2008) to establish the critical condition scenarios.
4. Measure the dilution ratio in the field with dye using study protocols specified in the Guidance, Section 5.0 "Conducting a Dye Study," as well as other protocols listed in Subpart C "Protocols." The Permittee may use mixing models as an acceptable alternative or adjunct to a dye study if:
  - a. The critical ambient conditions necessary for model input are known or will be established with field studies.
  - b. If the diffuser is visually inspected for integrity or has been recently tested for performance by the use of tracers.
5. Consult the Guidance mentioned above when choosing the appropriate model.
6. Use models if critical condition scenarios that need to be examined are quite different from the set of conditions present during the dye study.
7. Must conduct validation/calibration in accordance with the Guidance mentioned above, in particular, Subsection 5.2 "Quantify Dilution" if it determines it needs to validate (and possibly calibrate) a model.
8. Apply the resultant dilution ratios for acute and chronic boundaries in accordance with directions found in Ecology's *Permit Writer's Manual* (revised 2015), Chapter 6 and Appendix C. You can obtain a copy of the manual at: <http://www.ecy.wa.gov/pubs/92109.pdf>.

### **S16.B. Reporting Requirements**

The Permittee must:

1. Include the results of the effluent mixing study in the Effluent Mixing Report and submit it to Ecology for approval by December 31, 2018.
2. Submit to Ecology any available information it has regarding background physical conditions or background concentrations of chemical substances in the receiving water (for which there are criteria in chapter 173-201A WAC) as part of the Effluent Mixing Report.
3. Locate the outfall and mixing zone boundaries with GPS coordinates and identify the accuracy of station locations in the report.

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

### **S16.C. Protocols**

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

1. Akar, P.J. and G.H. Jirka, Cormix2: An Expert System for Hydrodynamic Mixing Zone Analysis of Conventional and Toxic Multiport Diffuser Discharges, USEPA Environmental Research Laboratory, Athens, GA, Draft, July 1990.
2. Baumgartner, D.J., W.E. Frick, P.J.W. Roberts, and C.A. Bodeen, *Dilution Models for Effluent Discharges*, USEPA, Pacific Ecosystems Branch, Newport, OR, 1993.
3. Doneker, R.L. and G.H. Jirka, Cormix1: An Expert System for Hydrodynamic Mixing Zone Analysis of Conventional and Toxic Submerged Single Port Discharges, USEPA, Environmental Research Laboratory, Athens, GA, EPA/600-3-90/012, 1990.
4. Ecology, *Permit Writer's Manual*, Water Quality Program, Department of Ecology, Olympia, WA 98504, revised January 2015, including most current addenda.
5. Ecology, *Guidance for Conducting Mixing Zone Analyses, Permit Writer's Manual*, (Appendix C), Water Quality Program, Department of Ecology, Olympia, WA 98504, revised January 2015.
6. Kilpatrick, F.A., and E.D. Cobb, *Measurement of Discharge Using Tracers, Chapter A16, Techniques of Water-Resources Investigations of the USGS*,

Book 3, Application of Hydraulics, USGS, U.S. Department of the Interior, Reston, VA, 1985.

7. Wilson, J.F., E.D. Cobb, and F.A. Kilpatrick, *Fluorometric Procedures for Dye Tracing, Chapter A12. Techniques of Water-Resources Investigations of the USGS*, Book 3, Application of Hydraulics, USGS, U.S. Department of the Interior, Reston, VA, 1986.

## General Conditions

### G1. Signatory Requirements

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

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

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

overall operation of the facility, a new authorization satisfying the requirements of paragraph G1.2, above, must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section must make the following certification:

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

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

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

1. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.
2. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.
3. To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
4. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

## **G3. Permit Actions**

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

1. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
  - a. Violation of any permit term or condition.
  - b. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.
  - c. A material change in quantity or type of waste disposal.

