STATEMENT OF BASIS

Air Operating Permit 0000922

Port Townsend Paper Corporation
100 Mill Road
Port Townsend, Washington 98368

Permit Issued Date: DRAFT
Permit Effective Date: DRAFT
Permit Expiration Date: DRAFT

Prepared by:

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List of Abbreviations and Acronyms

Acronym	Description
Btu	British thermal units
BACT	Best Available Control Technology
CAA	Clean Air Act [42 U.S.C. section 7401 et seq.]
CAM	Compliance assurance monitoring
CEMS	Continuous emission monitoring system
CFR	Code of Federal Regulations
CMS	Continuous monitoring system
CO	Carbon Monoxide
COMS	Continuous opacity monitoring system
CO_2	Carbon dioxide
dscf	Dry standard cubic foot
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
EU	Emission Unit
gr/dscf	Grains/dry standard cubic foot (7,000 grains = 1 pound)
HAP	Hazardous air pollutant
hr	Hour
IEU	Insignificant emission unit
lb	Pound
MACT	Maximum Achievable Control Technology
mm	One million
NESHAP	National Emission Standards for Hazardous Air Pollutants (40 CFR 61 and 63)
NOC	Notice of Construction
NOx	Oxides of nitrogen
NSPS	New source performance standards
O_2	Oxygen
PM	Particulate matter
$PM_{2.5}$	Particulate matter with an aerodynamic diameter ≤ 2.5 microns
PM_{10}	Particulate matter with an aerodynamic diameter ≤ 10 microns
ppmdv	Parts per million, on a dry volume basis
PSD	Preventions of Significant Deterioration
PTE	Potential to emit
SCR	Selective catalytic reduction
SO_2	Sulfur dioxide
SOx	Oxides of sulfur
tpy	Tons per year
tBACT	Toxics Best Available Control Technology
TSP	Total suspended particulate
VOC	Volatile organic compounds
WAC	Washington Administrative Code

1.0 INTRODUCTION

This document, the Statement of Basis or support document, summarizes the legal and factual basis for the permit conditions in the Air Operating Permit issued by the Washington State Department of Ecology (Ecology) to the source. When Ecology issues a draft Operating Permit, we must provide a statement that sets forth the legal and factual basis for these draft permit conditions, including references to the applicable statutory or regulatory provisions per Washington Administrative Code (WAC) 173-401-700(8).

Unlike the Air Operating Permit, this document is not legally enforceable. This Statement of Basis summarizes the emitting processes at the facility, air emissions, permitting and compliance history, the statutory or regulatory provisions that relate to the facility, and the steps taken to provide opportunities for public review of the permit. The Permittee is obligated to follow the terms of the permit. Any errors or omissions in the summaries provided here do not excuse the Permittee from the requirements of the permit.

2.0 PERMIT AUTHORITY

Title V of the Federal Clean Air Act Amendments requires all states to develop a renewable operating permit program for industrial and commercial sources of air pollution. The Washington State Clean Air Act (Revised Code of Washington (RCW) 70A.15) was amended in 1991 and 1993 to provide the Department of Ecology and Local Air Agencies with the necessary authority to implement a statewide operating permit program. The law requires all major sources or any source that is subject to a standard, limitation or other requirement under the Standards of Performance for New Stationary Sources obtain an air operating permit. A major source is defined as one that either directly emits or has the potential to emit 100 tons per year (tpy) or more of a pollutant that is subject to regulation, for example criteria pollutants, 10 tpy or more of a hazardous air pollutant, or 25 tpy or more in the cumulative of hazardous air pollutants. Criteria pollutants include sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter (PM), carbon monoxide (CO), lead (Pb), and ozone (O_3).

Chapter 173-401 of the WAC, which specifies the requirements of Washington State's Operating Permit Regulation became effective November 4, 1993. EPA granted Washington's program interim approval December 9, 1994. Final approval of Washington's program was granted on August 13, 2001. The current version of the regulation was filed in August 2018 and became effective September 16, 2018.

3.0 FACILITY INFORMATION

Company/Owner	Port Townsend Paper Corporation
Plant or Facility Name	Port Townsend Paper Corporation
Responsible Official	Nicholas Nachbar General Manager
Facility Contact(s)	Phil Racine Environmental and Technical Manager
Facility Location	100 Mill Road, Port Townsend, WA 98368
Mailing Address	100 Mill Road, Port Townsend, WA 98368
Telephone	(360) 379-2141
SIC Code	26 (Pulp and Allied Products)
Attainment Classification	As of January 6, 2022, there are no Washington State counties (or adjacent Oregon counties) in nonattainment for any of the criteria pollutants. (Green Book, EPA)
Basis for Title V applicability	The facility by definition is a major source with a potential emissions of over 100 tons of a regulated air pollutant and 10 tons of HAP per year

Figure 1 - Location map

A. Source Description

Ownership

Port Townsend Paper Corporation (PTPC) is an integrated pulp and paper mill located in Port Townsend, Washington.

Construction on the kraft pulp and paper mill began in 1927 to be owned and operated by the National Paper Products Company. The mill was owned and operated by Crown Zellerbach until 1983 when it was acquired by a West German company, Haindl Papier GmbH. The mill was renamed "Port Townsend Paper Corporation" and later sold in 1997 to Northwest Capital Appreciation. In 2007 the mill filed for bankruptcy and emerged under the new ownership of GoldenTree Asset Management. In 2015, the mill was purchased by the holding company Crown Paper Group.

Process

The mill uses two main sources of fiber to make paper. The mill purchases secondary fiber as bales of old corrugated containerboard (OCC) to repulp. PTPC also creates its own virgin pulp from wood chips using the kraft process. PTPC produces approximately 1,000 air dried tons of product a day.

The kraft process uses chemicals to convert wood chips to pulp. The solution of chemicals is called "white liquor" and consists of sodium hydroxide (NaOH) and sodium sulfide (Na_2S). "White liquor" is mixed with the wood chips and sawdust in a digester to extract the pulp material from the raw materials. This mixture is then washed and processed to separate the used chemicals from the pulp fibers. The pulp fibers are further processed into pulp and paper products, while the used chemicals are sent through the recovery process to recover the sodium hydroxide and sodium sulfide for re-use. The emissions units associated with the chemical recovery process (recovery boiler, smelt dissolver tank, and lime kiln) are the major sources of air pollution at the facility. Other sources include the boilers, which generate steam to power certain components of the process, and fugitive emissions, such as the chip and hog fuel storage area. These emissions units are discussed in more detail below.

Recovery Furnace

The Recovery Furnace (RF) is the first emission unit associated with the chemical recovery process. The used chemical solution, also known as “weak black liquor”, is sent to evaporators to remove excess moisture. The concentrated black liquor is then sent to the Recovery Furnace to be burned. The black liquor is converted to a molten salt (smelt) that is collected at the bottom of the boiler. Smelt primarily consists of Na_2S and sodium carbonate (Na2CO3). Steam is also produced in the process and used to help provide power for the mill. The air pollution control equipment for the emissions from the Recovery Furnace is an electrostatic precipitator (precipitator or ESP). Emissions from the precipitator are measured using a stack test for hazardous air pollutants (HAPs) and particulate and continuously for opacity, sulfur dioxide (SO2), and total reduced sulfurs (TRS). Stack tests are performed by a third party.

Smelt Dissolver Tank

The smelt generated in the Recovery Furnace is transferred to the Smelt Dissolver Tank (SDT), where it is dissolved in water to form a solution called “green liquor”. The “green liquor” is reacted with lime (CaO) to convert the Na2CO3 in the green liquor to NaOH. The solution generated from this reaction contains NaOH and Na2S, or “white liquor”. The “white liquor” is returned to the digesters to convert more wood chips into pulp. The air pollution control equipment for the emissions from the Smelt Dissolver Tank is a packed tower scrubber. The scrubber uses fresh mill water as a scrubber medium. Emissions from the wet scrubber are monitored through stack tests for particulate and continuously for HAPs and opacity using surrogate parameters. The stack tests are performed by a third party.

Lime Kiln

The reaction of “green liquor” and lime produces a precipitate of CaCO3 (also known as lime mud). Excess moisture is removed from the lime mud before it is sent to the Lime Kiln (LK) where it is heated to a high temperature to regenerate the lime (CaO). The regenerated lime can then be used again to react with more “green liquor”. The air pollution control equipment for the emissions from the Lime Kiln is a venturi scrubber followed by a cyclone separator. Emissions from the cyclone separator are monitored through stack tests for particulate and SO2, continuously for TRS, and continuously for HAPs and opacity using surrogate parameters.

Power Boiler #10 and Package Boiler

Power Boiler #10 (PB10) burns hog fuel, urban wood, floaters associated with the boiler ash, OCC rejects (also referred to as paper recycling residuals), compressed natural gas (CNG), and reprocessed fuel oil to produce steam that is needed to run the manufacturing processes at the facility. Power Boiler # 10 is part of the “stoker/sloped grate/others designed to burn wet biomass fuel” subcategory for Boiler MACT. Power Boiler #10 is the main source of steam generation and the Package Boiler is mainly used as a backup if additional steam is necessary. The Package Boiler burns only compressed natural gas. The air emissions from the Power Boiler #10 were previously controlled by multiclones and a turbo-tak wet scrubber. In October 2015, the turbo-tak was replaced by a venturi scrubber followed by a wet electrostatic precipitator.

Emissions are monitored through stack tests for particulate matter, continuously for nitrogen oxides (NOx), continuously for opacity using surrogate parameters, and through fuel receipts for SO2. Stack tests are performed by a third party. Air pollution control for the Package Boiler is accomplished through good operational/combustion practices and use of only natural gas as fuel. Emissions from the Package Boiler are monitored through stack tests for particulate, continuously for opacity and NOx, through fuel receipts for SO2, and through operating conditions for carbon monoxide (CO) and volatile organic compounds (VOCs).

Non-Condensable Gases and Condensates

Non-condensable gases (NCGs) and condensates are collected from various units associated with the pulp and paper making processes. The collected gases are piped to the Lime Kiln for destruction. The collected condensates are sent to the wastewater treatment system for destruction. The facility is required to ensure that the HAPs associated with the gases and condensates are collected and destroyed. This is demonstrated through inspection of the collection system to ensure that there are no leaks. The facility also monitors the amount of HAPs associated with the condensates that are both collected and destroyed, as well as certain operational parameters of the wastewater treatment system, to ensure sufficient destruction of the HAPs.

Emissions

Actual emissions from the Washington Emissions Reporting System (WEIRS) for the 2019 reporting year are tabulated in Table 1.

Table 1

Criteria and Other Air Pollutants Actual Emissions Summary (2020)

Emission Unit	TSP [tons]	PM_{10} [tons]	$PM_{2.5}$ [tons]	SO_2 [tons]	NO_x [tons]	VOC [tons]	CO [tons]	TRS [tons]
Recovery Furnace	106.80	79.89	71.88	3.90	202.00	10.0	166.00	0.35
Smelt Dissolver Tank	21.60	16.16	14.54	0.80	3.00	1.00	0.0	3.79
Lime Kiln	24.45	24.04	23.48	1.10	30.0	1.00	2.0	0.19
Power Boiler #10	27.52	26.97	26.97	74.60	294.00	21.00	504.00	--
Package Boiler	0.82	0.71	0.46	0.5	26.00	0.08	0.60	--
Pulp Processing	--	--	--	--	--	14.00	--	--
Fugitive Dust	165.14	47.93	6.79	--	--	--	--	--
Paper Machine Vents	7.72	7.06	4.91	--	--	24.00	--	--
OCC Vents	--	--	--	--	--	1.00	--	
Kraft Liquor	--	--	--	--	--	8.0	--	--
ASB	--	--	--	--	--	--	--	58
Total	**354**	**203**	**149**	**81**	**555**	**80**	**797**	**62.3**

B. Permitting Summary

PTPC submitted a Title V permit renewal application to Ecology which was received on November 3, 2014. Ecology reviewed the renewal application and determined the application to be complete on November 12, 2014.

This section summarizes the major permitting actions at PTPC.

Table 2

PTPC Permitting History Summary

Date	Order/PSD	Description
7/1/1982	Order DE 82-291	Order concerning NCG venting.
6/1/1984	PSD-I	Proposed three phase modernization. Proposed expansion from 450 to 650 (Phase 1 and 2) to 750 tons per day (tpd) of unbleached pulp. Phase 1: - add 3 batch digesters - add new line of brownstock washers and screens for 390 tpd production - new multi-effect evaporator line and concentrator to increase black liquor solids from 62 to 70 percent - new lime washer and causticizer and modification of old mud washer to be a green liquor clarifier - modifications to paper machines to increase production - no physical changes to RF, SDT, or LK but productions increase will lead to increase in emissions Phase 2: - replace RF air heater with extended economizer. May require additional ESP. - add pulp storage chest and wood handling improvements. Phase 3 (expansion from 650 to 750 tpd) - add digester capacity - replace old line of MEE - add bleaching facilities (not completed) - modification to paper machines to increase production
6/20/1984	Order DE 84-390	Order limiting mill emissions and emissions associated with a mill expansion to produce approximately 650 tpd of unbleached kraft pulp and paper.
3/14/1985	Order DE 85-209	Compliance Order requiring monthly particulate source testing at PB10.
1/27/1987	Order DE 87-107	Compliance Order requiring demonstration of backup boiler start up in compliance with opacity limits.

Date	Order/PSD	Description
5/31/1988	Order DE 88-195	Compliance Order requiring installation of Waterloo scrubber at PB10 and setting appropriate operating conditions after inability to meet 20% opacity standard.
8/13/1992	Order DE 92-AQI057	Ecology issued Order DE 92-AQI057 approving the replacement of the #2 precipitator at the Recovery Furnace. In September 1992, PTPC appealed the Order. Through settlement, decided to issue Order DE 93-AQI063 for Emission Reduction Credits (ERC) for the precipitator replacement and Ecology would rescind Order DE 92-AQI057. Order rescinded July 6, 1993.
7/6/1993	Order DE 93-AQI063	Order limiting emissions from the RF corresponding to issuance of a certificate of ERC. Replacement of #2 precipitator at the Recovery Furnace. #2 installed in 1969 and rebuilt in 1980. Newer #1 ESP installed in 1985.
6/18/1997	PSD-96-01A	Package Boiler installation (245 MMBTU/hr capacity). Decommissioning of PB4 and PB5.
5/11/1998	PSD-96-01A, First Amendment	Amendment following PCHB settlement.
5/14/1998	Order DE 97AQ-I030, First Revision	Package Boiler installation (245 MMBTU/hr capacity). Decommissioning of PB4 and PB5.
3/16/2000	Order DE 00AQIS-131	Order consolidating previous Orders. Supersedes/repeals: Order De 93-AQI063, Order DE 88-195, Order DE 87-107, Order DE 85-209, Order DE 84-390, Order DE 82-291, and all other Orders issued prior to 1984.
11/14/2000	AOP 000092-2	Air Operating Permit (AOP) issued by Ecology to PTPC. Effective date 11/14/2000. Expiration date 11/14/2005.
9/13/2001	N/A	Power Boiler 2 shutdown. Ecology notified on 10/1/2001. Disconnecting of the oil supply line and removing the gas supply line completed on 9/13/2001.
8/10/2006	Order 2892-05AQ	Replaced Order DE 00AQIS-131. Removed applicable requirements stipulated by regulation. The presence of the regulations created duplicative requirements since the regulation was already included in the AOP.
1/17/2007	AOP 000092-2	AOP renewal. Issuance date 11/17/2007.
7/29/2008	Agreed Order 5771	Agreed Order to gather data for the Department of Health in order to assess health impacts from PTPC air emissions.

