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Mason, Pacific, and  
Thurston counties.*

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# Technical Support Document

For Air Operating  
Permit # 18AOP1300

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McKinley Paper  
Company

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AOP – Renewal  
18AOP1300  
FINAL  
August 17, 2021

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## 1.0 DISCLAIMER

This Technical Support Document generally describes and contains background information on the recycle paper manufacturing facility located at 1902 Marine Drive in Port Angeles which is herein referred to as the McKinley Facility. The McKinley Facility is currently operated by the McKinley Paper Company (McKinley) and owned by the parent company Bio Pappel S.A.B. de C.V. (Bio Pappel) located in Mexico City. All information contained in this Technical Support Document is for purposes of background information regarding air quality only and is not directly enforceable. Enforceable air quality related requirements including emission limits and monitoring, recordkeeping and reporting requirements are contained in the associated Air Operating Permit (AOP) for the McKinley Facility, permit # 18AOP1300, which was issued by Olympic Region Clean Air Agency (ORCAA) on August 17, 2021.

## 2. PERMIT ADMINISTRATION

### 2.1 General

The McKinley Facility in Port Angeles is an integrated pulp and paper mill that produces packaging grade brown paper and containerboard from recycled feedstock. The McKinley Facility currently includes a recycle pulp plant, two paper machines, a wastewater treatment plant, landfill (off-site) and a 20 MW biomass-fueled combined heat and power (CHP) plant. The McKinley Facility's pulp plant is a single-line continuous recycle pulper with a design capacity of 900 oven-dry tons of pulp per day. The two paper machines are currently permitted at a combined production capacity of 840 air-dried tons per day (ADT/day). The McKinley Facility is a major source of both criteria air pollutants and Hazardous Air Pollutants (HAP). It is therefore subject to Title V of the federal Clean Air Act and required to operate under an AOP.

**Table 1: Administrative Information and Contact Information**

Company Name	McKinley Paper Company
Facility/Source Name	McKinley Paper Company – Washington Mill
Owner/Parent Company (Parent company refers to the single company that has a controlling interest in another company or companies.)	Bio Pappel S.A.B. de C.V. Av. Ejercito Nacional No. 1130 Piso 8 Col. Los Morales Polanco, CP 11510 Mexico, Mexico City
AOP Permit No.	18AOP1300
Mailing Address	McKinley Paper Company 1815 Marine Drive Port Angeles, WA 98362
Site Address	1902 Marine Drive
Facility/Plant/Environmental Manager	Terry Nishimoto Environmental Manager
Responsible Official	Time Lane Mill Manager
Unified Business Identification #	604082969

Standard Industrial Classification (SIC) Code	2621
Attainment Area Status	Attainment
Permitting Authority	Olympic Region Clean Air Agency
Permit Engineer	Mark V. Goodin – ORCAA Engineer Manager (360) 539-7610 ext. 108
Compliance Supervisor	Mike Shults – Compliance Supervisor (360) 539-7610

## 2.2 Permittee

The term “Permittee” refers to both the owner and operator of the facility. Both the owner and the operator are responsible for assuring compliance with the terms and conditions in the AOP. The current operator of the McKinley Facility is identified as the McKinley Paper Company – Washington Mill (McKinley). The current parent company or owner of the McKinley Facility is identified as Bio Pappel S.A.B. de C.V. located in Mexico City. The AOP and its requirements apply to operations at the McKinley Facility regardless of ownership changes. Therefore, a change in ownership transfers responsibility for complying with the AOP immediately to the new owner and operator.

## 2.3 Responsible Official

AOP regulations under Chapter 173-401 WAC require a “Responsible Official” certify the truth and accuracy of all compliance related submittals and reports required by the AOP based on their belief formed after reasonable inquiry.

AOP compliance-related submittals covers practically every report, submittal and certification required by the AOP such as deviation reports, malfunction reports, periodic monitoring reports, test reports, quarterly reports and annual compliance certifications. The AOP for the McKinley facility allows “batch-wise” certification of routine compliance reports under condition G5, which states, “Provided, however, where a report is sent more frequently than once every six months, the responsible official’s certification needs only be submitted once every six months, covering all required reporting since the date of the last certification.” The Responsible Official may certify retroactively all reports submitted since the last certification.

According to WAC 173-401-200(29), the “Responsible Official” means one of the following:

- a) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
  - i. The facilities employ more than two hundred fifty persons or have gross annual sales or expenditures exceeding forty-three million in 1992 dollars; or

- ii. The delegation of authority to such representative is approved in advance by the permitting authority;
- b) For a partnership or sole proprietorship: A general partner or the proprietor, respectively;
- c) For a municipality, state, federal, or other public agency: Either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a regional administrator of EPA); or
- d) For affected sources:
  - i. The designated representative in so far as actions, standards, requirements, or prohibitions under Title IV of the FCAA or the regulations promulgated thereunder and in effect on April 7, 1993 are concerned; and
  - ii. The designated representative for any other purposes under 40 C.F.R. Part 70.

The designated Responsible Official for the McKinley Facility is identified as the Mill Manager for the facility. This designation meets the requirements for Responsible Officials found in WAC 173-401-200(29), provided that the Mill Manager is a duly authorized by a president, secretary, treasurer, or vice president of the corporation who is in charge of a principal business functions.

## 2.4 Origins and Authorities for AOP Conditions

Per the Washington Air Operating Permit Program under WAC 173-401-600, the regulatory origin and authority for each condition must be stated in an AOP. For McKinley’s AOP, the origin and authority are stated at the end of each permit condition. The “Origin” cites the local, state, federal regulation or New Source Review permit where the applicable requirement came from. The “Authority” cites the specific section in Chapter 173-401 WAC providing authority to include the requirement in the AOP. Table 2 below lists the specific authorities used by ORCAA for AOPs.

**Table 2: Legal Authorities for AOP Conditions**

Category of AOP Condition	Origin	Authority
Federal Emissions Limits and Standards	cite the NOC condition or performance standard	WAC 173-401-600(1)(a)
State Emissions Limits and Standards		WAC 173-401-600(1)(b)
NSR Permit Conditions		WAC 173-401-600(1)(c)
Applicable Monitoring <i>When monitoring is required by an applicable requirement</i>	cite the NOC condition or performance standard	WAC 173-401-615(1)(a)
Gap-filling Monitoring <i>When monitoring is not specified by an applicable requirement</i>	“N/A – gap-filling”, Cite federal PS or QA procedure if you use as a surrogate	WAC 173-401-615(1)(b)

Additional Monitoring Equipment Requirements <i>When required monitoring references a federal performance specification and QA procedure</i>	Add the underlying section that requires the PS or QA procedure such as 40 CFR § 60.13(a)	WAC 173-401-615(1)(c)
Sufficiency Monitoring <i>When monitoring is required by an applicable requirement, but it is not sufficient to assure compliance</i>	“Provisions added to augment” cite the NOC condition or performance standard requiring the monitoring	WAC 173-401-630(1)
Recordkeeping (including gap-filling)		WAC 173-401-615(2)
All Reporting		WAC 173-401-615(3)

**2.5 AOP Enforcement**

Terms and conditions in the AOP are enforceable by ORCAA, Washington State, and, except for state or local only designated requirements, the U.S. EPA. Each condition in the AOP cites both the regulatory origin and authority of the condition. Any disputes regarding the exact language of an applicable requirement listed in the AOP should be settled by consulting the regulations cited as the regulatory origins for the condition.

**2.6 Annual Fees**

ORCAA calculates annual fees for Title V sources (AOP fees) using a formula that includes a facility fee, a fee based on the number of emission units, and a fee based on the actual amount of annual emissions in tons for the previous calendar year. The intent of this formula is to base annual Title V fees assessed each facility to its complexity and ORCAA’s cost to administer the Title V program. The formula used to calculate AOP fees is found in ORCAA Rule 3.2.

For fee assessment purposes, the McKinley Facility is recognized as having 6 emissions units that add to the complexity of the Facility: pulp plant, paper Machines, Boiler 9, Boiler 10, Boiler 11, and ancillary emissions units. McKinley’s above ground gas tank, wastewater treatment plant, and use of temporary generators were lumped together and accounted for as a single emissions unit referred to as “ancillary emissions units” because ORCAA’s time and effort in regulating these emissions units is minimal.

**2.7 Permit Renewals**

The AOP renewal for the McKinley Facility is issued with a fixed term of five years. Unless the Permittee submits a complete permit renewal application no later than six months before the expiration date, the AOP will expire. If a complete application is received in a timely manner, the AOP will remain in effect until a renewal AOP is issued. The same procedural requirements that apply to issuing an initial AOP apply to permit renewals, including public participation and affected state and EPA review. If ORCAA denies an AOP renewal application, the procedures for permit revocation apply. A final determination to deny an AOP renewal application can be



contested by filing an appeal with the Pollution Control Hearings Board and serving a copy upon ORCAA within 30 days of receipt of the notice of the final determination to deny.

## ***2.8 Permit Revocation***

ORCAA may revoke the AOP only upon request of the permittee or for cause. For all revocations, ORCAA is required to provide at least thirty days written notice to the holder of the AOP prior to taking final action to revoke the permit or deny a permit renewal application. Such notice shall include an explanation of the basis for the proposed action and afford the permittee/applicant an opportunity to meet prior to ORCAA's final decision. ORCAA may issue conditional revocations with a future effective date. A preliminary determination to revoke an AOP can be contested by filing an appeal with the Pollution Control Hearings Board and serving a copy upon ORCAA within 30 days of receiving notice of the intended action.

## ***2.9 Reopening for Cause***

ORCAA will reopen and revise the AOP if any of the following occurs:

1. Additional requirements become applicable and the remaining permit term is 3 years or longer.
2. Additional requirements become applicable under the acid rain program.
3. ORCAA or the EPA determines that the AOP contains a material mistake or inaccurate information was used to set any of the terms or conditions of the permit.
4. ORCAA or the EPA determines that the AOP must be revised to assure compliance with any applicable requirement.

ORCAA will provide the Permittee at least 30 days written notice before reopening an AOP for cause, unless an emergency requires a shorter time period. The same procedural requirements that apply to issuing an initial AOP apply to reopening and reissuing an AOP, including public participation and affected state and EPA review, except that only those parts of the AOP modified or revised are subject to public and affected states review.

## ***2.10 Administrative Permit Amendments***

An administrative permit amendment is a permit revision to the AOP that:

1. Corrects typographical errors;
2. Identifies a name change, contact information, or similar administrative change;
3. Requires more frequent monitoring or record keeping;
4. Allows for a change in ownership or control; or
5. Incorporates conditions from a Notice of Construction (NOC), provided the NOC approval process substantially meets the same requirements as an AOP modification and no gap filling is required to verify compliance.

The Permittee may request an administrative amendment, which ORCAA will either incorporate into the permit or deny within 60 days. ORCAA will then submit the revised permit to EPA.

### ***2.11 Changes not Requiring Permit Revisions***

The Permittee may make a change at a facility subject to an AOP without a permit revision if all of the following conditions are met:

1. The proposed changes are not Title 1 modifications;
2. The proposed changes do not result in an increase in emissions, either a rate or a total, beyond what is allowed by the permit;
3. The proposed changes do not alter permit terms required to enforce limitation on emissions from emission units covered by the permit; and
4. The permittee provides ORCAA and EPA written notification of the proposed changes at least 7 days prior to making the changes, unless an emergency requires swifter action.

A Title 1 modification is defined as any modification subject to a Part 111 standard (NSPS) or a Part 112 standard (NESHAP) or is subject to preconstruction review under the PSD program or in a nonattainment area.