- d. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination.
  - e. A change in any condition that requires either a temporary or permanent reduction, or elimination of any discharge or sludge use or disposal practice controlled by the permit.
  - f. Nonpayment of fees assessed pursuant to RCW 90.48.465.
  - g. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.
2. The following are causes for modification but not revocation and reissuance except when the Permittee requests or agrees:
- a. A material change in the condition of the waters of the state.
  - b. New information not available at the time of permit issuance that would have justified the application of different permit conditions.
  - c. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.
  - d. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.
  - e. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.
  - f. Ecology has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.
  - g. Incorporation of an approved local pretreatment program into a municipality's permit.
3. The following are causes for modification or alternatively revocation and reissuance:
- a. When cause exists for termination for reasons listed in 1.a through 1.g of this section, and Ecology determines that modification or revocation and reissuance is appropriate.
  - b. When Ecology has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G7) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new Permittee.

#### **G4. Reporting Planned Changes**

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



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

### **G5. Plan Review Required**

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

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

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

### **G7. Transfer of this Permit**

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

#### **1. Transfers by Modification**

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

#### **2. Automatic Transfers**

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

- a. The Permittee notifies Ecology at least thirty (30) days in advance of the proposed transfer date.
- b. The notice includes a written agreement between the existing and new Permittees containing a specific date transfer of permit responsibility, coverage, and liability between them.

- c. Ecology does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under this subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

### **G8. Reduced Production for Compliance**

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

### **G9. Removed Substances**

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

### **G10. Duty to Provide Information**

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

### **G11. Other Requirements of 40 CFR**

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

### **G12. Additional Monitoring**

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

### **G13. Payment of Fees**

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

### **G14. Penalties for Violating Permit Conditions**

Any person who is found guilty of willfully violating the terms and conditions of this permit is deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars (\$10,000) and costs of prosecution, or by imprisonment

in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

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

## **G15. Upset**

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

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

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

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

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

## **G16. Property Rights**

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

## **G17. Duty to Comply**

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

## **G18. Toxic Pollutants**

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

## **G19. Penalties for Tampering**

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two (2) years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment shall be a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or by both.

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

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

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following “notification levels:”
  - a. One hundred micrograms per liter (100 µg/L).
  - b. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony.
  - c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
  - d. The level established by the Director in accordance with 40 CFR 122.44(f).
2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following “notification levels:”
  - a. Five hundred micrograms per liter (500µg/L).
  - b. One milligram per liter (1 mg/L) for antimony.
  - c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
  - d. The level established by the Director in accordance with 40 CFR 122.44(f).

## **G21. Compliance Schedules**

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

## Appendix A

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

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

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

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

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

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

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

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

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

<b>Nonconventional Pollutants</b>	<b>CAS Number (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL) <sup>1</sup> <math>\mu\text{g/L}</math> unless specified</b>	<b>Quantitation Level (QL) <sup>2</sup> <math>\mu\text{g/L}</math> unless specified</b>
Alkalinity, Total		SM2320-B		5 mg/L as CaCO <sub>3</sub>
Aluminum, Total	7429-90-5	200.8	2.0	10
Ammonia, Total (as N)		SM4500-NH <sub>3</sub> -B and C/D/E/G/H		20
Barium Total	7440-39-3	200.8	0.5	2.0
BTEX (benzene + toluene + ethylbenzene + m,o,p xylenes)		EPA SW 846 8021/8260	1	2