Date	Order/PSD	Description
4/20/2010	Order 2892-05AQ, First Modification	Original Order contained Condition D.1 which specified compliance with SO_2 emission limits for PB10 included in 40 CFR Part 60, Subpart D be demonstrated using fuel receipts. The EPA determined that Condition D.1 did not completely fulfill the Subpart D requirements. A satisfactory compliance demonstration method was developed and included in the AOP, therefore Condition D.1 was removed in this modification.
4/28/2010	AOP 000092-2	AOP reissuance. Effective date 5/1/2010. Expiration date 5/1/2015.
7/7/2010	Order 7839	BART Compliance Order.
10/22/2010	Order 7850	Cogeneration project to install a new steam turbine generator and produce 25 MW of energy. Project never constructed. Ecology invalidation letter for Order 7850 sent July 21, 2014.
5/6/2013	Order 9823	Compliance Order based on 40 CFR Part 63, Subpart MM violations at RF and LK. Order terminates on issuance of subsequent AOP renewal. - No longer use Method 8 for PM, only RM 5 - All RM 5 test consist of at least 3 runs - Source test frequency Monthly/Quarterly/Semi-annually - Exhaust leak stack O2 program to detect exhaust duct leaks
7/21/2014	Order 10453	Addition of two refiners prior PM2.
2/11/2015	Order 11025	Replacement of the turbotak at PB10 for Boiler MACT compliance.
6/15/2016	PSD-96-01A, Amendment 1	Conversion of the Package Boiler to burn only natural gas.
6/22/2016	Order DE 97AQ-I030, Second Revision	Conversion of the Package Boiler to burn only natural gas.
7/23/2019	NOC 16293	OCC pulper upgrade project. Increase OCC plant production capacity from 480 to 720 tpd.

C. Compliance Summary

This section summarizes the air violations which have occurred the previous five years at PTPC for which there are associated Ecology notices of violation (NOVs) or notices of penalty (NOP).

Table 3

PTPC Exceedances and Violations

Date Citation Issued	Docket Number	Unit	Parameter	Additional Information
8/18/21	NOV 20467	Recovery Furnace	Opacity	PTPC exceeded the opacity standard at Recovery Furnace on 6/18 and 6/28/21. Average opacity of 67.5 was observed on 6/18 from 4:18 to 4:42 AM. Average opacity of 70.0% was observed on 6/28 from 18:24 to 18:48.
6/9/21 and 7/12/21	NOV 20070 and NOP 20170	Power Boiler #10	NOx	3-hour maximum NOx of 0.31 lb/mmBTU was recorded on 4/13/21 which is in excess of the 0.30 lb/mmBTU limit at Power Boiler 10.
6/9/21	NOV 20069	Lime Kiln	TRS CEMS	On March 9, 2021, a Relative Accuracy Test Audit (RATA) was performed on the Lime Kiln Total Reduced Sulfur (TRS) continuous emission monitoring system (CEMS). The RATA exceeded the performance criteria and the CEMS was therefore "out-of-control." The Lime Kiln and the mill were shutdown for previously scheduled maintenance from March 14th until March 28th. A second RATA was performed on the Lime Kiln TRS CEMS on March 29, 2021; all performance criteria were met. The Lime Kiln TRS CEMS was "out-of-control" for 44% of the operating time during the month of March 2021. This is in excess of the permit allowable 10%.
5/10/21 and 7/12/21	NOV 19968 and NOP 20170	Power Boiler #10	NOx	3-hour maximum NOx of 0.31 lb/mmBTU was recorded on 3/30/21 which is in excess of the 0.30 lb/mmBTU limit at Power Boiler 10.
3/29/21 and 7/12/21	NOV 19799 and NOP 20170	Power Boiler #10	NOx	3-hour maximum NOx of 0.31 lb/mmBTU was recorded on 2/2/21 which is in excess of the 0.30 lb/mmBTU limit at Power Boiler 10.
3/8/21	NOV 19685	Recovery Furnace	Opacity	PTPC exceeded the opacity standard at Recovery Furnace on 1/30/21. Opacity of 63.77% was observed from 12:48 to 1:00 PM.
3/8/21	NOV 19686	Condensate Collection	Work Practice Standards	PTPC identified leaks in the condensate closed collection system during the required monthly inspections. A first effort to repair or corrective action must be made no later than 5 calendar days after the problem is identified. PTPC failed to make first effort to repair until 21 days after the leak was first identified. This is a violation of AOP Condition F.4a and 40 CFR 63.453(l)(1).

Date Citation Issued	Docket Number	Unit	Parameter	Additional Information
12/4/20	NOV 19486	Recovery Furnace	Opacity	Violation of AOP No. WA0000922, Condition A.3 and WAC 173-405-040(6). Opacity of 93% was observed at the RF from 1:36 to 1:48 which is greater than 35% for more than 6 consecutive minutes.
5/19/20	NOV 18157	CEMS Data Availability	CEMS Data Availability	Violation of AOP No. WA0000922, Appendix F, Footnote 11 and WAC 173-401-615(1)(c). CEMS downtime and resulting monitoring data loss exceeded 10% of unit operating time.
5/19/20	NOV 18158	Power Boiler #10	PM	On March 14, 2020, the total secondary power at the wet electrostatic precipitator at Power Boiler 10 fell below the required minimum of 11.6 kW from 18:25 to 18:41. The average observed total secondary power was 0.65 kW with a minimum of 0.6 kW.
5/19/20	NOV 18156	Recovery Furnace	Opacity	On March 6, 2020, opacity at the Recovery Furnace was 67% (6-minute average) from 2:54 AM until 3:06 AM.
4/3/20	NOV 18094	Power Boiler #10	PM	Total secondary power at the wet electrostatic precipitator at Power Boiler #10 fell below the required minimum of 11.6 kW from 14:14 to 14:43.
3/26/20	NOV 18059	Recovery Furnace	HAP Metals (PM)	Recovery Furnace source test exceedance of the HAP metals standard on November 18, 2019. The test showed PM emissions of 0.045 gr/dscf @ 8% O_2 which is in excess of the 0.044 gr/dscf limit.
12/31/19	NOV 17956	Condensate Collection	HAPs	From 11/27/19 at 15:53 to 11/28/19 at 06:43, foul condensates overflowed from the foul condensate tank. The overflowed condensate went to the process sewer and the wastewater treatment plant. The overflow is a failure to enclose, collect, and convey pulping condensates as is required by the air operating permit.
10/7/19	NOV 16849	Recovery Furnace	CEMS Downtime	Recovery Furnace total reduced sulfur (TRS) continuous emission monitoring system (CEMS) downtime for August 2019 was 10.2% which is in excess of the requirement in AOP No. WA 0000922, Appendix F, Footnote 11 which states that monitoring downtime must be less than 10% of the monthly unit operating time.
10/4/19	NOV 16847	Smelt Dissolver Tank	HAP Metals (PM)	On July 23, 2019, PTPC conducted a quarterly PM stack test at the Smelt Dissolver Tank. The test showed PM emissions of 0.25 lb/ton of black liquor solids which is in excess of the 0.2 lb/ton of black liquor solids limit.
8/28/19	NOV 16631	Power Boiler #10	PM	PTPC had alternate opacity exceedances at Power Boiler #10 on June 13 and June 23, 2019. Scrubber recirculation flow and scrubber pressure drop fell below 1553 gpm and 6 inches H2O for more than six consecutive minutes respectively.

Date Citation Issued	Docket Number	Unit	Parameter	Additional Information
4/3/19 and 9/19/19	NOV 16451 and NOP 16548	Lime Kiln	HAP Metals (PM)	PTPC exceeded HAP metals emission limit at the Lime Kiln as indicated by particulate matter stack test results on 2/27/19 and 3/1/19. The source tests showed PM emissions of 0.0883 and 0.0973 gr/dscf @ 10% O_2 which is above the 0.064 gr/dscf limit.
2/6/19	NOV 16194	Power Boiler #10	PM	On December 11, 2018, scrubber recirculation flow at Power Boiler #10 was below the required 1553 gallons per minute for more than 6 consecutive minutes.
3/12/18	NOV 15726	Power Boiler #10	PM	On January 4, 2018, scrubber recirculation flow at the Power Boiler #10 was below the required 1553 gallons per minute for more than 6 consecutive minutes.
1/11/18 and 2/20/18	NOV 15613 and NOP 15678	Power Boiler #10	CO	PTPC exceeded the established 30-day rolling average carbon monoxide limit (720 ppm) at Power Boiler #10 on November 8, 9, and 10. The 30-day CO rolling averages corrected to 3% O_2 were 730, 735, and 729 ppm.
1/11/18	NOV 15612	Power Boiler #10	PM	On November 5, 2017, scrubber recirculation flow at the Power Boiler #10 was below the required 1553 gallons per minute for more than 6 consecutive minutes and wet electrostatic precipitator power was below the required 11.6 kW for more than 6 consecutive minutes.
12/13/17	NOV 15570	Power Boiler #10	PM	Exceedance of opacity surrogate parameter at Power Boiler #10. Scrubber recirculation flow fell below 1553 gallons per minute (gpm) from 16:53 to 17:07. Minimum and average scrubber flows were 555 gpm and 608 gpm, respectively.
11/17/17	NOV 15479	Lime Kiln	PM	On 9/13/17, an alternate opacity exceedance occurred at the lime kiln. Scrubber pressure drop fell below the required 8 inches of water from 23:15 to 23:23.
10/16/17	NOV 15421	Condensate Collection	HAPs	On 2/1/2017 at approximately 08:00, the foul condensate line ruptured underground. The broken line was isolated and foul condensate was diverted to the main process sewer. Line was repaired on 2/4. Line ruptured a second time on 5/26/17. Line was repaired on 5/28.
8/30/17	NOV 14291	Recovery Furnace	Opacity	Two opacity exceedances at the Recovery Furnace on May 27, 2017. The opacity exceedances occurred at 19:48 and 20:00 and the 6 minute average opacities were 48% and 47% respectively. A transformer rectifier control malfunction caused both opacity exceedances.
5/15/17	NOV 14149	Lime Kiln	CEMS Downtime	The CEMS for Lime Kiln TRS failed a quality assurance audit. No valid TRS data was collected from March 3 until March 28, 2017.
3/23/17	NOV 14076	Power Boiler #10	Opacity	Alternate opacity excursions at Power Boiler #10 resulting from a millwide power outage on 1/18/17.

Date Citation Issued	Docket Number	Unit	Parameter	Additional Information
1/26/17 and 4/20/17	NOV 13983 and NOP 14046	Smelt Dissolver Tank	PM	Exceedance of Particulate Matter emission limit at the Smelt Dissolver Tank. Violation was identified by a stack test performed on 11/10/16. The source test showed PM emissions of 0.96 lb PM per ton of black liquor solids fired which is above the 0.20 lb PM per ton of black liquor solids fired limit.
1/5/17	NOV 13960	Recovery Furnace	Opacity	Opacity exceedances at the Recovery Furnace on 10/23 and 10/31.
11/21/2016 and 4/20/17	NOV 13899 and NOP 14099	Recovery Furnace	Operations and Maintenance	PTPC's AOP requires the permittee to maintain and operate their facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practice. Ecology observed a leak from the Recovery Furnace ducting allowing flue gases to be released to the environment prior to treatment. The leak occurred for at least 30 days.
11/16/16	NOV 13898	Recovery Furnace	Opacity	PTPC's AOP specifies a limit of 35% opacity averaged over a six minute period for the Recovery Furnace. This limit was exceeded for two 6 minute periods on 7/4/16, the average opacity for one 6-minute period was 100% followed by a 6-minute period with an average opacity of 45%.
7/12/16	NOV 13627	Package Boiler	Opacity	PTPC's AOP specifies a limit of 15% (and 20%) opacity averaged over a six minute period for the package boiler. The average opacity for an 11 minute period on 5/15/16 was 25%.
1/6/16	NOV 13097	Power Boiler #10	NOx	PTPC's AOP specifies a limit of 0.30 lb/MMBTU of NOx emissions, over any 3-hr. period as an avg. of three contiguous one hr. periods. The three-hr. avg. NOx emissions were reported as 0.31 lb/MMBTU from 12:00 to 15:00 on 10/16/15 and 0.32 lb/MMBTU between 09:00 and 12:00 on 10/25/15.
9/11/15	NOV 12866	Package Boiler	Opacity	PTPC's AOP specifies a limit of 15% (and 20%) opacity averaged over a six minute period for the package boiler. The average opacity for an 18 minute period on 7/1/15 was 67%.

4.0 APPLICABLE REQUIREMENTS

A. Federal Air Quality Requirements: NESHAP, NSPS, CAM

National Emission Standards for Hazardous Air Pollutants (NESHAPs): 40 CFR Part 61 Subpart E and 40 CFR Part 63 Subparts A, S, MM, ZZZZ, DDDDD (adopted by reference in WAC 173-400-075).

New Source Performance Standards (NSPS): 40 CFR Part 60 Subparts A, D, Db, BB, and IIIII (adopted by reference in WAC 173-400-115).

Compliance Assurance Monitoring (CAM): 40 CFR Part 64 (adopted by reference in WAC 173-401-615). See CAM Section for Applicability & Requirements.

Greenhouse Gases: 40 CFR Part 98 (no applicable requirements under Title V operating permit program).

B. State Air Quality Requirements

The Permittee is subject to several state-only requirements, which are not enforceable under the Federal Clean Air Act. These requirements include some requirements in Order 2892-05AQ, the total reduced sulfur (TRS) treatment standard applicable to the digester, multi-effect evaporators, and condensate stripper system in WAC 173-405-040(4); the TRS limits at the lime kiln in WAC 173-405-040(3); and the greenhouse gas reporting requirements in Chapter 173-441 WAC and the greenhouse gas performance standards in Chapter 173-407 WAC.

