INTERNATIONAL PAPER

Washington Department of Ecology
Eastern Regional Office
Attn: David Finley
4601 N. Monroe St
Spokane, WA 99205-1295

April 25, 2025

RE: International Paper Company, Moses Lake Facility, Notice of Construction Application - Replacement Flexo Folder Gluer Printer with Die Cutter

Dear Mr. Finley:

Please find enclosed the Notice of Construction application to replace two flexo folder gluer printers at the International Paper, Moses Lake Facility (Facility ID 13869266). In addition, the IP Moses Lake facility requests that the permitted annual production of printed corrugated cardboard be increased as specified in the supporting application materials.

The following is enclosed in this application package:

- Notice of Construction Application Form
- SEPA Checklist
- Supporting Documentation: Facility Maps/Plot Plan, Emission Calculations, BACT Analysis, Air Dispersion Model Results, Machine Specifications.
- Application Filing Fee:
    - New Project/Equipment – Basic: $1,904

The facility anticipates beginning construction of the flexographic printer/folder/gluer units by September 2025.

If you have any questions regarding this permit application, please contact me at (509) 855-3309 or our environmental consultant Lisa Kiehl with Ashworth Leininger Group (ALG) at (805) 705-7601. ALG has permission to speak on our behalf regarding this permit application.

Sincerely,

Brian Johnson
Manufacturing Manager

Enclosures

DEPARTMENT OF ECOLOGY
State of Washington

Notice of Construction Application

A notice of construction permit is required before installing a new source of air pollution or modifying an existing source of air pollution. This application applies to facilities in Ecology's jurisdiction. Submit this application for review of your project. For general information about completing the application, refer to Ecology Forms ECY 070-410a-g, "Instructions for Ecology's Notice of Construction Application."

Ecology offers up to two hours of free pre-application assistance. We encourage you to schedule a pre-application meeting with the contact person specified for the location of your proposal, below. If you use up your two hours of free pre-application assistance, we will continue to assist you after you submit Part 1 of the application and the application fee. You may schedule a meeting with us at any point in the process.

Upon completion of the application, please enclose a check for the initial fee and mail to:

Department of Ecology
Cashiering Unit
PO Box 47611
Olympia, WA 98504-7611

For Fiscal Office Use Only: 0299-3030404-B00-216--001--000404

Check the box for the location of your proposal. For assistance, call the appropriate office listed below:

Check box	Ecology Permitting Office	Contact
☐	**Chelan, Douglas, Kittitas, Klickitat, or Okanogan County** Ecology Central Regional Office (509) 575-2490	Lynnette Haller (509) 457-7126 lynnette.haller@ecy.wa.gov
☑	**Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Stevens, Walla Walla, or Whitman County** Ecology Eastern Regional Office (509) 329-3400	Karin Baldwin (509) 329-3452 karin.baldwin@ecy.wa.gov
☐	**San Juan County** Ecology Northwest Regional Office (206) 594-0000	David Adler (425) 649-7267 david.adler@ecy.wa.gov
☐	**For actions taken at Kraft and Sulfite Paper Mills and Aluminum Smelters Only** Ecology Industrial Section (360) 407-6900	James DeMay (360) 407-6868 james.demay@ecy.wa.gov
☐	**For actions taken on the US Department of Energy Hanford Reservation Only** Ecology Nuclear Waste Program (509) 372-7950	Lilyann Murphy (509) 372-7951 lilyann.murphy@ecy.wa.gov

46 1A4822

$1,904.00

MAY 20 2025

Check the box below for the fee that applies to your application.

New project or equipment:

- [x] **$1,904: Basic project** initial fee covers up to 16 hours of review.
- [ ] **$12,614: Complex project** initial fee covers up to 106 hours of review.

Change to an existing permit or equipment:

- [ ] **$357: Administrative or simple change** initial fee covers up to 3 hours of review. Ecology may determine your change is complex during the completeness review of your application. If you project is complex, you must pay the additional xxx before we will continue working on your application
- [ ] **$1,190: Complex** change initial fee covers up to 10 hours of review
- [ ] **$350flat fee**: Replace or alter control technology equipment under WAC 173-400-114. Ecology will contact you if we determine your change belongs in another fee category. You must pay the fee associated with that category before we will continue working on your application.

Read each statement below, then check the box next to it to acknowledge that you agree.

- [x] The initial fee you submitted may not cover the cost of processing your application. Ecology will track the number of hours spent on your project. If the number of hours Ecology spends exceeds the hours included in your initial fee, Ecology will bill you $119 per hour for the extra time.
- [x] You must include all information requested by this application. Ecology may not process your application if it does not include all the information requested.
- [x] Submittal of this application allows Ecology staff to visit and inspect your facility.

Part 1: General Information

I. Project, Facility, and Company Information

1. Project Name: Equipment Replacement and Production Increase
2. Facility Name: International Paper Company - Moses Lake
3. Facility Street Address:

   13594 Wheeler Road NE, Moses Lake, WA 98837

4. Facility Legal Description: _____
5. Company Legal Name (if different from Facility Name):
   International Paper Company
6. Company Mailing Address (street, city, state, zip)

   13594 Wheeler Road NE, Moses Lake, WA 98837

II. Contact Information and Certification

1. Facility Contact Name (who will be onsite): Brian Johnson
2. Facility Contact Mailing Address (if different than Company Mailing Address:

3. Facility Contact Phone Number: 509-855-3309
4. Facility Contact E-mail: BRIAN.JOHNSON2@IPAPER.COM
5. Billing Contact Name (who should receive billing information):
   Taressa Ladoduk
6. Billing Contact Mailing Address (if different Company Mailing Address):

7. Billing contact Phone Number: 509-764-5542
8. Billing Contact E-mail: Taressa.Ladoduk@ipaper.com
9. Consultant Name (optional – if 3rd party hired to complete application elements):
10. Consultant Organization/Company:
11. Consultant Mailing Address (street, city, state, zip):
12. Consultant Phone Number:
13. Consultant E-mail:
14. Responsible Official Name and Title (who is responsible for project policy or decision making):
    Steve Abernethy, Regional General Manager
15. Responsible Official Phone: 303-506-1694
16. Responsible Official E-mail: Steve.Abernethy@ipaper.com
17. Responsible Official Certification and Signature:

    I certify that the information on this application is accurate and complete.

