



Serving Island, Skagit & Whatcom Counties

PACIFIC WOODTECH CORPORATION
LAMINATED VENEER LUMBER & WOOD I-JOIST
MANUFACTURING
BURLINGTON, WASHINGTON

STATEMENT OF BASIS

- FINAL -
July 28, 2011

PERMIT INFORMATION
PACIFIC WOODTECH CORPORATION
1850 Park Lane, Burlington, WA 98233

SIC: 2439 NAICS 321213

NWCAA ID: 1813-V-S

EPA AFS: 53-057-00055

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1. INTRODUCTION

The Pacific Woodtech Corporation (identified herein as the permittee, the facility or PWC) is required to have an air operating permit (AOP) because the facility has a potential to emit greater than 10.0 tons of methanol per year. This air pollutant is defined as a regulated pollutant in Chapter 173-401 of the Washington Administrative Code (WAC).

The purpose of this Statement of Basis (SOB) is to set forth the legal and factual evidence for the conditions in the PWC AOP and to provide background information for permit review by interested parties. The SOB is not a legally enforceable document in accordance with WAC 173-401-700(8).

1.1 Original AOP and First Modification

An application for an AOP was submitted by PWC on September 18, 2007; the original AOP was issued on March 17, 2008.

In a letter received on January 26, 2011, PWC notified the Northwest Clean Air Agency (NWCAA) that David DeWitte, President and CEO of PWC, replaced Robert Schroeder, Vice President of Operations, as Responsible Official. This would ordinarily have been addressed as an administrative permit amendment; however, the PWC AOP required reopening for cause due to material mistakes identified by NWCAA. Therefore, the AOP was opened and modified pursuant to WAC 173-401-730(1)(c) to address these material mistakes; the designated Responsible Official was updated concurrently.

Section 3 of the PWC AOP incorrectly listed requirements from 40 CFR 60 Subpart A – General Provisions for New Source Performance Standards (NSPS). However, PWC is not currently subject to any NSPS. PWC is subject to 40 CFR 63 Subpart DDDD - National Emission Standard for Hazardous Air Pollutants (NESHAP): Plywood and Composite Wood Products and is, therefore, subject to 40 CFR 63 Subpart A – General Provisions for NESHAP.

Table 6-1 Inapplicable Requirements in the PWC AOP incorrectly listed many regulations as inapplicable that are, in fact, applicable. Notably, NWCAA regulations pertaining to ambient air quality standards, including the formaldehyde ambient standard, were listed as inapplicable. Furthermore, 40 CFR 63 Subpart DDDD was listed as an inapplicable requirement; while there are no requirements for the source beyond initial notification, that regulation still applies to affected sources at the facility. Since WAC 173-401-640 Permit Shield, which makes an allowance for inapplicable requirements to be listed in an AOP, specifically notes that “*Upon request* [emphasis added], the permitting authority shall include in the permit ... a determination identifying specific requirements that do not apply to the source” and PWC in their AOP application specifically stated that they are “not requesting a permit shield against any specific requirements at this time”, the entire Table 6-1 Inapplicable Requirements was deleted from the AOP.

WAC 173-401-730(1)(c) provides a means for the permitting authority to reopen an AOP and correct such material mistakes; only the parts of the permit for which cause to reopen exists are allowed to be revised.

In April 2011, the PWC AOP and SOB were reopened, Section 3 of the AOP was corrected to list the provisions of 40 CFR 63 Subpart A applicable to PWC, Table 6-1 Inapplicable Requirements in the AOP was deleted, and the SOB was updated to reflect the contents of the corrected AOP. The Responsible Official information was also updated per PWC’s notification while the permit was open.

2. FACILITY DESCRIPTION

2.1 Commercial Products Produced

Pacific Woodtech Corporation (PWC) is a manufacturer of laminated veneer lumber (LVL) and wood I-joists. The sawdust by-product of primary manufacturing is also sold to a wholesaler for use as fuel and animal bedding.

LVL is a composite of wood veneer sheet elements with wood fiber primarily oriented along the length of the member. The veneer sheets are bonded together with structural exterior exposure adhesive. LVL

applications include structural members such as headers and rim board, flanges for I-Joist and scaffold planks.

Wood I-joists are structural members manufactured using sawn lumber or LVL flanges and wood structural panel webs bonded together with structural exterior exposure adhesive to form an “I” cross-sectional shape. PWC primarily uses LVL flanges, produced by PWC, and oriented strand board (OSB) web stock, produced by others, to manufacture its I-joist. Sawn lumber flanges are occasionally used and are supplied by others. I-joist applications include roof and floor systems.

2.2 Manufacturing Processes

PWC receives dried veneer from others. Some of the veneer is processed further by PWC on the Scarf Line where it is trimmed to a uniform length and in some cases receives a tapered cut along its short edge. Not all veneer received by PWC is processed on the Scarf Line.

PWC operates two nearly identical continuous LVL presses. Line 1 began operation in 2000 and Line 2 began operating in 2006.

Veneer is fed into the presses where each sheet passes through a glue curtain where it is coated with a uniform layer of adhesive. PWC uses a phenol-formaldehyde-based adhesive. In some cases a catalyst is added to the adhesive mix for greater control of the resin cure time. An insecticide, whose active ingredient is Imidacloprid¹, is also occasionally added to the adhesive mix. Insecticide treated product can only be made on Line 2.

The adhesive-coated veneer is then layered. The mat is pre-heated by a microwave before entering the press. Once in the press heat and pressure are applied to form the mat into the intended thickness. The heat for the press is supplied by thermal oil. The thermal oil is heated in natural gas-fired heaters.

The completed LVL billet is cut to length and one edge hogged to give uniform width as it exits the press. The LVL billets are stacked in the warehouse. Some LVL billets are wrapped and sold as full billets. Most billets are sent through one of two rip saws where they are cut to final width as headers or flanges.

The headers continue down the line where most receive a layer of wax sealant on all surfaces. The headers are then wrapped, prepared for shipping and sent outside for storage before leaving by truck or rail for sale.

The flanges enter into the I-line assembly process. The flanges have a rout cut into them for their entire length. OSB web is inserted into this rout and this joint is held together with a polyurethane adhesive. The OSB is received from others by PWC in 8' by 8' sheets. The OSB is cut to width in the web saw. The OSB web is then profiled on all four edges before it joins the flange. The completed I-joist is cut to length, wrapped, prepared for shipping and sent outside for storage before leaving by truck or rail for sale.

2.3 Other Processes

Four make-up air units are used by PWC. These make-up air units are fueled by natural gas. The make-up air units provide heat for the plant and air into the plant to maintain equal pressure.

2.4 Operating Schedule

Both LVL lines are capable of running around the clock continuously except for maintenance. At a minimum they need 12 hours of downtime every two weeks for maintenance.

The I-line is capable of running for 16 hours before requiring a downtime of 8 hours for cleaning and maintenance. The I-line also requires 12 hours of downtime every two weeks for more exhaustive maintenance.

The entire facility is shut down a minimum of 7 days a year for holiday vacations and overall maintenance for plant infrastructure.

¹ <http://en.wikipedia.org/wiki/Imidacloprid>.

2.5 Location

The PWC facility is located at 1850 Park Lane in Burlington, Washington.