<b>Nonconventional Pollutants</b>	<b>CAS Number (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL) <sup>1</sup> <math>\mu\text{g/L}</math> unless specified</b>	<b>Quantitation Level (QL) <sup>2</sup> <math>\mu\text{g/L}</math> unless specified</b>
Boron, Total	7440-42-8	200.8	2.0	10.0
Chemical Oxygen Demand		SM5220-D		10 mg/L
Chloride		SM4500-Cl B/C/D/E and SM4110 B		Sample and limit dependent
Chlorine, Total Residual		SM4500 Cl G		50.0
Cobalt, Total	7440-48-4	200.8	0.05	0.25
Color		SM2120 B/C/E		10 color units
Dissolved oxygen		SM4500-OC/OG		0.2 mg/L
Flow		Calibrated device		
Fluoride	16984-48-8	SM4500-F E	25	100
Hardness, Total		SM2340B		200 as CaCO <sub>3</sub>
Iron, Total	7439-89-6	200.7	12.5	50
Magnesium, Total	7439-95-4	200.7	10	50
Manganese, Total	7439-96-5	200.8	0.1	0.5
Molybdenum, Total	7439-98-7	200.8	0.1	0.5
Nitrate + Nitrite Nitrogen (as N)		SM4500-NO <sub>3</sub> -E/F/H		100
Nitrogen, Total Kjeldahl (as N)		SM4500-N <sub>org</sub> B/C and SM4500NH <sub>3</sub> -B/C/D/EF/G/H		300



<b>Nonconventional Pollutants</b>	<b>CAS Number (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL) <sup>1</sup> <math>\mu\text{g/L}</math> unless specified</b>	<b>Quantitation Level (QL) <sup>2</sup> <math>\mu\text{g/L}</math> unless specified</b>
NWTPH Dx <sup>4</sup>		Ecology NWTPH Dx	250	250
NWTPH Gx <sup>5</sup>		Ecology NWTPH Gx	250	250
Phosphorus, Total (as P)		SM 4500 PB followed by SM4500-PE/PF	3	10
Salinity		SM2520-B		3 practical salinity units or scale (PSU or PSS)
Settleable Solids		SM2540 -F		Sample and limit dependent
Soluble Reactive Phosphorus (as P)		SM4500-P E/F/G	3	10
Sulfate (as mg/L SO <sub>4</sub> )		SM4110-B		0.2 mg/L
Sulfide (as mg/L S)		SM4500-S <sup>2</sup> F/D/E/G		0.2 mg/L
Sulfite (as mg/L SO <sub>3</sub> )		SM4500-SO3B		2 mg/L
Temperature (max. 7-day avg.)		Analog recorder or Use micro-recording devices known as thermistors		0.2° C
Tin, Total	7440-31-5	200.8	0.3	1.5
Titanium, Total	7440-32-6	200.8	0.5	2.5

<b>Nonconventional Pollutants</b>	<b>CAS Number (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL) <sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL) <sup>2</sup> µg/L unless specified</b>
Total Coliform		SM 9221B, 9222B, 9223B	N/A	Specified in method - sample aliquot dependent
Total Organic Carbon		SM5310-B/C/D		1 mg/L
Total dissolved solids		SM2540 C		20 mg/L

<b>Priority Pollutants</b>	<b>PP #</b>	<b>CAS Number (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL) <sup>1</sup> µg/L unless specified</b>	<b>Quantitation Level (QL) <sup>2</sup> µg/L unless specified</b>
<b>Metals, Cyanide &amp; Total Phenols</b>					
Antimony, Total	114	7440-36-0	200.8	0.3	1.0
Arsenic, Total	115	7440-38-2	200.8	0.1	0.5
Beryllium, Total	117	7440-41-7	200.8	0.1	0.5
Cadmium, Total	118	7440-43-9	200.8	0.05	0.25
Chromium (hex) dissolved	119	18540-29-9	SM3500-Cr C	0.3	1.2
Chromium, Total	119	7440-47-3	200.8	0.2	1.0
Copper, Total	120	7440-50-8	200.8	0.4	2.0
Lead, Total	122	7439-92-1	200.8	0.1	0.5
Mercury, Total	123	7439-97-6	1631E	0.0002	0.0005
Nickel, Total	124	7440-02-0	200.8	0.1	0.5

