Environmental Protection Act  
Loi sur la protection de l’environnement

ONTARIO REGULATION 537/93

EFFLUENT MONITORING AND EFFLUENT LIMITS — PETROLEUM SECTOR

**Consolidation Period:** From July 28, 2017 to the [e-Laws currency date](http://www.e-laws.gov.on.ca/navigation?file=currencyDates&lang=en).

Last amendment: [299/17](https://www.ontario.ca/laws/regulation/R17299).

Legislative History: 524/95, [232/07](https://www.ontario.ca/laws/regulation/R07232), [299/17](https://www.ontario.ca/laws/regulation/R17299).

This Regulation is made in English only.

CONTENTS

|  |  |  |
| --- | --- | --- |
|  |  | Sections |
| [PART I](#BK0" \o "PART I) | GENERAL |  |
|  | [Interpretation](#BK1" \o "Interpretation) | 1 |
|  | [Purpose](#BK2" \o "Purpose) | 2 |
|  | [Application](#BK3" \o "Application) | 3 |
|  | [Obligations under Approvals, Orders, etc.](#BK4" \o "Obligations under Approvals, Orders, etc.) | 4 |
|  | [Non-Application of General Effluent Monitoring Regulation](#BK5" \o "Non-Application of General Effluent Monitoring Regulation) | 5 |
|  | [By-Passes](#BK6" \o "By-Passes) | 6 |
|  | [Sampling and Analytical Procedures](#BK7" \o "Sampling and Analytical Procedures) | 7 |
| [PART II](#BK8" \o "PART II) | SAMPLING POINTS |  |
|  | [Establishment and Elimination of Sampling Points](#BK9" \o "Establishment and Elimination of Sampling Points) | 8 |
|  | [Reports on Sampling Points](#BK10" \o "Reports on Sampling Points) | 9 |
|  | [Use of Sampling Points Established Under This Part](#BK11" \o "Use of Sampling Points Established Under This Part) | 10 |
| [PART III](#BK12" \o "PART III) | CACULATION OF LOADINGS |  |
|  | [Calculation of Loadings — General](#BK13" \o "Calculation of Loadings — General) | 11 |
|  | [Calculation of Loadings — Process Effluent](#BK14" \o "Calculation of Loadings — Process Effluent) | 12 |
|  | [Calculation of Loadings — Cooling Water](#BK15" \o "Calculation of Loadings — Cooling Water) | 13 |
| [PART IV](#BK16" \o "PART IV) | PARAMETER AND LETHALITY LIMITS |  |
|  | [Parameter Limits](#BK17" \o "Parameter Limits) | 14 |
|  | [Lethality Limits](#BK18" \o "Lethality Limits) | 15 |
| [PART V](#BK19" \o "PART V) | MONITORING |  |
|  | [Monitoring — General](#BK20" \o "Monitoring — General) | 16 |
|  | [Monitoring — Process Effluent — Daily](#BK21" \o "Monitoring — Process Effluent — Daily) | 17 |
|  | [Monitoring — Process Effluent — Weekly](#BK22" \o "Monitoring — Process Effluent — Weekly) | 18 |
|  | [Monitoring — Process Effluent — Quarterly](#BK23" \o "Monitoring — Process Effluent — Quarterly) | 19 |
|  | [Monitoring — Process Effluent — Quality Control](#BK24" \o "Monitoring — Process Effluent — Quality Control) | 20 |
|  | [Monitoring — Process Effluent — pH Measurement](#BK25" \o "Monitoring — Process Effluent — pH Measurement) | 21 |
|  | [Monitoring — Acute Lethality Testing — Rainbow Trout](#BK26" \o "Monitoring — Acute Lethality Testing — Rainbow Trout) | 22 |
|  | [Monitoring — Acute Lethality Testing — Daphnia magna](#BK27" \o "Monitoring — Acute Lethality Testing — Daphnia magna) | 23 |
|  | [Monitoring — Chronic Toxicity Testing — Fathead Minnow and Ceriodaphnia Dubia](#BK28" \o "Monitoring — Chronic Toxicity Testing — Fathead Minnow and Ceriodaphnia Dubia) | 24 |
|  | [Monitoring — Cooling Water Effluent — Weekly Assessment](#BK29" \o "Monitoring — Cooling Water Effluent — Weekly Assessment) | 25 |
| [PART VI](#BK30" \o "PART VI) | EFFLUENT VOLUME |  |
|  | [Flow Measurement](#BK31" \o "Flow Measurement) | 26 |
|  | [Calculation of Plant Volumes](#BK32" \o "Calculation of Plant Volumes) | 27 |
| [PART VII](#BK33" \o "PART VII) | STORM WATER CONTROL STUDY | 28 |
| [PART VIII](#BK34" \o "PART VIII) | RECORDS AND REPORTS |  |
|  | [Record Keeping](#BK35" \o "Record Keeping) | 29 |
|  | [Reports Available to the Public](#BK36" \o "Reports Available to the Public) | 30 |
|  | [Reports to the Director — General](#BK37" \o "Reports to the Director — General) | 31 |
|  | [Reports to the Director on Compliance with Section 6 and Part IV](#BK38" \o "Reports to the Director on Compliance with Section 6 and Part IV) | 32 |
|  | [Quarterly Reports to the Director](#BK39" \o "Quarterly Reports to the Director) | 33 |
|  | [Reports to the Director on Chronic Toxicity Testing](#BK40" \o "Reports to the Director on Chronic Toxicity Testing) | 34 |
| [Schedule 1](#BK41" \o "Schedule 1) | List of regulated plants |  |
| [Schedule 2](#BK42" \o "Schedule 2) | Process effluent limits and monitoring frequency |  |
| [Schedule 3](#BK43" \o "Schedule 3) | Cooling water assessment monitoring requirements |  |
| [Schedule 4](#BK44" \o "Schedule 4) | Reference production rate |  |

PART I  
GENERAL

Interpretation

**1.**(1)  In this Regulation,

“assessment parameter” means a parameter that is listed in Schedule 3;

“blowdown water” means recirculating water that is discharged from a cooling water system for the purpose of controlling the level of water in the cooling water system or for the purpose of discharging from the cooling water system materials contained in the cooling water system the further build-up of which would impair the operation of the system;

“cooling water effluent” means water and associated material that is used in an industrial process for the purpose of removing heat and that has not, by design, come into contact with process materials, but does not include blowdown water;

“cooling water effluent monitoring stream” means a cooling water effluent stream on which a sampling point is established under section 8;

“cooling water effluent sampling point” means a sampling point established on a cooling water effluent stream under section 8;

“crude oil” means any naturally occurring petroleum or any mixture of hydrocarbons that is brought into a plant for processing, but does not include any hydrocarbon or residual fuel that is brought into a plant primarily to meet the fuel operating requirements of the plant or primarily for direct blending into finished products;

“Director”, in relation to obligations of a discharger, means a Director appointed under section 5 of the Act and responsible for the region in which the discharger’s plant is located and includes an alternate named by the Director;

“discharger” means an owner or person in occupation or having the charge, management or control of a plant to which this Regulation applies;

“limited parameter”, in relation to a plant, means a parameter for which a limit is specified for the plant in Column 3 or 4 of the Table for the plant in Schedule 2;