C. Regulatory Orders

As of the date of this renewal, the Permittee is subject to following regulatory orders and modifications.

Compliance Order 18124;

NOC Order 16293;

Order DE 97AQ-I030, Second Revision;

PSD-96-01A, Amendment 1;

NOC Order 11025;

NOC Order 10453;

NOC Order 7839;

NOC Order 2892-05AQ, Modification 2;

PSD-I

5.0 EMISSION UNITS DESCRIPTION

A. RECOVERY FURNACE

The Recovery Furnace is an indirect-contact recovery furnace with a 542 MMBtu per hour design capacity constructed in 1968. Emissions of PM from the Recovery Furnace are controlled using an electrostatic precipitator (ESP). The ESP has three parallel chambers (1, 2, and 3), each with three, four, and four fields respectively.

On May 24, 1993, PTPC submitted an application for Emission Reduction Credits (ERCs) for emission reductions of five tons per year of total suspended particulate (TSP) and four tons per year of PM-10 resulting from the replacement of the #2 electrostatic precipitator at the Recovery Furnace.

The emissions stack is equipped with multiple continuous emissions monitoring system (CEMS) units to measure TRS and oxygen. The emissions stack is equipped with a continuous opacity monitoring system (COMS) unit to measure opacity.

Applicable unit specific regulations include: 40 CFR Part 63, Subpart MM (National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-alone Semi-chemical Pulp Mills); 40 CFR Part 64; 173-405 Washington Administrative Code (Kraft Pulping Mills); Order 2892-05AQ, Modification 2; and PSD-I.

Ecology has adopted 40 CFR Part 63 and appendices by reference in WAC 173-400-075.

Condition A.1a and b – Particulate Matter (PM): Order 2892-05AQ; WAC 173-405-040(1)(a); and 40 CFR Part 64 (CAM)

The Permittee monitors PM emission limit compliance with monthly/quarterly/annual source tests. The former AOP required monthly/quarterly testing. With the modification of Order 2892-05AQ, the source test frequency was updated to a minimum frequency of annual. Tiered monthly/quarterly/semiannual/annual source testing frequency has been established in the AOP using the sufficiency monitoring requirement in 40 CFR 70.6(c)(1). The former AOP contained an allowance for one test of at least one-hour in lieu of three one-hour tests; this allowance has not been included in the AOP. A single one-hour tests does not provide sufficient assurance of compliance. Three runs of at least one-hour are required to demonstrate compliance.

Facility-wide General Requirement, Condition 37 is newly referenced for source test notification requirements.

Source test reporting requirements have been included in the condition. Previously the report requirements were included separately. Facility-wide General Requirement, Condition 38 is newly referenced for additional source test report requirements.

The compliance assurance requirements (CAM) of this condition reference 40 CFR Part 63, Subpart MM (Condition A.3b) and require that opacity be monitored continuously using a COMS and that the Permittee implement corrective action if the average of ten consecutive 6-minute averages result in a measurement greater than 20% opacity.

Condition A.2 – HAP Metals (PM as surrogate): 40 CFR Part 63, Subpart MM

The National Emission Standards for Hazardous Air Pollutants (NESHAP) for pulp mill combustion sources (40 CFR Part 63, Subpart MM) was originally proposed in 1998 and promulgated in 2001.

40 CFR Part 63, Subpart MM established a particulate matter emission limit of 0.044 grains/dry standard cubic foot (gr/dscf) corrected to 8% oxygen. The particulate matter emission limit is a surrogate used for determining emissions of hazardous air pollutant (HAP) metals.

40 CFR Part 63, Subpart MM required the implementation of maximum achievable control technology (MACT). The Clean Air Act (CCA) requires that EPA periodically review MACT standards to assess whether residual risk remains and if additional standards are needed. This Risk and Technology Review (RTR) was completed on October 11, 2017 for the standards in 40 CFR Part 63, Subpart MM. As a result of the RTR, EPA included periodic source test requirements (every 5 years) for recovery furnaces to demonstrate compliance with the HAP metals standard. The proposed AOP has been updated to include this updated source test frequency. Language regarding representative conditions, notification, recordkeeping, on-going compliance, and reporting have also been added.

Condition A.3a – Opacity: WAC 173-405-040(6)

This condition has been updated to clarify that the reference test method is EPA RM 9 for WAC 173-405-040(6). Opacity is continuously monitored with a COMS which is being used as the continuous compliance determination method.

Condition A.3b – HAP Metals (Operating Limit): 40 CFR Part 63, Subpart MM

Continuous compliance with the HAP metals standard is assured through the use of a COMS. As a result of the RTR, EPA revised the violation determination. A violation now occurs when opacity is greater than 35 percent for 2 percent or more of operating time during a semi-annual period when spent pulping liquor is fed; previously the allowance was 6 percent of operating time. Recordkeeping and reporting language has been updated.

The RTR revised the excess emission reporting requirement from quarterly to semi-annual; this change has been reflected in the AOP.

Condition A.4a and b – Sulfur Dioxide (SO_2): PSD-I and WAC 173-405-040(11)(a)

The former permit required the Permittee to monitor SO_2 emission limit compliance with monthly/quarterly/annual source tests. The permit renewal updates the source testing frequency to monthly/quarterly/semiannual/annual to be consistent with Industrial Section policy. The former permit contained an allowance for one test of at least one-hour in lieu of three one-hour tests; this allowance has been removed. Three runs of at least one-hour are required to demonstrate compliance.

Facility-wide General Requirement, Condition 37 is newly referenced for source test notification requirements.

Facility-wide General Requirement, Condition 38 is newly referenced for additional source test report requirements.

Condition A.5 – Automatic Voltage Control (AVC): 40 CFR Part 63, Subpart MM

As a result of the RTR, EPA revised 40 CFR Part 63, Subpart MM to include a requirement that facilities maintain proper operation of the electrostatic precipitator's automatic voltage control (AVC). Language has been added to the AOP to reflect this new requirement.

Condition A.6 – Operations and Maintenance: 40 CFR Part 63, Subpart MM

The duty to minimize emissions and the requirement to properly operate and maintain the Recovery Furnace (including air pollution control equipment and monitoring equipment) has been included in the AOP.

Condition A.7 – Operations and Maintenance: Order 2892-05AQ, Modification 2, Condition 11

Operations and maintenance requirements from Order 2892-05AQ were not included in the previous AOP. The requirements have been included.

Condition A.8 – Particulate Matter (PM): Order 2892-05AQ [STATE ONLY]

This state-only requirement is not federally enforceable. PM compliance is monitored on a monthly/quarterly/semiannual/annual basis using EPA Reference Method 5. Order 2892-05AQ, Modification 2 requires annual source testing. Tiered monthly/quarterly/semiannual/annual source testing frequency has been established in the AOP using the sufficiency monitoring requirement in 40 CFR 70.6(c)(1).

The former permit contained an allowance for one test of at least one-hour in lieu of three one-hour tests; this allowance has been removed. Three runs of at least one-hour are required to demonstrate compliance.

Facility-wide General Requirement, Condition 37 is newly referenced for source test notification requirements.

Facility-wide General Requirement, Condition 38 is newly referenced for additional source test report requirements.

Condition A.9 – Total Reduced Sulfur (TRS): WAC 173-405-040(1)(c) and Order 2892-05AQ [STATE ONLY]

This is a state-only requirement and is not federally enforceable. TRS limit compliance is continuously monitored with a CEMS. Reporting has been updated to include the reporting of daily 24-hour TRS averages. SSM language has been removed. Facility-wide General Requirement, Condition 26 is newly referenced for continuous emission monitory system operating requirements.

Condition A.10a – Oxygen (O_2): Order 2892-05AQ

This is a state-only requirement and is not federally enforceable. Oxygen is to be monitored using a CEMS. Facility-wide General Requirement, Condition 26 is newly referenced for continuous emission monitory system operating requirements.

Condition A.10b – Oxygen (O_2): Order 2892-05AQ

This is a state-only requirement and is not federally enforceable. This requirement was previous established as part of Compliance Order 9823. Compliance Order 9823, which terminates upon issuance of the renewed AOP, states that the requirement will be incorporated into the AOP following termination. The oxygen requirement in the compliance order has been incorporated into the AOP as a requirement of WAC 173-401-040(8) which requires the proper operation and maintenance of the facility (including air pollution control equipment). The sufficiency monitoring language in WAC 173-401-615(1)(b) has been used to ensure compliance through appropriate monitoring.

Other Notable Changes

Startup, Shutdown, Malfunction (SSM) exemption and plan language was removed from 40 CFR Part 63, Subpart MM as part of the EPA RTR. The SSM language has been removed from the proposed AOP.

B. SMELT DISSOLVER TANK

The Smelt Dissolver Tank receives smelt from the Recovery Furnace. Particulate matter emissions from the Smelt Dissolver Tank are controlled by a wet scrubber. Fresh mill water is used as a scrubber liquid.

The Smelt Dissolver Tank is equipped with continuous parameter monitoring systems (CPMS) to monitor scrubber flow (gallons per minute) and scrubber fan amperage.

Applicable unit specific regulations/orders include: 40 CFR Part 63, Subpart MM (National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-alone Semi-chemical Pulp Mills); 40 CFR Part 64 (Compliance Assurance Monitoring); 173-405 Washington Administrative Code (Kraft Pulping Mills), and Compliance Order 18124.

Ecology has adopted 40 CFR Part 63 and appendices by reference in WAC 173-400-075.

Condition B.1 – Particulate Matter (PM): WAC 173-405-040(2) and 40 CFR Part 64

The Permittee monitors PM emission limit compliance with monthly/quarterly/annual source tests. The former AOP required monthly/quarterly testing. The source test frequency requirements have been updated to be consistent with Ecology Industrial Section policy. The former AOP contained an allowance for one test of at least one-hour in lieu of three one-hour tests; this allowance has been removed. Three runs of at least one-hour are required to demonstrate compliance.

Facility-wide General Requirement, Condition 37 is newly referenced for source test notification requirements.

Source test reporting requirements have been included in the condition. Facility-wide General Requirement, Condition 38 is newly referenced for additional source test report requirements.

The compliance assurance requirements (CAM) of this condition reference Condition B.3 and require that scrubber liquid flow rate to be monitored for compliance with the limit. CAM references to damper inspections and testing have also been included.

Condition B.2 – HAP Metals (PM as surrogate): 40 CFR Part 63, Subpart MM

The National Emission Standards for Hazardous Air Pollutants (NESHAP) for pulp mill combustion sources (40 CFR Part 63, Subpart MM) was originally proposed in 1998 and promulgated in 2001.

40 CFR Part 63, Subpart MM established a particulate matter emission limit of 0.20 pounds of PM per ton of black liquor solids fired. The particulate matter emission limit is a surrogate used for determining emissions of HAP metals.

As discussed above, 40 CFR Part 63, Subpart MM required the implementation of MACT which was updated after completion of the RTR that was completed on October 11, 2017. As a result of the RTR, EPA included periodic source test requirements (every 5 years) for smelt dissolver tanks to demonstrate compliance with the HAP metals standard. The proposed AOP has been updated to include this updated source test frequency. Language regarding representative conditions, notification, recordkeeping, on-going compliance, and reporting have also been added/updated.

Facility-wide General Requirement, Condition 38 is referenced for additional source test report requirements

Condition B.3 – Opacity: WAC 173-405-040(6) and 40 CFR Part 64 (CAM)

The condition has been updated to clarify that the reference test method is EPA RM 9.

The Permittee demonstrates compliance by continuously monitoring scrubbing liquid flow rate. Scrubbing liquid flow rate ≥ 50 gpm (6 consecutive minutes) was first established as the operating limit in Order DE 84-390 which accompanied PSD-I and was included in the 2000 AOP. Order 84-390 was consolidated with other regulatory orders into Order DE 00AQIS-131 in March 2000. Order DE 2892-05AQ was issued in 2006 and replaced/superceded Order DE 00AQIS-131. Order 2892-05AQ no longer included many requirements from Order DE 84-390 and DE 00AQIS-131 which were deemed to be redundant because they were duplicative of requirements in other existing regulations (such as WAC). This opacity requirement was one such conditions which was not included in Order 2892-05AQ. The opacity requirement and scrubbing liquid flow operating limit were incorporated into the previous AOP as requirements of WAC 173-405-040(6). Additional information can be found in the Statement of Basis for the 2007 AOP issuance. The 50 gpm scrubber flow operating limit originally from Order DE 84-390, DE 00AQIS-131, and subsequently from the previous AOP issuances has been included in this renewal.

The scrubber liquid flow rate operational parameter has not been updated since 1984. Ecology believes that the operational parameter should be re-established to ensure compliance with the applicable requirements. The AOP requires the submittal of updated scrubber liquid flow rate operational parameter within 180 days of AOP issuance.

Condition B.4 – Scrubber Operating Limits as surrogates for HAP Metals: 40 CFR Part 63, Subpart MM

Continuous compliance with the HAP metals standard is assured through the use of CPMS. Scrubbing liquid flow and fan amperage must be monitored. AOP language has been updated to reflect the language in the federal regulation. CMS data recovery requirements have been included by reference (Facility-wide General Requirement, Condition 28).

40 CFR Part 63, Subpart MM requires that pressure drop and scrubber flow rate be monitored at smelt dissolver tanks to demonstrate compliance with the HAP metals limit. As an alternative to measuring pressure drop, fan amperage may be used for smelt dissolving tank dynamic scrubbers that operate at ambient pressure or flor low-energy entrainment scrubbers. The scrubber at PTPC operates at ambient pressure and therefore has established a fan amperage operating limit.

The operational limit for scrubber liquid flow was initially established from source emission testing conducted by PTPC in 1997, 1998, and 2004. The initial scrubber liquid flow rate was established at 80 gpm. Additional information regarding establishment of the initial scrubber liquid flow operational limit can be found in the 2007 Statement of Basis.

Scrubber operating limits for scrubber liquid flow and fan amperage were re-established during source testing in September 2020. The operating limits from the September 2020 source testing have been included in the AOP.

Recordkeeping requirements have been included.

Monthly reporting requirements have been added.

The RTR revised the excess emission reporting requirement from quarterly to semi-annual; this change has been reflected in the AOP.

Condition B.5 through B.7 – Compliance Order 18124

Ecology issued Compliance Order 18124 to address excess emissions at the Smelt Dissolver Tank due to issues related to the in stack damper. The applicable conditions from the compliance order have been incorporated into the AOP renewal.

Other Notable Changes

Startup, Shutdown, Malfunction (SSM) language was removed from 40 CFR Part 63, Subpart MM as part of the EPA RTR. The SSM language has been removed from the proposed AOP.