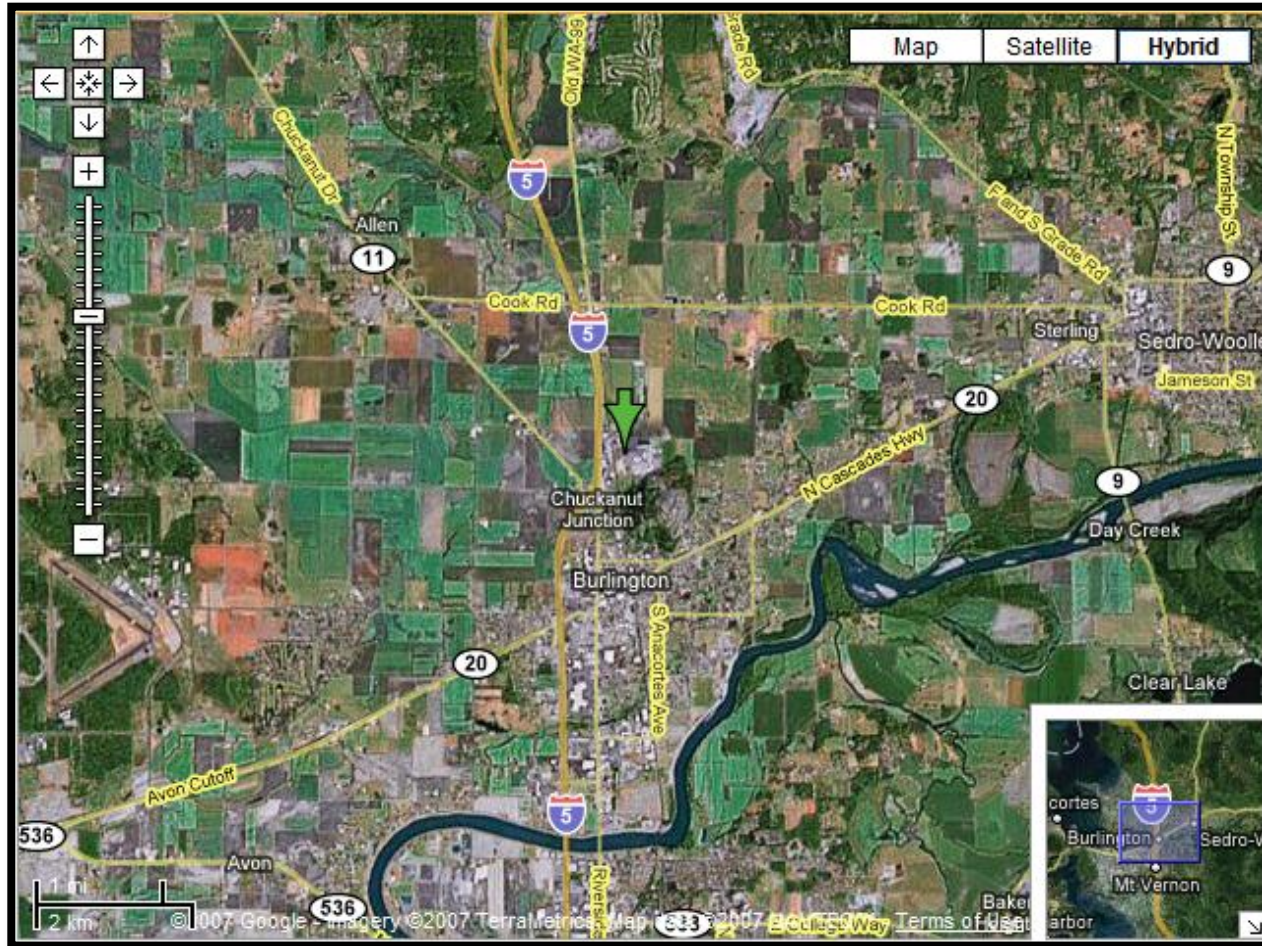


Figure 1 Location of Pacific Woodtech Corporation

2.6 Plant Information

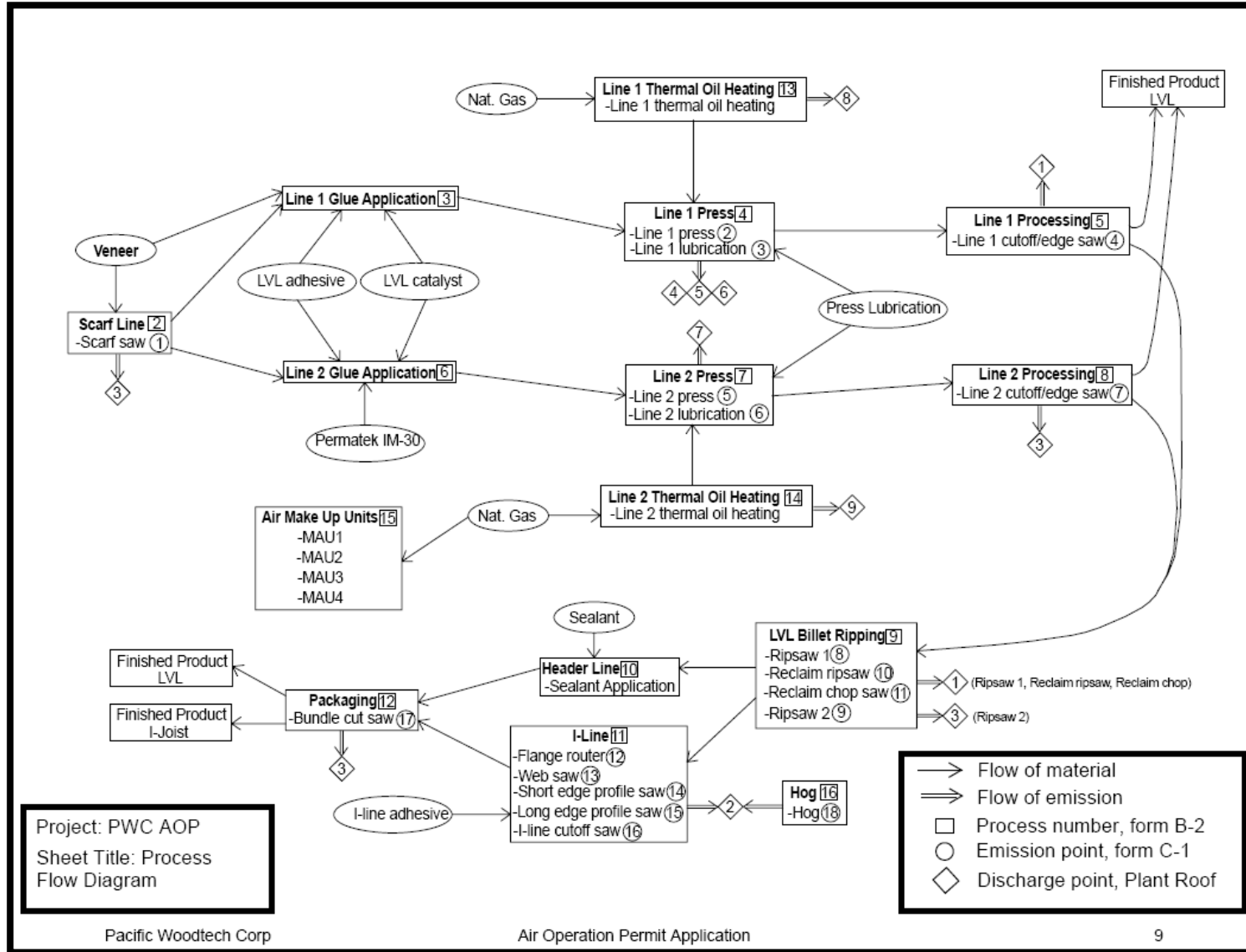


Figure 2 Process flow diagram

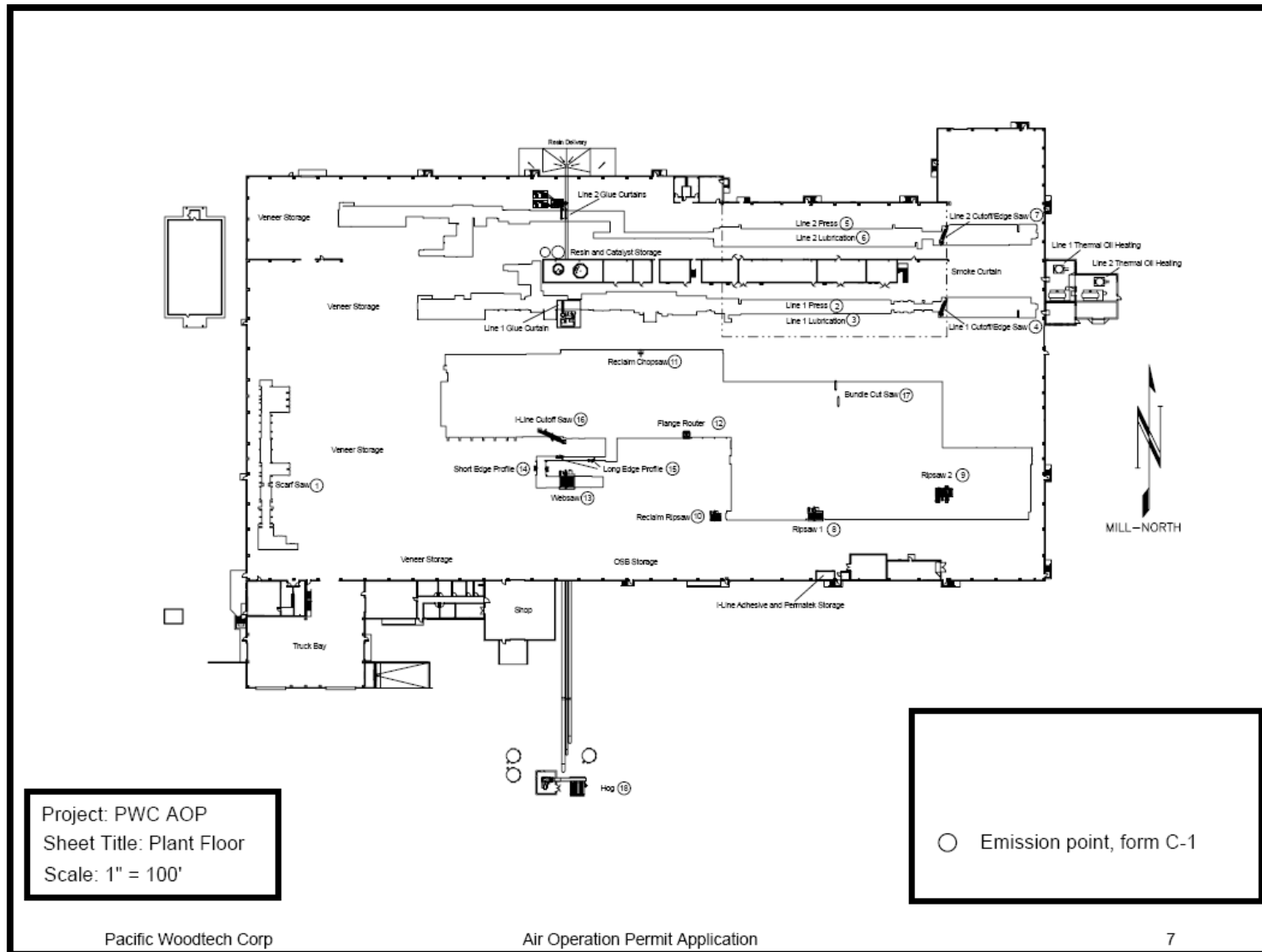


Figure 3 Process equipment layout

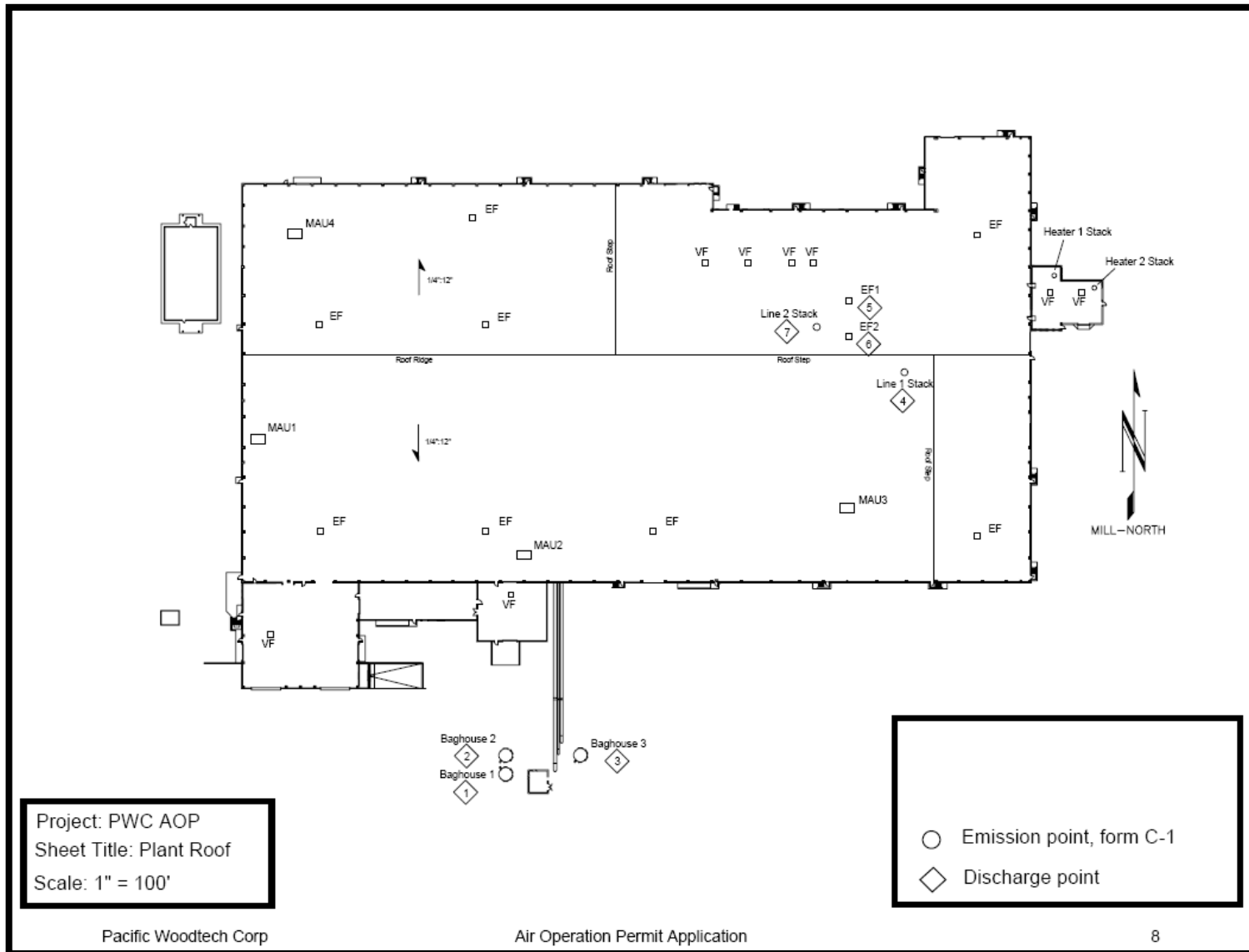


Figure 4 Discharge (stack) locations on roof

3. EMISSIONS UNITS

3.1 Plant-wide

This category includes all emission units that do not have specific permit requirements. Requirements for these units are in Section 4 of the AOP.

3.2 Scarf Line

Raw veneer is checked for moisture content and other defects. Raw veneer is trimmed to length and in some cases receives a tapered cut on the short edge. The control device is a baghouse that exhausts out the Baghouse 3 stack.

3.3 Line 1 Glue Application

On Line 1, resin is mixed with additives and applied via glue curtain to sheets of veneer. There is no control device for this operation, which is vented to the atmosphere through the Line 1 stack and EF1 and EF2 (EF= exhaust fan).

3.4 Line 1 Press

On Line 1, alternating layers of veneer and resin are pre-heated with a microwave before entering a continuous press that applies heat and pressure. There is no control device for this operation, which is vented to the atmosphere through the Line 1 stack and EF1 and EF2.

3.5 Line 1 Processing

On Line 1, completed billets exiting the press are cut to length and one edge of the billet is hogged to maintain a consistent billet width. The control device is a baghouse that exhausts out the Baghouse 1 stack.

3.6 Line 2 Glue Application

On Line 2, resin is mixed with additives and applied via glue curtain to sheets of veneer. There is no control device for this operation, which is vented to the atmosphere through the Line 2 stack.

3.7 Line 2 Press

On Line 2, alternating layers of veneer and resin are pre-heated with a microwave before entering a continuous press that applies heat and pressure. There is no control device for this operation, which is vented to the atmosphere through the Line 2 stack.

3.8 Line 2 Processing