“pick up”, in relation to a sample, means pick up for the purpose of transportation to and analysis at a laboratory;

“plant” means an industrial facility and the developed property, waste disposal sites and wastewater treatment facilities associated with it;

“process change” means a change in equipment, production processes, process materials or treatment processes;

“process effluent” means,

(a) effluent that, by design, has come into contact with process materials,

(b) blowdown water,

(c) effluent that results from cleaning or maintenance operations at a plant during a period when all or part of the plant is shut down, and

(d) any effluent described in clauses (a) to (c) combined with cooling water effluent or storm water effluent;

“process effluent monitoring stream” means a process effluent stream on which a sampling point is established under section 8;

“process effluent sampling point” means a sampling point established on a process effluent stream under section 8;

“process materials”, in relation to a discharger’s plant, means raw materials for use in an industrial process at the plant, manufacturing intermediates produced at the plant, or products or by-products of an industrial process at the plant, but does not include chemicals added to cooling water for the purpose of controlling organisms, fouling and corrosion;

“quarter” means all or part of a period of three consecutive months beginning on the first day of January, April, July or October;

“semi-annual period” means all or part of a period of six months beginning on the first day of January or July;

“specific parameter”, in relation to a plant, means 2, 3, 7, 8-tetrachlorodibenzo-para-dioxin, 2, 3, 7, 8-tetrachlorodibenzofuran, and 2, 3, 7, 8 substituted dioxin and furan congeners;

“storm water effluent” means run-off from a storm event or thaw that is not used in any industrial process. O. Reg. 299/17, s. 1.

(2)  For greater certainty, this Regulation applies both to effluent streams that discharge continuously and to effluent streams that discharge intermittently.

(3)  An obligation on a discharger to do a thing under this Regulation is discharged if another person has done it on the discharger’s behalf. O. Reg. 537/93, s. 1.

Purpose

**2.**The purpose of this Regulation is to monitor and control the quality of effluent discharged from the plants listed in Schedule 1. O. Reg. 537/93, s. 2.

Application

**3.**(1)  This Regulation applies only with respect to the plants listed in Schedule 1. O. Reg. 537/93, s. 3 (1).

(2)  This Regulation does not apply with respect to the discharge of effluent to a municipal sanitary sewer. O. Reg. 537/93, s. 3 (2); O. Reg. 524/95, s. 1.

Obligations under Approvals, Orders, etc.

**4.**For greater certainty, subject to subsection 186 (4) of the Act, the requirements of this Regulation are in addition to and independent of requirements in an approval, order, direction or other instrument issued under any Act. O. Reg. 524/95, s. 2.

Non-application of General Effluent Monitoring Regulation

**5.**This Regulation is not a Sectoral Effluent Monitoring Regulation within the meaning of Ontario Regulation 695/88. O. Reg. 537/93, s. 5.

By-passes

**6.**Beginning on January 1, 1996, a discharger shall not permit effluent that would ordinarily flow past a sampling point established under this Regulation to be discharged from the discharger’s plant without flowing past that sampling point, regardless of whether it would be convenient to do so because of a maintenance operation, a breakdown in equipment or any scheduled or unscheduled event. O. Reg. 524/95, s. 3.

Sampling and Analytical Procedures

**7.**(1)  Each discharger shall carry out the establishment of sampling point obligations of this Regulation and the sampling and analysis obligations of this Regulation, including quality control sampling and analysis obligations, in accordance with the procedures described in the Ministry of the Environment publication entitled “Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater”, as amended from time to time. O. Reg. 232/07, s. 1.

(2)  Each discharger shall maintain the sampling equipment used at the discharger’s plant for sampling required by this Regulation in a way that ensures that the samples collected at the plant under this Regulation accurately reflect the level of discharge of each limited parameter, assessment parameter and specific parameter from the plant. O. Reg. 537/93, s. 7 (2).

PART II  
SAMPLING POINTS

Establishment and Elimination of Sampling Points

**8.**(1)  Each discharger shall, by December 9, 1993, establish a sampling point on each process effluent and cooling water effluent stream at the discharger’s plant, as necessary so that the plant loadings calculated under sections 12 and 13 for each limited parameter and assessment parameter and the concentrations determined for each specific parameter accurately reflect the level of discharge of each such parameter from the plant.

(2)  If circumstances change so that a new sampling point is necessary at a discharger’s plant in order to permit the calculation of plant loadings under sections 12 and 13 for each limited parameter and assessment parameter and the determination of concentrations for each specific parameter that accurately reflect the level of discharge of each such parameter from the plant, the discharger shall, within thirty days of the change, establish the new sampling point.

(3)  A discharger may eliminate a sampling point established under subsection (1) or (2) if the sampling point is no longer necessary to permit the calculation of plant loadings under sections 12 and 13 for each limited parameter and assessment parameter and the determination of concentrations for each specific parameter that accurately reflect the level of discharge of each such parameter from the plant.

(4)  For the purposes of this section, a plant loading for a parameter or a concentration for a parameter that is based on analytical results that are significantly affected by dilution or masking due to the merging of streams upstream of a sampling point at a plant is not a loading or a concentration that accurately reflects the level of discharge of the parameter from the plant.

(5)  In determining what is necessary to meet a discharger’s obligations to establish sampling points under this section, the discharger shall consider both which streams should have sampling points and where on a stream a sampling point should be located. O. Reg. 537/93, s. 8.

(6)  Despite subsection (1), a discharger need not establish a sampling point on a by-pass. O. Reg. 524/95, s. 5.

Reports on Sampling Points

**9.**(1)  By December 20, 1993, each discharger shall submit to the Director a list and plot plan showing the sampling points established under this Regulation at the discharger’s plant as of December 9, 1993.

(2)  Within thirty days after establishing a sampling point under this Regulation that is not shown on a list and plot plan submitted under this section, the discharger shall give the Director a written notice describing the location of the sampling point, together with a revised list and plot plan showing the sampling point.

(3)  Within thirty days after eliminating a sampling point under this Regulation that is shown on a list and plot plan submitted under this section, the discharger shall give the Director a written notice describing where the sampling point used to be, together with a revised list and plot plan without the sampling point. O. Reg. 537/93, s. 9.

Use of Sampling Points Established Under This Part

**10.**Subject to section 21, each discharger shall use the sampling points established under this Part for all sampling required by this Regulation. O. Reg. 537/93, s. 10.

PART III  
CACULATION OF LOADINGS

Calculation of Loadings — General

**11.**(1)  For the purposes of performing a calculation under sections 12 and 13, a discharger shall use the actual analytical result obtained by the laboratory. O. Reg. 537/93, s. 11 (1).

(2)  Despite subsection (1), where the actual analytical result is less than one-tenth of the analytical method detection limit set out in the Ministry of the Environment publication entitled “Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater”, as amended from time to time, the discharger shall use the value zero for the purpose of performing a calculation under sections 12 and 13. O. Reg. 232/07, s. 2.

(3)  Each discharger shall ensure that each calculation of a process effluent loading required by section 12 is performed as soon as reasonably possible after the analytical result on which the calculation is based becomes available to the discharger. O. Reg. 537/93, s. 11 (3).