C. LIME KILN

The Lime Kiln is a rotary kiln built in 1975 by Fuller Company of Allentown, Pennsylvania. Emissions from the Lime Kiln are controlled by a venturi scrubber which was installed in September 2003.

The Lime Kiln is equipped with CPMS to monitor pressure drop (inches H_2O) across the scrubber and scrubbing liquid flow rate (gallons per minute). The Lime Kiln is equipped with CEMS for measurement of total reduced sulfur and oxygen.

The Lime Kiln accepts high volume, low concentration (HVLC) and low volume, high concentration (LVHC) non-condensible gases (NCGs) from the pulping processes for thermal destruction.

Applicable unit specific regulations/orders include: 40 CFR Part 63, Subpart MM (National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda,

Sulfite, and Stand-alone Semi-chemical Pulp Mills); 40 CFR Part 64 (Compliance Assurance Monitoring); 173-405 Washington Administrative Code (Kraft Pulping Mills); and Order 2892-05AQ, Modification 2.

Ecology has adopted 40 CFR Part 63 and appendices by reference in WAC 173-400-075.

Condition C.1 – Particulate Matter (PM): WAC 173-405-040(3)(a) and 40 CFR Part 64 (CAM)

The Permittee monitors PM emission limit compliance with monthly/quarterly/annual source tests. The former AOP required monthly/quarterly testing. The source test frequency requirements have been updated to be consistent with Ecology Industrial Section policy. The former AOP contained an allowance for one test of at least one-hour in lieu of three one-hour tests; this allowance has been removed. Three runs of at least one-hour are required to demonstrate compliance.

Facility-wide General Requirement, Condition 37 is newly referenced for source test notification requirements.

Source test reporting requirements have been included in the condition. Facility-wide General Requirement, Condition 38 is newly referenced for additional source test report requirements.

The compliance assurance requirements (CAM) of this condition reference condition C.3 which establishes an operating parameter for pressure drop and requires the establishment of an operating parameter for scrubber flow. Pressure drop and scrubber flow are valid measures of emission control device performance and therefore both have been included in the CAM requirement. Updated/new operating parameter values for pressure drop and scrubber flow must be established within 180 days of permit issuance.

Condition C.2 – HAP Metals (PM as surrogate): 40 CFR Part 63, Subpart MM

The NESHAP for pulp mill combustion sources (40 CFR Part 63, Subpart MM) was originally proposed in 1998 and promulgated in 2001.

40 CFR Part 63, Subpart MM established a particulate matter emission limit of 0.064 grains per dry standard cubic feet corrected to 10 percent oxygen. The particulate matter emission limit is a surrogate used for determining emissions of hazardous air pollutant (HAP) metals.

As discussed above, 40 CFR Part 63, Subpart MM required the implementation of MACT which was updated after completion of the RTR that was completed on October 11, 2017.As a result of the RTR, EPA included periodic source test requirements (every 5 years) for lime kilns to demonstrate compliance with the HAP metals standard. The proposed AOP has been updated to include this updated source test frequency. Language regarding representative conditions, notification, recordkeeping, on-going compliance, and reporting have also been added/updated.

Facility-wide General Requirement, Condition 38 is referenced for additional source test report requirements.

Condition C.3 – Opacity: WAC 173-405-040(6) and 40 CFR Part 64 (CAM)

The condition has been updated to clarify that the reference test method is EPA RM 9.

The Permittee demonstrates compliance by continuously monitoring venturi scrubber pressure drop. Scrubber pressure drop ≥ 15 inches H_2O (gauge) was first established as the operating limit in Order DE 84-390 which accompanied PSD-I and was included in the 2000 AOP. Order DE 84-390 was consolidated with other regulatory orders into Order DE 00AQIS-131 in March 2000. Order 2892-05AQ was issued in 2006 and replaced/superceded Order DE 00AQIS-131. Order 2892-05AQ no longer included many requirements from Order DE 84-390 and DE 00AQIS-131 which were deemed to be redundant because they were duplicative of requirements in other existing regulations. This opacity requirement was one such conditions which was not included in Order 2892-05AQ. The opacity requirement and scrubber pressure drop operating limit were incorporated into the previous AOP as requirements of WAC 173-

405-040(6) and the scrubber pressure drop requirement was updated from 15 to 8 inches H_2O. Additional information can be found in the Statement of Basis for the 2007 AOP issuance. The 8 inch H_2O pressure drop operating limit is included in this renewal. A requirement to update the pressure drop operating limit within 180 days of permit issuance has also been included in the permit renewal.

Language requiring the establishment of a scrubber flow operating limit for CAM within 180 of permit issuance has been included in the permit renewal.

Language has been updated to include a requirement to perform corrective action if there is an operating limit excursion.

Condition C.4 – Scrubber Operating Limit as a surrogate for HAP Metals: 40 CFR Part 63, Subpart MM

Continuous compliance with the HAP metals standard is assured through the use of CPMS. AOP language has been updated to reflect the language in the federal regulation. Operating limits for pressure drop and scrubbing liquid flow rate were previously established at 8 inches H_2O and 90 gpm respectively. Pressure drop and scrubbing liquid flow rate operating limits (21" H_2O and 128 gpm) were re-established during source testing which occurred in October 2020.

CMS data recovery requirements have been included by reference (Facility-wide General Requirement, Condition 28). Recordkeeping requirements have been included. Monthly reporting requirements have been added.

The RTR revised the excess emission reporting requirement from quarterly to semi-annual; this change has been reflected in the AOP.

Condition C.5 – Sulfur Dioxide (SO_2): WAC 173-405-040(11)(a)

SO_2 limit compliance is monitored using an EPA Reference Method 6C source test. The source testing frequency has been updated from monthly/quarterly to monthly/quarterly/semiannual/annually. This change is consistent with the source test frequencies for other kraft mills in Washington State and is being incorporated for the remaining kraft mills as AOP permits are renewed. Source test report requirements have been included by reference.

Condition C.6a – Total Reduced Sulfur (TRS): Order 2892-05AQ

TRS limit compliance is determined through the use of CEMS. Continuous emission monitoring system operating requirements have been included by reference (Facility-wide General Requirement, Condition 26). The monthly reporting requirement has been updated to better ensure compliance.

Condition C.6b – Total Reduced Sulfur (TRS): 40 CFR Part 60, Subpart BB

While the Lime Kiln is not an NSPS emission unit, it is used to burn waste gases from NSPS units (Condition F). 40 CFR Part 60, Subpart BB requires that a temperature greater or equal to 1200 degrees Fahrenheit be maintained with a retention time of 0.5 seconds in the lime kiln when burning NCGs from NSPS affected units.

Temperature monitoring requirements for power boilers, recovery furnaces, and lime kilns were removed during EPA's 1986 revisions to Subpart BB. The decision to remove temperature monitoring requirements by EPA is documented in *Kraft Pulp Mills – Background Information for Promulgated Revisions to Standards (EPA-450/3-85-020*, *Section 2.4.1*). EPA determined that the flame temperatures and residence times at which these facilities are expected to operate exceed the 1200 °F and ½ second considered necessary for adequate incineration of TRS emissions. Ecology has referenced Condition C.6a to demonstrate compliance with the incineration requirement.

Condition C.7 – Oxygen (O_2): Order 2892-05AQ

O_2 is to be continuously monitored using a CEMS. CEMS operating requirements have been included by reference (Facility-wide General Requirement, Condition 26).

Condition C.8 – Stack Height: PSD-I

Stack height must be ≥ 31 meters and any reduction in height must be reported.

Condition C.9 – Operations and Maintenance: Order 2892-05AQ, Modification 2, Condition 11

Operations and maintenance requirements from Order 2892-05AQ were not included in the previous AOP. The requirements have been included.

Conditions C.10 and 11 – Total Reduced Sulfur (TRS): WAC 173-405-040(3)(b) and (c)

The TRS emission limits in Condition C.9 and 10 are state-only requirements and are not federally enforceable.

Other Notable Changes

The Startup, Shutdown, Malfunction (SSM) exemption and associated plan language was removed from 40 CFR Part 63, Subpart MM as part of the EPA RTR and therefore removed from the AOP.

D. POWER BOILER #10

Power Boiler #10 (PB10) was installed in 1975 by Combustion Engineering, Inc. PB10 is a spreader-stoker type boiler with horizontally opposed overfire air ports and tangential oil burners downstream of the grate. PB10 burns wood (hog fuel), urban wood, recycled fuel oil (RFO), compressed natural gas (CNG), and paper recycling residuals (PRRs). PTPC also reburns floaters, which are a component of the boiler ash which has residual heating value. Solid fuel (wood, PRRs, floaters) is fired on the grates while the RFO and CNG are fired at the tangential burners. Emissions are controlled using a venturi scrubber and wet electrostatic precipitator which were installed in October 2015. PB10 can accept LVHC NCGs from the pulping processes for thermal destruction. Lime Kiln is the primary LVHC NCG destruction unit while PB10 is used as a backup. PB10 does not accept HVLC NCGs for thermal destruction.

PB10 has a heat input capacity of 414 MMBtu/hr.

Applicable unit specific regulations/orders include: 40 CFR Part 60, Subpart D (Standards of Performance for Fossil-Fuel –Fired Steam Generators); 40 CFR Part 63, Subpart DDDDD (National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters); 40 CFR Part 64 (CAM); 173-405 Washington Administrative Code (Kraft Pulping Mills); and PSD-I.

Ecology has adopted 40 CFR Part 63 and appendices by reference in WAC 173-400-075.

Ecology has adopted 40 CFR Part 60 and appendices by reference in WAC 173-400-115.

Condition D.1a– Particulate Matter (PM): 40 CFR Part 60, Subpart D

The Permittee monitors PM emission limit compliance with monthly/quarterly/annual source tests. The former AOP required monthly/quarterly testing. The source test frequency requirements have been updated. The former AOP contained an allowance for one test of at least one-hour in lieu of three one-hour tests; this allowance has been removed. Three runs of at least one-hour are required to demonstrate compliance.

Facility-wide General Requirement, Condition 37 is newly referenced for source test notification requirements.

Source test reporting requirements have been included in the condition. Facility-wide General Requirement, Condition 38 is newly referenced for additional source test report requirements.

40 CFR Part 60, Subpart D includes continuous opacity monitoring as part of the PM standard. The continuous opacity monitoring has been included in Condition D.3a and has been referenced in Condition D.1a.

Condition D.1b – Particulate Matter (PM): WAC 173-405-040(5)(a) and 40 CFR Part 64 (CAM)

Compliance is determined using the methods described in Condition D.1a. The Permittee must comply with the monitoring requirements in Condition D.3a for CAM.

Condition D.2 –HAP Metals (PM as surrogate): 40 CFR Part 63, Subpart DDDDD

Power Boiler #10 is considered in the subcategory of boilers defined as "stokers/sloped grate/other designed to burn wet biomass fuel" per Boiler MACT. The Permittee must demonstrate HAP metals compliance by an annual source test using EPA RM 5. Source test frequency may be reduced to once every three years if certain conditions are met, as described in the AOP Condition.

Condition D.3a and b – Opacity: 40 CFR Part 60, Subpart D, WAC 173-405-040(6), and 40 CFR Part 64 (CAM)

The condition has been updated to clarify that the reference test method is EPA RM 9.

Because the emission controls utilize water resulting in condensation being present in the gas stream, the installation and effective use of a COMS is not possible; therefore, the Permittee submitted an alternative opacity monitoring plan to EPA. The plan established scrubber operating parameters (in accordance with 40 CFR 60.13(i)) that would ensure compliance with the opacity standard in 40 CFR Part 60, Subpart D. The plan was approved on March 31, 2000 by letter from EPA to PTPC. In October 2015, PTPC replaced the existing emission control device (Waterloo TurboTak) with a venturi scrubber. The alternative opacity operating parameters were updated at that time via letter from PTPC to Ecology dated May 15, 2016. The updated operating parameters are included in this AOP renewal.

Continuous emission monitoring system operating requirements have been included by reference (Facility-wide General Requirement, Condition 27).

CAM requirements have been included in Condition D.3b.

WAC 173-405-040(6) allows for the use of alternative opacity standards in WAC 173-400-040(2)(a) during soot blowing/grate cleaning. This reference has been added to Condition D.3b.

Condition D.4a and b – Sulfur Dioxide (SO_2): 40 CFR Part 60, Subpart D and WAC 173-405-040(9)(b)

SO_2 limit compliance is demonstrated through fuel analysis. In *the Support Document Supplement* (pages 5 and 6 of 34) for the 4/28/2010 permit reissuance, Ecology showed that compliance with the NSPS SO_2 emission limit of 0.80 lb/MMBtu of heat input can be sufficiently demonstrated by limiting RFO sulfur content to ≤0.76% sulfur by weight. See referenced document for additional information and analysis.

Condition D.5 – Nitrogen Oxides (NO_x): 40 CFR Part 60, Subpart D

NO_x limit compliance is monitored continuously using a CEMS that conforms with Performance Specification 2 in 40 CFR Part 60, Appendix B. CEMS operating requirements have been included by reference (Facility-wide General Requirement, Condition 27).

Monthly reporting language has been updated.

The AOP has been updated to clarify that NO_x is to be expressed as NO_2 as specified in 40 CFR 60.44(a).

Condition D.6 – TRS: 40 CFR Part 60, Subpart BB

While Power Boiler 10 is not an NSPS emission unit, it is used to burn waste gases from NSPS units (Condition F). 40 CFR Part 60, Subpart BB requires that a temperature greater or equal to 1200 degrees

Fahrenheit be maintained with a retention time of 0.5 seconds in the lime kiln when burning NCGs from affected units.

Temperature monitoring requirements for power boilers, recovery furnaces, and lime kilns were removed during EPA's 1986 revisions to Subpart BB. The decision to remove temperature monitoring requirements by EPA is documented in *Kraft Pulp Mills – Background Information for Promulgated Revisions to Standards (EPA-450/3-85-020*, *Section 2.4.1*). EPA determined that the flame temperatures and residence times at which these facilities are expected to operate exceed the 1200 °F and ½ second considered necessary for adequate incineration of TRS emissions. No monitoring has been required.

Condition D.7 – Oxygen (O_2): 40 CFR Part 60, Subpart D

O_2 is to be continuously monitored using a CEMS. CEMS operating requirements have been included by reference (Facility-wide General Requirement, Condition 27).

Condition D.8 – Stack Height: PSD-I

Stack height must be ≥ 53 meters and any reduction in height must be reported.

Condition D.9 – Salty Hog Fuel: WAC 173-401-615

A prohibition on the burning of salty hog fuel is included in this AOP due to the potential for dioxin and furan emissions.