### ***2.12 Minor Permit Modifications***

A change that does require a permit revision may be classified as a minor permit modification if it meets the following conditions:

1. No applicable requirements are violated;
2. There are no significant changes to monitoring, reporting, or record keeping requirements;
3. There are no changes to case-by-case determinations regarding an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. The changes do not establish or change a permit term or condition assumed by the source for the purpose of avoiding an applicable requirement; and
5. No Title 1 modifications are proposed.

A Title 1 modification means any modification subject to a Part 111 standard (NSPS) or a Part 112 standard (NESHAP) or is subject to preconstruction review under the PSD program or in a nonattainment area.

Requests for minor permit modifications must be made on official forms supplied by ORCAA and certified by a responsible official. Once ORCAA declares the application complete, it is ORCAA's responsibility to notify the EPA administrator and affected states and post notice on the Permit Register, which initiates a 21-day comment period. Within 90 days of receiving an application for a minor permit modification or within 15 days after the end of EPA's 45-day review period, whichever comes last, ORCAA shall either:

1. Issue the modification as proposed;
2. Deny the proposed modification;
3. Determine that the proposed modification should be resubmitted as a major permit modification; or
4. Revise the draft permit modification and transmit to EPA.

The Permittee may make the proposed changes immediately upon requesting the modification (unless a NOC is required). However, the Permittee must continue to comply with the applicable requirements governing the change and the proposed terms and conditions. During this time period, the Permittee need not comply with the existing permit terms and conditions it seeks to modify. However, if the source fails to comply with its proposed permit terms and conditions during this time period, the existing permit terms and conditions it seeks to modify may be enforced against it.

### 2.13 Major Permit Modifications

By definition, a change that requires a permit revision and does not qualify as an administrative permit amendment or a minor permit modification is a major permit modification. Every significant change in existing monitoring permit terms or conditions and every relaxation of reporting or recordkeeping permit terms or conditions shall be considered significant. Major permit modifications must meet all the requirements of Chapter 173-401 WAC, including those for applications, public participation, review by affected states, and review by EPA, as they apply to permit issuance and permit renewal. ORCAA shall complete review on the majority of significant permit modifications within 9 months after receipt of a complete application.

## 3. Basis for Title V Applicability

Title V Air Operating Permits apply to “Major Sources” based on their Potential to Emit (PTE) regulated air pollutants. PTE is defined as the maximum possible emissions given physical and regulatory limitations. Table 3 below shows PTE estimates for the McKinley Facility based on current emissions limits and equipment design parameters. Any facility with a PTE at or above the “major source” threshold for any regulated pollutant is required to operate under an AOP issued through an approved Washington State AOP program, according to Title V of the federal Clean Air Act. The McKinley Facility is a major source of both criteria and HAP.

**Table 3: McKinley Facility Potential to Emit (tons per year)**

Pollutant	Boiler 11	Boilers 9 & 10	Pulp Plant	Paper Machines	WWTP	Facility Total
NOx	239.15	195.00	0.00	0.00	0.00	434.15
CO	643.86	4.91	0.00	0.00	0.00	648.77
PM (total = back + front)	36.79	3.24	0.00	4.09	0.00	44.12
PM10	36.79	2.30	0.00	5.88	0.00	44.98
PM2.5	36.79	1.68	0.00	6.44	0.00	44.91

SO2	245.28	639.00	0.00	0.00	0.00	884.28
VOC	27.59	0.33	1.28	44.46	1.24	74.90
Ammonia	21.34	0.00	0.00	0.00	0.00	21.34
HCl	7.36	0.00	0.00	0.00	0.00	7.36
Acetaldehyde	1.53E+00	0.00E+00	2.12E-01	1.85E+00	0.00E+00	3.59E+00
Acrolein	1.84E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.84E-01
Benzene	1.32E+00	2.10E-04	0.00E+00	0.00E+00	0.00E+00	1.32E+00
Biphenyl	0.00E+00	0.00E+00	5.95E-02	5.67E-01	0.00E+00	6.27E-01
Carbon Disulfide	0.00E+00	0.00E+00	2.88E-01	2.96E-01	0.00E+00	5.85E-01
Chloroform	5.15E-02	0.00E+00	9.09E-03	6.16E-01	0.00E+00	6.77E-01
Cumene	0.00E+00	0.00E+00	5.29E-02	3.39E-01	0.00E+00	3.92E-01
Formaldehyde	1.01E-01	5.98E-02	2.52E-02	1.59E+00	0.00E+00	1.78E+00
Methanol	0.00E+00	0.00E+00	4.62E-01	3.33E+00	6.67E-02	3.86E+00
Methyl Ethyl Ketone (not a HAP)	0.00E+00	0.00E+00	2.28E-02	5.35E-03	0.00E+00	2.82E-02
Methylene Chloride	5.33E-01	0.00E+00	3.07E-02	4.74E-01	0.00E+00	1.04E+00
Naphthalene	1.78E-01	0.00E+00	6.75E-02	1.67E-03	0.00E+00	2.48E-01
Phenol	6.81E-03	0.00E+00	5.60E-02	4.87E-01	0.00E+00	5.50E-01
Propionaldehyde	0.00E+00	0.00E+00	2.61E-02	4.60E-01	0.00E+00	4.86E-01
Toluene	1.69E+00	0.00E+00	2.92E-01	2.59E+00	0.00E+00	4.58E+00
Dioxin/Furan	2.94E-09	3.04E-09	0.00E+00	0.00E+00	0.00E+00	5.98E-09
Mercury	1.47E-03	2.94E-12	0.00E+00	0.00E+00	0.00E+00	1.47E-03
Total HAP	12.96	0.07	1.58	12.61	0.07	27.28

NOTES:

<sup>a</sup>Emission factors and PTE basis is described below for each emissions unit.

<sup>b</sup>Cooling towers, gasoline dispensing, temporary engines and landfill emissions not accounted for as they do not contribute significantly to overall emissions from the facility.

## 4. FACILITY DESCRIPTION

### 4.1 Facility History

The McKinley Facility was purchased by McKinley Paper Co. in 2017 from Nippon Paper Industries USA Co., Ltd. It is located at the base of Ediz Hook, which is zoned “Industrial Heavy” and is on the western edge of Port Angeles Harbor, as shown in Figure 1.

**Figure 1. Location of McKinley Paper Co. – Washington Mill**



The mill was originally constructed in 1920. By 1927, it included three paper machines and produced nearly 120,000 tons of newsprint paper each year. It continued in this configuration until the 1960s when the original paper line was shut down and the other two lines were converted to directory paper. In 1992, a plant for recycling old newspaper and old telephone directories was added to the mill. This allowed it to produce post-consumer recycled fiber and produce light-weight directory paper comprised of 40% recycled post-consumer fiber.

The cogeneration (Cogen) facility was approved for construction by ORCAA on June 21, 2011 and was completed in 2014. The Cogen facility includes a biomass-fired boiler that burns primarily wood-derived fuel, but is also approved to co-combust small amounts of wastewater sludge, construction debris, demolition debris and other post-consumer wood waste. The Cogen facility became fully operational by the end of 2014.

In 2019 McKinley secured permits and commenced upgrades to enable use of different recovered fiber sources and the production of heavier brown paper grades. The McKinley Facility remained shut down from the time it was purchased by McKinley in April 2017 up to completion of the upgrades. During the shutdown period, McKinley maintained operational readiness of existing emissions units such as the biomass boiler, oil-fired boilers, paper machines and other emissions units. The major upgrades included modifying the existing two paper machines to enable production of heavier and stronger grades of paper and converting

the pulping operations to a single-line, continuous pulper. These changes enabled the McKinley Facility to produce packaging grade brown paper and containerboard from 100% recycled feedstock. McKinley recommenced operation of the facility at a reduced capacity (operating only one paper machine) on February 9, 2020.

## **4.2 Background Air Quality**

The dominant wind direction where the McKinley Facility is located is from the west and follows the Strait of Juan de Fuca with an occasional onshore breeze of less than 7 knots. The nearest residential area is located south of the McKinley Facility at a distance of roughly 2000 ft. Air quality in the Port Angeles area is generally good. ORCAA has monitored ambient concentrations of particulate matter in Port Angeles for nearly fifty years. The location and number of air monitors have changed several times. Earlier locations included the hospital (939 Caroline St), the police station (321 E 5th St), the Vern Burton Center (308 E 4th St), and Stevens Middle School (1139 W 14th St). In 2015 ORCAA's ambient monitoring station moved to the Port Angeles Fire Station at 102 E 5th St. No violations of an ambient air quality standard have been documented through monitoring at any site in Port Angeles since 1990. Poor air quality episodes in Port Angeles and surrounding communities generally occur during air stagnation episodes associated with inversions and cold weather, which increases and concentrates emissions from residential wood stove use in the atmosphere.

In 2014 and 2015, ORCAA collaborated with the University of Washington to conduct additional air quality monitoring in Clallam Co. following public concerns regarding the location of the ambient monitor and potential increases in ultra-fine particle concentration (particle diameters < 100 nm) from combustion of biomass at the McKinley Facility. Air monitors were placed at four locations around Clallam Co: Stevens Middle School (1139 W 14th St), Port Angeles Library (2210 S Peabody St), the Port Angeles Fire Station (102 E 5th St), and the Sequim Fire Station (323 N 5th Ave, Sequim). Ambient air quality was consistent at all 4-sites, indicating that both Stevens Middle School (the previous air monitor location) and the Port Angeles fire station (new air monitor location) were representative of regional air quality. In Port Angeles, the highest PM<sub>2.5</sub> concentrations were associated with southerly winds. At the Port Angeles fire station, a 20 PPB increase in ambient CO concentrations was associated with northwesterly winds (from direction of McKinley), but there was no observable change in either ultra-fine or PM<sub>2.5</sub> concentrations that could be correlated with Boiler 11 emissions. As a point of reference regarding the CO increase observed, the ambient standards for CO are 35,000 and 9,000 ppb for the one hour average and 8 hour average CO standards respectively.

### 4.3 Pulp Plant

McKinley produces pulp in a single-line, continuous pulper (Recycle Pulp Plant or RPP) that was constructed in 2019. The RPP was designed to operate at capacity using 100% recycled fiber feedstock consisting of reclaimed paper and cardboard. Operating capacity of the RPP is limited by condition 3.1 in the current AOP to no more than 900 oven-dried tons of pulp per day (900 ODTP/day).

In the RPP, recycled fiber is re-pulped by adding water, surfactants and heat. The primary chemical used is sodium hydrosulfite, which serves as a whitening agent. McKinley’s pulping process does not use any bleaching chemicals, which is also prohibited by condition 3.2 of the current AOP.

Pulp is cleaned by removing foreign objects, ink and other impurities through mechanical processes. The process for removing the ink from the fiber relies on injecting air into a pulp slurry with surfactants. The ink becomes attached to the surfactant bubbles and the resulting foam is removed by skimming paddles working the surface of repulping vessels.

Air pollutant emissions from the RPP are primarily fugitive in nature and consist of Volatile Organic Compounds (VOC) including several compounds that are classified as either a Toxic Air Pollutant (TAP), a Hazardous Air Pollutants (HAP) or both. The RPP is regulated as a discrete Emissions Unit (EU) and is designated as EU5 in the current AOP.

Emissions from the RPP are estimated using emissions factors published by the National Council for Air and Stream Improvement (NCASI). The permitted capacity of 900 ODTP/day defines the Potential to Emit (PTE) of the RPP. Table 4 below shows PTE for air pollutants emitted by the Pulp Plant.