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> $\mu\text{g/L}$ unless specified	Quantitation Level (QL) <sup>2</sup> $\mu\text{g/L}$ unless specified
<b>Metals, Cyanide &amp; Total Phenols</b>					
Selenium, Total	125	7782-49-2	200.8	1.0	1.0
Silver, Total	126	7440-22-4	200.8	0.04	0.2
Thallium, Total	127	7440-28-0	200.8	0.09	0.36
Zinc, Total	128	7440-66-6	200.8	0.5	2.5
Cyanide, Total	121	57-12-5	335.4	5	10
Cyanide, Weak Acid Dissociable	121		SM4500-CN I	5	10
Cyanide, Free Amenable to Chlorination (Available Cyanide)	121		SM4500-CN G	5	10
Phenols, Total	65		EPA 420.1		50

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> $\mu\text{g/L}$ unless specified	Quantitation Level (QL) <sup>2</sup> $\mu\text{g/L}$ unless specified
<b>Acid Compounds</b>					
2-Chlorophenol	24	95-57-8	625	1.0	2.0
2,4-Dichlorophenol	31	120-83-2	625	0.5	1.0
2,4-Dimethylphenol	34	105-67-9	625	0.5	1.0
4,6-dinitro-o-cresol (2-methyl-4,6-dinitrophenol)	60	534-52-1	625/1625B	1.0	2.0

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> $\mu\text{g/L}$ unless specified	Quantitation Level (QL) <sup>2</sup> $\mu\text{g/L}$ unless specified
<b>Acid Compounds</b>					
2,4 dinitrophenol	59	51-28-5	625	1.0	2.0
2-Nitrophenol	57	88-75-5	625	0.5	1.0
4-Nitrophenol	58	100-02-7	625	0.5	1.0
Parachlorometa cresol (4-chloro-3-methylphenol)	22	59-50-7	625	1.0	2.0
Pentachlorophenol	64	87-86-5	625	0.5	1.0
Phenol	65	108-95-2	625	2.0	4.0
2,4,6-Trichlorophenol	21	88-06-2	625	2.0	4.0

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> $\mu\text{g/L}$ unless specified	Quantitation Level (QL) <sup>2</sup> $\mu\text{g/L}$ unless specified
<b>Volatile Compounds</b>					
Acrolein	2	107-02-8	624	5	10
Acrylonitrile	3	107-13-1	624	1.0	2.0
Benzene	4	71-43-2	624	1.0	2.0
Bromoform	47	75-25-2	624	1.0	2.0
Carbon tetrachloride	6	56-23-5	624/601 or SM6230B	1.0	2.0
Chlorobenzene	7	108-90-7	624	1.0	2.0

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>Volatile Compounds</b>					
Chloroethane	16	75-00-3	624/601	1.0	2.0
2-Chloroethylvinyl Ether	19	110-75-8	624	1.0	2.0
Chloroform	23	67-66-3	624 or SM6210B	1.0	2.0
Dibromochloromethane (chlordibromomethane)	51	124-48-1	624	1.0	2.0
1,2-Dichlorobenzene	25	95-50-1	624	1.9	7.6
1,3-Dichlorobenzene	26	541-73-1	624	1.9	7.6
1,4-Dichlorobenzene	27	106-46-7	624	4.4	17.6
Dichlorobromomethane	48	75-27-4	624	1.0	2.0
1,1-Dichloroethane	13	75-34-3	624	1.0	2.0
1,2-Dichloroethane	10	107-06-2	624	1.0	2.0
1,1-Dichloroethylene	29	75-35-4	624	1.0	2.0
1,2-Dichloropropane	32	78-87-5	624	1.0	2.0
1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) 6	33	542-75-6	624	1.0	2.0
Ethylbenzene	38	100-41-4	624	1.0	2.0
Methyl bromide (Bromomethane)	46	74-83-9	624/601	5.0	10.0