(4)  Each discharger shall ensure that each calculation of a cooling water effluent loading required by section 13 is performed in time to comply with subsection 33 (4). O. Reg. 537/93, s. 11 (4).

Calculation of Loadings — Process Effluent

**12.**(1)  Each discharger shall calculate, in kilograms, a daily process effluent stream loading for each limited parameter in each process effluent monitoring stream of the discharger for each day on which a sample is collected under this Regulation from the stream for analysis for the parameter.

(2)  When calculating a daily stream loading under subsection (1), the discharger shall multiply, with the necessary adjustment of units to yield a result in kilograms, the analytical result obtained from the sample for the parameter by the daily volume of effluent, as determined under section 26, for the stream for the day.

(3)  Each discharger shall calculate, in kilograms, a daily process effluent plant loading for each limited parameter for each day for which the discharger is required to calculate a daily process effluent stream loading for the parameter under subsection (1).

(4)  For the purposes of subsection (3), a daily process effluent plant loading for a parameter for a day is the sum, in kilograms, of the daily process effluent stream loadings for the parameter calculated under subsection (1) for the day.

(5)  Where a discharger calculates only one daily process effluent stream loading for a parameter for a day under subsection (1), the daily process effluent plant loading for the parameter for the day for the purposes of subsection (3) is the single daily process effluent stream loading for the parameter for the day.

(6)  Each discharger shall calculate, in kilograms, a monthly average process effluent plant loading for each limited parameter for each month in which a sample is collected under this Regulation more than once from a process effluent monitoring stream at the discharger’s plant for analysis for the parameter.

(7)  For the purposes of subsection (6), a monthly average process effluent plant loading for a parameter for a month is the arithmetic mean of the daily process effluent plant loadings for the parameter calculated under subsection (3) for the month. O. Reg. 537/93, s. 12.

Calculation of Loadings — Cooling Water

**13.**(1)  Each discharger shall calculate, in kilograms, a daily cooling water effluent stream loading for each assessment parameter in each cooling water effluent monitoring stream of the discharger for each day on which a sample is collected under this Regulation from the stream for analysis for the parameter.

(2)  When calculating a daily stream loading under subsection (1), the discharger shall multiply, with the necessary adjustment of units to yield a result in kilograms, the analytical result obtained from the sample for the parameter by the daily volume of effluent, as determined under section 26, for the stream for the day.

(3)  Each discharger shall calculate, in kilograms, a daily cooling water effluent plant loading for each assessment parameter for each day for which the discharger is required to calculate a daily cooling water effluent stream loading for the parameter under subsection (1).

(4)  For the purposes of subsection (3), a daily cooling water effluent plant loading for a parameter for a day is the sum, in kilograms, of the daily cooling water effluent stream loadings for the parameter calculated under subsection (1) for the day.

(5)  Where a discharger calculates only one daily cooling water effluent stream loading for a parameter for a day under subsection (1), the daily cooling water effluent plant loading for the parameter for the day for the purposes of subsection (3) is the single daily cooling water effluent stream loading for the parameter for the day.

(6)  Each discharger shall calculate, in kilograms, a monthly average cooling water effluent plant loading for each assessment parameter for each month in which a sample is collected under this Regulation more than once from a cooling water effluent monitoring stream at the discharger’s plant for analysis for the parameter.

(7)  For the purposes of subsection (6), a monthly average cooling water effluent plant loading for a parameter for a month is the arithmetic mean of the daily cooling water effluent plant loadings for the parameter calculated under subsection (3) for the month. O. Reg. 537/93, s. 13.

PART IV  
PARAMETER AND LETHALITY LIMITS

Parameter Limits

**14.**(1)  Each discharger shall ensure that each daily process effluent plant loading calculated for a parameter under section 12 in connection with the discharger’s plant does not exceed the daily plant loading limit specified for the parameter and the plant in Column 3 of the Table for the plant in Schedule 2. O. Reg. 537/93, s. 14 (1); O. Reg. 299/17, s. 2.

(2)  Each discharger shall ensure that each monthly average process effluent plant loading calculated for a parameter under section 12 in connection with the discharger’s plant does not exceed the monthly average plant loading limit specified for the parameter and the plant in Column 4 of the Table for the plant in Schedule 2. O. Reg. 537/93, s. 14 (2); O. Reg. 299/17, s. 2.

(3)  Each discharger shall control the quality of each process effluent monitoring stream at the discharger’s plant to ensure that the concentration of 2, 3, 7, 8-tetrachlorodibenzo-para-dioxin and the concentration of 2, 3, 7, 8-tetrachlorodibenzofuran are both non-measurable in any sample collected at a process effluent sampling point at the plant. O. Reg. 537/93, s. 14 (3).

(4)  For the purposes of subsection (3), the concentration of 2, 3, 7, 8-tetrachlorodibenzo-para-dioxin in a sample is non-measurable if analysis of the sample shows a concentration of 2, 3, 7, 8-tetrachlorodibenzo-para-dioxin of less than 20 picograms per litre and the concentration of 2, 3, 7, 8-tetrachlorodibenzofuran in a sample is non-measurable if analysis of the sample shows a concentration of 2, 3, 7, 8-tetrachlorodibenzofuran of less than 50 picograms per litre. O. Reg. 537/93, s. 14 (4).

(5)  Each discharger shall control the quality of each process effluent monitoring stream at the discharger’s plant to ensure that the total toxic equivalent concentration of 2,3,7,8 substituted dioxin and furan congeners in any sample collected at a process effluent sampling point at the plant, calculated in accordance with the methods described in the Ministry of the Environment publication entitled “Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater”, as amended from time to time, does not exceed 60 picograms per litre. O. Reg. 232/07, s. 3.

(6)  Subject to subsection (7), each discharger shall control the quality of each process effluent monitoring stream at the discharger’s plant to ensure that the pH value of any sample collected at a process effluent sampling point at the plant is within the range of 6.0 to 9.5. O. Reg. 537/93, s. 14 (6).

(7)  Throughout any day on which a discharger has used an alternate sampling point on a process effluent monitoring stream for sampling required by section 21, as permitted by subsections 21 (7) and (8), the discharger,

(a) shall control the quality of the stream to ensure that the pH value of any sample collected at the alternate sampling point on the stream is within the range of 6.0 to 9.5; and

(b) need not comply with subsection (6) with respect to the stream. O. Reg. 537/93, s. 14 (7).

Lethality Limits

**15.**Each discharger shall control the quality of each process effluent monitoring stream and each cooling water effluent monitoring stream at the discharger’s plant to ensure that each rainbow trout acute lethality test and each Daphnia magna acute lethality test performed on any grab sample collected at a process effluent sampling point or cooling water effluent sampling point at the plant results in mortality for no more than 50 per cent of the test organisms in 100 per cent effluent. O. Reg. 537/93, s. 15.

PART V  
MONITORING

Monitoring — General

**16.**(1)  Despite sections 17 to 25, a discharger need not collect samples from any stream at the discharger’s plant on a day on which there is no process effluent that is being discharged from the plant.

(2)  Where a discharger is required by this Regulation to pick up a set of samples and analyze it for certain parameters, the discharger shall pick up a set of samples sufficient to allow all the analyses to be performed.