**Table 4: Recycle Pulp Plant PTE**

Pollutant	CAS # <sup>1</sup>	TAP <sup>2</sup>	HAP <sup>3</sup>	VOC	Emission Factor Lb/ADTP <sup>4,5</sup>	PTE, Lbs/Day	PTE, Tons/Yr
PM 2.5	N/A	N/A	N/A	N/A	0.00E+00	0.00	0.00
PM10	N/A	N/A	N/A	N/A	0.00E+00	0.00	0.00
PM (total)	N/A	N/A	N/A	N/A	0.00E+00	0.00	0.00
VOC	N/A	N/A	N/A	✓	7.00E-03	7.00	1.28
HCl	7647-01-0	✓	✓	✓	0.00E+00	0.00	0.00
Acetaldehyde	75-07-0	✓	✓	✓	1.16E-03	1.16	0.21
Biphenyl	92-52-4		✓	✓	3.26E-04	0.33	0.06
Carbon Disulfide	75-15-0	✓	✓	✓	1.58E-03	1.58	0.29
Chloroform	67-66-3	✓	✓	✓	4.98E-05	0.05	0.01
Cumene	98-82-8	✓	✓	✓	2.90E-04	0.29	0.05

Formaldehyde	50-00-0	✓	✓	✓	1.38E-04	0.14	0.03
Methanol	67-56-1	✓	✓	✓	2.53E-03	2.53	0.46
Methyl Ethyl Ketone	78-93-3	✓		✓	1.25E-04	0.13	0.02
Methylene Chloride	75-09-2	✓	✓	✓	1.68E-04	0.17	0.03
Naphthalene	91-20-3	✓	✓	✓	3.70E-04	0.37	0.07
Phenol	108-95-2	✓	✓	✓	3.07E-04	0.31	0.06
Propionaldehyde	123-38-6		✓	✓	1.43E-04	0.14	0.03
Toluene	108-88-3	✓	✓	✓	1.60E-03	1.60	0.29
Mercury	7439-97-6	✓	✓	✓	0.00E+00	0.00	0.00
Other HAP (per AP-42)	N/A	N/A	✓	N/A	0.00E+00	0.00	0.00
Total HAP	N/A	N/A	N/A	N/A	N/A	8.7	1.58

<sup>1</sup>CAS # stands for Chemical Abstracts Service, registry number, which is a unique numerical identifiers for chemical substances.

<sup>2</sup>TAP stands for Toxic Air Pollutant under Chapter 173-460 WAC.

<sup>3</sup>HAP stands for Hazardous Air Pollutant under the Federal Clean Air Act.

<sup>4</sup>Emission factors for particulate from ORCAA 2020 emissions inventory.

<sup>5</sup>Emissions factors for rest of pollutants from Table 10.1 (OCC and Recycled Paperboard Stock Preparation) from NCASI TB 973 (2010).

<sup>6</sup>ADTP = Air-Dried Tons of Paper

## 4.4 Paper Machines

There are two paper machines at the Facility referred to as Paper Machine 1 and Paper Machine 2. The Facility was originally constructed with one paper machine. By 1927, the Mill had three paper lines and produced nearly 120,000 tons of newsprint each year. The mill continued in this configuration until the 1960s when the original paper machine was shut down and the other two machines were converted to directory paper. In 2019, McKinley renovated the Paper Machine 1 to enable production of heavier grades of paper. These renovations went through NSR and were approved by ORCAA in August 2019 under NOC # 19NOC1327, which is the effective NOC Approval Order for the paper machines. The NOC Approval Order approving McKinley's renovations to the mill limit the gross combined production of the Paper Machines to 840 air-dried tons per day of paper. The paper machines are regulated as a single emissions unit in the current AOP, Emissions Unit 6 (EU6), because emissions are comingled and exhausted from the paper plant building through a common exhaust system.

In each paper machine, the pulp, consisting of a mixture of water and fiber is distributed onto a large moving screen, which allows the water to be drained out rapidly creating a tangled web of fibers called a wet web. The wet paper web is then squeezed between poly-covered rolls (presses) to remove more water. Final water removal is accomplished by drying the paper across multiple steam heated metal cylinders (dryer section). The water evaporated from the paper in the drying section is captured from above the machine by large fans, and then exhausted through building vents. The dry paper is then smoothed by pressing between steel rollers, and wound into rolls. The rolls are wrapped and stored for shipment. From the wet end



to the dry end of each paper machine there is about a 93% reduction in moisture content. The paper making process is energy intensive and requires a constant supply of steam from McKinley's boilers.

The paper machines can operate independently or simultaneously as needed but are at limited to a combined production rate of 840 air-dried tons of pulp per day (840 ADTP/day) by condition 4.1 of the current AOP. This rate was rate of production at which air impacts were reviewed and approved under 19NOC1327.

Emissions from the paper machines result from fugitive and evaporated losses as the pulp is processed and dried into paper. The paper machines are sources of PM, VOC, TAP and HAP emissions. Emissions from the paper machines are monitored indirectly by monitoring the amount of paper produced and calculating emissions using emissions factors relating the amount of emissions to the air-dried tons of finished paper produced. The ORCAA-approved emissions factors that are allowed for calculating reported emissions are those published by NCASI in Technical Bulletin #740: Volatile Organic Compound Emissions from Non-Chemical Pulp and Paper Mill Sources, Part V – Paper Machines (NCASI, 7/1997). PTE for the paper machines is approximated using NCASI published emissions factors applied to the allowed rate of production. The permitted capacity of 840 ADTP/day defines PTE for the paper machines. Table 5 below shows PTE for air pollutants emitted by the paper machines.

**Table 5: Paper Machines PTE**

Pollutant	CAS #1	TAP2	HAP3	VOC	Emission Factor Lb/ADTP4,5	PTE, Lbs/Day	PTE, Tons/Yr
PM 2.5	N/A	N/A	N/A	N/A	2.67E-02	22.44	4.09
PM10	N/A	N/A	N/A	N/A	3.84E-02	32.25	5.88
PM (total)	N/A	N/A	N/A	N/A	4.20E-02	35.28	6.44
VOC	N/A	N/A	N/A	✓	2.90E-01	243.60	44.46
HCl	7647-01-0	✓	✓	✓	0.00E+00	0.00	0.00
Acetaldehyde	75-07-0	✓	✓	✓	1.21E-02	10.16	1.85
Biphenyl	92-52-4		✓	✓	3.70E-03	3.11	0.57
Carbon Disulfide	75-15-0	✓	✓	✓	1.93E-03	1.62	0.30
Chloroform	67-66-3	✓	✓	✓	4.02E-03	3.38	0.62
Cumene	98-82-8	✓	✓	✓	2.21E-03	1.86	0.34
Formaldehyde	50-00-0	✓	✓	✓	1.04E-02	8.74	1.59
Methanol	67-56-1	✓	✓	✓	2.17E-02	18.23	3.33
Methyl Ethyl Ketone	78-93-3	✓		✓	3.49E-05	0.03	0.01
Methylene Chloride	75-09-2	✓	✓	✓	3.09E-03	2.60	0.47
Naphthalene	91-20-3	✓	✓	✓	1.09E-05	0.01	0.002
Phenol	108-95-2	✓	✓	✓	3.18E-03	2.67	0.49
Propionaldehyde	123-38-6		✓	✓	3.00E-03	2.52	0.46

Toluene	108-88-3	✓	✓	✓	1.69E-02	14.20	2.59
Mercury	7439-97-6	✓	✓	✓	0.00E+00	0.00	0.00
Other HAP (per AP-42)	N/A	N/A	✓	N/A	0.00E+00	0.00	0.00
Total HAP	N/A	N/A	N/A	N/A	N/A	69.09	12.61

<sup>1</sup>CAS # stands for Chemical Abstracts Service, registry number, which is a unique numerical identifiers for chemical substances.

<sup>2</sup>TAP stands for Toxic Air Pollutant under Chapter 173-460 WAC.

<sup>3</sup>HAP stands for Hazardous Air Pollutant under the Federal Clean Air Act.

<sup>4</sup>Emission factors for particulate from ORCAA 2020 emissions inventory.

<sup>5</sup> Emissions factors for rest of pollutants from Table 10.1 (OCC and Recycled Paperboard Stock Preparation) from NCASI TB 973 (2010).

<sup>6</sup>ADTP = Air-Dried Tons of Paper

#### 4.5 Waste Water Treatment Plant (WWTP)

There are two wastewater discharge points from the Facility into offshore marine waters that discharge an average of 10 million gallons per day cumulatively. Pulping and paper machine operations, the Cogen plant and other sources of waste water at the Facility generate approximately 10 million gallons per day (average) of wastewater when the Facility is in full production. Treatment of process wastewater and stormwater generated by the Facility is accomplished by an on-site wastewater treatment plant (WWTP), which is a source of VOC and discharges through Outfall 001. Water quality of wastewater outfalls from the mill are regulated through a National Pollutant Discharge Elimination System (NPDES) permit issued and enforced by Ecology (NPDES permit # WA-00292-5).

The WWTP includes both a primary clarifier and a secondary activated sludge system and clarifier. Sludge from the primary and secondary clarifiers, along with sludge from the recycled paper plant, is dewatered in a screw press. Sludge from the primary clarifier consists mainly of paper fibers. Sludge from the secondary clarifier contains a fiber fines and waste activated sludge. The recycled paper plant sludge consists of fiber losses from the recycled waste-paper. The WWTP generally removes about 90 percent of the solids and biochemical oxygen demand (BOD) from the raw wastewater. The NPDES permit requires monitoring, recording, and reporting to verify that the wastewater treatment process is functioning correctly and that the discharge complies with the NPDES effluent limits.

The WWTP is a source of air emissions of methanol and VOCs. The WWTP was constructed in 1971 and last upgraded in 1978, which is prior to ORCAA's NSR effectiveness date for WWTPs of January 8, 2002. WWTPs are not specifically exempted from NSR in ORCAA's regulations. However, ORCAA did not start proactively registering and requiring NSR for WWTPs until January 8, 2002 (See ORCAA Technical Guidance 001.01, 2/11/2014 revision). Therefore, both the original construction of the WWTP and latest upgrade of the plant in 1978 predated NSR requirements through ORCAA.

The WWTP is designated as Emissions Unit #7 (EU7) for purposes of regulation through this AOP. Emissions from the WWTP include VOC and methanol. These emissions are monitored by

tracking wastewater quality and throughput and calculating emissions using ORCAA-approved emissions factors. At present, ORCAA accepts NACSI published emissions factors for estimating emissions from WWTPs at pulp and paper facilities. Air pollutant emissions from the WWTP are provided in Table 6.

**Table 6: Waste Water Treatment Plant PTE**

Pollutant	CAS #	TAP?	HAP?	VOC?	EF Lbs/MGD-annual ave <sup>2</sup>	PTE, Lbs/Day	PTE, Tons/Yr
VOC	N/A	N/A	N/A	N/A	250.00	0.00	1.24
Methanol	67-56-1	yes	yes	yes	13.5	0.00	0.07

<sup>1</sup>2011 annual ave waste water rate used as basis for PTE estimates

<sup>2</sup>Emissions factors from 2011 Emission Inventory submitted to ORCAA by Nippon Paper Industries.

#### 4.6 Process Steam

The mill has three separate boilers that generate steam for the pulp and paper making processes. All boilers at the Facility are subject to the federal requirements for boilers under 40 CFR Part 63, Subpart DDDDD, which is commonly referred to as the “Boiler MACT.” The Boiler MACT is applicable to all the boilers at the Facility since the Facility is a “Major Source” of Hazardous Air Pollutants (HAP). The Boiler MACT contains separate and distinct requirements for different sub-categories of boilers including boilers that are used very infrequently, or “Limited-Use” boilers.