On Line 2, completed billets exiting the press are cut to length and one edge of the billet is hogged to maintain a consistent billet width. The control device is a baghouse that exhausts out the Baghouse 3 stack.

3.9 LVL Billet Ripping

Full billets are fed into rip-saws to be cut into smaller widths for use as headers or I-joist flanges. LVL billet ripping vents to Baghouse 1 and Baghouse 3 for control of PM, with exhaust leaving the facility via the Baghouse 1 stack and the Baghouse 3 stack.

3.10 Header Line

LVL Headers receive ink stamps and an optional wax sealant coating. The process is vented to Baghouse 3.

3.11 I-Line

Flanges are combined with OSB web to construct wood I-joists. The control device is Baghouse 2, exhausting out the Baghouse 2 stack.

3.12 Packaging

Finished products are wrapped and prepared for shipping (includes sawing with the baghouse-controlled bundle cut saw). The control device is Baghouse 3, exhausting out the Baghouse 3 stack.

3.13 Line 1 Thermal Oil Heating

Thermal oil is heated with natural gas-fired heaters. The thermal oil is used to heat the Line 1 Press. There is no control device for this operation, which is vented to the atmosphere through the Heater 1 stack.

3.14 Line 2 Thermal Oil Heating

Thermal oil is heated with natural gas-fired heaters. The thermal oil is used to heat the Line 2 Press. There is no control device for this operation, which is vented to the atmosphere through the Heater 2 stack.

3.15 Air Make-Up Units

Air is brought into the plant to maintain pressure differentials and to provide heat.

3.16 Hog

Unusable scraps of veneer, LVL or I-joist are hogged into sawdust. The control device is Baghouse 2, exhausting out the Baghouse 2 stack.

4. EMISSIONS FOR 2006

The facility qualifies as a major source subject to the requirements of the Title V program because it has the potential to emit more than 10.0 tons per year (tpy) of methanol, a pollutant that has been designated a hazardous air pollutant (HAP) in Section 112(b) of the Federal Clean Air Act.

The following tables contain actual emissions and potential to emit (PTE) from the PWC Burlington facility for 2006. The actual data was provided by PWC, checked by Agency personnel, and then corrected as necessary by PWC.