Signature: Steve Abernethy Date: 4/28/2025

Part 2: Technical Information

The Technical Information may be sent with this application form to the Cashiering Unit, or may be sent directly to the Ecology regional office with jurisdiction along with a copy of this application form.

For all sections, check the box next to each item as you complete it.

III. Project Description

- [x] Written narrative describing your proposed project.
- [x] Projected construction start and completion dates.
- [x] Operating schedule and production rates.
- [x] List of all major process equipment and manufacturer and maximum rated capacity.
- [x] Process flow diagram with all emission points identified.
- [x] Plan view site map.
- [x] Manufacturer specification sheets for major process equipment components
- [ ] Manufacturer specification sheets for pollution control equipment.
- [ ] Fuel specifications, including type, consumption (per hour and per year) and percent sulfur.

IV. State Environmental Policy Act (SEPA) Compliance

Check the appropriate box below.

- [ ] SEPA review is complete. Include a copy of the final SEPA checklist and SEPA determination (e.g., DNS, MDNS, and EIS) with your application.
- [x] SEPA review has not been conducted:
  - [ ] If review will be conducted by another agency, list the agency. You must provide a copy of the final SEPA checklist and SEPA determination before Ecology will issue your permit. Agency reviewing SEPA: _____
  - [x] If the review will be conducted by Ecology, fill out a SEPA checklist and submit it with your application. You can find a SEPA checklist online at https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-document-templates

V. Emissions Estimations of Criteria Pollutants

Does your project generate criteria air pollutant emissions? [x] **Yes** [ ] **No**

If yes, please proved the following information regarding your criteria emissions in the application.

- [x] The names of the criteria air pollutants emitted (i.e., NO_X, SO_2, CO, $PM_{2.5}$, PM_{10}, TSP, VOC, and Pb)
- [x] Potential emissions of criteria air pollutants in tons per hour, tons per day, and tons per year (include calculations)
- [ ] If there will be any fugitive criteria pollutant emissions, clearly identify the pollutant and quantity

VI. Emissions Estimations of Toxic Air Pollutants

Does your project generate toxic air pollutant emissions? [x] **Yes** [ ] **No**

If yes, please provide the following information regarding your toxic air pollutant emissions in your application.

- [x] The names of the toxic air pollutants emitted (specified in WAC 173-460-150[1])
- [x] Potential emissions of toxic air pollutants in pounds per hour, pounds per day, and pounds per year (include calculations)
- [ ] If there will be any fugitive toxic air pollutant emissions, clearly identify the pollutant and quantity

VII. Emission Standard Compliance

- [x] Provide a list of all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, and emission standards adopted under Chapter 70A.15 RCW.

Does your project comply with all applicable standards identified? [x] **Yes** [ ] **No**

VIII. Best Available Control Technology

- [x] Provide a complete evaluation of Best Available Control Technology (BACT) for your proposal.

IX. Ambient Air Impacts Analyses

Please provide the following:

- [ ] Ambient air impacts analyses for Criteria Air Pollutants (including fugitive emissions)
- [x] Ambient air impacts analyses for Toxic Air Pollutants (including fugitive emissions)
- [x] Discharge point data for each point included in air impacts analyses (include only if modeling is required)
  - [x] Exhaust height
  - [x] Exhaust inside dimensions (ex. diameter or length and width)
  - [x] Exhaust gas velocity or volumetric flow rate
  - [x] Exhaust gas exit temperature
  - [x] The volumetric flow rate
  - [x] Description of the discharges (i.e., vertically or horizontally) and whether there are any obstructions (ex., raincap)
  - [x] Identification of the emission unit(s) discharging from the point
  - [x] The distance from the stack to the nearest property line
  - [x] Emission unit building height, width, and length
  - [x] Height of tallest building on-site or in the vicinity and the nearest distance of that building to the exhaust
  - [x] Whether the facility is in an urban or rural location

Does your project cause or contribute to a violation of any ambient air quality standard or acceptable source impact level? [ ] **Yes** [x] **No**

To request ADA accommodation, call Ecology at (360) 407-6800, 711 (relay service), or (877) 833-6341 (TTY)

[1] http://apps.leg.wa.gov/WAC/default.aspx?cite=173-460-150

Notice of Construction Permit Application

I. General Information

A. Project, Facility and Company Information

Project Name
Moses Lake Equipment Replacement and Production Increase

Facility Information
International Paper (IP) owns and operates a box manufacturing plant in Moses Lake, WA. The facility is primarily classified Standard Industry Classification Code (SIC) Code 2653 – Corrugated and Solid Fiber Boxes. The facility operates rotary die cutters (2), Flexo folder gluer (3), and a corrugator in support of the production of corrugated boxes.

Facility Name:	International Paper Company – Moses Lake
Facility Address:	13594 Wheeler Road NE Moses Lake, WA 98837

B. Contact Information

Facility Contact:	Brian Johnson
Telephone Number:	(509) 855-3309
E-mail:	brian.johnson@ipaper.com
Responsible Official:	Steve Abernethy
Telephone Number:	(303) 506-1694
E-mail:	steve.abernethy@ipaper.com

II. Technical Information

A. Project Description

Project Overview
The International Paper (IP) Moses Lake facility is submitting this Notice of Construction permit application to permit the replacement of two flexo folder gluer units and request an increase to the annual production limit currently identified in Approval Order No. 22AQ-E026.

Process Description
The equipment is used to form raw paper material into corrugated board. The roll stock is fed into the corrugator machine, where it is heated by unfired steam vessels supplied by boilers. Some of the paper is fluted into the corrugating medium, and the rest is used as liners. A starch-based adhesive is then applied to the edges of the flutes, and the paper liners are applied on either side to form the corrugated board. The assembled lamination is then pulled over hot plates so the starch adhesive can bloom, gel,

and adhere the lamination together. The continuous sheet of corrugated board is then cut into wide box blanks by the slitter and scorer.