Condition D.10 – Urban Wood Acceptance Program; Order 11025

An urban wood acceptance program must be included as part of the Operations and Maintenance Manual for PB10. All urban wood purchased by PTPC must meet the requirements of the program.

Condition D.11 – Carbon Monoxide (CO): 40 CFR Part 63, Subpart DDDDD

Boiler MACT CO limit compliance is monitored using a CEMS that conforms to Performance Specification 4, 4A, or 4B in 40 CFR Part 60, Appendix B.

Condition D.12 through 14 – HAP Metals and Mercury: 40 CFR Part 63, Subpart DDDDD

Continuous HAP metals and mercury Boiler MACT compliance is demonstrated by establishing 30-day rolling average operating parameters at the emission control devices during the required HAP metals (PM) and mercury source tests. Established operating parameters must be maintained to demonstrate Boiler MACT compliance. The operating parameters are: electrostatic precipitator total secondary power input, scrubber pressure drop, and scrubber liquid flow rate.

Monthly reporting language has been included.

Condition D.15 – Hydrogen Chloride: 40 CFR Part 63, Subpart DDDDD

The Permittee must demonstrate hydrogen chloride (HCl) compliance by an annual source test using EPA RM 26 or 26A. Source test frequency may be reduced to once every three years if certain conditions are met, as described in the AOP Condition. Continuous compliance demonstrated by keeping monthly fuel records as specified in Condition D.16.

Condition D.16– Mercury: 40 CFR Part 63, Subpart DDDDD

The Permittee must demonstrate compliance with the mercury limit by an annual source test using EPA RM 29, 30A, 30B, or alternate method listed in 40 CFR Part 63, Subpart DDDDD Table 5, Item 4e. Source test frequency may be reduced to once every three years if certain conditions are met, as described in the AOP Condition. Continuous mercury and HCl compliance is demonstrated by keeping monthly fuel use records to ensure equal or lower fuel input of chlorine and mercury than the maximum values calculated during the most recent performance test.

Condition D.17– Fuel input: 40 CFR Part 63, Subpart DDDDD

The Permittee must keep records of monthly fuel use to ensure that the fuels used have equal to or lower fuel input of chlorine and mercury than the maximum values calculated during the most recent performance test. Plans to burn a new fuel or new mixture of fuels require that the maximum mercury and HCl input be recalculated.

Condition D.18 – Operating Load: 40 CFR Part 63, Subpart DDDDD

The Permittee must maintain a 30-day rolling average operating load below 110% of the highest hourly average operating load recorded during the most recent performance test.

Condition D.19– Work Practice Standards: 40 CFR Part 63, Subpart DDDDD

The Permittee is required perform a once-every-five-year tune-up because the boiler is installed with a continuous oxygen trim system. If the boiler removes the continuous oxygen trim system, annual tune-ups must be performed.

Condition D.20 and 21 – Startup/Shutdown Work Practice Standards: 40 CFR Part 63, Subpart DDDDD

The Permittee is required follow specific work practice standards during startup and shutdown. The requirements are included in the permit.

Condition D.22 – Startup/Shutdown Recordkeeping: 40 CFR Part 63, Subpart DDDDD

Boiler MACT startup/shutdown recordkeeping requirements have been included in the permit.

Condition D.23 and D.24 – Good Operations and Maintenance: Order 11025 and 40 CFR Part 63, Subpart DDDDD

O&M requirements from Order 11025 and Boiler MACT have been included in the permit.

Condition D.25 – Boiler MACT Monitoring Data Collection: 40 CFR Part 63, Subpart DDDDD

Boiler MACT monitoring data collection requirements have been included in the permit.

Additional Boiler MACT Work Practice Standards

Boiler MACT requires that a one-time energy assessment be performed at PB10 in accordance with Table 3 of 40 CFR Part 63, Subpart DDDDD. The Permittee has already performed this one-time energy assessment, therefore the requirement is not included in the AOP.

E. PACKAGE BOILER

The Package Boiler is an “A” type design with an internal furnace and two convection boiler banks. The boiler has a design capacity of 250 MMBtu per hour. The boiler was converted in 2016 to burn only natural gas and not fuel oil, which returned the boiler back to how it was originally designed.

Applicable unit specific regulations/orders include: 40 CFR Part 60, Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units); 40 CFR Part 63, Subpart DDDDD (National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters); 40 CFR Part 64; 173-405 Washington Administrative Code (Kraft Pulping Mills); PSD 96-01A, Amendment 1; and Order DE 97AQ-I030, Second Revision.

Ecology has adopted 40 CFR Part 63 and appendices by reference in WAC 173-400-075.

Ecology has adopted 40 CFR Part 60 and appendices by reference in WAC 173-400-115.

Condition E.1a, b, and c – Particulate Matter (PM): PSD 96-01A, Amendment 1 and WAC 173-405-040

The Permittee performed an initial source test to demonstrate compliance with the PM emission limit. Continuous compliance is demonstrated through burning only natural gas and good combustion control. The requirements of 40 CFR Part 60, Subpart Db still apply to the Package Boiler but there are no applicable PM requirements for boilers burning natural gas. Because the Package Boiler was converted to only burn natural gas, the previous PM emission limit in 40 CFR Part 60, Subpart Db has been removed from the AOP.

Condition E.2a and b – Opacity: PSD 96-01A, Amendment 1 and WAC 173-405-040(6)

Opacity is continuously monitored with a COMS. Continuous emission monitoring system operating requirements have been included by reference (Facility-wide General Requirement, Condition 26).

Opacity requirements from 40 CFR Part 60, Subpart Db were removed since the Package Boiler was converted to fire only natural gas and there are no opacity emission limits in 40 CFR Part 60, Subpart Db for units only firing natural gas.

Condition E.3a and b – Sulfur Dioxide (SO_2): Order DE 97AQ-I030, Second Revision, PSD 96-01A, Amendment 1, and WAC 173-405-040(9)(b)

SO_2 limit compliance is monitored using EPA RM 6, 6a, 6b, or 6c. Source testing is required once every five years/annually/monthly.

The 0.80 lb/mmBtu (30-day rolling average) emission limit has been removed following the conversion of the Package Boiler to burn only natural gas. See Order DE 97AQ-I030, Second Revision.

Condition E.4a, b, and c – Nitrogen Oxides (NO_x): PSD 96-01A, Amendment 1 and 40 CFR Part 60, Subpart Db

NO_x limit compliance is monitored continuously using a CEMS that conforms with Performance Specification 2 in 40 CFR Part 60, Appendix B. CEMS operating requirements have been included by reference (Facility-wide General Requirement, Conditions 26 and 27).

The AOP has been updated to clarify that NO_x is to be expressed as NO_2 as specified in 40 CFR 60.44(a).

Semi-annual excess emission reporting language has been included for compliance with Subpart Db.

Condition E.5 – Oxygen (O_2): PSD 96-01A, Amendment 1

O_2 is to be continuously monitored using a CEMS. CEMS operating requirements have been included by reference (Facility-wide General Requirement, Condition 26).

Condition E.6 – Fuel Consumption: PSD 96-01A, Amendment 1

The fuel consumption requirement limits the heat input to the Package Boiler and limits fuel use to only natural gas.

Condition E.7a and b – Carbon Monoxide (CO): Order DE 97AQ-I030

The Permittee must demonstrate compliance with the carbon monoxide emission limit by source testing every five years/annually/monthly using EPA RM 10. The underlying Order does not specify an averaging period for compliance with the CO limit. Ecology has clarified in the AOP that compliance with the emission limit is based on a 1-hour averaging period. Facility-wide General Requirements, Condition 37 and 38 are newly referenced for source test notification and report requirements.

Condition E.8a and b – Volatile Organic Compounds (VOC): Order DE 97AQ-I030, Second Revision

The Permittee must demonstrate compliance with the VOC emission limit by source testing every five years/annually/monthly using EPA Method 10. The underlying Order does not specify an averaging period for compliance with the VOC limit. Ecology has clarified in the AOP that compliance with the

emission limit is based on a 1-hour average period. Facility-wide General Requirement, Condition 37 and 38 are newly referenced for source test notification and report requirements.

Condition E.9 – Work Practice Standards: 40 CFR Part 63, Subpart DDDDD

The Permittee is required perform a once-every-five-year tune-up. The 5 year frequency for boiler tune-ups is because the boiler has an oxygen trim system [see 40 CFR 63.7540(a)(12)].

Condition E.10 – Good Operations and Maintenance: PSD 96-01A, Amendment 1 and Order 97AQ-I030, Second Revision

O&M requirements have been incorporated.

Condition E.11 – PSD CEMS Reporting: PSD 96-01A, Amendment 1

The Permittee is required to submit CEMS data in a quarterly report.

Additional Boiler MACT Work Practice Standards

Boiler MACT requires that a one-time energy assessment be performed at PKB in accordance with Table 3 of 40 CFR Part 63, Subpart DDDDD. The Permittee has already performed this one-time energy assessment, therefore the requirement is not included in the AOP.

F. DIGESTERS, MULTI-EFFECT EVAPORATORS, BROWNSTOCK WASHERS

Condition F captures requirements at the digesters, multi-effect evaporators, and brownstock washers.

Applicable unit specific regulations/orders include: 40 CFR Part 60, Subpart BB (Standards of Performance for Kraft Pulp Mills) and 173-405 WAC (Kraft Pulping Mills).

Ecology has adopted 40 CFR Part 60 and appendices by reference in WAC 173-400-115.

Condition F.1 – Total Reduced Sulfur: 40 CFR Part 60, Subpart BB

MEE E-set, C-washer, and Digesters #10, 11, and 12 are NSPS (40 CFR Part 60, Subpart BB) affected units. Digesters #1 through 9 were built before and not modified after 9/24/1976. The applicable requirement has been included. The Permittee demonstrates compliance with the emission limit standard by combusting gases from the applicable units in the Lime Kiln or Power Boiler 10. Continuous compliance demonstrated with the monitoring required in Condition C.6b or D.6.

Condition F.2 – NCG Collection and Treatment: WAC 173-405-040 and Order 2892-05AQ, Modification 2

The Permittee must treat NCGs by thermal oxidation in a lime kiln or equivalent and install a backup system to ensure continual treatment.

Ecology has established that the continual treatment requirement is satisfied if venting is minimized and does not exceed 10 hours per month.

G. LOW VOLUME HIGH CONCENTRATION (LVHC) SYSTEM

40 CFR Part 63, Subpart S (National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry) requires the capture and control of HAPs from the Low Volume, High Concentration (LVHC) systems at kraft, soda, and semi-chemical pulp and paper mills.

LVHC systems “means the collection of equipment including the digester, turpentine recovery, evaporator, steam stripper systems, and any other equipment serving the same function as those previously listed.”

Affected Units

The affected LVHC units include: batch digester systems, "D" and "E" multi-effect evaporator systems, batch digester blow tank, foul condensate tank, blow heat condenser system, and turpentine collection system (including the turpentine after condenser).

Condition G.1 through G.8 – LVHC Collection and Treatment: 40 CFR Part 63, Subpart S

The Permittee collects LVHC NCG emissions which are conveyed to and then treated by the Lime Kiln and/or Power Boiler #10. Conditions G.1 through G.8 detail the requirements for the collection and treatment of LVHC NCGs. This section has been updated and reorganized to provide additional clarity and ensure applicable requirements are included.

H. HIGH VOLUME LOW CONCENTRATION SYSTEM

The High Volume, Low Concentration (HVLC) system is defined in 40 CFR Part 63, Subpart S as "the collection of equipment including the pulp washing, knotter, screen, decker, and oxygen delignification systems, and any other equipment serving the same function as those previously listed."

Affected Units

The potentially affected emission units of the HVLC requirements at PTPC are the B-side and C-side: knotters, washers, filtrate tanks, screens, and deckers.

Per PTPC's *MACT I Compliance Demonstration* dated December 1, 2006, PTPC determined that the knotters and screens were below the HAP emissions threshold requiring HVLC collection and control [40 CFR 63.443(a)(1)(ii)] and therefore exempt. The deckers use paper machine white water and are therefore exempt per 40 CFR 63.443(a)(1)(iv).

The emission units for which the HVLC requirements in 40 CFR Part 63, Subpart S apply are the brownstock washers and filtrate tanks. The c-side washers are sealed pressure washers with no vents. Emissions from the pulp traveling through the C-side are collected from the filtrate tanks and controlled. The B-side washer and the washer vacuum pumps (both sides) are covered by the Clean Condensate Alternative.

Condition H.1 through H.7 – HVLC Collection and Treatment: 40 CFR Part 63, Subpart S

The Permittee collects HVLC NCG emissions which are conveyed to and then treated by the Lime Kiln and/or Power Boiler #10. Conditions H.1 through H.7 detail the requirements for the collection and treatment of HVLC NCGs.

I. PULPING PROCESS CONDENSATES AND CLEAN CONDENSATE ALTERNATIVE

40 CFR Part 63, Subpart S (National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry) requires the collection and control of HAPs from kraft pulping process condensates.

Pulping process condensates "means any HAP-containing liquid that results from contact of water with organic compounds in the pulping process. Examples of process condensates include digester system condensates, turpentine recovery system condensates, evaporator system condensates, LVHC system condensates, HVLC system condensates, and any other condensates from equipment serving the same function as those previously listed. Liquid streams that are intended for byproduct recovery are not considered process condensate streams."

Affected Units

The affected pulping process condensates include: batch digester condensates, digester condensate tank, "D" and "E" evaporator foul condensate off primary feed effects, turpentine collection system, concentrator condensate, LVHC NCG condensates, and foul condensate collection tank.

Clean Condensate Alternative

As an alternative to the collection and treatment requirements for the HVLC system, 40 CFR Part 63, Subpart S allows for alternative collection and treatment of an equivalent amount of HAPs found in process condensates. This option is called the Clean Condensate Alternative (CCA).

According to PTPC's "*MACT I Compliance Demonstration"* dated December 1, 2006, PTPC chose to comply with the provisions of the CCA in order to offset the non-collection of HVLC emissions from the B-side washer and the vacuum pump exhaust. The calculated amount of HAPs required to be treated by the CCA option was 0.12 pounds of methanol per oven dried ton per day (lb/ODTP).

In order to treat the additional condensates, PTPC installed a 500-horsepower fine bubble diffuser system at the front of the wastewater treatment system (first run of the ASB). "This system provides more concentrated aeration in the section of the pond where the HAPs concentration is the highest. Modeling indicated that the improved biodegradation would increase methanol destruction by approximately 0.2 lb/ODTP." Results from compliance testing showed additional methanol treatment by the wastewater treatment system upgrade was 0.25 lb/ODTP.