(3)  A discharger shall use all reasonable efforts to ensure that all analyses required by this Regulation are completed as soon as reasonably possible and that the results of those analyses are made available to the discharger as soon as reasonably possible.

(4)  Subject to subsection (5), each discharger shall pick up all sets of samples required to be picked up at the discharger’s plant under sections 17, 18 and 19 between the hours of 7 a.m. and 10 a.m.

(5)  If the Director is satisfied, on the basis of written submissions from a discharger, that the circumstances at the discharger’s plant are such that it would be impractical to pick up a set of samples from each sampling point established at the plant under this Regulation within the time period specified in subsection (4), the Director may give the discharger a written notice in respect of the plant, varying the time period specified in subsection (4).

(6)  Subject to subsections (7) and (8), where a discharger is required by section 17, 18 or 19 to pick up a set of samples, the discharger shall pick up a set collected over the twenty-four-hour period immediately preceding the pick-up.

(7)  The twenty-four-hour period referred to in subsection (6) may be shortened or enlarged by up to three hours to permit a discharger to take advantage of the three-hour range specified in subsection (4) or of a different three-hour period specified in a notice under subsection (5).

(8)  Where a notice has been given under subsection (5), respect of a plant specifying a time period longer than three hours, the twenty-four-hour period referred to in subsection (6) may be shortened or enlarged by up to that longer amount of time to permit the discharger to take advantage of the time period specified in the notice.

(9)  If the circumstances at a plant change so that the Director is satisfied that the circumstances described in subsection (5) no longer apply at the plant, the Director may revoke a notice given in respect of a plant under subsection (5) by giving a notice of revocation in writing to a discharger for the plant. O. Reg. 537/93, s. 16.

Monitoring — Process Effluent — Daily

**17.**(1)  Each discharger shall, on each day, pick up a set of samples collected at each process effluent sampling point at the discharger’s plant and shall analyze each set of samples for the parameters for which the frequency of monitoring, as set out in Column 2 of the Table in Schedule 2 for the discharger’s plant, is daily. O. Reg. 299/17, s. 3.

(2)  A discharger need not meet the requirements of subsection (1) where it is impossible to do so because of sampling by a provincial officer. O. Reg. 537/93, s. 17.

Monitoring — Process Effluent — Weekly

**18.**(1)  Each discharger shall, on one day in each week, pick up a set of samples collected at each process effluent sampling point at the discharger’s plant and shall analyze each set of samples for the parameters for which the frequency of monitoring, as set out in Column 2 of the Table in Schedule 2 for the discharger’s plant, is weekly. O. Reg. 299/17, s. 4.

(2)  There shall be an interval of at least four days between successive pick-up days at the plant under subsection (1).

(3)  All samples picked up under subsection (1) in a week shall be picked up on the same day in the week. O. Reg. 537/93, s. 18.

Monitoring — Process Effluent — Quarterly

**19.**(1)  Each discharger shall, on one day in each quarter, pick up a set of samples collected at each process effluent sampling point at the discharger’s plant and shall analyze each set of samples for the parameters for which the frequency of monitoring, as set out in Column 2 of the Table in Schedule 2 for the discharger’s plant, is quarterly. O. Reg. 299/17, s. 5.

(2)  There shall be an interval of at least forty-five days between successive pick-up days at the plant under subsection (1).

(3)  All samples picked up under subsection (1) in a quarter shall be picked up on the same day in the quarter. O. Reg. 537/93, s. 19.

Monitoring — Process Effluent — Quality Control

**20.**(1)  On one day in each year after 1993, on a day on which samples are picked up at the plant under subsection 18 (1), each discharger shall collect and pick up a duplicate sample for each sample picked up on that day under subsection 18 (1) at one process effluent sampling point at the discharger’s plant and shall analyze each duplicate sample for the parameters for which the frequency of monitoring, as set out in Column 2 of the Table in Schedule 2 for the discharger’s plant, is weekly. O. Reg. 537/93, s. 20 (1); O. Reg. 299/17, s. 6.

(2)  Each discharger shall prepare a travelling blank and travelling spiked blank sample for each sample for which a duplicate sample is picked up at the plant under subsection (1) and shall analyze the travelling blank and travelling spiked blank samples in accordance with the directions set out in the Ministry of the Environment publication entitled “Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater”, as amended from time to time. O. Reg. 232/07, s. 4.

(3)  There shall be an interval of at least six months between successive pick-up days at the plant under subsection (1). O. Reg. 537/93, s. 20 (3).

Monitoring — Process Effluent — pH Measurement

**21.**(1)  Each discharger shall, on each day during the time period applicable to the plant under subsection 16 (4) or (5), collect a grab sample from each process effluent monitoring stream at the discharger’s plant and shall analyze each sample for the parameter pH.

(2)  Each discharger shall, within each twenty-four-hour period beginning with the collection of the first grab sample at the plant under subsection (1) on each day, collect two more grab samples from each process effluent monitoring stream at the discharger’s plant and shall analyze each sample for the parameter pH.

(3)  There shall be an interval of at least four hours between each of the three collections at a stream under subsections (1) and (2) in each twenty-four-hour period.

(4)  Each grab sample collected under subsections (1) and (2) shall be picked up within twenty-four hours of when it was collected.

(5)  Instead of complying with subsections (1) to (4) with respect to a stream, a discharger may use an on-line analyzer at the sampling point on the stream and analyze the effluent at the sampling point for the parameter pH once in each day during the time period applicable to the plant under subsection 16 (4) or (5), and two more times in each twenty-four-hour period beginning with the first analysis at the plant under this subsection in each day.

(6)  There shall be an interval of at least four hours between each of the three analyses at a sampling point under subsection (5) in each twenty-four-hour period.

(7)  For the purposes of this section, a discharger shall use either the sampling point established under section 8 on the stream or an alternate sampling point located downstream of the sampling point but before the point of discharge of the stream to surface water or to an industrial sewer used in common with another plant.

(8)  Before using an alternate sampling point under subsection (7), a discharger shall give the Director a written notice describing the location of the alternate sampling point, together with a revised version of the list and plot plan submitted under section 9 showing the alternate sampling point. O. Reg. 537/93, s. 21.

Monitoring — Acute Lethality Testing — Rainbow Trout

**22.**(1)  Where a discharger is required by this section to perform a rainbow trout acute lethality test, the discharger shall perform the test according to the procedures described in the Environment Canada publication entitled “Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout”, as amended from time to time. O. Reg. 232/07, s. 5.

(2)  Each rainbow trout acute lethality test required by this section shall be carried out as a single concentration test using 100 per cent effluent. O. Reg. 537/93, s. 22 (2).

(3)  On one day in each month, on a day on which samples are picked up at the plant under subsection 18 (1), each discharger shall collect and immediately pick up a grab sample at each process effluent sampling point at the discharger’s plant and shall perform a rainbow trout acute lethality test on each sample. O. Reg. 537/93, s. 22 (3).

(4)  There shall be an interval of at least fifteen days between successive pick-up days at the plant under subsection (3). O. Reg. 537/93, s. 22 (4).

(5)  All samples picked up under subsection (3) in a month shall be picked up on the same day in the month. O. Reg. 537/93, s. 22 (5).