The manufactured corrugated cardboard sheets enter the flexo folder gluers (FFG) via a vacuum sheet fed system at the feed end of each machine. Low VOC ink is applied to the rollers and then transferred onto rotary printing dies, which apply the ink onto the corrugated sheets. The cardboard is then slotted, scored, and die cut. Finally, the units apply a think bead of adhesive onto the printed, slotted, scored, and die-cut corrugated product prior to folding.

Construction Schedule

IP Moses Lake facility is projecting a construction start date of September 2025.

Operating Schedule and Production Rates

The facility operates year-round, five (5) to six (6) days a week, up to twenty-four (24) hours per day.

Under Approval Order No. 22AQ-E026, the facility is currently limited to the production of 1 billion square feet of printed corrugated carboard surface per year. (*Approval Condition 1.a*). IP Moses Lake is requesting an increase to this facility-wide limit to 2.5 billion square feet of printed corrugated cardboard surface per year.

Process Equipment

The IP – Moses Lake facility maintains the following Flexo Folder Gluers (FFG) and Rotary Die Cutters (RDC) in support of the production of corrugated boxes. A diagram depicting the location of the FFG and RDC is included in Attachment A.

Table 1 – Existing Equipment

Existing Units	Sheets/hr	Size (in) W	Size (in) L	sqft/hr
5276 Flexo	21,000	38	96	532,000
2406 RDC	8,000	66	113	414,333
3650 Staley Folding*	1,800	86	195	209,625
2425 Ward RDC	8,000	66	113	414,333
5106 Ward Flexo*	8,000	36	96	192,000
Total				**1,762,292**

*Units proposed for replacement

As noted above, the facility proposes replacing two flexo folding gluers (FFG) with the following two units:

Table 2 – Replacement/New Equipment

Replacement Units	Sheets/hr	Size (in) W	Size (in) L	Max ft^2/hr
Harper Folding	1,800	86	195	209,625
5276 Flexo	21,000	33.5	94.5	461,940
Total				**671,565**

B. State Environmental Policy Act (SEPA) Compliance

IP Moses Lake requests that Ecology conduct the SEPA review. The SEPA checklist is included with this application.

C. Emissions Estimations of Criteria Pollutants

The units release emissions of volatile organic compounds (VOC) resulting from the glue and ink applied to the raw paper material in the production of corrugated boxes. Emissions from the two replacement units have been calculated based on the maximum application rate of each substance (lb/MSF), the corresponding weighted average VOC weight %, and the total production capacity (ft^2/hour) of the replacement Flexo units. A summary of the potential emissions is presented below. See Attachment B for supporting details.

Table 3 – Summary of Potential Emissions of Volatile Organic Compounds (VOCs) from Replacement FFG

Production Rate			Potential Emissions VOC		
(MSF/hour)	(MSF/day)	(MSF/yr)[1]	(lb/hr)	(lb/day)	(tpy)
672	16,118	1,500,000	2.63	63.23	2.94

D. Emissions Estimations of Toxic Air Pollutants

The inks applied to the raw paper material contain Toxic Air Pollutants (TAP) as identified in WAC 173-460-150. Hourly, daily, and annual emissions of TAPs have been estimated based on the maximum weight percent of the TAPs as found in the various inks applied by IP Moses Lake.

As summarized in Table 4 below, potential emissions from the inks applied have TAPs that may exceed the De Minimis thresholds on an hourly, daily, and/or annual basis. Additionally, the attached emissions estimate suggests acrylic acid exceeds the daily SQER threshold. As such, IP Moses Lake has conducted an ambient air impact analysis using the AERMOD dispersion modeling program to demonstrate that emissions will be below the Acceptable Source Impact Level (ASIL). See Attachment B for the complete summary of potential TAPs, and associated emissions.

Table 4 – Summary of TAPs with Emissions In Excess of De Minimis Thresholds

TAP	CAS #	Average Period	Emission Rate	De Minimis Threshold		SQER Threshold		Modeling Required?
			lb/period	lb/period		lb/period		
Sodium hydroxide	1310-73-2	Hourly	2.47E-03	7.40E-04	Exceed	1.50E-02	Okay	No
Propylene glycol	57-55-6	Daily	1.33E-01	1.10E-01	Exceed	2.10E+00	Okay	No
Acrylic acid	79-10-7	Daily	2.17E-01	3.70E-03	Exceed	7.40E-02	Exceed	Yes
Mercury, elemental	7439-97-6	Daily	1.13E-04	1.10E-04	Exceed	2.20E-03	Okay	No
3,3'-Dichlorobenzidine	91-94-1	Annual	4.79E-02	2.40E-02	Exceed	4.80E-01	Okay	No
Polychlorinated biphenyls (PCBs), NOS	1336-36-3	Annual	4.91E-02	1.40E-02	Exceed	2.80E-01	Okay	No

[1] Hourly and daily production represents the production capacity of the two new/replacement FFG. Annual production rate represents the requested increase in annual production facility-wide.

The AERMOD model assumed emissions from the replacement FFG are released from the manufacturing building via roof vents, windows, and doors; no direct stacks are in place. As detailed in the attached report, the air dispersion model demonstrates that the modeled TAP emissions will have impacts less than the respective ASIL. See Table 5 below, and Attachment E which summarizes the results of the dispersion model. Since the modeled TAP concentration is less than the ASIL, no further analysis is required.

Table 5 – Air Dispersion Modeling Results

TAP	Averaging Period	Concentrations (µg/m³)		UTM Coordinates (m)	
		Modeled Maximum 24-hr Average	ASIL	X	Y
Acrylic acid	24 Hour	0.60	1.0	333125	5222062.5

E. Emission Standard Compliance

New Source Review

New Source Review (NSR) is required under WAC 173-400-110 for construction of new emissions units or modifications to existing units that may result in an increase in a plant-wide cap, or an increase in an emission unit or activity specific emission limit above the exemption thresholds defined in Table 110(5). The replacement of the two Flexo units is considered construction of new emission units. Additionally, the facility proposes to increase the plant-wide production cap. Emissions associated with the proposed replacement equipment and plant-wide production cap are summarized relative to the Table 110(c) exemption thresholds.