In the EPA memorandum *"Clean Condensate Alternative for the Pulp and Paper National Emission Standards for Hazardous Air Pollutants"* dated April 8, 2004, EPA affirms that improvements to wastewater treatment system efficiency through the addition of aeration would be creditable towards CCA compliance as long as the emission reductions were: verifiable and not used to over control a source for the purpose of gaining an operating/compliance cushion to gain flexibility in establishing the need for longer averaging times or reduced monitoring, reporting, or recordkeeping.

Condition I.1 through I.7 – Condensate Collection and Treatment: 40 CFR Part 63, Subpart S

PTPC collects condensates from the kraft pulping process which are sent to the ASB for biological treatment.

In accordance with 40 CFR 63.453(n), PTPC has established alternative monitoring parameters for the open biological treatment unit (ASB) to ensure continuous compliance with the condensate treatment standards. PTPC established minimum aerator performance parameters which consisted of either two blowers operation, or in the event of blower maintenance or failure, one blower and eight surface aerators (see "*MACT I Monitoring Parameter Determination"* dated December 1, 2006).

Conditions I.1 through I.7 detail the requirements for collection and control of condensates. These include requirements for performance testing, monitoring, inspections, corrective actions, and recordkeeping/reporting. This section has been updated and reorganized to provide additional clarity and ensure applicable requirements are included. The additional condensate required to be treated under the CCA has been included in Condition I.2.

40 CFR Part 63, Subpart S requires that the HAP collection and treatment be measured on a pounds per ton of oven dried pulp (ODP). ODP is defined in 40 CFR 63.441 as, "*a pulp sample at zero percent moisture content by weight. Pulp samples for applicability or compliance determinations for both the pulping and bleaching systems shall be unbleached pulp. For purposes of complying with mass emission limits in this subpart, megagram of ODP shall be measured to represent the amount of pulp entering and processed by the equipment system under the specified mass limit. For equipment that does not process pulp, megagram of ODP shall be measured to represent the amount of pulp that was processed to produce the gas and liquid streams."*

To provide additional clarity in the AOP, Ecology has specified that for the purposes of the HAP collection and treatment calculations, oven dried tons of unscreened brownstock pulp shall be used.

J. PAPER MACHINE 2 (PM2)

On July 24, 2014, Ecology approved a project (via NOC Order 10453) to modify Paper Machine No. 2 (PM2) through the addition of two refiners prior to the paper machine. The modification allowed the

Permittee to improve the strength properties of the fibers, which allowed the paper machine to process specific grades of paper at a faster speed than they previously could.

Condition J.1 through J.3 – Paper Machine 2: Order 10453

Conditions J.1 through J.3 detail the requirements that were included in NOC Order 10453 for the modification of PM2.

K. OLD CORRUGATED CONTAINER (OCC) PLANT

On July 23, 2019, Ecology approved a project (via Order 16293) to replace the existing batch OCC pulper at the OCC plant with a new continuous OCC pulper. The project also included an upgraded screening system. OCC pulp production capacity increased from 480 oven-dried tons of pulp (ODTP) per day to 720 ODTP per day.

Condition K.1 through K.4 – OCC Plant: Order 16239

Conditions K.1 through K.4 detail the requirements that were included in Order 16293 for the upgrade OCC plant.

L. RECIPROCATING INTERNAL COMBUSTION ENGINES

The Permittee has reciprocating internal combustion engines (RICE) which are subject to the requirements in 40 CFR Part 63, Subpart ZZZZ and 40 CFR Part 60, Subpart IIII. In accordance with 40 CFR 63.6590(c)(7), if a new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 bhp located at a major source of HAP emissions is required to meet the requirements for 40 CFR Part 60 Subpart IIII, no further requirements from 40 CFR Part 63, Subpart ZZZZ apply. Applicable requirements are included in Conditions L.1 through L.14.

Table 4. RICE Engine Summary

Engine Name	Kiln Aux Drive	Mud Stor Agit BU Gen	Main Pump Station	Diesel Fire Pump	Clarifier Bypass Pump 2	Clarifier Bypass Pump 3
Engine Type (Emergency / Nonemergency)	E	E	E	NE	E	E
Engine Size	97.2 hp	27 kw	409 hp	260 hp	170 hp	154 hp
Compression / Spark Ignition	CI	CI	CI	CI	CI	CI
Model Year	2007	2012	Pre-2005	1986	2000	2011
New / Existing	New	New	Existing	Existing	Existing	New
NSPS	X	X				X
NESHAP			X	X	X	

Engine Name	Kiln Aux Drive	Mud Stor Agit BU Gen	Main Pump Station	Diesel Fire Pump	Clarifier Bypass Pump 2	Clarifier Bypass Pump 3
Emission Cat	Tier 2	Tier 4		Tier 1		Tier 3

M. MILLWIDE EMISSION LIMITS

Conditions M.1 through M.12 capture millwide emissions requirements from Order 2892-05AQ and PSD-I.

PSD-I was issued by Ecology on June 1, 1984 to approve a three-phase modernization project at the mill. Order 84-390 was issued in conjunction with the PSD permit. Order 84-390 was superseded and replaced by Order 00AQIS-131 on March 16, 2000. Order 00AQIS-131 was superseded and replaced by Order 2892-05AQ on August 10, 2006.

N. GREENHOUSE GAS REPORTING

The Permittee is subject to the Washington GHG reporting requirements (Chapter 173-441 WAC) and the federal GHG reporting requirements (40 CFR Part 98), because GHG emissions from the source operations are above 10,000 metric tons per year (Washington State threshold) and 25,000 metric tons per year (federal threshold). The federal GHG reporting requirements are not “applicable requirements” for the purposes of Title V permits. The applicable requirements of Chapter 173-441 WAC, a state-only-enforceable requirement, have been incorporated into the permit renewal. For compliance with the state-only Washington GHG reporting regulations, Conditions N.1 through N.4 impose requirements under which the GHGs are reported, including emissions calculations, reporting schedule/contents, and recordkeeping.

O. COMPLIANCE ASSURANCE MONITORING

To satisfy the Title V and Title VII monitoring requirements for the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) promulgated the Compliance Assurance Monitoring (CAM) rule with an effective date of November 21, 1995. The CAM rule requires facilities to monitor compliance indicators for emission units to provide reasonable assurance for compliance with regulatory emission limitations. When monitoring indicates the occurrence of a parameter excursion or exceedance, the facility is required to take corrective action to restore the monitoring parameter to the value range established as part of a source compliance or performance test. The facility is also required to document/report corrective actions, maintain monitoring records, and provide an annual certification of compliance to the delegated authority that administers the Title V operating permit program.

In accordance with 40 CFR 64.2, the CAM rule applies to Pollutant Specific Emission Units (PSEUs) at major sources that are required to obtain a Part 70 or 71 permit and that meet all of the following criteria:

1. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant (or surrogate);
2. The PSEU uses a control device to achieve compliance with the emission limit or standard; and
3. The PSEU has potential pre-control device emissions (of the applicable regulated pollutant) equal to or above the major source threshold.

In accordance with 40 CFR 64.2(b), the following are exempt from the CAM rule:

1. Emission limitation or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 and 112 of the Clean Air Act; and
2. Emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method.

Plan Content

Pursuant to 40 CFR 64.3, EPA requires the following elements in a facility's CAM Plan:

- Applicability determination for pollutant-specific emission units;
- Monitoring plan, including basis for selection of monitoring parameters and establishment of parameter values and averaging periods, and performance criteria for monitoring systems;
- CAM reporting and recordkeeping requirements.

Monitoring requirements for emission units exempt from the CAM rule are located in the facility's existing Title V operating permit or in federal NSPS or NESHAP requirements proposed since November 15, 1990.

Ecology reviewed the PTPC CAM evaluation submitted as part of the permit renewal application. Emission limitations were reviewed to identify whether the CAM rule applied to individual emission units on a pollutant-by-pollutant basis.

Tables 5 through Table 11 below summarizes the findings of applicability/non-applicability for 40 CFR Part 64. CAM was found to be applicable for Recovery Furnace (PM), Smelt Dissolver Tank (PM, opacity), Lime Kiln (PM, opacity), and Power Boiler 10 (PM, opacity). The CAM Plan for each of these CAM applicable PSEUs that did not meet one of the exemption criteria was prepared by the Permittee and is included in Appendix A.

Table 5. Recovery Furnace CAM Applicability

Permit Reference	Pollutant -Parameter[a]	Emission Limit or Standard[b]	Federally Enforceable?	Control device to achieve compliance?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
A.1a	Particulate	0.08 gr/dscf @ 8% O_2, one hour average.	YES	YES-ESP	100	YES	YES	NO	NO	YES	Recovery Boiler Particulate & Opacity
A.1b	Particulate	0.10 gr/dscf @ 8% O_2, averaged over 3 one hours tests	YES	YES-ESP	100	YES	YES	NO	NO	YES	Recovery Boiler Particulate & Opacity
A.6	Particulate	0.05 gr/dscf @ 8% O2, one hour averaging	NO	YES-ESP	100	YES	NO	NO	NO	NO	
A.2	Particulate and HAP metals	< or = 0.044 gr/dscf @ 8% O2	YES	YES-ESP	25	YES	YES	YES	YES	NO	
A.3	Opacity	<35% average for more than 6 consecutive minutes in any 60 minute period	YES	YES-ESP	N/A		YES	NO	YES	NO	
A. 3b	HAP Metals with Opacity as a surrogate	Opacity greater than 35% for 2% or more of operating time during a semiannual period.	YES	YES-ESP	N/A		YES	YES	YES	NO	
A.4a	SO_2	200 ppm at 8% O2 one hour averaging	YES	NO	100	NO	NO	NO	NO	NO	
A.4b	SO_2	500 ppm at 8% O2 one hour average	YES	NO	100	NO	NO	NO	NO	NO	

Permit Reference	Pollutant -Parameter[a]	Emission Limit or Standard[b]	Federally Enforceable?	Control device to achieve compliance?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
A.5	HAP's	N/A	YES	N/A	N/A		NO	YES	YES	NO	
A.7	TRS	5.0 ppm at 8% O2 24 hour average	NO - state only	NO	100	YES	NO	NO	YES	NO	
	TRS	17.5 ppm at 8% O2 daily average	YES	NO	100	YES	NO	NO	YES	NO	
A.8a	O2	No limit	NO	NO	NO	NO	NO	NO	YES	NO	
A.8b	O2	13% O2 daily average for 3 consecutive days	YES	NO	NO	NO	NO	NO	YES	NO	

(a) For pollutants with multiple limits/standards, CAM is analyzed for each limits/standards. If a pollutant does not have a limit or standard, it is not included in the table because it is not subject to CAM.

(b) Federally-enforceable limits or standards.

(c) Limit proposed by EPA pursuant to section 111 (NSPS) and section 112 (NESHAPs). This exemption does not necessarily apply to limits set by WACs, NOCs, or PSDs.

(d) If the CEMS/COMS are specified compliance methods (demonstration of compliance), the exemption applies. If the CEMS/COMS are considered "indicators of compliance," this exemption does not apply.

(e) EPA maintained that opacity limits are subject CAM evaluation. This position was communicated to Ecology in the renewal process of Boise Wallula air permit in 2018.

Table 6. Smelt Dissolver Tank CAM Applicability

Permit Reference	Pollutant -Parameter[a]	Emission Limit or Standard[b]	Federally Enforceable?	Control device to achieve compliance?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
B.1	Particulate	0.3 lbs/ton BLS one hour average	YES	Scrubber	100	YES	YES	NO	NO	YES	Smelt Dissolver Particulate & Opacity
B.2	Particulate for HAP's	0.10 kg/Mg (0.20 lb/ton) of black liquor solids fired	YES	Scrubber		YES	YES	YES	NO	NO	
B.3	Opacity	35% average for more than 6 consecutive minutes in an 60 minute period	YES	Scrubber			YES	NO	NO	YES	Smelt Dissolver Particulate & Opacity
B.4	HAP Metals (Scrubber Operating Limits as a surrogate)	Five monitoring parameter values below the min operating limits during any semi-annual operating period	YES	Scrubber		NO	YES	YES	YES	NO	
B.5	Damper Inspections	N/A	NO	N/A			NO			NO	
B.6	Annual Damper Testing	N/A	NO	N/A			NO			NO	

Permit Reference	Pollutant -Parameter[a]	Emission Limit or Standard[b]	Federally Enforceable?	Control device to achieve compliance?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
B.7	Observation Hatch	N/A	NO	N/A			NO			NO	

(a) For pollutants with multiple limits/standards, CAM is analyzed for each limits/standards. If a pollutant does not have a limit or standard, it is not included in the table because it is not subject to CAM.

(b) Federally-enforceable limits or standards.

(c) Limit proposed by EPA pursuant to section 111 (NSPS) and section 112 (NESHAPs). This exemption does not necessarily apply to limits set by WACs, NOCs, or PSDs.

(d) If the CEMS/COMS are specified compliance methods (demonstration of compliance), the exemption applies. If the CEMS/COMS are considered "indicators of compliance," this exemption does not apply.

(e) EPA maintained that opacity limits are subject CAM evaluation. This position was communicated to Ecology in the renewal process of Boise Wallula air permit in 2018.

Table 7. Lime Kiln CAM Applicability

Permit Reference	Pollutant -Parameter(a)	Emission Limit or Standard(b)	Federally Enforceable?	Control device to achieve compliance?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
C.1	Particulate	0.13 gr/dscf @ 10% O2, 1-hr average	YES	Scrubber	100	YES	YES	NO	NO	YES	Lime Kiln Particulate & Opacity
C.2	HAP's Metals - PM as a surrogate	0.064 gr/dscf (0.15 g/dscm) @10% O2	YES	Scrubber	100	YES	YES	YES	NO	NO	
C.3	Opacity	35% average for more than 6 consecutive minutes in an 60 minute period	YES	Scrubber			YES	NO	NO	YES	Lime Kiln Particulate & Opacity
C.4	HAP Metals (Scrubber Operating Limits as a surrogate)	Five monitoring parameter values below the min operating limits during any semi-annual operating period	YES	Scrubber	100	YES	YES	YES	YES	NO	
C.5	SO2	500 ppm @ 10% O2, 1-hr average	YES	None	100	NO	NO	NO	NO	NO	
C.6a	TRS (as H2S)	8 ppmdv @ 10% O_2, 12-hour average	NO	None		NO	NO		YES	NO	

Permit Reference	Pollutant -Parameter(a)	Emission Limit or Standard(b)	Federally Enforceable?	Control device to achieve compliance?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[(c)] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[(d)]	CAM required?	Proposed CAM
C.6b	TRS	Temperature >1200F and retention time > 0.5 seconds when burning NCG's	YES	None			NO		YES	NO	
C7.	O_2	No limit – required for O_2 correction	NO	None			NO			NO	
C.8	Stack Height	N/A	YES	None			NO			NO	
C.9	TRS	20 ppm @ 10% O_2, 24-hr average	YES	None			NO		YES	NO	
C.10	TRS	80 ppm H_2S @ 10% O_2 for more than 2 consecutive hours	YES	None			NO		YES	NO	

(a) For pollutants with multiple limits/standards, CAM is analyzed for each limits/standards. If a pollutant does not have a limit or standard, it is not included in the table because it is not subject to CAM.