## 4.7 Boilers 9 and 10

Boilers 9 and 10 are identical Babcock & Wilcox, oil fired boilers that are regulated as “Limited Use Boilers” under the Boiler MACT. They are type FM water tube boilers each rated at 157 MMBtu/hr (100,000 lbs/hr saturated steam). They were constructed in 1981 and are subject to requirements under NSR permits 81NOC326, 15MOD1125 and 15MOD1131. Neither boiler is equipped with add-on air pollution control. They are designed to burn #2 and #6 fuel oil. They are designated as separate emissions units, EU3 & EU4 for Boiler 9 and Boiler 10 respectively. However, because they are identical units and subject to the same applicable requirements, they are regulated in aggregate and, therefore, share the same conditions in the AOP.

Except during periods of startup and shutdown of McKinley’s cogeneration plant boiler which is described below, Boilers 9 and 10 are prohibited (condition AR 2.3) from operating while the CHP plant is operating. They are also subject to an annual fuel rate limit (condition AR 2.4) to maintain the boilers as “Limited Use Boilers” according to the Boiler MACT. They are not subject to any fuel oil sulfur limit, but are subject to an SO<sub>2</sub> mass rate limit, which indirectly limits the fuel sulfur input to the boilers.

A boiler qualifies as a limited-use boiler if it has federally enforceable limits that maintain its annual capacity factor to no more than 10 percent. Annual capacity factor means the ratio between the actual heat input from the fuels burned during a calendar year and the potential heat input had the boiler been operated for 8,760 hours during a year at the maximum steady state design heat input capacity. Heat input in this definition means heat derived from combustion of fuel and does not include the heat input from preheated combustion air, recirculated flue gases, returned condensate, or exhaust gases from other sources such as gas turbines, internal combustion engines, kilns, etc. Limited-use boilers are not subject to emissions limits, annual tune-up or the energy assessment requirement but must complete a tune-up every 5-years and are required to keep daily record of fuel use.

Emissions from Boilers 9 & 10 are monitored by tracking fuel consumption and calculating emissions using ORCAA-approved emissions factors. Emissions factors for NO<sub>x</sub>, CO, PM and VOC emissions are based on stack testing that was conducted in 2010 and 2011. Emissions factors from NCASI and EPA are accepted by ORCAA and used to calculate lead, mercury, nickel, arsenic, cadmium and other Hazardous Air Pollutant (HAP) emissions expected from the combustion of fuel oil. Sulfur dioxide emissions are calculated using a mass balance approach based on the sulfur content of the fuel oil combusted.

**Table 7: Combined PTE for Boilers 9 and 10**

Pollutant	CAS # <sup>1</sup>	TAP <sup>2</sup>	HAP <sup>3</sup>	VOC	Emission Factor Lb/Mgal <sup>4,5</sup>	PTE, Lbs/Day	PTE, Tons/Yr
NO <sub>x</sub>	10102-44-0	✓			24.00	26.91	195.00
CO	630-08-0	✓			5.00	5.61	4.91
PM (total = back + front)	N/A				3.30	3.70	3.24

PM10	N/A				0.71 times PM <sub>tot</sub>	2.63	2.30
PM2.5	N/A				0.58 times PM <sub>tot</sub>	1.92	1.68
SO2	7446-09-5				0.21	0.24	639.00
VOC	N/A				0.34	0.38	0.33
Ammonia	7664-41-7	✓			N/A	0.00	0.00
HCl	7647-01-0	✓		✓	N/A	0.00	0.00
Acetaldehyde	75-07-0	✓	✓	✓	N/A	0.00E+00	0.00E+00
Acrolein	107-102-8	✓	✓	✓	N/A	0.00E+00	0.00E+00
Benzene	71-43-2	✓	✓	✓	2.14E-04	2.40E-04	2.10E-04
Carbon Disulfide	75-15-0	✓	✓	✓	N/A	0.00E+00	0.00E+00
Chloroform	67-66-3	✓	✓	✓	N/A	0.00E+00	0.00E+00
Cumene	98-82-8	✓	✓	✓	N/A	0.00E+00	0.00E+00
Formaldehyde	50-00-0	✓	✓	✓	6.10E-02	6.84E-02	5.98E-02
Methanol	67-56-1	✓	✓	✓	N/A	0.00E+00	0.00E+00
Methyl Ethyl Ketone	78-93-3	✓	✓	✓	N/A	0.00E+00	0.00E+00
Methylene Chloride	75-09-2	✓	✓	✓	N/A	0.00E+00	0.00E+00
Naphthalene	91-20-3	✓	✓	✓	N/A	0.00E+00	0.00E+00
Phenol	108-95-2	✓	✓	✓	N/A	0.00E+00	0.00E+00
Toluene	108-88-3	✓	✓	✓	N/A	0.00E+00	0.00E+00
Dioxin/Furan	N/A	✓	✓		3.10E-09	3.48E-09	3.04E-09
Mercury	7439-97-6	✓			3.00E-12	3.36E-12	2.94E-12
Total HAP	N/A	N/A	N/A	N/A	6.90E-02	7.74E-02	6.77E-02

<sup>1</sup>CAS # stands for Chemical Abstracts Service, registry number, which is a unique numerical identifiers for chemical substances.

<sup>2</sup>TAP stands for Toxic Air Pollutant under Chapter 173-460 WAC.

<sup>3</sup>HAP stands for Hazardous Air Pollutant under the Federal Clean Air Act.

<sup>4</sup>Annual PTE for NOx and SO2 based on permit limit.

<sup>5</sup>Emissions factors for rest of pollutants from Section 1.3 of AP-42.

<sup>6</sup>Mgal means thousand gallons

## 4.8 Boiler 11

Boiler 11 is part of McKinley's cogeneration (Cogen) plant which was approved by ORCAA in 2011 and began operating in 2014. McKinley's Cogen plant was designed to produce up to 20 MW of electricity through a condensing steam turbine simultaneous with producing low pressure steam for McKinley's pulp and paper making process. . The condensing turbine also required the use of cooling towers to lower the temperature of the hot water for paper mill needs. McKinley is in the process of replacing the condensing steam turbine with a back pressure turbine with a nameplate capacity of 12.95 MW of electricity. This new turbine will not need cooling towers. The turbine is expected to be operational in late 2021.

The original NOC approval for the Cogen plant and Boiler 11 (NOC#: 10NOC763) was superseded by several subsequent NOC revisions. The current, effective NOC for the Cogen

plant and Boiler 11 is 15MOD1125, which contains requirements primarily for Boiler 11. The cooling towers for the CHP plant were approved under a separate NOC (NOC#: 12NOC889) and are discussed below. Boiler 11 is regulated as Emissions Unit 8 (EU8) under the current AOP. The cooling towers are regulated separately as Emissions Unit 9 (EU9). The Steam Turbine does not emit air pollution and, therefore, is not a regulated source.

Boiler 11 is a solid-fuel, vibrating grate boiler with a design heat input rate of 420 million British thermal units per hour (MMBtu/hr) and a rated capacity of 225,000 pounds per hour (lb/hr) of steam at 900 pounds per square inch (psig) and 900 degrees Fahrenheit (F°). It is approved to combust biomass, distillate oil (for startup only), and minor amounts of dewatered sludge from the Facility's WWTP. When the Facility is fully operational (both paper machines running), Boiler 11 may combust up to 200,000 bone-dry tons of biomass fuel annually. At present, the Facility is not fully operational: both paper machines are not operating full-time and the new turbine is not installed to generate electricity.

Since it began operating, the bulk of hog fuel combusted by Boiler 11 has been biomass from forest slash (minimally processed remains from wood harvesting), land clearing, residuals from lumber production (bark, sawdust, trim) and post-consumer wood waste. Post-consumer wood waste fuel is required to be quality assured and is prohibited from containing contaminated materials such as non-wood material, treated wood or painted wood.

Boiler 11 is approved to combust clarifier sludge from the Facility's WWTP. Clarifier sludge consists primarily of fiber losses originating from the RPP and paper machines. Boiler 11 does not have approval to combust municipal waste, municipal wastewater sludge, contaminated materials, or any material that may be defined as solid waste as solid waste.

Boiler 11 employs several air pollution control devices and techniques. Carbon monoxide (CO) and Volatile Organic Compound (VOC) emissions are minimized through good combustion practices and good boiler design. Boiler 11 includes a sectionalized under-grate for good distribution of air both under and over the grate that distributes and suspends the biomass fuel as it is combusting in fire-box. Ample air distribution to the biomass on the grate is essential to maintaining proper combustion. Boiler 11 also includes over-fire air and oxygen trim systems. An oxygen trim system continuously measures the amount of O<sub>2</sub> in the exhaust gas stream and provides feedback to air delivery systems and dampers to automatically maintain optimal excess air levels in the boiler. The over-fire air system delivers secondary air above the grate to complete combustion and to produce turbulence, thereby increasing the efficiency of the combustion process. Both CO and O<sub>2</sub> in the Boiler 11 exhaust gas stream are continuously monitored.

Over-fire air both promotes efficient and complete combustion and is a means of reducing formation of Nitrogen Oxides (NO<sub>x</sub>). However, Selective Non-Catalytic Reduction (SNCR) technology is the primary NO<sub>x</sub> control system for Boiler 11. SNCR involves injecting ammonia into the firebox at specific locations where the flue gas is between 1,400 and 2,000 °F (760 and 1,090 °C) to react with the NO<sub>x</sub> in a chemical reduction reaction. The resulting product of the

reaction is molecular nitrogen (N<sub>2</sub>), carbon dioxide (CO<sub>2</sub>), and water (H<sub>2</sub>O). Boiler 11 has multiple ammonia injection ports with nozzles strategically located to promote the reduction reaction. The injection rate of ammonia is automatically controlled to maintain compliance with both NO<sub>x</sub> and Ammonia emissions limits based on continuous monitoring of both pollutants.

Particulate Matter (PM) including PM<sub>10</sub> and PM<sub>2.5</sub> is controlled using a multiclone mechanical separator followed by a four-zone electrostatic precipitator (ESP) and then a Condensing Economizer (CE). The ESP design control efficiency for PM is 99.3 percent. The CE is a two-stage condensing economizer consisting of indirect and direct contact heat exchangers. The CE controls Hydrogen Chloride (HCl), other acid gases and condensable particulate. Compliance with PM and HCl emission limits are monitored indirectly by continuously monitoring performance of both the ESP and the CE. ESP performance is assured by continuously monitoring opacity levels in the exhaust gas after the ESP but before the CE and maintaining opacity below opacity limits. Performance of the CE is assured by continuously monitoring several CE operating parameters including fluid flow in the condensing economizer and pH of the effluent from the condensing economizer and maintaining operations within acceptable ranges determined during annual stack testing.

During startup, shutdown, and when necessary to maintain good combustion, ultra-low sulfur diesel oil may be combusted by Boiler 11. Total fossil fuel combustion is restricted to not exceed 10 percent of the plant's heat input capacity. This restriction enables Boiler 11 to be classified as a biomass boiler.

Boiler 11 is operated continuously when the Facility is not shut down for maintenance or other reasons. A normal cold startup of Boiler 11 takes between 12 and 18 hours. For the first 4 to 6 hours the Boiler 11 fires on ultra-low-sulfur diesel fuel using a low NO<sub>x</sub> burner. The burner is ignited with a small amount of propane. The ESP is activated once the exhaust gas rises to 300°F. After the ESP reaches this temperature, biomass will start being fed to the boiler and the oil feed gradually reduced while temperatures continue to climb. Other air pollution control systems are activated once proper operating temperatures and conditions are achieved. A temperature of 1,550°F or greater is needed for the SNCR system to operate properly. After this temperature threshold is reached, SNCR is activated by initiating ammonia injection as needed to control NO<sub>x</sub> emissions. Likewise, the CE is activated after flue gas temperatures are sufficiently elevated. Sludge is not introduced into the fuel mix until the CE is operating. The time needed from initial startup of Boiler 11 on diesel to proper operation of all required air pollution control systems ranges from 8-12 hours. A typical shutdown follows the reverse process of a startup, but only takes one or two hours.