Table 6 – Table 110(c) Exemption Levels

Pollutant	Exemption Level	Project Emissions
	TPY	TPY
Carbon Monoxide	5.0	0.00
Lead	0.005	0.00
Nitrogen Oxides	2.0	0.00
PM-10	0.75	0.00
PM.2-5	0.5	0.00
TSP	1.25	0.00
Sulfur Dioxide	2.0	0.00
VOC, total	2.0	2.94
TAP	See Table 4 and Attachment B	

As summarized in Table 7 above, the potential emissions from the project are in excess of the exemption thresholds for VOC and TAP, as such NSR evaluation is required.

Per WAC 173-400-113 (1), proposed new sources or modifications to existing sources which are subject to NSR, must comply with applicable New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP).

New Source Performance Standards (NSPS)

The FFG units at the IP Moses Lake facility are not subject to New Source Performance Standards (NSPS) as defined under 40 CFR Part 60.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

National Emission Standards for Hazardous Air Pollutants (NESHAPs) are defined in 40 CFR Parts 61 and 63 and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. The IP Moses Lake facility is a minor source of HAPs, and as such, NESHAPs do not apply.

F. Best Available Control Technology

Per WAC 173-400-113 (2), proposed new sources or modifications to existing sources which are subject to NSR must employ BACT for all pollutants not previously emitted, or whose emissions would increase as a result of the new source or modification. BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis.

Additionally, WAC 173-460-060 requires the consideration of t-BACT (toxic air pollutant BACT) for projects with an increase in TAP above the de minimis levels defined in WAC 173-460-150. As this project results in an increase in excess of the TAP de minimis level, t-BACT is required (see Table 4 and Attachment B).

The replacement FFG equipment is required to apply the best available control technology for VOC and the associated air toxics (t-BACT). As the TAP emissions from the FFG consist of volatile organic compounds (VOC), EPA's RBLC was queried for controls required for flexographic, paper surface coating, and other surface coating BACT determinations. Additionally, the California Air Resources Board (CARB) BACT Clearinghouse, the South Coast AQMD BACT Guidelines, and the Texas Commission on Environmental Quality (TCEQ) were reviewed for additional determinations (See Attachment D). The BACT determinations for flexographic printing identified the following control technologies for VOC and TAP:

- Low VOC/TAP inks and coatings (1.5 lb/gal);
- Limits on ink usage;
- Collecting and venting VOC to add-on control device if emissions are greater than 50 TPY;
- Capture systems (permanent total enclosures) vented to a thermal oxidizer;

Due to the small potential to emit for VOCs (~ 2.9 TPY), with TAPs representing ~ 0.5 TPY of the total VOCs, installing physical controls (PTE and/or oxidizers) is not considered technically feasible. BACT is proposed as the use of low VOC inks, glues, and other additives with an average VOC content less than 1.5 lb/gal, less water and exempt compounds.

G. Ambient Air Impacts Analysis

Criteria Pollutants

WAC 173-400-113 (3) requires an evaluation of criteria pollutant emission increases associated with proposed new or modified sources to demonstrate that such emission increases to not contribute to a violation of the Ambient Air Quality Standards (AAQS). The AAQS are defined for CO, SO2, PM2.5, PM10, and NO2 applicable in Non-Attainment areas. As the facility is located in an attainment area, and the project increases only include VOCs, no modeling is required.

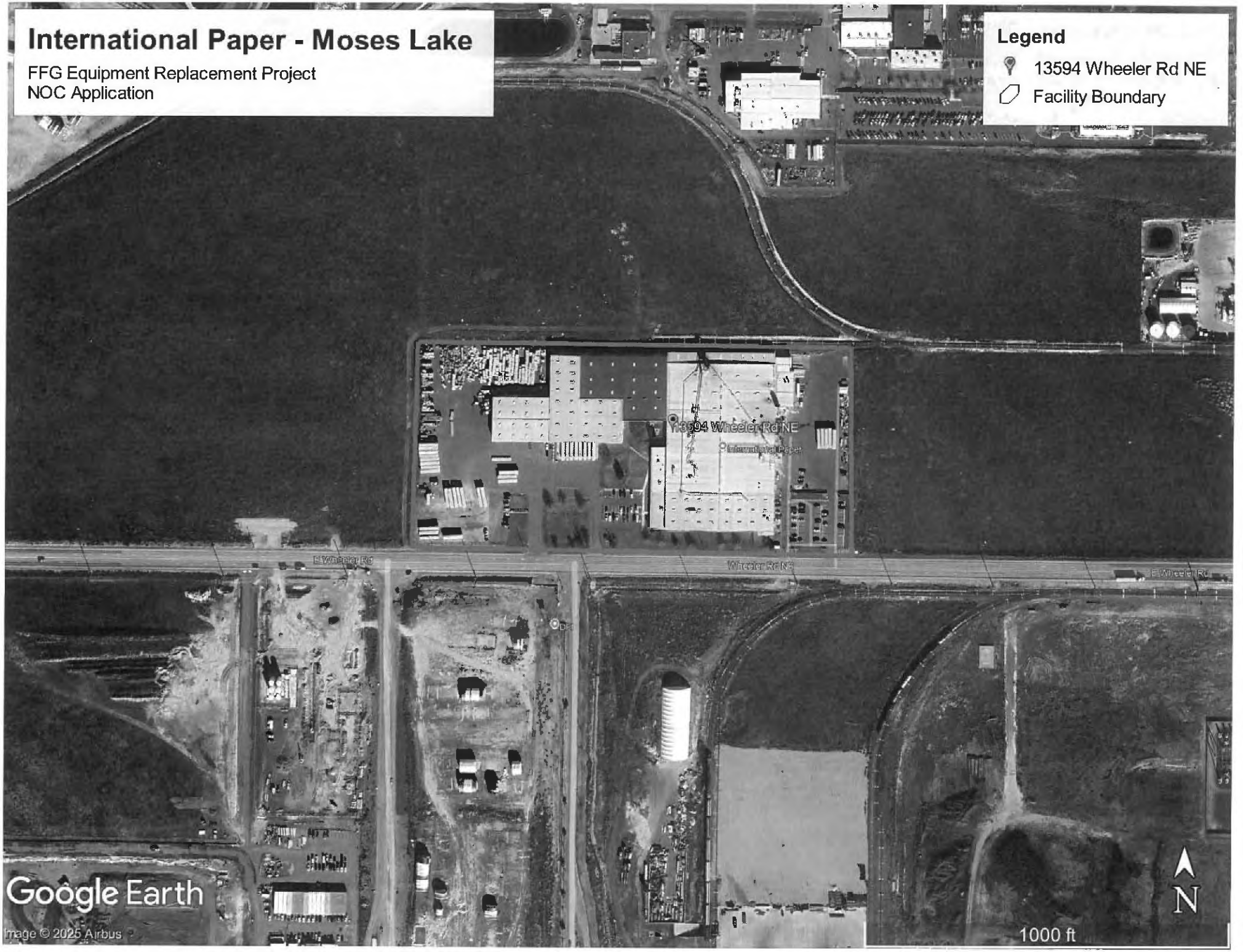
Toxic Air Pollutants (TAP)