(6)  Where a discharger has performed tests under subsection (3) for twelve consecutive months on samples collected from the same sampling point and the mortality of the rainbow trout in each test did not exceed 50 per cent, the discharger is relieved of the obligations under subsection (3) relating to the sampling point and shall instead collect and immediately pick up a grab sample at the sampling point on one day in each quarter and perform a rainbow trout acute lethality test on each sample. O. Reg. 537/93, s. 22 (6).

(7)  Samples picked up at a plant under subsection (6) shall be picked up on a day on which samples are picked up at the plant under subsection (3). O. Reg. 537/93, s. 22 (7).

(8)  If no samples are being picked up at a plant under subsection (3) during a quarter, samples picked up at the plant during the quarter under subsection (6) shall be picked up on a day on which samples are picked up at the plant under subsection 18 (1). O. Reg. 537/93, s. 22 (8).

(9)  There shall be an interval of at least forty-five days between successive pick-up days at the plant under subsection (6). O. Reg. 537/93, s. 22 (9).

(10)  All samples picked up under subsection (6) in a quarter shall be picked up on the same day in the quarter. O. Reg. 537/93, s. 22 (10).

(11)  If a rainbow trout acute lethality test performed under subsection (6) on any sample from a sampling point results in mortality of more than 50 per cent of the test rainbow trout, subsections (6) to (10) cease to apply in respect to samples from that sampling point, and a discharger shall instead comply with the requirements of subsection (3) relating to the sampling point, until the tests performed under subsection (3) on all samples collected from the sampling point for a further twelve consecutive months result in mortality for no more than 50 per cent of the rainbow trout for each test. O. Reg. 537/93, s. 22 (11).

(12)  A discharger shall notify the Director in writing of any change in the frequency of acute lethality testing under this Regulation at the discharger’s plant, within thirty days after the day on which the change begins. O. Reg. 537/93, s. 22 (12).

(13), (14)  Revoked: O. Reg. 537/93, s. 22 (15).

(15)  Spent: O. Reg. 537/93, s. 22 (15).

(16)  Subsections (2) to (15) apply with necessary modifications to each cooling water effluent sampling point and, for the purpose, the reference in subsection (3) to each process effluent sampling point shall be deemed to be a reference to each cooling water effluent sampling point and the reference in subsections (3) and (8) to subsection 18 (1) shall be deemed to be a reference to subsection 25 (1). O. Reg. 537/93, s. 22 (16).

Monitoring — Acute Lethality Testing — *Daphnia magna*

**23.**(1)  Where a discharger is required by this section to perform a Daphnia magna acute lethality test, the discharger shall perform the test according to the procedures described in the Environment Canada publication entitled “Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Daphnia magna”, as amended from time to time. O. Reg. 232/07, s. 6.

(2)  Subsections 22 (2) to (16) apply with necessary modifications to Daphnia magna acute lethality tests and, for the purpose, a reference to rainbow trout shall be deemed to be a reference to Daphnia magna. O. Reg. 537/93, s. 23 (2).

(3)  Each discharger shall pick up each set of samples required to be collected from a sampling point at the discharger’s plant under this section on a day on which the discharger collects a sample from the sampling point under section 22, to the extent possible having regard to the frequency of monitoring required at the sampling point under this section and section 22. O. Reg. 537/93, s. 23 (3).

Monitoring — Chronic Toxicity Testing — Fathead Minnow and *Ceriodaphnia Dubia*

**24.**(1)  Where a discharger is required to perform a seven-day fathead minnow growth inhibition test, the discharger shall perform the test according to the procedure described in the Environment Canada publication entitled “Biological Test Method: Test of Larval Growth and Survival Using Fathead Minnows”, as amended from time to time. O. Reg. 232/07, s. 7.

(2)  Where a discharger is required to perform a seven-day *Ceriodaphnia dubia* reproduction inhibition and survivability test, the discharger shall perform the test according to the procedure described in the Environment Canada publication entitled “Biological Test Method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia*”, as amended from time to time. O. Reg. 232/07, s. 7.

(3)  On one day in each semi-annual period, on a day on which samples are picked up at the plant under subsection 18 (1), each discharger shall collect and immediately pick up a grab sample from each process effluent sampling point at the discharger’s plant, and shall perform a seven-day fathead minnow growth inhibition test and a seven-day Ceriodaphnia dubia reproduction inhibition and survivability test on each sample. O. Reg. 537/93, s. 24 (3).

(4)  There shall be an interval of at least ninety days between successive pick-up days at the plant under subsection (3). O. Reg. 537/93, s. 24 (4).

(5)  All samples picked up under subsection (3) in a semi-annual period shall be picked up on the same day in the semi-annual period. O. Reg. 537/93, s. 24 (5).

(6)  A discharger need not collect a sample from a sampling point in accordance with subsection (3) until twelve consecutive monthly rainbow trout acute lethality tests and twelve consecutive monthly Daphnia magna acute lethality tests performed on samples collected at the sampling point at a discharger’s plant result in mortality for no more than 50 per cent of the test organisms in 100 per cent effluent. O. Reg. 537/93, s. 24 (6).

Monitoring — Cooling Water Effluent — Weekly Assessment

**25.**(1)  Each discharger shall, on one day in each week, pick up a set of samples collected at each cooling water effluent sampling point at the discharger’s plant and shall analyze each set of samples for each assessment parameter.

(2)  There shall be an interval of at least four days between successive pick-up days at the plant under subsection (1).

(3)  All samples picked up under subsection (1) in a week shall be picked up on the same day in the week. O. Reg. 537/93, s. 25.

PART VI  
EFFLUENT VOLUME

Flow Measurement

**26.**(1)  For the purposes of this section, a volume of effluent for a stream for a day is the volume that flowed past the sampling point established under Part II on the stream during the twenty-four hour period preceding the pick-up of the first sample picked up from the stream for the day.

(2)  Each discharger shall determine in cubic metres a daily volume of effluent for each process effluent stream at the discharger’s plant for each day on which a sample is collected under this Regulation from the stream, by integration of continuous flowrate measurements.

(3)  Despite subsection (2), where a process effluent stream discharges on an intermittent basis, the daily volumes for the stream may be determined either by integration of continuous flowrate measurements or by the summation of individual batch volume measurements.

(4)  Each discharger shall use flow measurement methods that allow the daily volumes for process effluent streams to be determined to an accuracy of within plus or minus 15 per cent.

(5)  Each discharger shall determine in cubic metres a daily volume of effluent for each cooling water effluent stream at the discharger’s plant for each day on which a sample is collected under this Regulation from the stream.

(6)  Each discharger shall use flow measurement methods that allow the daily volumes for cooling water effluent streams to be determined to an accuracy of within plus or minus 20 per cent.

(7)  Each discharger shall, no later than the day that this section comes into force, determine by calibration or confirm by means of a certified report of a registered professional engineer of the Province of Ontario that each flow measurement method used under subsections (2) and (3) meets the accuracy requirements of subsection (4) and that each flow measurement method used under subsection (5) meets the accuracy requirements of subsection (6).

(8)  Where a discharger uses a new flow measurement method or alters an existing flow measurement method, the discharger shall determine by calibration or confirm by means of a certified report of a registered professional engineer of the Province of Ontario that each new or altered flow measurement method meets the accuracy requirements of subsection (4) or (6), as the case may be, within two weeks after the day on which the new or altered method or system is used.