Emissions from Boiler 11 are monitored by both calculating emissions based on ORCAA-approved emissions factors and the actual amount of fuel burned Boiler 11, and by using Continuous Emissions Monitoring Systems (CEMS). McKinley operates CEMS to monitor NO<sub>x</sub>, CO, O<sub>2</sub>, Ammonia, and SO<sub>2</sub>. McKinley also operates a continuous opacity monitoring system (COMS) and a stack gas flow monitoring system.

Emissions factors for NOx, CO, PM and VOC emissions are based on stack testing that was conducted in 2017. Emissions factors from NCASI and EPA are accepted by ORCAA and used to calculate lead, mercury, nickel, arsenic, cadmium and other Hazardous Air Pollutant (HAP) emissions expected from the combustion of fuel oil. Sulfur dioxide emissions are calculated using a mass balance approach based on the sulfur content of the fuel oil combusted, stack test results, or CEMS.

**Table 8: Boiler 11 PTE**

Pollutant	CAS # <sup>1</sup>	TAP <sup>2</sup>	HAP <sup>3</sup>	VOC	Emission Factor (units) <sup>3,4</sup>	PTE, Lbs/Day	PTE, Tons/Yr
NOx	10102-44-0	✓			0.13 (lb/MMBtu)	65.00	239.15
CO	630-08-0	✓			0.35 (lb/MMBtu)	147.00	643.86
PM (back + front)	N/A				0.02 (lb/MMBtu)	8.40	36.79
PM10	N/A					8.40	36.79
PM2.5	N/A					8.40	36.79
SO2	7446-09-5				56 (lb/hr)	56.00	245.28
VOC	N/A				0.015 (lb/MMBtu)	6.30	27.59
Ammonia	7664-41-7	✓			25 (ppm)	4.87	21.34
HCl	7647-01-0	✓		✓	4.00E-3 (lb/MMBtu)	1.68	7.36
Acetaldehyde	75-07-0	✓	✓	✓	8.30E-4 (lb/MMBtu)	3.49E-01	1.53E+00
Acrolein	107-102-8	✓	✓	✓	1.00E-4 (lb/MMBtu)	4.20E-02	1.84E-01
Benzene	71-43-2	✓	✓	✓	7.20E-4 (lb/MMBtu)	3.02E-01	1.32E+00
Carbon Disulfide	75-15-0	✓	✓	✓	N/A	0.00E+00	0.00E+00
Chloroform	67-66-3	✓	✓	✓	2.80E-5 (lb/MMBtu)	1.18E-02	5.15E-02
Cumene	98-82-8	✓	✓	✓	N/A	0.00E+00	0.00E+00
Formaldehyde	50-00-0	✓	✓	✓	5.5E-5 (lb/MMBtu)	2.31E-02	1.01E-01
Methanol	67-56-1	✓	✓	✓	N/A	0.00E+00	0.00E+00
Methyl Ethyl Ketone	78-93-3	✓	✓	✓	N/A	0.00E+00	0.00E+00
Methylene Chloride	75-09-2	✓	✓	✓	2.9E-4 (lb/MMBtu)	1.22E-01	5.33E-01
Naphthalene	91-20-3	✓	✓	✓	9.7E-5 (lb/MMBtu)	4.07E-02	1.78E-01
Phenol	108-95-2	✓	✓	✓	3.70E-6 (lb/MMBtu)	1.55E-03	6.81E-03
Toluene	108-88-3	✓	✓	✓	9.20E-4 (lb/MMBtu)	3.86E-01	1.69E+00
Dioxin/Furan	N/A	✓	✓		1.60E-12 (lb/MMBtu)	6.72E-10	2.94E-09
Mercury	7439-97-6	✓			8.0E-7 (lb/MMBtu)	3.36E-04	1.47E-03
Total HAP	N/A	N/A	N/A	N/A		1.28E+00	5.60E+00

<sup>1</sup>CAS # stands for Chemical Abstracts Service, registry number, which is a unique numerical identifiers for chemical substances.

<sup>2</sup>TAP stands for Toxic Air Pollutant under Chapter 173-460 WAC.

<sup>3</sup>HAP stands for Hazardous Air Pollutant under the Federal Clean Air Act.

<sup>4</sup>Emissions factors based on permit limits for NOx, CO, VOC, PM, SO2, Ammonia, HCl, Acrolein, Benzene, Dioxin/Furan, and Mercury. All other pollutants based on AP42 and design capacity.

<sup>5</sup>Emissions factors from AP42, Section 1.6.



## **4.9 Cogeneration Plant Cooling Tower**

McKinley's Cogen plant includes a condensing steam turbine used to generate electricity. Cooling of the steam turbine and especially the condensing section of the turbine is necessary for its efficient operation. Cooling is accomplished using filtered feedwater before it is used in any process at the Facility. In this arrangement, McKinley both cools the turbine and preheats water that would otherwise need to be heated by process steam. However, under certain operating scenarios, the temperature of the pre-heated feedwater is too high to be used in any process at the Facility. Under these scenarios, McKinley relies on a dual cell, 5,500 gallon per minute (gpm) packed cooling tower to cool the feedwater down to a temperature where it can be used in the Facility.

The Cooling Tower is a source of PM emissions due to "drift," which is the small portion of the cooling tower water lost in the form of airborne droplets. When the drift evaporates in the air, it leaves behind any dissolved solids in the form of fine airborne PM. Emissions of other pollutants could result from impurities or chemicals used to treat the Cooling Tower water to control algae or bacteria growth. Regarding added chemicals, McKinley is prohibited from treating the Cooling Tower water per condition 6.3b in the current AOP. Regarding impurities, feedwater is obtained from the Elwha river, which is considered a pristine source of water. Therefore, the only emissions expected from the Cooling Tower are in the form of PM

The Cooling Tower uses mist eliminators that are capable of achieving a drift loss rate of 0.002% with a predicted loss rate of 0.001%. To minimize the drift loss, each cooling cell is equipped with a variable speed motor on the fan and, to the extent possible, the exhaust velocity through the mist eliminator will be maintained at or below 800 feet per minute. Cooling Tower PM PTE was calculated based on a design cooling water rate of 5,500 gpm, a drift loss rate of 0.002%, a concentration of Total Dissolved Solids (TDS) of 1000 parts per million by weight (ppmw), and 8760 hours per year operation.

The cooling towers are no longer used under McKinley's current configuration. McKinley does have future plans of replacing the existing Cogen Plant steam turbine with a condensing steam turbine, thus eliminating the need of the cooling tower.

## **4.10 Landfill**

The Facility includes an off-site landfill located on Monroe Road in Port Angeles, which is referred to as the McKinley Landfill (formerly the Lawson Landfill). Although the landfill is not adjacent or contiguous to the Facility, it is included in this permit. It has been in operation since 1988 for purposes of disposing of boiler ash generated at the facility and is located on a 21 acre parcel off of Monroe Road. The landfill footprint itself occupies 7 acre. The landfill is not equipped with a landfill gas collection system because generation of landfill gases is trivial due to the inert nature of the boiler ash. However, off-loading of boiler ash and heavy equipment operating at the landfill have may cause occasional fugitive airborne emissions of boiler ash.

Because of the potential for fugitive emissions from operations at the landfill, is regulated as Emissions Unit 12 (EU12) under the current AOP.

#### ***4.11 Aboveground Gasoline Storage Tank***

The mill includes a 300 gallon above ground storage tank that is designated as Emissions Unit #10 (EU10). Gasoline dispensed from a single-hose dispenser without a vapor recovery system. Minor emissions of VOC including benzene, ethylbenzene, toluene and xylene result from gasoline dispensing. Records of gasoline throughput are maintained.

#### ***4.12 Portable Generators***

The mill is allowed to use portable generators for the purpose of providing temporary power during emergencies, maintenance events and other occurrences when power is not available. Temporary generators used in this capacity are regulated as “Non-road Engines.” McKinley is required to submit a Notice of Intent (NOI) to ORCAA at least 15-days prior to commencing operation of a Non-road Engine at the Facility. Temporary generators are regulated collectively as Emissions Unit #11 (EU11).

### 4.13 Summary of Emissions Units

Emission unit designations and brief descriptions are provided in Table 9.

**TABLE 9. Emissions Units Covered Under Permit**

Emission Unit ID#	Description	Air Pollution Control Technology	Effective NOCs
EU1	<b>#2 and #3 Refiner Lines: Decommissioned August 27, 2019</b>	N/A	N/A
EU2	<b>Boiler 8: Decommissioned January 2016</b>	N/A	N/A
EU3	<b>Boiler 9:</b> <ul style="list-style-type: none"> <li>▪ Limited use boiler per 40 CFR §63.7575</li> <li>▪ Babcock and Wilcox type FM water tube boiler</li> <li>▪ Rated at 157 MMBtu/hr (100,000 lbs/hr)</li> <li>▪ Fuel: #6 fuel oil, #2 fuel oil</li> <li>▪ Max pressure: 300 psig</li> <li>▪ Working pressure: 225 psig</li> <li>▪ Constructed in 1981</li> </ul>	No mechanical devices, sulfur dioxide limitation met by sulfur content in oil	81NOC326 15MOD1131
EU4	<b>Boiler 10:</b> <ul style="list-style-type: none"> <li>▪ Limited use boiler per 40 CFR §63.7575</li> <li>▪ Babcock and Wilcox type FM water tube boiler</li> <li>▪ Rated 157 MMBtu/hr (100,000 lbs/hr)</li> <li>▪ Fuel: #6 fuel oil, 32 fuel oil</li> <li>▪ Max pressure: 300 psig</li> <li>▪ Working pressure: 225 psig</li> <li>▪ Constructed in 1981</li> </ul>	No mechanical devices, sulfur dioxide limitation met by limiting sulfur content in oil burned	81NOC326 15MOD1131
EU5	<b>Recycle Pulp Plant:</b> <ul style="list-style-type: none"> <li>▪ Single-line continuous pulper capable of processing a variety of fiber feedstock.</li> <li>▪ 900 ODTP/day (1,000 ADTP/day) permitted capacity</li> <li>▪ 328,500 ODTP/year (365,000 ADTP/year) permitted capacity</li> <li>▪ No chemical bleaching of pulp</li> <li>▪ Fugitive source of Volatile Organic Compounds (VOC) including Toxic Air Pollutants (TAP) and Hazardous Air Pollutants (HAP)</li> <li>▪ Re-constructed in 2019</li> </ul>	No add on control technology	19NOC1327
EU6	<b>Paper Machines (1&amp;2):</b> <ul style="list-style-type: none"> <li>▪ Two paper machines</li> <li>▪ Fugitive source of Volatile Organic Compounds (VOC) including Toxic Air Pollutants (TAP) and Hazardous Air Pollutants (HAP)</li> <li>▪ Gross combined production capacity of the paper machines does not exceed 840 air-dried tons per day.</li> <li>▪ Paper machines #1 was reconstructed in 2019</li> </ul>	No add-on control technology	19NOC1327