Pursuant to WAC 173-460-070, the Notice of Construction Application must demonstrate that the increase in emissions of TAPs from the replacement/new emission units are sufficiently low to protect human health and safety from potential carcinogenic and/or other toxic effects. The facility has conducted a first-tier review of the potential emissions from the TAPs associated with the replacement/new emissions units which exceeded the de minimis emission level specified in WAC 173-460-150.

The facility compared the emission rates for the TAPs exceeding the *de minimis* thresholds, to the Small Quantity Emission Rates (SQER) defined in WAC 173-460-150, using the maximum weighted average TAP % of the inks used in the prior year. Based on this evaluation, the facility would exceed the SQER on a daily basis for one of the TAPs, acrylic acid. As such, the facility conducted air dispersion modeling to demonstrate that acrylic acid does not exceed the ASIL defined for this TAP.

The air dispersion model demonstrates that the modeled TAP emissions will have impacts less than the respective ASIL, as such, no further analysis is required (See Table 5 and Attachment E).

Attachment A – Maps and Diagrams
Process Flow Diagram
Plan View Site Map


International Paper - Moses Lake
FFG Equipment Replacement Project
NOC Application
Legend
13594 Wheeler Rd NE
Facility Boundary
13594 Wheeler Rd NE
E Wheeler Rd
Wheeler Rd NE
E Wheeler Rd
Google Earth
Image © 2025 Airbus
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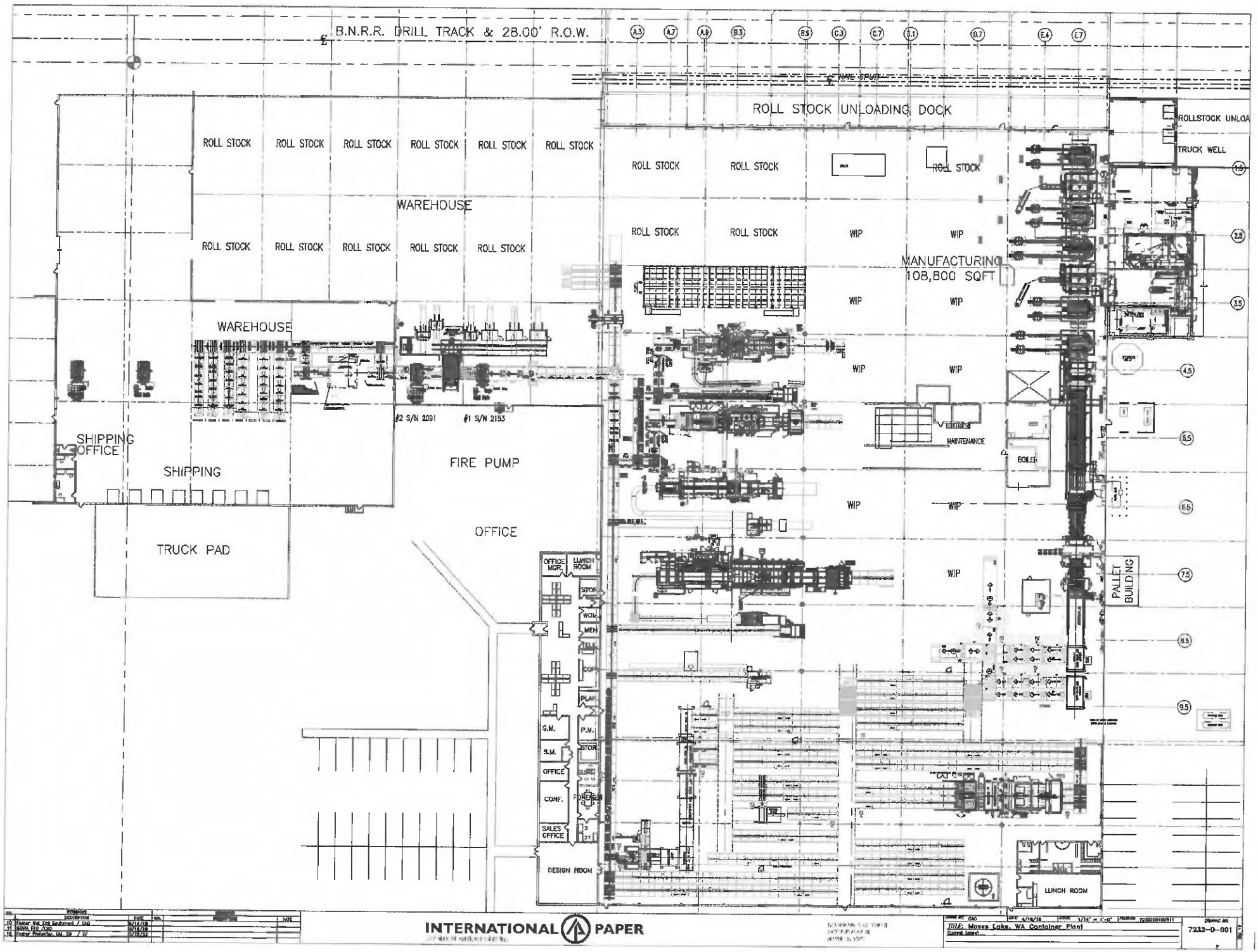
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ROLL STOCK UNLOADING DOCK
ROLLSTOCK UNLOA
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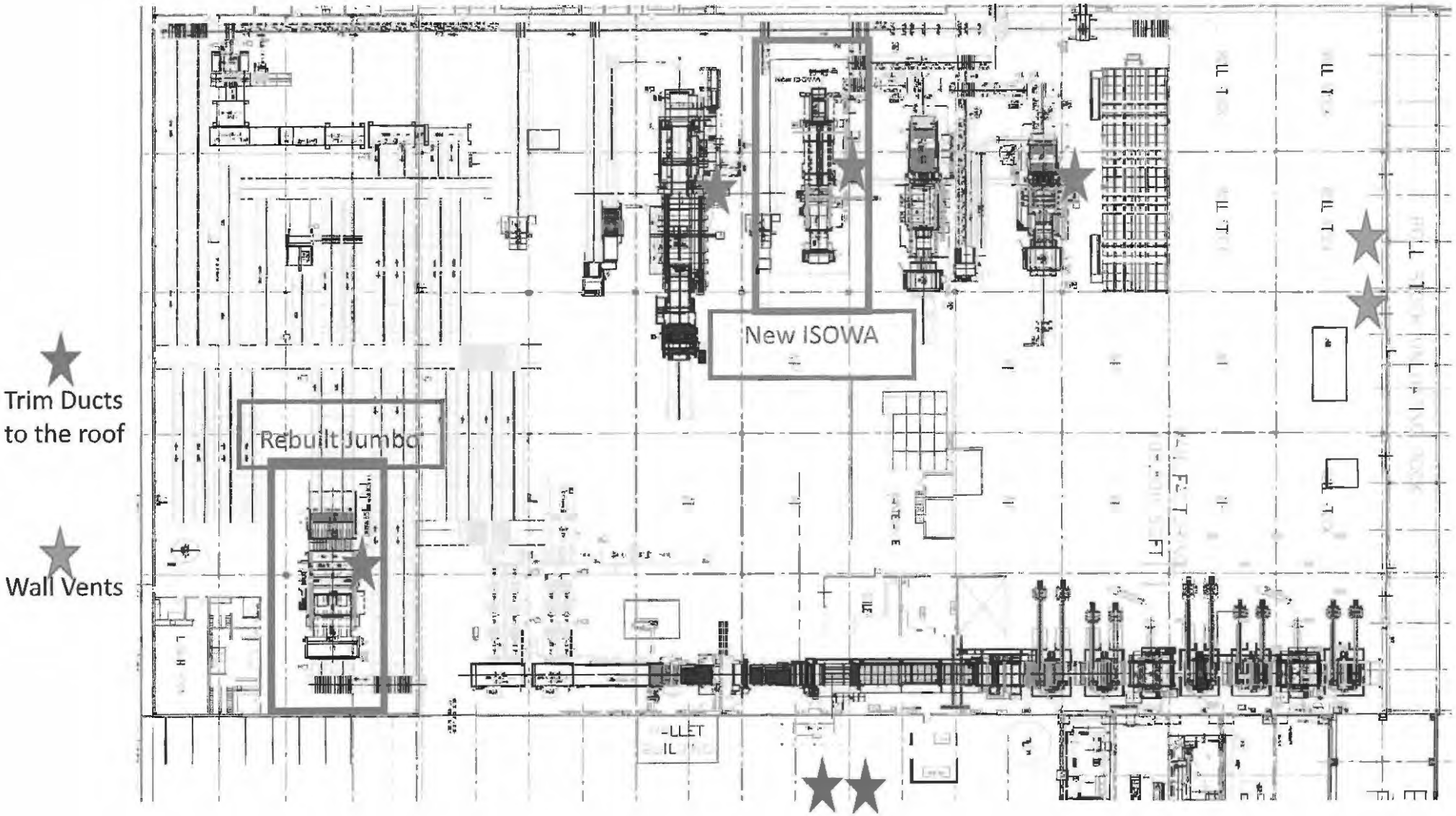
108,800 SQFT
MAINTENANCE
BOILER
#2 S/N 2091
#1 S/N 2153
SHIPPING OFFICE
SHIPPING
FIRE PUMP
OFFICE
TRUCK PAD