(9)  Each discharger shall develop and implement a maintenance schedule and a calibration schedule for each flow measurement system installed at the discharger’s plant and shall maintain each flow measurement system according to good operating practices.

(10)  Each discharger shall use reasonable efforts to set up each flow measurement system used for the purposes of this section in a way that permits inspection by a provincial officer. O. Reg. 537/93, s. 26.

Calculation of Plant Volumes

**27.**(1)  Each discharger shall calculate, in cubic metres, a daily process effluent plant volume for each day.

(2)  For the purposes of subsection (1), a process effluent plant volume for a day is the sum of the daily process effluent volumes determined under section 26 for the day.

(3)  Each discharger shall calculate, in cubic metres, a monthly average process effluent plant volume for each month, by taking the arithmetic mean of the daily process effluent plant volumes calculated under subsection (1) for the month.

(4)  Each discharger shall calculate, in cubic metres, a daily cooling water effluent plant volume for each day.

(5)  For the purposes of subsection (4), a cooling water effluent plant volume for a day is the sum of the daily cooling water volumes determined under section 26 for the day.

(6)  Each discharger shall calculate, in cubic metres, a monthly average cooling water effluent plant volume for each month, by taking the arithmetic mean of the daily cooling water effluent plant volumes calculated under subsection (4) for the month. O. Reg. 537/93, s. 27.

PART VII  
STORM WATER CONTROL STUDY

**28.**(1)  Each discharger shall complete a storm water control study in respect of the discharger’s plant, in accordance with the requirements of the Ministry of Environment and Energy publication entitled “Protocol for Conducting a Storm Water Control Study” dated August, 1994. O. Reg. 537/93, s. 28 (1); O. Reg. 524/95, s. 9 (1).

(2)  A discharger need not comply with subsection (1) in respect of the discharger’s plant if,

(a) the plant meets the exemption criteria set out in the Ministry of Environment and Energy publication entitled “Protocol for Conducting a Storm Water Control Study” dated August, 1994; and

(b) the discharger notifies the Director in writing, by September 12, 1994, that the plant meets the exemption criteria referred to in clause (a). O. Reg. 537/93, s. 28 (2); O. Reg. 524/95, s. 9 (2).

(3)  Subject to subsection (4), a discharger shall complete the storm water control study in respect of the discharger’s plant by September 11, 1995.

(4)  A discharger may postpone completion of the storm water control study in respect of the discharger’s plant until January 1, 1997 if,

(a) in order to meet the requirements of Part IV, the discharger plans to make process changes, install wastewater treatment facilities, implement management practices, or make any other changes at the plant that would likely alter the quantity or quality of storm water discharged from the plant: and

(b) the discharger notifies the Director in writing, by September 11, 1995, of the plans referred to in clause (a).

(5)  Each discharger shall ensure that a copy of each study completed under this section is available to Ministry staff at the discharger’s plant, on request, during the plant’s normal office hours. O. Reg. 537/93, s. 28 (3-5).

PART VIII  
RECORDS AND REPORTS

Record Keeping

**29.**(1)  Each discharger shall keep records, in an electronic format acceptable to the Director, of all analytical results obtained under sections 17, 18, 19, 21 and 25, all calculations performed under sections 12 and 13 and all determinations and calculations made or performed under sections 26 and 27.

(2)  Each discharger shall keep records of all sampling and analytical procedures used in meeting the requirements of section 7, including, for each sample, the date, the time of pick-up, the sampling procedures used and any incidents likely to affect the analytical results.

(3)  Each discharger shall keep records of the results of all monitoring performed under sections 20 and 22 to 24.

(4)  Each discharger shall keep records of all maintenance and calibration procedures performed under section 26.

(5)  Each discharger shall keep records of all problems or malfunctions, including those related to sampling, analysis, acute lethality testing, chronic toxicity testing or flow measurement, that result or are likely to result in a failure to comply with a requirement of this Regulation, stating the date, duration and cause of each malfunction, and including a description of any remedial action taken.

(6)  Each discharger shall keep records of any incident in which process effluent is discharged from the discharger’s plant without flowing past a sampling point established on a process effluent stream in accordance with this Regulation before being discharged, stating the date, duration, cause and nature of each incident.

(7)  Each discharger shall keep records of all process changes and redirections of or changes in the character of effluent streams that affect the quality of effluent at any sampling point established under this Regulation at the discharger’s plant.

(8)  Each discharger shall keep records of the amount of crude oil, calculated in cubic metres, that is processed daily at the discharger’s plant.

(9)  Each discharger shall keep records of the location of each sampling point established at the discharger’s plant under Part II.

(10)  Each discharger shall make each record required by this section as soon as reasonably possible and shall keep each such record for a period of three years.

(11)  Each discharger shall ensure that all records kept under this section are available to Ministry staff at the discharger’s plant, on request, during the plant’s normal office hours. O. Reg. 537/93, s. 29.

Reports Available to the Public

**30.**(1)  On or before June 1 in each year, each discharger shall prepare a report relating to the previous calendar year and including,

(a) a summary of plant loadings calculated under sections 12 and 13;

(b) a summary of the results of monitoring performed under sections 17, 18 and 19 and 21 to 25;

(c) a summary of calculations performed under subsections 27 (1) and (4);

(d) a summary of the loadings, concentrations or other results that exceeded a limit prescribed by section 14 or 15; and

(e) a summary of the incidents in which process effluent was discharged from the discharger’s plant without flowing past a sampling point established on a process effluent stream in accordance with this Regulation before being discharged.

(2)  Each discharger shall ensure that each report prepared under subsection (1) is available to any person at the discharger’s plant, on request, during the plant’s normal office hours.

(3)  Each discharger shall provide the Director, upon request, with a copy of any report that the discharger has prepared under subsection (1). O. Reg. 537/93, s. 30.

Reports to the Director — General

**31.**(1)  Each discharger shall notify the Director in writing of any change of name or ownership of the discharger’s plant occurring after September 10, 1993, within thirty days after the end of the month in which the change occurs.

(2)  Each discharger shall notify the Director in writing of any process change or redirection of or change in the character of an effluent stream that affects the quality of effluent at any sampling point established under this Regulation at the discharger’s plant, within thirty days of the change or redirection.

(3)  A discharger need not comply with subsection (2) where the effect of the change or redirection on effluent quality is of less than one week’s duration.

(4)  Each discharger shall notify the Director in writing if the discharger’s plant has, for more than ninety consecutive days, operated at less than 75 per cent of the reference production rate specified in Schedule 4 for the discharger’s plant, within thirty days of the end of the ninety-day period. O. Reg. 537/93, s. 31.

Reports to the Director on Compliance with Section 6 and Part IV

**32.**(1)  Each discharger shall report any incident in which process effluent is discharged from the discharger’s plant without flowing past a sampling point established on a process effluent stream in accordance with this Regulation before being discharged.

(2)  Each discharger shall report any loading, concentration or other result that exceeds a limit prescribed by section 14 or 15.

(3)  A report required under subsection (1) or (2) shall be given orally, as soon as reasonably possible, and in writing, as soon as reasonably possible. O. Reg. 537/93, s. 32.