EU7	<b>Wastewater Treatment Plant:</b> <ul style="list-style-type: none"> <li>Fugitive source of Volatile Organic Compounds (VOC) including Toxic Air Pollutants (TAP) and Hazardous Air Pollutants (HAP) and methanol</li> </ul>	None	None – NSR never triggered
EU8	<b>Boiler 11:</b> <ul style="list-style-type: none"> <li>Detroit Stoker, vibrating grate boiler meeting the definition of a hybrid suspension grate boiler in §63.7575.</li> <li>Rated at 420 MMBtu/hr heat input (gross)</li> <li>Designed to produce 225,000 lb/hr of saturated steam at 900 psi<sub>g</sub></li> <li>Combusts clean woody biomass including hog fuel, recycled wood-derived fuel, dewatered clarifier sludge, natural gas and diesel.</li> </ul>	<ul style="list-style-type: none"> <li>Selective non-catalytic reduction system (SNCR) for control of NO<sub>x</sub></li> <li>Electrostatic Precipitator (ESP) for control of particulate</li> <li>Condensing economizer for control of acid gases and particulate</li> </ul>	13MOD998
EU9	<b>Cogen Cooling Tower:</b> <ul style="list-style-type: none"> <li>Two-cell cooling tower</li> <li>5,500 gallons per minute colling water rate</li> </ul>	Cooling tower drift eliminators	12NOC889
EU10	<b>Gasoline Dispensing:</b> <ul style="list-style-type: none"> <li>300 gallon above ground gasoline storage tank</li> <li>Not equipped with vapor recovery</li> </ul>	None	12NOC885
EU11	<b>Portable Temporary Generators:</b> <ul style="list-style-type: none"> <li>40 CFR Part 89 compliant</li> <li>Temporary (&lt; 12-months)</li> </ul>	None	N/A
EU12	<b>Landfill:</b> <ul style="list-style-type: none"> <li>7 acre landfill</li> <li>Used to landfill boiler ash</li> </ul>	Passive, landfill gas collection system	03NOC318

**Table Notes:** The information in Table 2.1 is for purposes of description.

#### 4.14 Insignificant Emission Units

In addition to the emission units identified and described in Table 9, the Facility includes emissions units that qualify as Insignificant Emissions Units (IEU) under WAC 173-401-530. Designation of an emission unit or activity as an IEU does not exempt the unit or activity from any applicable requirement, including generally applicable requirements. However, testing, monitoring, recordkeeping and reporting required by the AOP are not required for IEUs unless determined by the permitting authority to be necessary to assure compliance, or unless it is otherwise required by a generally applicable requirement of the state implementation plan.

Where a permit does not require testing, monitoring, recordkeeping and reporting for an IEU, the Permittee may certify continuous compliance if there were no observed, documented, or known instances of noncompliance during the reporting period. Where a permit does require testing, monitoring, recordkeeping and reporting for an IEU, the Permittee may certify continuous compliance when the testing, monitoring, recordkeeping required by the permit revealed no violations during the period, and there were no observed, documented, or known

instances of noncompliance during the reporting period. The permit shield per WAC 173-401-640 does not apply to IEUs.

McKinley listed the units and activities described in Table 10 as IEUs in their AOP renewal application. ORCAA reviewed McKinley’s list of IEUs and concurs with McKinley that these unit and activities qualify as IEUs. ORCAA reviewed McKinley’s list of IEUs shown in Table 10 and determined:

1. Testing, monitoring, recordkeeping and reporting are not necessary to assure compliance with applicable requirements, including generally applicable requirements.
2. No federally enforceable applicable requirements apply to any of the units or activities listed.

**TABLE 10. Insignificant Emissions Units Identified in Application**

Insignificant Emission Unit ID#	Description	IEU Basis
IEU1	Loadout of wood residuals and ash (fugitive emissions only)	Fugitive Emissions Only WAC 173-401-530(1)(d)
IEU2	Lubricating Oil Storage Tank	Categorically Exempt WAC 173-401-532(3)
IEU3	Storage of pressurized gas	Categorically Exempt WAC 173-401-532(5)
IEU4	Maintenance shops	Categorically Exempt WAC 173-401-532(7)
IEU5	Vents from rooms, buildings and enclosures that contain permitted emissions units or activities from which local ventilation, controls and separate exhaust are provided.	Categorically Exempt WAC 173-401-532(9)
IEU6	Vehicle internal combustion engines	Categorically Exempt WAC 173-401-532(10)
IEU7	Welding operations	Categorically Exempt WAC 173-401-532(12)
IEU8	Plant upkeep operations	Categorically Exempt WAC 173-401-532(33)
IEU9	Pavement cleaning and sweeping	Categorically Exempt WAC 173-401-532(35)
IEU10	Food preparation	Categorically Exempt WAC 173-401-532(41)
IEU11	Portable drums and totes	Categorically Exempt WAC 173-401-532(42)
IEU12	Landscaping activities	Categorically Exempt WAC 173-401-532(43)
IEU13	General vehicle maintenance	Categorically Exempt WAC 173-401-532(45)
IEU14	Comfort air conditioning	Categorically Exempt WAC 173-401-532(46)
IEU15	Office activities	Categorically Exempt

		WAC 173-401-532(49)
IEU16	Sampling connections	Categorically Exempt WAC 173-401-532(51)
IEU17	Parking lot exhaust	Categorically Exempt WAC 173-401-532(54)
IEU18	Indoor mechanical operations not resulting in emissions	Categorically Exempt WAC 173-401-532(55)
IEU19	Repair and maintenance activities	Categorically Exempt WAC 173-401-532(74)
IEU20	Totally closed conveyors	Categorically Exempt WAC 173-401-532(86)
IEU21	Air compressors and pneumatically operated equipment	Categorically Exempt WAC 173-401-532(88)
IEU22	Steam leaks	Categorically Exempt WAC 173-401-532(89)
IEU23	Vacuum system exhaust	Categorically Exempt WAC 173-401-532(108)

**Table 10 Notes:**

1. All IEUs identified in Table 10 are subject to only general applicable requirements in the AOP.
2. ORCAA has determined no additional monitoring, record keeping or reporting is required for any of the IEUs identified.
3. All IEUs identified in Table 10 were listed in McKinley's AOP renewal application.

## 6.0 ACTUAL EMISSIONS

Actual annual emissions are reported to ORCAA annually in conjunction with ORCAA's Emissions Inventory program. The most recent emissions inventory submitted by McKinley is their emissions inventory for calendar year 2020. This emissions inventory was received by ORCAA in February of 2021 and is still in the process of being reviewed by ORCAA. In 2019, the Mill did not emit because it was under renovation after being purchased by McKinley.

**Table 11 McKinley Facility Actual Emissions 2020**

Pollutant	Annual Emissions	Units
PM (Total Particulate)	6.9	Tons
PM-10 (Total Particulate) (<= 10)	3.8	Tons
PM 2.5 (Fine Particulate (<=2.5))	2.6	Tons
VOC as Volatile Organic Compounds	0.4	Tons
VOC as Propane	6.2	Tons
VOC as Carbon (Paper Machines)	0.0	Tons
SO2 (Sulfur Dioxide)	1.2	Tons
NOX (Nitrogen Oxides)	35	Tons
CO (Carbon Monoxide)	18	Tons
Total HAP	3.28	Tons

Ammonia	1,700	pounds
Methanol	796	pounds
Styrene	1,027	pounds
Manganese	865	pounds
Acetaldehyde	866	pounds
Toluene	1,080	pounds
Chlorine	427	pounds
Chloroform	144	pounds
Dichloromethane (Methylene Chloride)	260	pounds
Selenium	2	pounds
Lead	26	pounds
Biphenyl	0	pounds
Propionaldehyde	33	pounds
Naphthalene	63	pounds
Formaldehyde	362	pounds
Nickel	18	pounds
Arsenic	12	pounds
Phenol	137	pounds
Chromium III	9	pounds
Carbon Tetrachloride	24	pounds
Sulfuric Acid	0	pounds
Tetrachloroethene	21	pounds
Cadmium	2	pounds
Hydrogen Chloride	25	pounds
Chlorobenzene	18	pounds
Beryllium	1	pounds
Mercury	0.4	pounds
1,1,1-Trichloroethane	17	pounds
Ethylbenzene	17	pounds
Trichloroethene	16	pounds
Total Polycyclic Organic Matter (POM)	16	pounds
Chromium VI	2	pounds
o-Xylene	14	pounds
Chloromethane	12	pounds
Benzene	12	pounds
Vinyl Chloride	10	pounds
Bromomethane	8	pounds
Acrolein	5	pounds
Antimony	4	pounds
Benzaldehyde	0	pounds
2,4-Dinitrophenol	0.1	pounds
4-Nitrophenol	0.1	pounds
Pentachlorophenol	0.03	pounds

bis(2-Ethylhexyl)phthalate	0.03	pounds
2,4,6-Trichlorophenol	0.01	pounds
Total Polychlorinated Biphenyls (PCB)	0.002	pounds
Acetophenone	0.002	pounds
Octachlorodibenzo-p-Dioxin (Diesel combustion)	0.0000001	pounds
Total Dioxins/Furans as 2,3,7,8-TCDD TEQs - WHO2005 (Wood combustion)	0.0000000	pounds
Carbon Disulfide	106	pounds
Cumene	78	pounds
Methyl Ethyl Ketone	5	pounds

## 7.0 NEW SOURCE REVIEW APPROVALS

### 7.1 Pre 1975

The record of construction activities at the Facility is limited prior to 1976. The following is a rough chronological recounting of changes that occurred at the Facility prior to 1976 based on the limited records available to ORCAA:

- Boilers #1 through #5 (Dutch Oven boilers that burned solid fuel) were installed pre 1950.
- The Boilers #6 and #7, two small marine boilers, were installed sometime prior to 1952.
- In 1952, Boiler #8 (an oil fired boiler) was built on site.
- In 1964 Boilers #9 and #10, package oil fired boilers, were built and replaced the Boilers #6 and #7 boilers.
- In 1971, Boilers #4 and #5 began burning hogged fuel and sludge from the primary clarifier.

### 7.2 Post 1975

ORCAA has better records for construction activities at the Facility post 1976, which are listed in Table 12. There have been several key projects post 1976 that triggered ORCAA's approval through New Source Review (NSR) and a Notice of Construction (NOC) permit application. Several of the NOC approvals issued by ORCAA are conditional and contain emissions limits and associated monitoring, recordkeeping and reporting requirements. These requirements are included in the AOP as applicable unless the NOC was superseded or the emissions unit retired. Condition by condition cross referencing of effective approval orders to AOP permit conditions is retained as part of the review record for this permit.

**Table 12: Approval Orders Issued after 1976**

Approval order	Project Description
1975 NOC	<b>Not effective.</b> This NOC approved construction of a sawmill adjacent to the paper mill. The sawmill was never constructed.
76NOC104	<b>Not effective.</b> Unconditional approval to modify Boiler 8 allowing combustion of hogged fuel on a grate, fly ash collection and reinjection, and installation of a venturi scrubber. Boiler 8 was retired when the CHP facility was constructed in 2014.