PALLET BUILDING
OFFICE MGR.
LUNCH ROOM
STOR.
WOM.
MEN
ELEC.
COP.
PLAN.
G.M.
P.M.
S.M.
OFFICE
CONF.
FORKLIFT CLP.
SALES OFFICE
DESIGN ROOM
LUNCH ROOM
INTERNATIONAL PAPER
TITLE: Moses Lake, WA Container Plant
7232-D-001


Trim Ducts
to the roof
Wall Vents
New ISOWA
Rebuilt Jumbo

Attachment B – Emission Calculations

International Paper - Moses Lake
Flexo Folder Gluer (FFG) Replacement Project

Machine Maximum Production							
Replacement FFG	Sheets/hr	Size (in) W	Size (in) L	sqin/hr	sqft	sqft	sqft/hr
Harper Folding	1,800	86	195	30,186,000	7.2	16.3	209,625
5276 Flexo (Isowa)	21,000	33.5	94.5	66,519,313	2.8	7.9	461,940
Total				**96,705,313**			**671,565**

Replacement FFG	MSF/hour	MSF/day	MSF/year
Harper Folding	210	5,031	
5276 Flexo (Isowa)	462	11,087	
Total:	**672**	**16,118**	**1,500,000**

Potential VOC Emissions from New/Replacement FFG Units:

Material	Maximum Application Rate	Weighted Avg VOC	Potential VOC Emissions		
	(lb/MSF)	(Weight %)	(lb/hr)	lb/day	(tpy)
Ink	0.208	1.60%	2.23	53.61	2.49
Glue	1.000	0.03%	0.20	4.84	0.23
pH Adjuster	0.005	5.00%	0.18	4.35	0.20
Press Cleaning Solution	0.00018	15.00%	0.02	0.44	0.02
Total			**2.63**	**63.23**	**2.94**

Potential TAP Emissions from New/Replacement FFG Units:

Material	Maximum Application Rate	Weighted Avg TAP	Potential TAP Emissions		
	(lb/MSF)	(Weight %)	(lb/hr)	lb/day	(tpy)
Ink	0.208	0.21%	0.30	7.14	0.33
Glue	1.000	0.03%	0.20	4.84	0.23
pH Adjuster	0.005	0.00%	0.00	0.00	0.00
Press Cleaning Solution	0.00018	0.00%	0.00	0.00	0.00
Total			**0.50**	**11.98**	**0.56**

Notes:
Annual MSF/year of 1.5 billion square feet, represents the annual increase above the current limit of 1 billion square feet facility-wide.
Maximum application rate based on 2023-2024 production data.
Weighted average VOC and TAP based on actual ink purchases for 2023-2024, applying the maximum wt% of each ink.