Quarterly Reports to the Director

**33.**(1)  No later than forty-five days after the end of each quarter, each discharger shall submit a report to the Director containing information relating to the discharger’s plant throughout the quarter as required by subsections (3) to (8).

(2)  A report under this section shall be submitted both in an electronic format acceptable to the Director and in hard copy generated from the electronic format and signed by the discharger.

(3)  A report under this section shall include all information included in a report given under section 32 during the quarter.

(4)  Each discharger shall report, for each month in the quarter, the monthly average plant loadings and the highest and lowest daily plant loadings calculated under sections 12 and 13 for each limited parameter and each assessment parameter.

(5)  Each discharger shall report, for each month in the quarter, the monthly average process effluent plant volume and the highest and lowest daily process effluent plant volumes calculated under section 27.

(6)  Each discharger shall report, for each month in the quarter, the monthly average cooling water effluent plant volume and the highest and lowest daily cooling water effluent plant volumes calculated under section 27.

(7)  Each discharger shall report the number of days in each month in the quarter on which process effluent was discharged from the discharger’s plant.

(8)  Each discharger shall report, for each month in the quarter, the highest and lowest pH results obtained under section 21 for each process effluent monitoring stream at the discharger’s plant. O. Reg. 537/93, s. 33.

Reports to the Director on Chronic Toxicity Testing

**34.**(1)  Each discharger shall report to the Director the results of all monitoring performed under section 24, together with the date on which each sample was picked up, no later than sixty days after the end of each semi-annual period in which the monitoring was performed.

(2)  A report under subsection (1) shall include a plot of percentage reduction in growth or reproduction against the logarithm of test concentration and shall include a calculation of the concentration at which a 25 per cent reduction in growth or reproduction would occur. O. Reg. 537/93, s. 34.

Schedule 1  
LIST OF REGULATED PLANTS

|  |  |  |
| --- | --- | --- |
| Plant Name | Location | Owner as of August, 1993 |
| Imperial Oil Limited, Sarnia Refinery | Sarnia | Imperial Oil Limited |
| Imperial Oil Limited, Nanticoke Refinery | Nanticoke | Imperial Oil Limited |
| Novacor Chemicals Ltd. | Corunna | Novacor Chemicals Ltd. |
| Petro-Canada, Lubricants Centre (Formerly: Petro-Canada Products — Lake Ontario Refinery Mississauga Plant) | Mississauga | Petro-Canada |
| Petro-Canada — Oakville Refinery (Formerly: Petro-Canada Products — Lake Ontario Refinery Oakville Plant) | Oakville | Petro-Canada |
| Shell Canada Products Ltd. | Sarnia | Shell Canada Products Ltd. |
| Sunoco Inc. | Sarnia | Suncor Inc. |

O. Reg. 524/95, s. 10.

SCHEDULE 2  
PROCESS EFFLUENT LIMITS AND MONITORING FREQUENCY

Table 1  
Imperial Oil Limited, Sarnia Refinery

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Analytical Test Group | Column 1  Parameter | Column 2  Monitoring Frequency | Column 3  Daily Plant Loading Limit in kilograms per day | Column 4  Monthly Average Plant Loading Limit in kilograms per day |
| 1. | 4a | Ammonia plus Ammonium | Weekly | 632 | 219 |
| 2. | 5a | Dissolved Organic Carbon (DOC) | Weekly | 1465 | 859 |
| 3. | 6 | Total Phosphorus | Weekly | Not applicable | 41 |
| 4. | 8 | Total Suspended Solids (TSS) | Weekly | Not applicable | 947 |
| 5. | 8 | Volatile Suspended Solids (VSS) | Daily | 1364 | 738 |
| 6. | 14 | Phenolics (4AAP) | Daily | 1.9 | 0.65 |
| 7. | 15 | Sulphide | Weekly | 12.6 | 6.3 |
| 8. | 25 | Oil and Grease | Weekly | 674 | 316 |
| 9. | 24 | 2, 3, 7, 8-tetrachlorodibenzo-para-dioxin | Quarterly | Not applicable | Not applicable |
| 10. | 24 | 2, 3, 7, 8-tetrachlorodibenzofuran | Quarterly | Not applicable | Not applicable |
| 11. | 24 | Total toxic equivalent of 2, 3, 7, 8 substituted dioxin and furan congeners | Quarterly | Not applicable | Not applicable |

TABLE 2  
Imperial Oil Limited, Nanticoke Refinery

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Analytical Test Group | Column 1  Parameter | Column 2  Monitoring Frequency | Column 3  Daily Plant Loading Limit in kilograms per day | Column 4  Monthly Average Plant Loading Limit in kilograms per day |
| 1. | 4a | Ammonia plus Ammonium | Weekly | 123 | 43 |
| 2. | 5a | Dissolved Organic Carbon (DOC) | Weekly | 285 | 167 |
| 3. | 6 | Total Phosphorus | Weekly | Not applicable | 8 |
| 4. | 8 | Total Suspended Solids (TSS) | Weekly | Not applicable | 184 |
| 5. | 8 | Volatile Suspended Solids (VSS) | Daily | 265 | 144 |
| 6. | 14 | Phenolics (4AAP) | Daily | 0.37 | 0.13 |
| 7. | 15 | Sulphide | Weekly | 2.5 | 1.2 |
| 8. | 25 | Oil and Grease | Weekly | 131 | 61 |
| 9. | 24 | 2, 3, 7, 8-tetrachlorodibenzo-para-dioxin | Quarterly | Not applicable | Not applicable |
| 10. | 24 | 2, 3, 7, 8-tetrachlorodibenzofuran | Quarterly | Not applicable | Not applicable |
| 11. | 24 | Total toxic equivalent of 2, 3, 7, 8 substituted dioxin and furan congeners | Quarterly | Not applicable | Not applicable |

Table 3  
Novacor Chemicals Ltd., Corunna

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Analytical Test Group | Column 1  Parameter | Column 2  Monitoring Frequency | Column 3  Daily Plant Loading Limit in kilograms per day | Column 4  Monthly Average Plant Loading Limit in kilograms per day |
| 1. | 4a | Ammonia plus Ammonium | Weekly | 188 | 65 |
| 2. | 5a | Dissolved Organic Carbon (DOC) | Weekly | 436 | 256 |
| 3. | 6 | Total Phosphorus | Weekly | Not applicable | 12 |
| 4. | 8 | Total Suspended Solids (TSS) | Weekly | Not applicable | 282 |
| 5. | 8 | Volatile Suspended Solids (VSS) | Daily | 406 | 220 |
| 6. | 14 | Phenolics (4AAP) | Daily | 0.57 | 0.19 |
| 7. | 15 | Sulphide | Weekly | 3.8 | 1.9 |
| 8. | 25 | Oil and Grease | Weekly | 201 | 94 |
| 9. | 24 | 2, 3, 7, 8-tetrachlorodibenzo-para-dioxin | Quarterly | Not applicable | Not applicable |
| 10. | 24 | 2, 3, 7, 8-tetrachlorodibenzofuran | Quarterly | Not applicable | Not applicable |
| 11. | 24 | Total toxic equivalent of 2, 3, 7, 8 substituted dioxin and furan congeners | Quarterly | Not applicable | Not applicable |