(b) Federally-enforceable limits or standards.

(c) Limit proposed by EPA pursuant to section 111 (NSPS) and section 112 (NESHAPs). This exemption does not necessarily apply to limits set by WACs, NOCs, or PSDs.

(d) If the CEMS/COMS are specified compliance methods (demonstration of compliance), the exemption applies. If the CEMS/COMS are considered "indicators of compliance," this exemption does not apply.

(e) EPA maintained that opacity limits are subject CAM evaluation. This position was communicated to Ecology in the renewal process of Boise Wallula air permit in 2018.

Table 8. Power Boiler 10 CAM Applicability

Permit Reference	Pollutant -Parameter(a)	Emission Limit or Standard(b)	Federally Enforceable?	Control device to achieve compliance? What?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
D.1a	Particulate	0.10 lb/mmBtu - 1 hr average	YES	WESP, Scrubber	100	YES	YES	NO	YES	NO	
D.1b	Particulate	0.2 grains/dscf @ 7% O2	YES	WESP, Scrubber	100	YES	YES	NO	NO	YES	PB10 Particulate & Opacity
D.2	Particulate and HAP metals	3.7 E-02 lb/MMBtu of heat input (Boiler MACT Emission Limit	YES	WESP, Scrubber	100	YES	YES	YES	YES	NO	
D.3a	PM (Opacity as a surrogate)	20% except for one 6 minute period per hour of not more than 27% opacity	YES	WESP, Scrubber	100	YES	YES	NO	YES	NO	

Permit Reference	Pollutant -Parameter(a)	Emission Limit or Standard(b)	Federally Enforceable?	Control device to achieve compliance? What?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
D. 3b	Opacity	20% average for more than 6 consecutive minutes in any 60 minute period	YES	WESP, Scrubber	N/A		YES	NO	NO	YES	PB10 Particulate & Opacity
D.4a	SO_2	0.80 lb/MMBtu of heat input	YES	NO	100	NO	NO	NO	YES	NO	
D.4b	SO_2	1000 ppm @ 7% O2, 1-hr average	YES	NO	100	NO	NO	NO	YES	NO	
D.5	NOx as NO2	0.30 lb/MMBtu of heat input, 3-hr average	YES	NO		NO	NO	NO	YES	NO	
D.6	O2	No limit – required for O2 correction	YES	NO			NO	NO		NO	
D.7	Stack Height	N/A	YES	NO			NO			NO	
D.8	Salty Hog Fuel	N/A	NO	NO			NO			NO	
D.9	Urban Wood Acceptance Program	N/A	NO	NO			NO			NO	
D.10	CO	720 ppm by volume on a dry basis @ 3% O_2, 30-day rolling average	YES	NO			NO	YES	YES	NO	

Permit Reference	Pollutant -Parameter(a)	Emission Limit or Standard(b)	Federally Enforceable?	Control device to achieve compliance? What?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
D.11	HAP Metals and Mercury (WESP Operating Limit)	Maintain the 30-day rolling average total secondary electric power input of the electrostatic precipitator at or above the operating limits established during the performance test demonstrating compliance with the PM or Mercury emission limit	YES	YES - WESP		YES	YES	YES	YES	NO	
D.12	HAP Metals and Mercury (Scrubber Operating Limit)	Maintain the 30-day rolling average pressure drop at or above the lowest one-hour average pressure drop measured during the performance test demonstrating compliance with the PM or mercury emission limit	YES	YES - Scrubber		YES	YES	YES	YES	NO	

Permit Reference	Pollutant -Parameter(a)	Emission Limit or Standard(b)	Federally Enforceable?	Control device to achieve compliance? What?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
D.13	HAP Metals and Mercury (Scrubber Operating Limit)	Maintain the 30-day rolling average liquid flow rate at or above the lowest one-hour average liquid flow rate measured during the performance test demonstrating compliance with the PM or mercury emission limit	YES	YES - Scrubber		YES	YES	YES	YES	NO	
D.14	HCl	2.2 E-02 lb per MMBtu of heat input (Boiler MACT Emission Limit)	YES	NO			YES	YES	YES	NO	
D .15a	Mercury	5.7 E-06 lb per MMBtu of heat input (Boiler MACT Emission Limit)	YES				YES	YES	YES	NO	

Permit Reference	Pollutant -Parameter(a)	Emission Limit or Standard(b)	Federally Enforceable?	Control device to achieve compliance? What?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
D.16	Mercury and HCl	Equal to or lower fuel input of chlorine and mercury than the maximum values calculated during the most recent performance test	YES				YES	YES	YES	NO	
D.17	Any pollutant for which compliance is demonstrated by a Boiler MACT performance test (Operating Limit)	Maintain 30-day rolling average operating load ≤ 110% of the highest hourly average operating load recorded during the performance test	YES	NO			YES	YES	YES	NO	
D.18	Work Practice Standard	Tune up	YES	NO			NO			NO	
D.19	Work Practice Standard	One-time Energy Assessment	YES	NO			NO			NO	

Permit Reference	Pollutant -Parameter(a)	Emission Limit or Standard(b)	Federally Enforceable?	Control device to achieve compliance? What?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
D.20	Startup (Work Practice Standard)	The Permittee must comply with all applicable emission limits at all times except for startup periods conforming with this work practice standard	YES	NO			NO			NO	
D.21	Shutdown (Work Practice Standard)	The Permittee must comply with all applicable emission limits at all times except for shutdown periods conforming with this work practice standard.	YES	NO			NO			NO	
D.22	Startup/Shutdown Recordkeeping	N/A	YES	NO			NO			NO	
D.23	Operations and Maintenance Manual	N/A	YES	NO			NO			NO	
D.24	Operations and Maintenance Manual	N/A	YES	NO			NO			NO	
D.25	Monitoring Data Collection	N/A	YES	NO			NO			NO	

(a) For pollutants with multiple limits/standards, CAM is analyzed for each limits/standards. If a pollutant does not have a limit or standard, it is not included in the table because it is not subject to CAM.

(b) Federally-enforceable limits or standards.

(c) Limit proposed by EPA pursuant to section 111 (NSPS) and section 112 (NESHAPs). This exemption does not necessarily apply to limits set by WACs, NOCs, or PSDs.

(d) If the CEMS/COMS are specified compliance methods (demonstration of compliance), the exemption applies. If the CEMS/COMS are considered "indicators of compliance," this exemption does not apply.

(e) EPA maintained that opacity limits are subject CAM evaluation. This position was communicated to Ecology in the renewal process of Boise Wallula air permit in 2018.

Table 9. Package Boiler CAM Applicability

Permit Reference	Pollutant -Parameter(a)	Emission Limit or Standard(b)	Federally Enforceable?	Control device to achieve compliance?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
E.1a	Particulate (PM)	0.01 lb/mmBtu, 30-day rolling average	YES	NO	100	NO	NO	YES	YES	NO	
E.1b	Particulate	0.1 gr/dscf @ 7% O2, 1-hr average	YES	NO	100	NO	NO	YES	YES	NO	
E.1.c	PM	10 TPY calendar year total	YES	NO	100	NO	NO	YES	NO	NO	
E.2a	Opacity	15% averaged over 6 consecutive minutes	YES	NO	N/A	NO	NO	YES	NO	NO	
E.2b	Opacity	Average 20% opacity for more than 6 consecutive minutes in any 60 minute period	YES	NO	N/A		NO	YES	NO	NO	
E.3a	SO2	1000 ppm @ 7% O2, 1-hr average	YES	NO	100	NO	NO	YES	NO	NO	
E.3b	SO_2	Only natural gas, as defined in 40 CFR 70.2 may be used as fuel	YES	NO	100	NO	NO	YES	YES	NO	

Permit Reference	Pollutant -Parameter(a)	Emission Limit or Standard(b)	Federally Enforceable?	Control device to achieve compliance?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
E.4a	NOx (as NO2)	0.2 lb/MMBtu, 30-day rolling average	YES	NO	100	NO	NO	YES	NO	NO	
E.4b	NOx (as NO2)	0.2 lb/MMBtu, 30-day rolling average	YES	NO	100	NO	NO	NO	YES	NO	
E.4c	NOx	50 tpy, calendar year total	YES	NO	100	NO	NO	YES	NO	NO	
E.5	O2	N/A	YES	NO			NO			NO	
E.6	Fuel Consumption	497,250 MMBtu/year (5,664 MMBtu/day)	YES	N/A			NO	YES	YES	NO	
E.7a	CO	0.0359 lb/MMBtu	YES	NO		NO	NO			NO	
E.7b	CO	8.9 tpy	YES	NO		NO	NO			NO	
E.8a	VOC as carbon	0.002 lb/MMBTU	YES	NO		NO	NO			NO	
E.8b	VOC as carbon	0.50 tpy	YES	NO		NO	NO			NO	
E.9	Work Practice Standard	Boiler Tune up	YES	NO			NO			NO	
E.10	Work Practice Standard	One time Energy Assessment	YES	NO			NO			NO	

Permit Reference	Pollutant -Parameter(a)	Emission Limit or Standard(b)	Federally Enforceable?	Control device to achieve compliance?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
E.11	Operations and Maintenance Manual	N/A	YES	NO			NO			NO	
E.12	PSD CEMS Reporting	N/A	YES	NO			NO	YES		NO	

(a) For pollutants with multiple limits/standards, CAM is analyzed for each limits/standards. If a pollutant does not have a limit or standard, it is not included in the table because it is not subject to CAM.

(b) Federally-enforceable limits or standards.

(c) Limit proposed by EPA pursuant to section 111 (NSPS) and section 112 (NESHAPs). This exemption does not necessarily apply to limits set by WACs, NOCs, or PSDs.

(d) If the CEMS/COMS are specified compliance methods (demonstration of compliance), the exemption applies. If the CEMS/COMS are considered "indicators of compliance," this exemption does not apply.

(e) EPA maintained that opacity limits are subject CAM evaluation. This position was communicated to Ecology in the renewal process of Boise Wallula air permit in 2018.

Table 10. Digesters, Multi Effect Evaporators, and Wasters CAM Applicability

Permit Reference	Pollutant -Parameter[a]	Emission Limit or Standard[b]	Federally Enforceable?	Control device to achieve compliance?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
F.1	TRS	5 ppmdv @ 10 % O2, unless combusted in aa certain non-NSPS applicable lime kilns, recovery furnaces or equivalent combustion devices	YES	YES	100	YES	YES	NO	YES	NO	
F.2	TRS	Treat noncondensable gases to reduce TRS emissions equal to reduction achieved by thermal oxidation in a lime kiln; install a backup treatment system to ensure continual treatment.	YES	YES	100	YES	NO	NO	YES	NO	

(a) For pollutants with multiple limits/standards, CAM is analyzed for each limits/standards. If a pollutant does not have a limit or standard, it is not included in the table because it is not subject to CAM.

(b) Federally-enforceable limits or standards.

(c) Limit proposed by EPA pursuant to section 111 (NSPS) and section 112 (NESHAPs). This exemption does not necessarily apply to limits set by WACs, NOCs, or PSDs.

(d) If the CEMS/COMS are specified compliance methods (demonstration of compliance), the exemption applies. If the CEMS/COMS are considered "indicators of compliance," this exemption does not apply.

(e) EPA maintained that opacity limits are subject CAM evaluation. This position was communicated to Ecology in the renewal process of Boise Wallula air permit in 2018.

NOTE: Scrubber efficiencies and uncontrolled emissions of H2S and SO2 from lime kiln scrubbers are highly variable due to the amount of sulfur, degree of mud washing efficiency and sulfur content of scrubbing solution. In addition, the kiln is equipped with TRS and SO2 CEMS so regardless of the level of uncontrolled emissions, these units are exempt from CAM for these pollutants due to the presence of CEMs.

Table 11. Paper Machine 2 CAM Applicability

Permit Reference	Pollutant -Parameter[a]	Federally Enforceable?	Control device to achieve compliance? What?	Major Source Threshold (tpy)	Pre-controlled emissions ≥ Major source threshold (tpy)?	CAM Applicable?	CAM Exemption: Limit[c] proposed after 11/15/90	CAM Exemption: Permit specifies continuous compliance determination method[d]	CAM required?	Proposed CAM
J.1	VOC	YES	NO	100	NO	NO	YES	NO	NO	
J.2	Operations and Maintenance	YES	NO	N/A		NO	NO	NO	NO	
J.3	Operations Consistent with Application	YES	NO	N/A		NO	NO	NO	NO	

(a) For pollutants with multiple limits/standards, CAM is analyzed for each limits/standards. If a pollutant does not have a limit or standard, it is not included in the table because it is not subject to CAM.

(b) Federally-enforceable limits or standards.

(c) Limit proposed by EPA pursuant to section 111 (NSPS) and section 112 (NESHAPs). This exemption does not necessarily apply to limits set by WACs, NOCs, or PSDs.

(d) If the CEMS/COMS are specified compliance methods (demonstration of compliance), the exemption applies. If the CEMS/COMS are considered "indicators of compliance," this exemption does not apply.

(e) EPA maintained that opacity limits are subject CAM evaluation. This position was communicated to Ecology in the renewal process of Boise Wallula air permit in 2018.

6.0 MISCELLANEOUS EMISSION UNITS AND REGULATIONS

HEALTH IMPACT ASSESSMENT (Department of Health and ATSDR)

In response to citizen concerns regarding the health effects of air emissions from PTPC, the Department of Health (DOH) conducted a formal health consultation under a Cooperative Agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). DOH concluded that there was insufficient air emissions data from PTPC to fully assess the significance of health impacts and that additional data was needed.

In 2008, Ecology issued Agreed Order 5771 which required that PTPC collect and report additional air emissions and meteorological data to enable DOH to complete is health impact assessment. The Agreed Order required the submittal of an air toxics emission inventory for the years 2002, 2005, and 2007; the installation of a meteorological station; and a plan for estimation of air emissions from the aerated stabilization basin (ASB). Ecology issued a notice of compliance with Agreed Order 5771 in June 2015, determining that PTPC had satisfied the terms of the condition.