81NOC326	<b>Effective, but unconditional.</b> Unconditional approval to install Boilers #9 and #10 as standby units to replace Boilers #6 and #7.
87NOC384	<b>Effective, but unconditional.</b> Unconditional approval of a dry clay storage and transfer system. The clay silos and transfer systems are still operating as insignificant emission units.
89NOC421	<b>Not effective.</b> This application was for a mill expansion that never occurred. ORCAA's approval of the application expired.
96NOC009	<b>Effective, but unconditional.</b> Unconditionally approval to install a dust collection system in the recycled paper warehouse. The dust collection system is still operated.
03NOC305	<b>Not effective.</b> Conditional approval to replace the overfire air and grate systems in boiler #8. The approval order was superseded by 03NOC325. Boiler 8 was retired when the CHP facility was constructed in 2014.
03NOC318	<b>Effective Approval Order.</b> Conditional approval to complete installation of a passive landfill gas venting system and closure of the Phase II section of the mill landfill.
03NOC325	<b>Not effective.</b> This approval order superseded 03NOC305. Boiler 8 was retired when the CHP facility was constructed in 2014.
06NOI475	<b>Effective Approval Order.</b> Conditional approval of a post-consumer wood waste fuel plan.
10NOC763	<b>Superseded by 15MOD1125.</b> Conditional approval to construct cogeneration plant including boiler #11.
12NOC885	<b>Effective Approval Order.</b> Conditional approval to construct an aboveground storage tank for the dispensing of gasoline into motor vehicles at the facility.
12NOC889	<b>Effective Approval Order.</b> Conditional approval to construct cooling towers for the cogeneration plant.
13MOD989	<b>Superseded by 15MOD1125.</b> Approval of modifications to condition 14 of the Approval Order 10NOC763 in order to reflect the current, effective National Emission Standards for Hazardous Air Pollutants (NESHAP) for boilers, 40 CFR 63 Subpart DDDDD (Boiler MACT)
13MOD998	<b>Superseded by 15MOD1125.</b> Approval of modifications to conditions 15, 18, 22, and 26 of Approval Order 10NOC763 (Order) to align with current particulate matter (PM) monitoring requirements in the effective National Emission Standards for Hazardous Air Pollutants (NESHAP) for boilers, 40 CFR 63 Subpart DDDDD (Boiler MACT).
15MOD1125	<b>Effective Approval Order.</b> Boiler 11 NOx emissions limit revised from 0.10 to 0.13 pounds per million Btu (lbs/MMBtu). Superseded past issued Approval Orders 10NOC763, 13MOD989 and 13MOD998.
15MOD1131	<b>Effective Approval Order.</b> Voluntary limits approved to establish boiler 9 and Boiler 10 as limited use boilers under the Boiler MACT.
15NOC1115	<b>Not effective.</b> Approval of an Old Corrugated Cardboard Tub Pulper (OCC Tub Pulper). This unit was retired and replaced with McKinley's single line Pulp Plant.
19NOC1327	<b>Effective Approval Order.</b> Approval to reconstruct and modify the Pulp and Paper Plants at the Facility.

## 8. REGULATORY DETERMINATIONS

### 8.1 Effective Versions of Applicable Requirements

Effective versions of each applicable requirement in the AOP for the McKinley Facility are the versions that were effective on the date the AOP was issued.

## 8.2 Title V of the Federal Clean Air Act

The Facility is a major source of both criteria and hazardous air pollutants and, therefore, subject to Title V of the Federal Clean Air Act. The Facility has operated under either a permit application shield or under an effective AOP continuously since it became subject to Title V.

## 8.3 New Source Performance Standards (NSPS)

EPA establishes New Source Performance Standards (NSPS) for new, modified or reconstructed facilities and source categories emitting criteria air pollutants. NSPS are codified in 40 CFR Part 60. The following sections detail regulatory determinations for relevant regulations under 40 CFR Part 60, which are referred to as “Subparts.”

**40 CFR Part 60, Subpart D: Standards of Performance for Fossil-Fuel Fired Steam Generators – Not Applicable:** Subpart D applies to fossil-fuel fired steam generators for which construction is commenced after August 17, 1971. For wood fired boilers, 40 CFR § 60.40(a) defines the affected facility as each fossil-fuel and wood residue fired steam generating unit capable of firing fossil fuel at a heat input rate of more than 250 MMBtu/hr. Boilers 9 and 10 have maximum design heat rates less than 200 MMBtu/hr. Boiler 11 is limited to combusting no more than 210 MMBtu/hr of fossil fuel. Therefore, none of the three boilers operating at the Facility are subject to 40 CFR Part 60, Subpart D.

**40 CFR Part 60, Subpart Da: Standards of Performance for Electric Utility Steam Generators – Not Applicable:** Electric utility steam-generating unit means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW net-electrical output to any utility power distribution system for sale. Boilers 9 and 10 only produce process steam for the Facility and, therefore, do not meet the definition of electric utilities. Boiler 11 is part of a Combined Heat and Power (CHP) facility and does meet the definition of an electric utility. However, since the maximum generation of electricity for sale by the CHP Plant is 20 MW, it is not subject to 40 CFR Part 60, Subpart Da.

**40 CFR Part 60, Subpart Db: Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units – Applies to Boiler 11:** Subpart Db applies to steam generating units with a heat input capacity greater than 100 MMBtu/hr that commenced construction, modification, or reconstruction after June 19, 1984. Boilers 9 and 10 were constructed before June 19, 1984 and have not been reconstructed or modified according to the definitions of these terms in Part 60. Therefore, Subpart Db does not apply to Boilers 9 or 10. However, Subpart Db does apply to Boiler #11. Subpart Db imposes a particulate matter emission limit and an opacity standard which are included in the AOP in condition AR5.14 and AR5.28 respectively.

**40 CFR Part 60, Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units – Not Applicable:** Subpart Dc applies to steam generating units with a heat input capacity greater than 10 MMBtu/hr but less than 100 MMBtu/hr that commenced construction, modification, or reconstruction after June 9, 1989. All boilers at the Facility have maximum design heat input capacities greater than 100 MMBtu/hr. Therefore, Subpart Dc does not apply to any boiler currently operating at the Facility.

**40 CFR Part 60, Subpart BB: Standards of Performance for Kraft Pulp Mills – Not Applicable:** This federal subpart applies to kraft pulp mills and pulp mills where kraft pulping is combined with neutral sulfite semi chemical pulping. Kraft pulp mill means any mill that produces pulp from wood by cooking (digesting) wood chips in a water solution of sodium hydroxide and sodium sulfide (white liquor) at high temperatures and pressures. McKinley's single line recycle Pulp Plant does not rely on the Kraft process to recycle pulp. The thermo-mechanical pulping process does not meet the definition of a Kraft pulp mill. Therefore, Subpart BB does not apply.

**40 CFR Part 60, Subpart BBa: Standards of Performance for Kraft Pulp Mill Affected Sources for Which Construction, Reconstruction, or Modification Commenced After May 23, 2013 – Not Applicable:** This federal subpart applies to kraft pulp mills and pulp mills constructed, reconstructed or modified after May 23<sup>rd</sup>, 2013, where kraft pulping is combined with neutral sulfite semi chemical pulping. McKinley's single line recycle Pulp Plant does not rely on the Kraft process to recycle pulp. The thermo-mechanical pulping process does not meet the definition of a Kraft pulp mill. Therefore, Subpart BBa does not apply.

**40 CFR Part 60, Subpart CCCC: Standards of Performance for Commercial and Industrial Solid Waste Incinerators – Not Applicable:** Subpart CCCC applies to incinerators that combust commercial or industrial non-hazardous solid waste with or without energy recovery. Boiler #11 is approved to combust only clean biomass, as defined in 40 CFR Part 241, and materials certified to be non-waste through the processes described in §241. Therefore, Subpart CCCC does not apply. Combustion of previously un-reviewed fuels resulting in the reclassification of any boiler as a solid waste incinerator will require new source review and an AOP revision. If any fuels already approved by ORCAA as part of an NSR process are or become classified as a waste material under §241, any boiler that actually combusts such fuel may be considered an incinerator subject to Subpart CCCC and a significant AOP revision may be required.

#### **8.4 National Emission Standards for Hazardous Air Pollutants (NESHAP)**

EPA establishes National Emission Standards for Hazardous Air Pollutants (NESHAP) under 40 CFR 63 to regulate HAP emissions from major sources of HAP. This regulatory program defines a major source as any facility that has the potential to emit more than 10 tons per year of a single HAP or more than 25 tons per year of all HAPs combined. Based on current estimates of emissions the McKinley Facility is a major HAP source.

**40 CFR Part 63, Subpart S: National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry – Not Applicable:** According to §63.440, the only affected facilities at

mechanical pulp mills are HAP emission points associated with bleaching systems. According to §63.445, bleaching systems that do not use chlorine or chlorine compounds are exempt from the standards of Subpart S. The pulping process at McKinley does not meet the definition of mechanical pulping and does not use chlorine or chlorine compounds. Therefore, Subpart S does not apply.

**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 Semichemical Pulp Mills – Not Applicable:** Subpart MM applies to any kraft, soda, sulfite, or stand-alone semichemical pulp mill that is a major source HAP. Those types of facilities are defined in Subpart MM as follows:

- *Kraft pulp mill* means any stationary source that produces pulp from wood by cooking (digesting) wood chips in a solution of sodium hydroxide and sodium sulfide. The recovery process used to regenerate cooking chemicals is also considered part of the kraft pulp mill.
- *Soda pulp mill* means any stationary source that produces pulp from wood by cooking (digesting) wood chips in a sodium hydroxide solution. The recovery process used to regenerate cooking chemicals is also considered part of the soda pulp mill.
- *Sulfite pulp mill* means any stationary source that produces pulp from wood by cooking (digesting) wood chips in a solution of sulfurous acid and bisulfite ions. The recovery process used to regenerate cooking chemicals is also considered part of the sulfite pulp mill.
- *Stand-alone semichemical pulp mill* means any stationary source that produces pulp from wood by partially digesting wood chips in a chemical solution followed by mechanical defibrating (grinding), and has an onsite chemical recovery process that is not integrated with a kraft pulp mill.

McKinley's Pulp Plant is comprised of a single-line, continuous, recycle pulper. It does not rely on any digesting or mechanical defibrating of wood chips. Therefore, Subpart MM does not apply to McKinley.

**40 CFR Part 63, Subpart DDDDD: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (The Boiler MACT) – Applies to Boilers 9, 10 and 11:** According to §63.7485, facilities that are major sources of hazardous air pollutants and operate boilers or process heaters will be subject to this subpart. Subpart DDDDD applies to all boilers at the Facility. Boilers 9 and 10 are regulated as "Limited Use Boilers" under the Boiler MACT and are subject only to the requirement to conduct a tune-up every 5 years as specified in §63.7540. Boiler 11 is regulated as a new boiler and is classified as both a "Hybrid suspension grate boiler designed to burn biomass/biobased solids" and "Units in all subcategories designed to burn solid fuel" classifications. Being a new boiler, Boiler 11 was required to comply with the Boiler MACT at startup.

**40 CFR Part 63, Subpart JJJJJ: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters at Area Sources – Not Applicable:** In June of 2010, EPA proposed the NESHAP for boilers and process heaters at area sources of hazardous air pollutants (HAP). The term "Area Sources" refers to sources of HAP emissions that are not major. The final rule was posted on the Federal Register on February 1,

2013. Because the McKinley Facility is a major source of HAP emissions, it is not an “Area Source” of HAP emissions and is not subject to Subpart JJJJJ.

**40 CFR Part 63, Subpart CCCCC: National emission standards for Hazardous Air Pollutants for Gasoline Dispensing Facilities – Not Applicable:** This Subpart applies to area sources only. The McKinley Facility is a major source of criteria and HAPs and, therefore, is not subject to these standards.

### **8.5 Accidental Release Prevention Program - Not Applicable**

Section 112r of the Clean Air Act Amendments of 1990 require facilities using substances that pose the greatest risk of harm from accidental releases to develop and implement Risk Management Programs including:

- Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases scenarios;
- Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and
- Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g., the fire department) should an accident occur.

Section 112r applies to stationary sources that manufacture, use, store, or otherwise handle more than a threshold quantity of a listed regulated substance in a process. Because McKinley does not store or use at the Facility any of the regulated substances listed in Section 112(r) of the Federal Clean Air Act above a threshold quantity, Section 112(r) requirements do not apply.