4.1 Criteria Pollutants in tons per year for 2006

Criteria Air Pollutant	Actual	PTE
PM	4.45	5.22
PM ₁₀	4.45	5.22
PM _{2.5}	4.45	5.22
SO ₂	0	0
NO _x	1.40	9.06
VOC	21.28	42.60
CO	0.94	4.33

4.2 Toxic Pollutants in pounds per year for 2006

Toxic Air Pollutant	Actual	PTE
Formaldehyde	1,400	3,040
Methanol	13,440	29,200
Acetaldehyde	1,120	2,160

Toxic Air Pollutant	Actual	PTE
Acetone	4,260	8,200
Propionaldehyde	920	1,780

5. FACILITY REGULATORY HISTORY

5.1 Pre-Construction Approvals

5.1.1 OAC 695

On March 15, 1999, on behalf of Pacific Woodtech, Columbia Engineering International, Ltd., submitted a "Notice of Construction and Application for Approval" to construct a laminated veneer lumber (LVL) header and I-beam plant at 1850 Park Lane, Burlington Hill Business Park, Burlington, Washington. Emission sources from the LVL plant were to include particulate matter from sawing operations, VOC/HAP from gluing, lamination and pressing, and NO_x, CO, and VOC from assorted natural gas-fired heaters. Wood dust emissions were to be controlled using two Air-Cure model 376AC10 baghouse filters with an efficiency of 99.96%. Best Available Control Technology for natural gas-fired heaters was considered to be fuel selection and good operation and maintenance practices. OAC 695 was issued on May 19, 1999. OAC 695 limited VOC emissions to 21.4 tons per year, and emissions of any single HAP (methanol, formaldehyde, etc.) to 9.0 tons per year. Compliance with these limits was to be determined by tracking of purchases of raw materials, such as resin and press lube oil.

The OAC "preamble" contained a statement that, "A tier 1 modeling analysis has indicated that without controls formaldehyde emissions will exceed the acceptable source impact levels as defined in WAC 173-460. Best Available Control Technology for Toxics (T-BACT for formaldehyde) was determined to be a packed tower scrubber. The Agency required that a PWC use a SLY, Inc. Model 102-120 packed tower scrubber to control formaldehyde emissions from the press exhaust hood and billet stacker hood with a control efficiency of 95%."