Toxic Air Pollutants (TAP) as identified in WAC 173-460-150
TAPs associated with the replacement of the two Flexo Units
Proposed increase of 1.5 Billion sq ft/year (2.5 Billion total limit)

Summary of Hourly Toxic Air Pollutant (TAP) Emissions

TAP	CAS #	Ink Composition	Hourly Emissions	De Minimis Threshold		SQER Threshold		Modeling Required?
		Wt %	lb/hr	(lb/hr)		(lb/hr)		
Isopropyl alcohol	67-63-0	8.43E-02	1.18E-01	3.00E-01	Okay	5.90E+00	Okay	No
Sodium hydroxide	1310-73-2	1.77E-03	2.47E-03	7.40E-04	Exceed	1.50E-02	Okay	No
Sodium sulfate	7757-82-6	5.11E-05	7.13E-05	1.10E-02	Okay	2.20E-01	Okay	No

Summary of Daily Toxic Air Pollutant (TAP) Emissions

TAP	CAS #	Ink Composition	Daily Emissions	De Minimis Threshold		SQER Threshold		Modeling Required?
		Wt %	lb/day	(lb/day)		(lb/day)		
Propylene glycol	57-55-6	3.98E-03	1.33E-01	1.10E-01	Exceed	2.10E+00	Okay	No
Acrylic acid	79-10-7	6.49E-03	2.17E-01	3.70E-03	Exceed	7.40E-02	Exceed	Yes
Ammonia	7664-41-7	2.65E-03	8.88E-02	1.90E+00	Okay	3.70E+01	Okay	No
Ethylene glycol	107-21-1	1.04E-05	3.47E-04	1.50E+00	Okay	3.00E+01	Okay	No
Mercury, elemental	7439-97-6	3.38E-06	1.13E-04	1.10E-04	Exceed	2.20E-03	Okay	No
Styrene	100-42-5	1.50E-02	5.03E-01	3.20E+00	Okay	6.50E+01	Okay	No
Toluene	108-88-3	3.83E-07	1.28E-05	1.90E+01	Okay	3.70E+02	Okay	No

Summary of Annual Toxic Air Pollutant (TAP) Emissions

TAP	CAS #	Ink Composition	Annual Emissions	De Minimis Threshold		SQER Threshold		Modeling Required?
		Wt %	lb/year	(lb/year)		(lb/year)		
1,4-Dioxane	123-91-1	7.23E-06	2.25E-02	1.60E+00	Okay	3.20E+01	Okay	No
3,3'-Dichlorobenzidine	91-94-1	1.54E-05	4.79E-02	2.40E-02	Exceed	4.80E-01	Okay	No
Benzene	71-43-2	4.26E-08	1.33E-04	1.00E+00	Okay	2.10E+01	Okay	No
Ethyl benzene	100-41-4	1.70E-06	5.31E-03	3.20E+00	Okay	6.50E+01	Okay	No
Ethylene oxide	75-21-8	1.80E-08	5.61E-05	1.60E-03	Okay	3.30E-02	Okay	No
Hexachlorobenzene	118-74-1	3.83E-07	1.19E-03	1.80E-02	Okay	3.50E-01	Okay	No
o-Toluidine	95-53-4	1.53E-05	4.77E-02	1.60E-01	Okay	3.20E+00	Okay	No
Polychlorinated biphenyls (PCBs), NOS	1336-36-3	1.57E-05	4.91E-02	1.40E-02	Exceed	2.80E-01	Okay	No
Styrene oxide	96-09-3	4.26E-06	1.33E-02	1.80E-01	Okay	3.50E+00	Okay	No
o-Toluidine	95-53-4	1.53E-05	4.77E-02	1.60E-01	Okay	3.20E+00	Okay	No

Attachment C – Manufacturer Data
Specification Sheets for Flexo Units

International Paper Co – Rockford, IL

Flexo Folder Gluer

MACHINE SPECIFICATION

Final

FALCON®

Model FP50
Model FG50
Model T09A
Model FEM21

Specifications Approved By Andrew Coffman
Andrew Coffman (Feb 11, 2021 14:20 CST)

Company name: International Paper

Date: 02/11/2021

〒486-0908
66 Nishiya-cho, Kasugai,
ISOWA Corporation
TEL +81-568-31-3102
FAX +81-568-31-3103

Checked	Reviewed/Checked	Prepared
2021/2/5	2021/2/5	2021/2/5
Engineering Department	Engineering Department	Export
Ikeda	Endo	Saegusa

・This specification shows model, specification, selected specification and special specification of the machine.
・The relevant specifications are indicated by marking in the ■ checked box.
・In addition to the above-mentioned ■ checked box, it also shows the text for the customized specification.

These records may be available upon request. To find out if there are more records for this project, contact Ecology's Public Records Office.