### **8.6 Prevention of Significant Deterioration (PSD)**

The goal of the Prevention of Significant Deterioration (PSD) program is to ensure that construction of new major stationary sources and major modifications will not significantly degrade areas with pre-existing good air quality. Though the Facility is a major source under the State’s PSD program, it has not triggered a PSD review to date. The latest PSD applicability determination was made by the Department of Ecology in 2019 in conjunction with McKinley’s proposal to renovate the Pulp Plant and Paper Machines at the Facility. This determination concluded a PSD permit was not triggered. McKinley submitted a PSD Applicability Determination request to the Washington State Department of Ecology (Ecology) in November 2018. Ecology rendered a determination on January 14, 2019 that McKinley’s proposal to renovate the Facility did not trigger PSD review and permitting. Ecology’s determination was based on McKinley’s demonstration that emissions increases were below the Significant Emission Rates (SER) and that the modeled maximum 24-hour PM10 and PM2.5 impacts were below the “significant” threshold of 1 microgram per cubic meter (1 µg/m3).

## 8.7 Compliance Assurance Monitoring Rule

Applicability of the Compliance Assurance Monitoring (CAM) Rule under §64.2(a) is determined on a pollutant by pollutant basis. The CAM Rule applies to a pollutant subject to an emissions limitation or standard when a control device is used to meet the limitation or standard and potential, pre-control device emissions are greater than a major source threshold. The CAM rule exempts backup utility units. Also, the CAM Rule does not apply to emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act, and emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method, as defined in §64.1.

**TABLE 13. CAM Applicability**

Emission Unit ID#	Control Device	Limit/Standard	Proposed after 11/15/1990?	Major, Pre-controlled Emissions	CAM Applicable?
EU1 Refiner Lines	N/A – Refiner lines retired				
EU2 Boiler 8	N/A – Boiler 8 retired				
EU3 Boiler 9	No	N/A – No control device is used to meet emissions limits and standards.			
EU4 Boiler 10	No	N/A – No control device is used to meet emissions limits and standards.			
EU5 Recycle Pulp Plant	No	N/A – No control device is used to meet emissions limits and standards.			
EU6 Paper Machines	No	N/A – No control device is used to meet emissions limits and standards.			
EU7 WWTP	No	N/A – No control device is used to meet emissions limits and standards.			
EU8 Boiler 11	Electrostatic Precipitator	§60.43b(f) – opacity	Yes	N/A – ORCAA concluded that monitoring provisions under the Boiler MACT are sufficient.	
		§60.43b(h)(4) – PM	Yes		
		§63.7500 – Limits for PM, opacity, mercury, and particulate HAP	Yes		
	15MOD1125 – Limits for PM, opacity, and particulate HAP	Yes			
	Condensing Economizer	§63.7500 – Limit for HCl	Yes		N/A – ORCAA concluded that monitoring provisions under the Boiler MACT are sufficient.
	Non-selective Catalytic Reduction	15MOD1125 – NO <sub>x</sub> Limits	Yes		N/A – NO <sub>x</sub> CEMS is required for monitoring compliance.
Combustion Controls	§63.7500 – CO operating limit	Yes	N/A – CO CEMS is required for monitoring compliance.		
	15MOD1125 – CO emissions limits	Yes			

		15MOD1125 – VOC emissions limits	Yes	N/A – ORCAA determined that CO monitoring required under 40 CFR Part 63 is sufficient for assuring compliance with VOC limits.
		All gaseous HAP limits	Yes	
	No	15MOD1125 – Ammonia emissions limit	N/A – NH <sub>3</sub> CEMS used to monitor compliance.	
	No	All SO <sub>2</sub> limits	N/A - SO <sub>2</sub> CEMS used to monitor compliance.	
EU9 CPH Cooling Tower	Yes	No	N/A - Drift loss specification imposed but no emissions limits or standards.	
EU10 Gasoline Storage Tank	No	N/A – No control device is used to meet emissions limits and standards.		
EU11 Portable Generators	No	N/A – No control device is used to meet emissions limits and standards.		
EU12 Landfill	No	N/A – No control device is used to meet emissions limits and standards.		

### **8.8 State Greenhouse Gas (GHG) Reporting Rule**

According to WAC 173-441-030(1), the State GHG Reporting Rule applies to industrial facilities that emit at least 10,000 metric tons per year of GHG in terms of carbon dioxide equivalents, including carbon dioxide from biofuels. Because the mill has the potential to emit GHGs above this level, the State GHG Reporting Rule applies. Requirements of reporting GHG emissions pursuant to Chapter 173-441 WAC are included as condition R8 in the AOP.

## **8.9 Federal Mandatory Greenhouse Gas Reporting Rule**

The Federal Mandatory Greenhouse Gas Reporting Rules under 40 CFR Part 98 establishes requirements for reporting emissions of GHGs. However, these requirements are not pursuant to either the state or federal Clean Air Acts and, therefore, are not “Applicable Requirements” for purposes of Title V AOPs.

## **8.10 State Carbon Dioxide Mitigation Program**

Carbon dioxide mitigation requirements per Chapter 463-80 WAC applies generally to thermal electric generating facilities with station-generating capability of 350 MW or more. McKinley’s Cogen plant is only capable of generating up to 20 MW. Therefore, Chapter 463-80 WAC does not apply to McKinley.

# **9.0 PERMIT CONDITIONS**

## **9.1 Permit Administration**

Permit administrative conditions (A1-A15) include conditions specifying how the AOP is managed according to the State AOP program under Chapter 173-401 WAC and conditions having implications on assuring compliance with all other conditions in the AOP. Many of the permit administrative conditions are “standard terms and conditions” and required to be in the AOP per either Chapter 173-401 WAC or per federal requirements for AOPs.

The origin of each permit administrative condition is stated at the end of each condition. Authority to include permit administrative conditions comes from primarily from WAC 173-401-600(1)(b), which specifies AOPs contain requirements from the Washington Clean Air Act (Chapter 70A.15 RCW) and rules implementing that chapter (Washington’s AOP program is pursuant to RCW 70A.15.2270, which is under the Washington Clean Air Act).

Permit administrative conditions specify terms of the AOP such as the permit duration, expiration, renewal and revision requirements. They also explain the “Permit Shield,” extent of AOP enforceability and how the AOP can be revoked or re-opened for cause. They are essential to the proper functioning of the AOP under the State of Washington Program. Because permit administrative conditions do not include any applicable emissions limitations or operational standards, monitoring is not applicable. However, general recordkeeping and reporting requirements apply. Also, compliance with permit administrative conditions must be certified annually.

## **9.2 General Terms and Conditions**

General terms and conditions (G1 – G23) cover general compliance and permitting requirements. These conditions are categorized as General Terms and Conditions in the permit



because they either have broad implications on multiple conditions in the AOP, or are entire programs that are applicable if triggered, such as the Stratospheric Ozone Protection program. Authority for each condition varies depending on whether the applicable requirement originated from a state or federal regulation. Several general terms or conditions are discussed in detail below.

### **9.3 Prohibited Activities**

Prohibited activities conditions (PA1-PA7) cover general prohibitions. These conditions are categorized as Prohibited Activities in the permit because they identify broad prohibitions that apply to Title V facilities at all times, such as prohibition of concealment or masking of emissions. There are no specific monitoring requirements for these prohibited activities because prohibitions generally do not involve applicable emission limits or operational standards for which testing and/or monitoring are needed. However, compliance with the prohibited activities conditions must be certified annually. Authority for each condition varies depending on whether the prohibited activity originated from a state or federal regulation.

### **9.4 Applicable Requirements**

Applicable requirements (AR1-AR9) include all emissions limits and standards, work practice standards and operating requirements for emissions units that apply at the McKinley Facility and are grouped as follows:

- AR1 (AR1.1-1.12) covers general applicable requirements that apply facility-wide to all emissions units at the McKinley Facility.
- AR2 (AR2.1-2.6) includes requirements that apply specifically to Boilers 9 and 10.
- AR3 (AR3.1-3.3) includes requirements that apply specifically to the Recycle Pulp Plant.
- AR4 (AR4.1-4.2) includes requirements that apply specifically to the paper machines.
- AR5 (AR5.1-5.35) includes requirements that apply specifically to Boiler 11.
- AR6 (AR6.1-6.4) includes requirements that apply specifically to the Cogen plant cooling tower.
- AR7 (AR7.1-7.3) includes requirements that apply specifically to the above ground gasoline storage tank.
- AR8 (AR8.1-8.4) includes requirements that apply specifically to operation of temporary generators.
- AR9 (AR9.1) is the only specific requirement that applies to the landfill.
- The WWTP at the McKinley Facility is subject to only the general applicable requirements as they apply.

### **9.5 Monitoring Terms and Conditions**

Applicable monitoring terms and conditions (M1 – M28) include all monitoring required under the permit. The overarching requirement for Title V permits is that they contain monitoring

sufficient for assuring compliance. This is codified in the Washington Title V rule under WAC 173-401-630(1) which states:

*Consistent with WAC 173-401-615, all chapter 401 permits shall contain compliance certification, testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit.*

To meet this requirement for Title V permits, monitoring provisions may be added to a permit when either the applicable limit or standard does not specify monitoring, or when the specified monitoring is not sufficient to assure compliance. Therefore, there are three different categories of monitoring included in a Title V permit, each under a specific authority:

- **Applicable Monitoring.** All monitoring specified by an applicable requirement needs to be included in the permit per WAC 173-401-615(1)(a). When this is the case, WAC 173-401-615(1)(a) is cited as the authority for including the monitoring and the underlying applicable requirement is cited as the “Origin” of the monitoring.
- **Gap-filling Monitoring.** When an applicable requirement (emissions limit, standard or work practice standard) does not specify monitoring, monitoring sufficient to assure compliance must be added to the permit. This category of monitoring is referred to by EPA as “gap-filling monitoring.” The authority to include gap-filling monitoring comes from WAC 173-401-615(1)(b)
- **Sufficiency Monitoring.** When monitoring is specified by an applicable requirement but it does not meet the Title V requirement of assuring compliance with the applicable requirement, the applicable monitoring needs to be augmented. This category of monitoring is referred to by EPA as “Sufficiency Monitoring.” The authority to include sufficiency monitoring provisions to a permit comes from WAC 173-401-630(1). The origin for sufficiency monitoring remains the underlying applicable requirement itself.

## **9.6 General Recordkeeping Requirements**

Applicable recordkeeping terms and conditions (RK1 – RK9) include all required recordkeeping requirements for Title V AOPs as required under WAC 173-401-615(2). Origin and authority are stated at the end of each condition.

## **9.7 Reporting**

Applicable reporting terms and conditions (R1 – R13) include all required reporting requirements for Title V AOPs as required under WAC 173-401-615(32). Origin and authority are stated at the end of each condition.

**\*\* end \*\***

# ATTACHMENTS



# Attachment 1: Data Summary

Name: McKinley Paper Company

Physical address:

McKinley Paper Company  
1815 Marine Drive  
Port Angeles, WA 98362

County: Clallam

Primary Contact: Terry Nishimoto

Contact phone number: 260-565-7045

Air Operation Permit #: 18AOP1300

EIS #: 4986011

FRS #: 110010680370

ICIS-AIR #: WACORC0005300900007

Type of ownership: Private

Operating status: Operating

NAICS code: 322121

SIC code(s): 2621

Air program(s): Title V

State Performance Standards:

- Chapter 173-400 WAC
- ORCAA Aules

Federal Regulations:

- 40CFR Part 60, Subpart A
- 40CFR Part 60, Subpart Db
- 40CFR Part 63, Subpart A
- 40CFR Part 63, Subpart DDDDD

Major for which pollutant(s)? NO<sub>x</sub>, CO, SO<sub>2</sub>, total HAP