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> $\mu\text{g/L}$ unless specified	Quantitation Level (QL) <sup>2</sup> $\mu\text{g/L}$ unless specified
<b>Volatile Compounds</b>					
Methyl chloride (Chloromethane)	45	74-87-3	624	1.0	2.0
Methylene chloride	44	75-09-2	624	5.0	10.0
1,1,2,2-Tetrachloroethane	15	79-34-5	624	1.9	2.0
Tetrachloroethylene	85	127-18-4	624	1.0	2.0
Toluene	86	108-88-3	624	1.0	2.0
1,2-Trans-Dichloroethylene (Ethylene dichloride)	30	156-60-5	624	1.0	2.0
1,1,1-Trichloroethane	11	71-55-6	624	1.0	2.0
1,1,2-Trichloroethane	14	79-00-5	624	1.0	2.0
Trichloroethylene	87	79-01-6	624	1.0	2.0
Vinyl chloride	88	75-01-4	624/SM6200B	1.0	2.0

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> $\mu\text{g/L}$ unless specified	Quantitation Level (QL) <sup>2</sup> $\mu\text{g/L}$ unless specified
<b>Base/Neutral Compounds (compounds in bold are Ecology PBTs)</b>					
Acenaphthene	1	83-32-9	625	0.2	0.4
Acenaphthylene	77	208-96-8	625	0.3	0.6

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>Base/Neutral Compounds (compounds in bold are Ecology PBTs)</b>					
Anthracene	78	120-12-7	625	0.3	0.6
Benzidine	5	92-87-5	625	12	24
Benzyl butyl phthalate	67	85-68-7	625	0.3	0.6
Benzo(a)anthracene	72	56-55-3	625	0.3	0.6
Benzo(b)fluoranthene (3,4-benzofluoranthene) <sup>7</sup>	74	205-99-2	610/625	0.8	1.6
<b>Benzo(j)fluoranthene</b> <sup>7</sup>		<b>205-82-3</b>	625	0.5	1.0
Benzo(k)fluoranthene (11,12-benzofluoranthene) <sup>7</sup>	75	207-08-9	610/625	0.8	1.6
<b>Benzo(r,s,t)pentaphene</b>		<b>189-55-9</b>	625	0.5	1.0
Benzo(a)pyrene	73	50-32-8	610/625	0.5	1.0
Benzo(ghi)Perylene	79	191-24-2	610/625	0.5	1.0
Bis(2-chloroethoxy)methane	43	111-91-1	625	5.3	21.2
Bis(2-chloroethyl)ether	18	111-44-4	611/625	0.3	1.0
Bis(2-chloroisopropyl)ether	42	39638-32-9	625	0.3	0.6
Bis(2-ethylhexyl)phthalate	66	117-81-7	625	0.1	0.5
4-Bromophenyl phenyl ether	41	101-55-3	625	0.2	0.4

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> $\mu\text{g/L}$ unless specified	Quantitation Level (QL) <sup>2</sup> $\mu\text{g/L}$ unless specified
<b>Base/Neutral Compounds (compounds in bold are Ecology PBTs)</b>					
2-Chloronaphthalene	20	91-58-7	625	0.3	0.6
4-Chlorophenyl phenyl ether	40	7005-72-3	625	0.3	0.5
Chrysene	76	218-01-9	610/625	0.3	0.6
<b>Dibenzo (a,h)acridine</b>		<b>226-36-8</b>	610M/625M	2.5	10.0
<b>Dibenzo (a,j)acridine</b>		<b>224-42-0</b>	610M/625M	2.5	10.0
Dibenzo(a-h)anthracene (1,2,5,6-dibenzanthracene)	82	53-70-3	625	0.8	1.6
<b>Dibenzo(a,e)pyrene</b>		192-65-4	610M/625M	2.5	10.0
<b>Dibenzo(a,h)pyrene</b>		189-64-0	625M	2.5	10.0
3,3-Dichlorobenzidine	28	91-94-1	605/625	0.5	1.0
Diethyl phthalate	70	84-66-2	625	1.9	7.6
Dimethyl phthalate	71	131-11-3	625	1.6	6.4
Di-n-butyl phthalate	68	84-74-2	625	0.5	1.0
2,4-dinitrotoluene	35	121-14-2	609/625	0.2	0.4
2,6-dinitrotoluene	36	606-20-2	609/625	0.2	0.4
Di-n-octyl phthalate	69	117-84-0	625	0.3	0.6
1,2-Diphenylhydrazine (as Azobenzene)	37	122-66-7	1625B	5.0	20
Fluoranthene	39	206-44-0	625	0.3	0.6



Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>Base/Neutral Compounds (compounds in bold are Ecology PBTs)</b>					
Fluorene	80	86-73-7	625	0.3	0.6
Hexachlorobenzene	9	118-74-1	612/625	0.3	0.6
Hexachlorobutadiene	52	87-68-3	625	0.5	1.0
Hexachlorocyclopentadiene	53	77-47-4	1625B/625	0.5	1.0
Hexachloroethane	12	67-72-1	625	0.5	1.0
Indeno(1,2,3-cd)Pyrene	83	193-39-5	610/625	0.5	1.0
Isophorone	54	78-59-1	625	0.5	1.0
<b>3-Methyl cholanthrene</b>		<b>56-49-5</b>	625	2.0	8.0
Naphthalene	55	91-20-3	625	0.3	0.6
Nitrobenzene	56	98-95-3	625	0.5	1.0
N-Nitrosodimethylamine	61	62-75-9	607/625	2.0	4.0
N-Nitrosodi-n-propylamine	63	621-64-7	607/625	0.5	1.0
N-Nitrosodiphenylamine	62	86-30-6	625	0.5	1.0
<b>Perylene</b>		<b>198-55-0</b>	625	1.9	7.6
Phenanthrene	81	85-01-8	625	0.3	0.6
Pyrene	84	129-00-0	625	0.3	0.6
1,2,4-Trichlorobenzene	8	120-82-1	625	0.3	0.6

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

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
<b>Pesticides/PCBs</b>					
Aldrin	89	309-00-2	608	0.025	0.05
alpha-BHC	102	319-84-6	608	0.025	0.05
beta-BHC	103	319-85-7	608	0.025	0.05
gamma-BHC (Lindane)	104	58-89-9	608	0.025	0.05
delta-BHC	105	319-86-8	608	0.025	0.05
Chlordane <sup>8</sup>	91	57-74-9	608	0.025	0.05
4,4'-DDT	92	50-29-3	608	0.025	0.05
4,4'-DDE	93	72-55-9	608	0.025	0.05
4,4' DDD	94	72-54-8	608	0.025	0.05
Dieldrin	90	60-57-1	608	0.025	0.05
alpha-Endosulfan	95	959-98-8	608	0.025	0.05
beta-Endosulfan	96	33213-65-9	608	0.025	0.05

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> $\mu\text{g/L}$ unless specified	Quantitation Level (QL) <sup>2</sup> $\mu\text{g/L}$ unless specified
<b>Pesticides/PCBs</b>					
Endosulfan Sulfate	97	1031-07-8	608	0.025	0.05
Endrin	98	72-20-8	608	0.025	0.05
Endrin Aldehyde	99	7421-93-4	608	0.025	0.05
Heptachlor	100	76-44-8	608	0.025	0.05
Heptachlor Epoxide	101	1024-57-3	608	0.025	0.05
PCB-1242 <sup>9</sup>	106	53469-21-9	608	0.25	0.5
PCB-1254	107	11097-69-1	608	0.25	0.5
PCB-1221	108	11104-28-2	608	0.25	0.5
PCB-1232	109	11141-16-5	608	0.25	0.5
PCB-1248	110	12672-29-6	608	0.25	0.5
PCB-1260	111	11096-82-5	608	0.13	0.5
PCB-1016 <sup>9</sup>	112	12674-11-2	608	0.13	0.5
Toxaphene	113	8001-35-2	608	0.24	0.5

1. Detection level (DL) or detection limit means the minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR part 136, Appendix B.

2. Quantitation Level (QL) also known as Minimum Level of Quantitation (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to  $(1, 2, \text{ or } 5) \times 10^n$ , where n is an integer. (64 FR 30417).

ALSO GIVEN AS:

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

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