5.1.2 OAC 695a

An amended application, dated June 10, 1999, and NCASI technical bulletin #769 entitled "Volatile Organic Compound Emissions from Wood Products Manufacturing Facilities Part II – Engineered Wood Products" were submitted by Columbia Engineering International, Ltd. on behalf of Pacific Woodtech. The NCASI Technical Bulletin contained new testing data indicating that formaldehyde emissions from resin use would not exceed the acceptable source impact level for formaldehyde as defined in WAC 173-460. PWC requested removal of the requirement for installation of a scrubber and some changes to allowable emissions. One new requirement in OAC 695a was that PWC perform a source test to verify that formaldehyde emissions would not be released in quantities sufficient to cause impacts in excess of the ASIL of 0.077 microgram per cubic meter (µg/m³).

5.1.3 OAC 933

On June 17, 2005 PWC applied to install a second laminated veneer lumber (LVL) manufacturing line. The facility proposed to use a continuous Dieffenbacher press to produce a billet of laminated softwood from previously dried veneer which is then cut to produce headers and I-beams. To support the LVL line, a 9.0 MMBtu/hr natural gas-fired thermal oil heater, two make-up air heaters (each 2.5 MMBtu/hr), hooding and venting equipment, and a Superior Systems Model 13-416-10 baghouse were proposed to be added. The facility would increase emissions of the toxic air contaminants formaldehyde and methanol from the pressing operation and criteria pollutants from the support equipment. With the startup of the Line 2 Press, the facility would become subject to the Air Operating Permit program.

OAC 933 was issued on October 10, 2005, superseding OAC 695a, and the permit conditions are contained in Section 5 of the AOP.

5.2 Compliance

5.2.1 Inspections

The following inspections have been performed at PWC by the Northwest Clean Air Agency.

Date	Notes
1/12/06	Project update/inspection
1/11/05	Compliance inspection
11/29/04	Annual inspection
10/29/03	Annual compliance inspection
3/15/02	Annual inspection
3/8/01	Annual inspection
4/14/00	Annual inspection
6/28/99	Initial inspection

5.2.2 Enforcement Actions

On January 17, 2007 the Northwest Clean Air Agency issued Written Warning #3569 for failure to comply with Condition 3 of OAC 933. Condition 3 requires PWC to notify the NWCAA of resin, catalyst, I-joint adhesive, and lube oil material changes prior to the change and submit an MSDS sheet. During the inspection it was found that the facility was using Casocophen PWC SFC-30 and SFC-10 catalysts. The NWCAA has no record of the facility making the required notifications prior to using these catalysts.

5.3 New Source Performance Standards

No New Source Performance Standards apply to PWC.

5.4 National Emissions Standards for Hazardous Air Pollutants (NESHAP)

The facility is subject to 40 CFR 63 Subpart DDDD—National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products (PCWP) because the facility is a major source of HAP emissions and manufactures composite wood products by bonding veneers with resin under heat and pressure to form an engineered wood product.

Table 1 of the Federal Register in which 40 CFR 63 Subpart DDDD was promulgated (69 FR 45949; 7/30/04) lists process units subject to the final control requirements in which engineered wood product (EWP) presses are listed separately from reconstituted wood product (RWP) presses. Under the rule, RWP presses are subject to control requirements as either new or existing affected sources. Both new and existing EWP presses are clearly excluded from control requirements established by this rule. PWC employs EWP presses to manufacture composite wood products.

40 CFR 63 Subpart DDDD distinguishes between engineered wood products (EWP) and reconstituted wood product (RWP) presses by the following definitions (40 CFR 63.2292):

Engineered wood product means a product made with lumber, veneers, strands of wood, or from other small wood elements that are bound together with resin. Engineered wood products include, but are not limited to, laminated strand lumber, laminated veneer lumber, parallel strand lumber, wood I-joists, and glue-laminated beams.

Reconstituted wood product press means a press, including (if applicable) the press unloader, that presses a resinated mat of wood fibers, particles, or strands between hot platens or hot rollers to compact and set the mat into a panel by simultaneous application of heat and pressure. Reconstituted wood product presses are used in the manufacture of hardboard, medium density

fiberboard, particleboard, and oriented strandboard. Extruders are not considered to be reconstituted wood product presses. A *reconstituted wood product press* is a process unit.

The affected sources at PWC under 40 CFR 63 subpart DDDD include the EWP presses, “miscellaneous finishing operations”, and “miscellaneous coating operations”. PWC applies ink stamps and edge seals to some products, which is considered a “group 1 miscellaneous coating operation”. Group 1 miscellaneous coating operations are subject to work practice requirements in Table 3 to this subpart per 40 CFR 63.2241. However, 40 CFR 63.2252 states that process units not subject to the compliance options or work practice requirements specified in 63.2240 are not required to comply with the requirements of subpart DDDD or subpart A of Part 63, except for initial notification. Therefore, since the EWP presses, miscellaneous coating operations, and other PCWP process activities at PWC are not subject to 63.2240, the processes at the facility are subject only to initial notification requirements in 63.9(b) (40 CFR 63 Subpart A). PWC submitted initial notification to NWCAA per 40 CFR 63.2252 as part of their AOP application.

5.5 Prevention of Significant Deterioration and Major New Source Review

PWC is not a major source as defined in the PSD (40 CFR 52.21) and Major NSR (40 CFR 51.165) regulations.

5.5.1 Other Federal New Source Review Programs

The entire jurisdiction of NWCAA is designated as in attainment for all criteria pollutants. For this reason no other federal new source review programs for new or modified sources of air pollution are applicable.

5.5.2 Other Federal Programs

PWC is not subject to the Compliance Assurance Monitoring (CAM) Rule (40 CFR 64), in part because there are no emission points at the facility that employ a control device to control emissions of a pollutant for which PWC is considered major. In other words, PWC employs no control devices that reduce methanol emissions.

6. GENERAL PERMIT ADMINISTRATION AND ASSUMPTIONS

6.1 Permit Content

Applicable requirements that were satisfied by a single past action on the part of the source are generally not included in the AOP. An example of this would be performance testing to demonstrate compliance with applicable emission limitations as a requirement of initial startup. Also, regulations that require action by a regulatory agency, but not of the regulated source, are not included as applicable permit conditions.

6.2 One-time Requirements

The following actions were noted as having been completed as required by Order of Approval to Construct (OAC) 933 and are not included in the AOP:

- OAC 933, Condition 13, The permittee shall demonstrate compliance with the Washington Administrative Code (WAC) Chapter 173-460 within eight weeks of permit issuance. Compliance may be demonstrated through (a) computer modeling, or (b) installation of a ninety-four foot above grade exhaust stack for the Line 2 Press prior to initial startup. A report certifying compliance with this condition shall be submitted to the NWCAA at the end of the eight week period. *Compliance with WAC 173-460 was demonstrated by dispersion (computer) modeling submitted to the NWCAA on December 7, 2005.*
- OAC 933, Condition 17, Written notification of initial startup of the second press line shall be submitted to the NWCAA no less than 20 days following startup. *Written notification of the first test billets produced by the Line 2 Press on August 29, 2006 was received by the NWCAA on September 1, 2006.*

6.3 Federal Enforceability

Federally enforceable requirements are terms and conditions required under the Federal Clean Air Act or under any of its applicable requirements such as NSPS or NESHAP. Local and state regulations become federally enforceable when they are adopted into the State Implementation Plan (SIP). Federally enforceable requirements are enforceable by the EPA and citizens of the United States. All applicable requirements in the permit including standard terms and conditions, generally applicable requirements, and specifically applicable requirements are federally enforceable unless they are specifically identified as enforceable by the “state only”. If two different versions of the same regulatory citations apply, one version is federally enforceable and the other version is only enforceable by the state and is noted in the permit as such. Both are listed as separate applicable requirements. If a regulation has both federally enforceable and state-only enforceable versions and the text is the same, the cited date is the most current available. The citation for each applicable requirement in the permit includes a date, which may be the effective date (in the case of WAC) or it may be the approval or publication date for NWCAA Regulation sections and federal regulations, respectively.