Using the additionally provided data, ATSDR performed air dispersion modeling to screen for pollutants of concern and to understand the dispersion characteristics of the facility emissions. Based on the air dispersion modeling, ATSDR setup ambient air monitors at multiple locations throughout the community for an 8 week period in the fall of 2018. The results for the ambient air monitoring study have yet to be finalized by ATSDR.

RISK MANAGEMENT PLAN (40 CFR PART 68)

40 CFR Part 68, Chemical Accident Provisions, requires submittal of a Risk Management Plan if the facility stores a regulated material above the applicable concentration and threshold values. Since the Permittee does not presently store a regulated material above the threshold quantity, the facility is presently only subject to the General Duty Clause requirements and must review materials as purchased to verify if additional requirements must be met. This requirement is included as Facility-Wide General Requirement 13.

7.0 INSIGNIFICANT EMISSION UNITS

The facility-wide general requirements apply to the whole facility, including insignificant emission units and activities (IEUs), as required by Ecology's Operating Permit Regulation rule. However, the rule states that IEUs are not subject to monitoring requirements unless the generally applicable requirements in the State Implementation Plan (SIP) impose them per WAC 173-401-530(2). The Washington SIP does not impose any specific monitoring-related requirements for the facility-wide requirements for IEUs at this source. The permit, therefore, does not require any testing, monitoring, reporting, or recordkeeping for insignificant emission units or activities.

An updated list of IEUs was provided by PTPC and is provided in Appendix B.

8.0 CHANGES TO PERMIT

This section documents any substantial changes in this permit renewal. Minor changes, such as references, reformatting, or typos, may not be included.

Recovery Furnace

- The conditions have been reorganized. The particulate matter (PM) emission limits have been organized into Condition A.1. The HAP Metals emission limit which uses PM as a surrogate has been separated into Condition A.2.

- Condition A.1a has been updated to incorporate the modification of Order 2892-05AQ. The Order requires source testing frequency on a minimum annual frequency. Source testing frequency in the AOP has been revised to monthly/quarterly/semiannual/annual using the sufficiency monitoring provision in 40 CFR 70.6(c)(1). The allowance for one 1-hour source test has been removed. Source test notification and reporting requirements have been updated. Source test reporting language was previously contained in a separate condition, it was incorporated into one condition in Order 2892-05AQ. CAM language has been updated.
- Condition A.2 (formerly Condition A.1) has been updated to incorporate changes to 40 CFR Part 63, Subpart MM following EPA's periodic Residual Risk and Technology Review (RTR). Performance testing for HAP metals compliance is required once every 5 years. Additional language has been added to further clarify the performance testing, notification, and reporting requirements. Continuous monitoring requirements (opacity) have been removed from this condition and placed in a separate condition with the other opacity requirement.
- Condition A.3a (formerly A.3) has been updated to reflect that the method of compliance determination for WAC 173-405-040(6) is EPA Method 9. A reference to Facility-wide General Requirement, Condition 26 has been added which discusses CEMS operating requirements. Reporting requirements have been updated and clarified.
- Condition A.3b has been added to incorporate the continuous monitoring requirements in 40 CFR Part 63, Subpart MM. The language has been updated to reflect changes from the 40 CFR Part 63, Subpart MM RTR. A violation now occurs if opacity is greater than 35% for 2% or more of operating time in a semiannual period. Previously this allowance was 6%. Recordkeeping and reporting language has been updated to clarify the requirements.
- Condition A.4 has been updated to specify monthly/quarterly/semiannual/annual source test frequency. The underlying requirements do specify source testing frequency therefore WAC 173-401-615 has been used to specify the frequency. Notification and source test reporting requirements have been updated.
- Condition A.5 has been added to include updated requirements from the 40 CFR Part 63, Subpart MM RTR. This update requires the use and maintenance of an automatic voltage control system for the precipitator.
- Condition A.6 and A.7 have been added. Operations and maintenance requirements from 40 CFR Part 63, Subpart MM and Order 2892-05AQ have been included.
- Condition A.8 has been updated to incorporate monthly/quarterly/semiannual/annual source testing frequency using the authority in 40 CFR 70.6(c)(1). The modified Order 2892-05AQ includes minimum annual source test frequency. Notification and source test reporting requirements have been updated.
- Condition A. 9 has been updated to include Facility-wide General Requirement, Condition 26 which discusses CEMS operating requirements. Reporting requirements have been updated.
- Condition A.10a has been updated to include Facility-wide General Requirement, Condition 26 which discusses CEMS operating requirements.
- Condition A.10b incorporates O_2 RF exhaust stack requirements which were formerly included in Order 9823 which terminates upon issuance of the AOP renewal. The O2 RF exhaust stack requirements have been included in the AOP based on the requirement for proper operation and maintenance in WAC 173-405-040(8) and the monitoring requirement has been included based on WAC 173-401-615(1)(b). Startup, Shutdown, Malfunction language from 40 CFR Part 63 was removed from the regulation and therefore has been removed from the AOP renewal.

Smelt Dissolver Tank

- The conditions have been reorganized. The particulate matter (PM) emission limits have been organized into Condition B.1. The HAP Metals emission limit which uses PM as a surrogate has been separated into Condition B.2.
- Condition B.1 (formerly B.2) has been updated the source test frequency to monthly/quarterly/semiannual/annual. The allowance for one 1-hour source test has been removed. Notification and reporting requirements have been updated. CAM language has been updated.
- Conditions B.2 (formerly B.1) has been updated to incorporate changes to 40 CFR Part 63, Subpart MM following EPA's periodic Residual Risk and Technology Review (RTR). Performance testing for HAP metals compliance is required once every 5 years. Additional language has been added to further clarify the performance testing, notification, and reporting requirements. Continuous monitoring requirements have been removed from this condition and placed in a separate condition.
- Condition B.3 has been updated to include language specifying that operating limits must be updated within 180 days of issuance of the permit renewal.
- Condition B.4 (formerly included in Condition B.1) has been moved to be with the other scrubber operating limits. The language has been updated to be consistent with the language in 40 CFR Part 63, Subpart MM. The requirement to monitor fan amperage has been included. The excess emission reporting requirement has been updated to a semiannual frequency.
- Condition B.5 through B.7 have been added to capture the requirements in Compliance Order 18124.
- Startup, Shutdown, Malfunction language from 40 CFR Part 63 has been removed from the regulation and has therefore been removed from the AOP renewal.

Lime Kiln

- The conditions have been reorganized. The particulate matter (PM) emission limits have been organized into Condition C.1. The HAP Metals emission limit which uses PM as a surrogate has been separated into Condition C.2.
- Condition C.1 (formerly C.2) has been updated the source test frequency to monthly/quarterly/semiannual/annual. The allowance for one 1-hour source test has been removed. Notification and reporting requirements have been updated. CAM language has been updated.
- Conditions C.2 (formerly C.1) is the HAP metals emission limit from 40 CFR 63 Part 63, Subpart MM. It has been updated to incorporate changes to 40 CFR Part 63, Subpart MM following EPA's periodic Residual Risk and Technology Review (RTR). Performance testing for HAP metals compliance is required once every 5 years. Additional language has been added to further clarify the performance testing, notification, and reporting requirements. Continuous monitoring requirements have been removed from this condition and placed in a separate condition.
- Condition C.3 has been updated to reflect that the method of compliance determination for WAC 173-405-040(6) is EPA Method 9. Previous continuous monitoring language using a COMS has been incorporated into the CAM specific requirement in the condition. A requirement to update/reconfirm the venturi pressure drop operating parameter and to establish a scrubber flow operating parameter has been included in the condition. Monitoring and reporting language has been updated.

- Condition C.4 reflects changes from the 40 CFR Part 63, Subpart MM RTR. Recordkeeping and reporting language has been updated. The excess emission reporting requirement has been updated to a semiannual frequency.
- Condition C.5 (formerly C.4) has been updated to monthly/quarterly/annual source testing frequency. Notification and reporting requirements have been updated. Allowance for one 1-hour source test has been removed.
- Condition C.6a (formerly C.5) has been updated to provide additional details regarding compliance requirements.
- Condition C.6b has been included to capture the requirement for the burning of NSPS Subpart BB NCGs in the Lime Kiln. Ecology has included a reference to the CEMS TRS monitoring in Condition C.6a to ensure compliance with the standard.
- Condition C.7 (formerly C.6) has been updated to provide additional details regarding compliance requirements for O_2 monitoring.
- Condition C.9 was been added to the AOP. Operations and maintenance requirements from Order 2892-05AQ were not previously included in the AOP.

Power Boiler 10

- Condition D.1a has updated the source test frequency to monthly/quarterly/semiannual/annual. The allowance for one 1-hour source test has been removed. Notification and reporting requirements have been updated/included. Condition D.1b has been added. It was not previously included in the AOP but is a requirement in WAC. Condition D.1b includes CAM language referencing Condition D.3a.
- Condition D.2 has been added to incorporate the HAP metals requirement in 40 CFR Part 63, Subpart DDDDD (Boiler MACT). PM source testing is used as a surrogate for HAP metals compliance.
- Condition D.3a (formerly 2.b) has been updated to include modified scrubber and precipitator parameters. Excess emission reporting requirements have been included.
- Conditions D.3b has been updated to include CAM language and the soot blowing opacity alternative standards in WAC 173-400-040(2).
- Condition D.5 (formerly D.4) has been updated to reference Facility-wide General Requirement, Condition 27 for CEMS operating requirements. Monthly and semiannual reporting requirements have been updated.
- Condition D.6 has been added to include the TRS requirement because Power Boiler 10 receives waste gases from NSPS (Subpart BB) emission units for destruction.
- Condition D.7 (formerly D.5) has been updated to reference Facility-wide General Requirement, Condition 27 for CEMS operating requirements.
- Condition D.10 has been added to incorporate the requirement for an urban wood acceptance program as specified in Order 11025.
- Conditions D.11 through D.25 have been added to incorporate the requirements from 40 CFR Part 63, Subpart DDDDD (Boiler MACT).

Package Boiler

- Condition E.1a has been updated to reflect the amendment to PSD 96-01A which converted the Package Boiler to only burn natural gas. The PM emission limit has been updated from 0.10 lb/MMBtu to 0.01 lb/MMBtu.

- Condition E.1b (formerly E.1c) has been updated to reflect the appropriate PM emissions limit of 0.1 gr/dscf.
- Condition E.1c (formerly E.1b) has been updated to reflect the reduced annual PM emission limit in PSD 96-01A, Amendment 1.
- Former Condition E.2 has been removed following the conversion of the Package Boiler to only burn natural gas and the amendment to PSD 96-01A.
- Condition E.2a has been updated to reference Facility-wide General Requirement, Condition 26 for CEMS operating requirements. Reporting requirements have been updated.
- Former Condition E.4a has been removed following the conversion of the Package Boiler to only burn natural gas and the amendment to PSD 96-01A.
- Conditions E.3a has been updated to include source test notification and reporting requirements.
- Condition E.3b is a new requirements due to the natural gas conversion.
- Former Condition E3.c has been removed following the natural gas conversion.
- Condition E.4 has updated NOx requirements following the natural gas conversion.
- Condition E.5 is a new requirement from PSD 96-01A, Amendment 1.
- Condition E.6 has been updated to reflect the new fuel consumption requirements due to the natural gas conversion.
- Condition E.7 has been updated to reflect the new CO emissions limit due to the natural gas conversion.
- Condition E.8 has been updated to reflect the new VOC emissions limit due to the natural gas conversion. As carbon reporting basis is specified.
- Conditions E.9 has been added to incorporate the requirements of 40 CFR Part 63, Subpart DDDDD (Boiler MACT).
- Former Condition E.12 was removed from Order DE 97AQ-I030 following the natural gas conversion.

Digester, Multi-Effect Evaporators, Washers

- Condition F.1 has been updated to provide additional information regarding compliance methodology.
- Condition F.2 has been updated to include language from Order 2892-05AQ which provides additional regulatory clarity regarding the continual treatment of NCGs.

LVHC System

- The list of affected units at the start of Condition G has been updated to remove the M&D digester which has been shut down.
- The conditions for the LVHC system have been reorganized and grouped to provide more regulatory clarity.

HVLC System

- The AOP has been updated to incorporate the HVLC requirements in 40 CFR Part 63, Subpart S.

Pulping Process Condensates and Clean Condensate Alternative

- The majority of changes to the condensate conditions are in the organization of the conditions. The conditions have been re-grouped to provide better clarity.
- Additional clarity has been provided regarding quarterly performance testing and daily monitoring.
- The Clean Condensate Alternative (CCA) requires the treatment of an additional 0.12 pounds of HAPs per oven-dried ton of pulp. This requirement has been included in Condition I.2.

Paper Machine 2

- Condition J has been added to the AOP to incorporate requirements from Order 10453 which approved the Paper Machine 2 Refiner Project.

Old Corrugated Container (OCC) Plant

- Condition K has been added to the AOP to incorporate requirements from Order 16293 which approved the OCC Pulper Upgrade Project.

Reciprocating Internal Combustion Engines (RICE)

- Condition L has been added to the AOP to incorporate requirements from 40 CFR Part 63, Subpart ZZZZ and 40 CFR Part 60, IIII which apply to the RICE at the facility.

NESHAP Startup, Shutdown, and Malfunction (SSM) Requirements

- Former Condition I which included SSM requirements has been removed.

Millwide Emission Limits and Requirements

- Conditions M.13 and M.14 have been added from Order 2892-05AQ.

Greenhouse Gas Reporting

- Conditions N have been added to the AOP to incorporate requirements of the Greenhouse Gas Reporting Rule in 173-441 WAC.

Facility-wide General Requirements

- Requirements for “New Source Review”, “Replacement or Substantial Alternation of Emission Control Technology”, and “Nonroad Engines” have been added.
- Requirement for “Representative Conditions” during source tests has been added (Condition 22).
- “Continuous Emission Monitoring System Operating Requirements” have been added in Condition 26. These are new requirements that were established in Washington Administrative Code in 2011.
- “CMS Data Recovery” requirements have been added (Conditions 27 and 28) to cover NSPS and MACT CMS using 40 CFR 70.6(c)(1) as the basis.
- “Notification of Planned Source Test” requirement has been added (Condition 37).
- “Source Testing Results” requirements have been added to Condition 38. This requirements specifies source test reporting timeframes and how the source tests must be reported to Ecology.
- “CEMS and COMS Data Assessment Report” requirements have been added (Condition 41) for CEMS and COMS subject to 40 CFR Part 60.

Appendix A – Compliance Assurance Monitoring (CAM) Plan

Appendix B – Insignificant Emission Units

Please see this Appendix in a separate document.

Appendix C - Response to Comments