TABLE 4  
Petro-Canada, Lubricants Centre

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Analytical Test Group | Column 1  Parameter | Column 2  Monitoring Frequency | Column 3  Daily Plant Loading Limit in kilograms per day | Column 4  Monthly Average Plant Loading Limit in kilograms per day |
| 1. | 4a | Ammonia plus Ammonium | Weekly | 161 | 56 |
| 2. | 5a | Dissolved Organic Carbon (DOC) | Weekly | 374 | 220 |
| 3. | 6 | Total Phosphorus | Weekly | Not applicable | 11 |
| 4. | 8 | Total Suspended Solids (TSS) | Weekly | Not applicable | 243 |
| 5. | 8 | Volatile Suspended Solids (VSS) | Daily | 350 | 188 |
| 6. | 14 | Phenolics (4AAP) | Daily | 0.48 | 0.17 |
| 7. | 15 | Sulphide | Weekly | 3.2 | 1.6 |
| 8. | 25 | Oil and Grease | Weekly | 173 | 81 |
| 9. | 24 | 2, 3, 7, 8-tetrachlorodibenzo-para-dioxin | Quarterly | Not applicable | Not applicable |
| 10. | 24 | 2, 3, 7, 8-tetrachlorodibenzofuran | Quarterly | Not applicable | Not applicable |
| 11. | 24 | Total toxic equivalent of 2, 3, 7, 8 substituted dioxin and furan congeners | Quarterly | Not applicable | Not applicable |

TABLE 5  
Petro-Canada, Oakville Refinery

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Analytical Test Group | Column 1  Parameter | Column 2  Monitoring Frequency | Column 3  Daily Plant Loading Limit in kilograms per day | Column 4  Monthly Average Plant Loading Limit in kilograms per day |
| 1. | 4a | Ammonia plus Ammonium | Weekly | 161 | 56 |
| 2. | 5a | Dissolved Organic Carbon (DOC) | Weekly | 374 | 219 |
| 3. | 6 | Total Phosphorus | Weekly | Not applicable | 10 |
| 4. | 8 | Total Suspended Solids (TSS) | Weekly | Not applicable | 242 |
| 5. | 8 | Volatile Suspended Solids (VSS) | Daily | 348 | 188 |
| 6. | 14 | Phenolics (4AAP) | Daily | 0.48 | 0.17 |
| 7. | 15 | Sulphide | Weekly | 3.2 | 1.6 |
| 8. | 25 | Oil and Grease | Weekly | 172 | 81 |
| 9. | 24 | 2, 3, 7 ,8-tetrachlorodibenzo-para-dioxin | Quarterly | Not applicable | Not applicable |
| 10. | 24 | 2, 3, 7, 8-tetrachlorodibenzofuran | Quarterly | Not applicable | Not applicable |
| 11. | 24 | Total toxic equivalent of 2, 3, 7, 8 substituted dioxin and furan congeners | Quarterly | Not applicable | Not applicable |

TABLE 6  
Shell-Canada Products Ltd., Sarnia

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Analytical Test Group | Column 1  Parameter | Column 2  Monitoring Frequency | Column 3  Daily Plant Loading Limit in kilograms per day | Column 4  Monthly Average Plant Loading Limit in kilograms per day |
| 1. | 4a | Ammonia plus Ammonium | Weekly | 157 | 55 |
| 2. | 5a | Dissolved Organic Carbon (DOC) | Weekly | 365 | 214 |
| 3. | 6 | Total Phosphorus | Weekly | Not applicable | 10 |
| 4. | 8 | Total Suspended Solids (TSS) | Weekly | Not applicable | 236 |
| 5. | 8 | Volatile Suspended Solids (VSS) | Daily | 340 | 184 |
| 6. | 14 | Phenolics (4AAP) | Daily | 0.47 | 0.16 |
| 7. | 15 | Sulphide | Weekly | 3.1 | 1.6 |
| 8. | 25 | Oil and Grease | Weekly | 168 | 79 |
| 9. | 24 | 2, 3, 7, 8-tetrachlorodibenzo-para-dioxin | Quarterly | Not applicable | Not applicable |
| 10. | 24 | 2, 3, 7, 8-tetrachlorodibenzofuran | Quarterly | Not applicable | Not applicable |
| 11. | 24 | Total toxic equivalent of 2, 3, 7, 8 substituted dioxin and furan congeners | Quarterly | Not applicable | Not applicable |

TABLE 7  
Sunoco Inc., Sarnia

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Analytical Test Group | Column 1  Parameter | Column 2  Monitoring Frequency | Column 3  Daily Plant Loading Limit in kilograms per day | Column 4  Monthly Average Plant Loading Limit in kilograms per day |
| 1. | 4a | Ammonia plus Ammonium | Weekly | 158 | 55 |
| 2. | 5a | Dissolved Organic Carbon (DOC) | Weekly | 366 | 214 |
| 3. | 6 | Total Phosphorus | Weekly | Not applicable | 10 |
| 4. | 8 | Total Suspended Solids (TSS) | Weekly | Not applicable | 236 |
| 5. | 8 | Volatile Suspended Solids (VSS) | Daily | 340 | 184 |
| 6. | 14 | Phenolics (4AAP) | Daily | 0.47 | 0.16 |
| 7. | 15 | Sulphide | Weekly | 3.2 | 1.6 |
| 8. | 25 | Oil and Grease | Weekly | 168 | 79 |
| 9. | 24 | 2, 3, 7, 8-tetrachlorodibenzo-para-dioxin | Quarterly | Not applicable | Not applicable |
| 10. | 24 | 2, 3, 7, 8-tetrachlorodibenzofuran | Quarterly | Not applicable | Not applicable |
| 11. | 24 | Total toxic equivalent of 2, 3, 7, 8 substituted dioxin and furan congeners | Quarterly | Not applicable | Not applicable |

O. Reg. 299/17, s. 7.

SCHEDULE 3  
COOLING WATER ASSESSMENT MONITORING REQUIREMENTS

All plants

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Analytical Test Group | Column 1  Parameter | Column 2  Monitoring Frequency |
| 1. | 14 | Phenolics (4AAP) | Weekly |
| 2. | 15 | Sulphide | Weekly |
| 3. | 17 | Benzene | Weekly |
| 4. | 17 | Toluene | Weekly |

O. Reg. 299/17, s. 7.

Schedule 4  
REFERENCE PRODUCTION RATE

|  |  |  |
| --- | --- | --- |
| Plant Name | Production | Reference Production Rate |
| Imperial Oil Limited, Sarnia Refinery | Crude Oil Processed | 19,900 m3/day |
| Imperial Oil Limited, Nanticoke Refinery | Crude Oil Processed | 18,600 m3/day |
| Novacor Chemicals Ltd. | Crude Oil Processed | 14,600 m3/day |
| Petro-Canada, Lubricants Centre | Equivalent Crude Oil Processed | 12,900 m3/day |
| Petro-Canada, Oakville Refinery | Crude Oil Processed | 14,150 m3/day |
| Shell Canada Products Ltd. | Crude Oil Processed | 11,300 m3/day |
| Sunoco Inc. | Crude Oil Processed | 11,900 m3/day |

O. Reg. 524/95, s. 12.

[Back to top](#Top)