Chapter 173-401 WAC is not federally enforceable although the requirements of this regulation are based on federal requirements for the air operating permit program. Upon issuance of the permit, the permit terms based on Chapter 173-401 WAC become federally enforceable.

6.4 Future Requirements

Applicable requirements promulgated with future effective compliance dates may be included as applicable requirements in the permit. Some requirements that are not applicable until triggered by an action, such as the requirement to file an application prior to constructing a new source, are addressed within the standard terms and conditions section of the permit.

There are presently no pending applications to construct or modify PWC in such a way as to trigger New Source Review. PWC has certified in the permit application that the facility will meet any future applicable requirements on a timely basis.

6.5 Compliance Options

PWC did not request emissions trading provisions or specify more than one operating scenario in the air operating permit application; therefore, the permit does not address these options as allowed under WAC 173-401-650. This permit does not condense overlapping applicable requirements (streamlining) nor does it provide any alternative emission limitations.

6.6 Gap-Filling

Title V of the Federal Clean Air Act is the basis for the EPA's 40 CFR 70, which is the basis for the State of Washington air operating permit regulation, Chapter 173-401 WAC. Title V requires that all air pollution regulations applicable to the source be called out in the AOP for that source. Title V also requires that each applicable regulation be accompanied by a federally enforceable means of "reasonably assuring continuous compliance." Some of the older general regulations and federal NSPS do not have monitoring, recordkeeping and reporting requirements that are sufficient to reasonably assure continuous compliance with emission limitations. Title V, 40 CFR 70, and WAC 173-401-615 all contain a "gap-filling" provision for that situation². The permitting agency is required to create monitoring, recordkeeping and reporting requirements to fill the gap and to put those requirements in the air operating permit. In any term where gap-filling has taken place, the regulatory citation for that term will contain the following citation of the gap-filling requirement in Chapter 173-401 WAC: "Directly enforceable under WAC 173-401-615(1)(b) & (c), 10/17/02."

7. PERMIT ELEMENTS AND BASIS FOR TERMS AND CONDITIONS

7.1 Permit Organization

The permit is organized in the following sequence:

Permit Information

Attest

Table of Contents

Emission Unit Identification

Standard Terms and Conditions

Standard Terms and Conditions for National Emissions Standards for Hazardous Air Pollutants

Generally Applicable Requirements

Specifically Applicable Requirements

Inapplicable Requirements

7.2 Section 1 – Permit Information, Attest, and Emissions Unit Description Sections

The Permit Information section identifies the source, the responsible corporate official, and the NWCAA personnel responsible for permit preparation, review, and issuance. The Attest section provides authorization by NWCAA for the source to operate under the terms and conditions contained in the AOP. The Emissions Unit Identification section lists the significant emissions units, associated control

² WAC 173-401-615(1) Monitoring. Each permit shall contain the following requirements with respect to monitoring:
(a) All emissions monitoring and analysis procedures or test methods required under the applicable requirements, including any procedures and methods promulgated pursuant to sections 504(b) or 114 (a)(3) of the FCAA;
(b) Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit, as reported pursuant to subsection (3) of this section. Such monitoring requirements shall assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement. Recordkeeping provisions may be sufficient to meet the requirements of this paragraph; and
(c) As necessary, requirements concerning the use, maintenance, and, where appropriate, installation of monitoring equipment or methods.

equipment, and fuel type. This section is a general overview of the facility. Detailed information about the plant can be found in the permit application and supporting files.

7.3 Section 2 – Standard Terms and Conditions

The Standard Terms and Conditions section of the permit specifies administrative requirements or prohibitions with no ongoing compliance monitoring requirements. The legal authority for the Standard Terms and Conditions are provided in the citations in Section 2 of the permit. The description of the regulation in each of these conditions (with the exception of those labeled “Directly enforceable under WAC 173-401-615(1)(b) & (c), 10/17/02”) is sometimes a paraphrase of the actual regulatory requirement. Where there is a difference between the actual requirement and the paraphrased description, the cited regulatory requirement takes precedence. In an effort to make the section more readable, the terms and conditions have been grouped by function. In some cases, similar requirements at the state and local authority level are grouped together.

Several permit conditions in Section 2 are labeled “Directly enforceable under WAC 173-401-615(1)(b) & (c), 10/17/02”. These conditions are a clarification of the regulatory requirements, as the NWCAA interprets those requirements. They are legal requirements, directly enforceable through the permit, with which the permittee must comply.

A number of requirements that would not be applicable until triggered have also been included in this section. An example of one such requirement is the requirement for a source to submit an application for new source review.

7.4 Section 3 – Standard Terms and Conditions for National Emission Standards for Hazardous Air Pollutants

Section 3 Standard Terms and Conditions for NESHAP contains applicable requirements from 40 CFR 63 Subpart A – General Provisions. PWC is subject to the NESHAP General Provisions because the facility is subject to 40 CFR 63 Subpart DDDD – National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products. Only the initial notification requirements of the General Provisions apply to PWC as discussed in section 5.4 above.

7.5 Section 4 – Generally Applicable Requirements

The Generally Applicable Requirements section of the permit identifies requirements that apply broadly to the facility. With some exceptions, each of these requirements applies non-specifically to sources. For example, NWCAA Regulation Section 455.1 broadly prohibits particulate emissions that exceed 0.1 gr/dscf from any emissions unit, with certain exceptions. Other requirements apply only to certain types of emissions units. For example, WAC 173-400-060 limits particulate material emissions from “general process units”. Despite these differences in applicability, these requirements have been listed together in the Generally Applicable Requirement section of the permit. The generally applicable requirements are organized in tabular form as described below.

The first column of the Generally Applicable Requirements table in Section 4 includes the permit term, numbered 4.1, 4.2, etc. The second column lists the legal citation of the enforceable requirement along with the version date of the requirement. If the requirement is not federally enforceable, it is specifically noted as “*state only*”. The third column is a paraphrase of the requirement for descriptive purposes only and is not intended to be a legal requirement. The last column contains the monitoring, recordkeeping and reporting (MR&R) requirements that the source must perform to demonstrate on-going compliance with the corresponding requirement. The MR&R from the underlying cited requirement may be paraphrased in the MR&R column as well, in which case the underlying requirement is the enforceable requirement. If the MR&R is listed as “directly enforceable under WAC 173-401-615(1)(b) & (c), 10/17/02”, then the wording of the MR&R is the explicit requirement.

Some applicable requirements listed in Section 4 do not require periodic testing or monitoring sufficient to yield data for a time period consistent with permitted limits. Such monitoring (which may consist of recordkeeping designed to serve as monitoring) is required to be in the permit by Washington Administrative Code (WAC) 173-401-615. In these cases, a site specific MR&R was developed based on the characteristics of the permitted facility, the nature of the underlying requirement, the requirements of WAC 173-401-615, and EPA guidance. The process of developing these MR&R requirements and

adding them to the permit is called “gap-filling”. The MR&R requirements that contain gap-filling language are identified with the words “Directly enforceable under WAC 173-401-615(1)(b) & (c), 10/17/02”.

Many of the permit requirements do not need to be explained in this Statement of Basis because the legal and factual basis for the requirement is self-evident. Some terms, however, contain requirements that are not well defined or have MR&R for which the rationale is not readily apparent. For these, additional discussion is provided below.

7.5.1 Visible Emissions (Permit Term 4.1):

The Line 1 and Line 2 glue application and press exhaust stacks and the baghouses are potential sources of visible emissions at the PWC facility, and they are covered by specifically applicable requirements in Section 5. For the purpose of ongoing compliance, PWC shall perform monthly inspections of the facility in general, and will investigate any observations of visible emissions and document the incident and corrective action taken.

7.5.2 Particulate Matter (Permit Terms 4.2 through 4.4):

The baghouse exhaust stacks are potential sources of particulate matter emissions at the PWC facility. The MR&R requires investigation of any observed visible emissions, documentation of the incident, and corrective action be taken with the assumption that any visible emissions are indicative of bag failure and high particulate values in the stack.

7.5.3 Sulfur Dioxide and Fuel-bound Sulfur (Permit Terms 4.5 through 4.9)

Below is a discussion on each of the generally applicable terms related to SO₂.

7.5.3.1 Fuel Sulfur Content (Permit Term 4.5):

Natural gas is used in the Line 1 and the Line 2 thermal oil heaters and various room air heaters and is the only fuel allowed at PWC. NWCAA 520 limits sulfur content of gaseous fuels to a maximum of 412 ppm sulfur, which is about 26 grains of sulfur per 100 standard cubic feet. Natural gas is supplied via pipeline by Cascade Natural Gas and contains an average of 1 to 2 grain of sulfur per 100 standard cubic feet and up to 20 grains of sulfur per 100 standard cubic feet, which is equivalent to about 321 ppm sulfur:

$$\frac{20 \text{ gr. Sulfur}}{100 \text{ ft}^3} \times \frac{1 \text{ lb}}{7000 \text{ gr}} \times \frac{1 \text{ lb-mole}}{32 \text{ lb}} \times \frac{359 \text{ ft}^3}{1 \text{ lb-mole}} \times 10^6 = 321 \text{ ppm S by volume}$$

Note:

A “lb-mole” of a pure gas weighs the molecular weight of that gas in pounds and occupies 359 ft³ at 32° F and 1 atmosphere pressure. A “lb-mole” of sulfur (S) weighs 32 lb and reacts with a lb-mole of oxygen (O₂) which also weighs 32 lb to form a lb-mole of sulfur dioxide, which weighs 64 lb. Therefore, 2 lb of SO₂ are emitted for every lb of sulfur in the fuel.

PWC demonstrates compliance with this requirement by burning only natural gas as required in Term 5.6.

7.5.3.2 Fuel Sulfur Content (Permit Term 4.6):

This condition limits SO₂ emissions to 1.5 pounds per million British thermal units of energy consumed.

When natural gas is burned, thermal oil heaters and various room air heaters may emit up to 0.054 lb/MMBtu SO₂ as shown in the following calculation:

$$\frac{20 \text{ gr. Sulfur}}{100 \text{ ft}^3} \times \frac{1 \text{ lb Sulfur}}{7000 \text{ gr Sulfur}} \times \frac{1000 \text{ ft}^3}{1.05 \text{ MMBtu}} \times \frac{2 \text{ lb SO}_2}{1 \text{ lb Sulfur}} = 0.054 \frac{\text{lb SO}_2}{\text{MMBtu}}$$

7.5.3.3 Sulfur Dioxide, Stack Emissions (Permit Terms 4.7 through 4.9):

Northwest Clean Air Agency Regulations 462 and 410 and WAC 173-400-040(6) have been grouped together under Permit Terms 4.7 through 4.9 since they are equivalent requirements (SO₂ emissions not

to exceed 1,000 parts per million on a dry, volumetric basis³ (ppm)) and have the same monitoring requirements.

The second paragraph of WAC 173-400-040(6), which is not in the Northwest Clean Air Agency regulations and is not adopted into the SIP, allows for exceptions to this requirement if the source can demonstrate that there is no feasible method of reducing the SO₂ concentrations to 1,000 ppm. This requirement is not federally enforceable and is not an applicable requirement for sources regulated by the Northwest Clean Air Agency.

The heaters and other fuel-consuming sources burn only natural gas and are incapable of violating the SO₂ limit while complying with the other requirements in the permit. The following calculations show that it is mathematically impossible for a unit to emit 1,000 ppm sulfur dioxide while burning natural gas.

Natural gas means a mixture of gaseous hydrocarbons, with at least 80 percent methane (by volume), and of pipeline quality, such as the gas sold or distributed by any utility company regulated by the Washington Utilities and Transportation Commission. PWC receives the same natural gas as all of the other natural gas consumers, private and industrial, in the Northwest.

According to *Perry's Chemical Engineer's Handbook*, each cubic foot of natural gas requires approximately 10 cubic feet of air for combustion, yielding approximately 11 cubic feet of combustion exhaust gases, consisting mostly of nitrogen, water vapor, and carbon dioxide. The sulfur in the natural gas will almost all be converted to sulfur dioxide, with each cubic foot of sulfur producing the same volume of sulfur dioxide. Since each cubic foot of natural gas may contain up to 3.21×10^{-4} cubic foot of sulfur (from section 7.5.3.1 above), each cubic foot of stack exhaust will contain approximately:

$$3.21 \times 10^{-4} \frac{ft^3 S}{ft^3 nat. gas} \times \frac{1 ft^3 SO_2}{1 ft^3 S} \times \frac{1 ft^3 nat. gas}{11 ft^3 stack exhaust} = 2.92 \times 10^{-5} \frac{ft^3 SO_2}{ft^3 stack exhaust}$$

This is equivalent to 29.2 ppmdv SO₂. Note that this estimated value is about three percent of the 1,000 ppm SO₂ standard. Therefore, it is reasonable to assume that combustion units that are fired on natural gas cannot exceed the 1,000 ppm SO₂ limits in Northwest Clean Air Agency Regulations 462 and 410 and WAC 173-400-040(6).

7.5.4 Nuisance (odor) and Fugitive Emissions (Permit Terms 4.10 through 4.17):

NWCAA Regulation 535 is a state only requirement that requires best available control technology (BACT) to reduce emission of odor bearing gases or particulate matter. WAC 173-400-040(5) prohibits emissions detrimental to health and property. WAC 173-400-040(4) is a similar state requirement that requires "recognized good practice" to reduce odors to a reasonable minimum.

NWCAA Regulation 550 is a federally enforceable requirement that requires reasonably available control technology (RACT) for all fugitive dust emissions. WAC 173-400-040(3) addresses fugitive dust emissions for some activities and WAC 173-400-040(8) requires reasonable precautions or reasonably available control technology (RACT) to control fugitive emissions. Both of the Ecology (WAC) regulations are federally enforceable. Recording of fugitive dust emissions is not necessarily a violation of the requirement, since the requirement does not prohibit fugitive dust emissions, but prohibits fugitive dust unless RACT is employed. RACT is employed for all sources of dust at this plant. WAC 173-400-040(2) is a state only regulation that prohibits emissions of particulate matter that deposits upon the property of others in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property.

³ "ppm" means "parts per million on a dry, volumetric basis." Sometimes this is written as "ppmdv." Stack gas is usually sampled through a probe placed somewhere in the middle of the stack cross-section. The moisture is removed from the gas stream as part of the sampling process. The stack gas sample is analyzed for the pollutant in question, with the lab results being calculated as cubic feet (or meters) of pollutant per million cubic feet (or meters) of dry stack gas. If you had a stack with 50% moisture that was running right at the 1,000 ppm SO₂ standard, you would have 1,000 cubic feet of SO₂ for every million cubic feet of dry stack gas. You would also have 1,000 cubic feet of SO₂ for every two million cubic feet of "wet" (as is) stack gas, which is 500 ppm. This is why it's important to know how stack sampling is done and why stack sampling and continuous emission monitoring methods are so specific.

The MR&R specifies that, in addition to monthly facility inspections, PWC shall respond to nuisance and fugitive emissions complaints and shall take corrective action within 24 hours if any nuisance or fugitive dust emissions are noted. Records must be kept of periodic inspections, any complaints, problems found, and corrective actions taken.

7.6 Section 5 – Specifically Applicable Requirements

This section lists requirements that specifically apply to the emission units that are subject to 40 CFR 63 Subpart DDDD – NESHAP for Plywood and Composite Wood Products and/or have requirements in Order of Approval to Construct (OAC) 933. The format and organization of this section are the same as the table for the generally applicable requirements.

7.6.1 Terms 5.1 40 CFR 63 Subpart DDDD

This term lists the one requirement of 40 CFR 63 Subpart DDDD that applies to PWC. The initial notification requirement was fulfilled by PWC as part of the AOP application process as discussed in section 5.4 above.

7.6.2 Terms 5.2 through 5.16 – OAC 933

OAC 933 was issued on October 10, 2005, superseding OAC 695a, allowing PWC to install a second laminated veneer lumber (LVL) manufacturing line to produce a billet of laminated softwood from pre-dried veneer which is then cut to produce headers and I-beams. The nucleus of this new system is a Dieffenbacher press, with ancillary equipment including a 9.0 MMBtu/hr natural gas-fired thermal oil heater, two make-up air heaters (each 2.5 MMBtu/hr), hooding and venting equipment, and a Superior Systems Model 13-416-10 baghouse. Terms and conditions in OAC 695a were incorporated into OAC 933.

8. INSIGNIFICANT EMISSIONS UNITS

Some categorically exempt insignificant emission units (IEU) as defined in WAC 173-401-532 are present at PWC and are listed in Table 8-1. Emission units at PWC that have been determined to be insignificant on the basis of size or production rate as defined in WAC 173-401-530 and WAC 173-401-533 are also listed as IEUs in Table 8-1.

Table 8-1 PWC - Insignificant Activities and Emissions Units

IEU Name	Basis for IEU Designation	Pollutant Thresholds		
		Pollutant	Emission Rate, tons/yr	
			Threshold	Actual
Vehicle exhaust from repair shop	WAC 173-401-532 (7)			
Vents from microwave room and hydraulic pump room	WAC 173-401-532 (9)			
Vehicles in parking lot	WAC 173-401-532 (54)			
Bathroom vents	WAC 173-401-532 (48)			
Welding	WAC 173-401-533 (i)			
Sealant application	WAC 173-401-532 (32)			
Line 1 thermal oil heater	WAC 173-401-530 (4)	CO	5	0.94
		NO _x	2	1.40

Table 8-1 PWC - Insignificant Activities and Emissions Units

IEU Name	Basis for IEU Designation	Pollutant Thresholds		
		Pollutant	Emission Rate, tons/yr	
			Threshold	Actual
Line 2 thermal oil heater	WAC 173-401-530 (4)	CO	5	0.94
		NO _x	2	1.40
Make-up air unit 1	WAC 173-401-533 (r)			
Make-up air unit 2	WAC 173-401-533 (r)			
Make-up air unit 3	WAC 173-401-533 (r)			
Make-up air unit 4	WAC 173-401-533 (r)			

9. INAPPLICABLE REQUIREMENTS

WAC 173-401-640 Permit Shield requires the permitting authority to issue a determination regarding the applicability of requirements with which the source must comply upon the source's request. The source must specify in the AOP application the requirements for which a determination is requested.

Inapplicable requirements must be listed in the AOP in order for the permit shield to apply. PWC specifically stated in their AOP application that they were not requesting a permit shield against any specific requirements at the time of application, nor has PWC made any requests for an applicability determination since the original AOP application.

10. DEFINITIONS AND ACRONYMS

Definitions are assumed to be those found in the underlying regulation. A short list of definitions has been included to cover those not previously defined.

An "applicable requirement" is a provision, standard, condition or requirement in any of the listed regulations or statutes as it applies to an emission unit or facility at a stationary source.

"Ecology" means the Washington State Department of Ecology.

An "emission unit" is any part or activity of a stationary source that emits or has the potential to emit any regulated air pollutant.

"PWC" means Pacific Woodtech Corporation.

A "permit" means for the purposes of the air operating permit program an air operating permit issued pursuant to Title 5 of the 1990 Federal Clean Air Act Amendments.

"State" means for the purposes of the air operating permit program NWCAA or the Washington State Department of Ecology.

The following is a list of Acronyms used in the Air Operating Permit and/or Statement of Basis:

AOP	Air Operating Permit
ASIL	Acceptable Source Impact Level
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
CFR	Code of Federal Regulations

EPA	The United States Environmental Protection Agency
FCAA	Federal Clean Air Act
FR	Federal Register
IEU	Insignificant emission unit
MR&R	Monitoring, Recordkeeping and Reporting
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOC	Notice of Construction
NO _x	Oxides of Nitrogen
NSPS	New Source Performance Standard
NSR	New Source Review
NWCAA	Northwest Clean Air Agency
O ₂	Oxygen
OAC	Order of Approval to Construct
PM	Particulate Matter
PM ₁₀	Particulate Matter less than 10 microns in diameter
ppmvd	(same as ppmvd) parts of pollutant per million parts of dry stack gas on a volumetric basis
PSD	Prevention of Significant Deterioration (federally required program for pre-construction review of sources)
QA/QC	quality assurance/quality control
RCW	Revised Code of Washington
SCR	Selective Catalytic Reduction
scf	standard cubic foot (cubic foot of gas at Standard Conditions)
SIP	State Implementation Plan
SO ₂	sulfur dioxide
VOC	Volatile Organic Compounds
WAC	Washington Administrative Code

11. PUBLIC DOCKET

Copies of PWC's air operating permit, permit application, and any technical support documents are available by request at www.nwcleanair.org and at the following location:

Northwest Clean Air Agency
1600 South Second Street
Mount Vernon, WA 98273-5202