- Online: https://ecology.wa.gov/footer-pages/public-records-requests
- Public Records Officer email: PublicRecordsOfficer@ecy.wa.gov • Call: 360-407-6040

Para averiguar si existen más registros sobre ese proyecto, póngase en contacto con la oficina de archivos públicos del Departamento de Ecología, envíe un correo electrónico a recordsofficer@ecy.wa.gov, o llame al 360-407-6040

Attachment D – BACT Determinations

EPA RBLC

SC AQMD

TCEQ

BACT Analysis: IP Moses Lake - FFG Unit Replacement
RBLC Seach Parameters: Flexographic
RBLC Search Date: 4/1/2025

RBLC ID	Date	Facility Name & Location	Process	Process Type	Process Notes	Throughput & Units	Pollutant	Emission Limit 1 & Units	Case by Case Basis	Pollutant/ Compliance Notes
WI-0297	12/10/2019 ACT	GREEN BAY PACKAGING INC. GREEN BAY PACKAGING- MILL DIVISION BROWN, WI	Five (5) Color Sheetfed Flexographic Printing Presses (F56h)	41.021	10 gallons/hr of inks, coating, adhesives and ink additives, 1.0 gallons/hr of cleaners and lubricants The press will utilize low VOC inks, coatings, varnishes, adhesives, primers and other additives. Cleaners and lubricants will also be used in this process. Emissions from this process are indoor fugitives.	10 GAL/H	Volatile Organic Compounds (VOC)	1.5 LB VOC/GAL MATERIAL	BACT-PSD	BACT Determinations: (a) The use of low VOC inks, coatings, varnishes, adhesives, primers, clean-up solvents and additives defined as the monthly average as-applied VOC content of all inks, coatings, varnishes, adhesives, primers, clean-up solvents and additives may not exceed 1.5 pounds of VOC per gallon of material, except as allowed in (b); (b) The permittee may use up to 100 pounds per month of non-low VOC clean-up solvents and process lubricants which have a VOC content greater than 1.5 pounds of VOC per gallon, as applied. These clean-up solvents are not included when determining compliance with the limit in (a); and (c) VOC emissions from this process may not exceed 1,666 pounds per month averaged over any consecutive 12-month period.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

10-20-2000 Rev. 0
12-5-2003 Rev. 1
7-14-2006 Rev. 2
2-2-2018 Rev. 3
2-1-2019 Rev. 4
9-2-2022 Rev. 5

Equipment or Process: Printing (Graphic Arts)

	Criteria Pollutants					
Subcategory	**VOC**	**NOx**	**SOx**	**CO**	**PM_{10}**	**Inorganic**
Flexographic	Inks with ≤ 1.5 Lbs VOC/Gal, Less Water and Less Exempt Compounds (1990); or use of UV/EB or water-based inks/coatings ≤ 180 g VOC/L. Compliance with Rules 1130 and 1171 (2-2-2018)					
Alternatively	For add-on control required by Rule 1130(c)(5) or other South Coast AQMD requirement: EPA M. 204 Permanent Total Enclosure (100% collection) vented to thermal oxidizer with 95% overall control efficiency; Combustion Chamber: Temp ≥ 1500°F[1], Retention Time > 0.3 seconds (2-2-2018)	Compliance with BACT requirements for Thermal Oxidizer		Compliance with BACT requirements for Thermal Oxidizer		
Letterpress	Compliance with Rules 1130 and 1171 (12-5-2003)					

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

TCEQ Coatings Sources

Historical Best Available Control Technology (BACT) Requirements

Printing Operations

This information is maintained by the Mechanical/Coatings Section and is subject to change. Last update 9/2018.

Year	Source Type	Pollutant	Minimum Acceptable Control	Control Efficiency or Details
2008	Offset/Non-heatset	VOC	Use low VOC blanket wash.	
			Use low VOC (alcohol substitutes) fountain solutions.	
			Use low VOC cleaning materials.	
			Storage of waste materials and shop towels in closed containers.	
			Good housekeeping for spills.	
	Heatset	VOC	Collecting and venting ink oil emissions (VOC) to an add-on control device for operations with VOC emissions of 25 tpy or more.	Minimum of 90% destruction efficiency for catalytic oxidizers and 95% for other thermal combustion devices.
			Use low VOC blanket wash.	
			Use low VOC (alcohol substitutes) fountain solutions.	
			Use low VOC cleaning materials.	
			Storage of waste materials and shop towels in closed containers.	
			Good housekeeping for spills.	

Year	Source Type	Pollutant	Minimum Acceptable Control	Control Efficiency or Details
2008	Flexographic	VOC	Use water-based (low VOC) inks.	
			Collecting and venting VOC to an add-on control device may be required for flexographic operations with VOC emissions greater than 50 tpy.	Minimum of 90% destruction efficiency for catalytic oxidizers and 95% for other thermal combustion devices.
			Storage of waste materials and shop towels in closed containers.	
			Good housekeeping for spills.	
	Rotogravure	VOC	Collecting and venting ink emissions to an add-on control device.	Minimum of 90% destruction efficiency for catalytic oxidizers and 95% for other thermal combustion devices.
			Storage of waste materials and shop towels in closed containers.	
			Good housekeeping for spills.	

Attachment E – Dispersion Modeling Results

International Paper

International Paper
Moses Lake Equipment Replacement and Production Increase Project

First Tier Review of Toxic Air Pollution Sources

Toxic Air Pollutant Dispersion Modeling Analysis

Prepared by:

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Prepared April 2025

Section Page

1.0 Executive Summary 3
2.0 Introduction 3
3.0 Modeling Approach 4
3.1 Emission Sources 5
3.2 Air Dispersion Model and Inputs 5
3.2.1 TAP Emissions 5
3.2.2 Source Release Parameters 5
3.2.3 Terrain Characterization 7
3.2.4 Building Downwash 7
3.2.5 Meteorological Data 7
3.2.6 Receptors 8
4.0 Modeling Results and Conclusion 8

List of Tables

Page

Table 1. TAP Emission Rates 5
Table 2. Project VOLUME Source Parameters 5
Table 3. Modeling Results 9

List of Figures

Page

Figure 1. General Location Map 3
Figure 2. Detailed Location Map 4
Figure 3. Modeled Source Location 6
Figure A-1. Windrose 10
Figure B-1. Receptor Locations 11
Figure C-1. Map Showing Maximum 24-hr Average Acrylic Acid Concentrations (µg/m^3) 12

List of Appendices

Page

APPENDIX A. Windrose 10
APPENDIX B. Receptor Grid Diagram 11
APPENDIX C. Modeling Results Diagram 12
APPENDIX D. Electronic Files 13

1.0 EXECUTIVE SUMMARY

International Paper (IP) owns and operates a box manufacturing plant in Moses Lake, WA. The facility is submitting a Notice of Construction permit application to permit the replacement of two flexo folder gluer units and request an increase to the annual production limit currently identified in Approval Order No. 22AQ-E026. A first tier review of potential toxic air pollutant (TAP) emission increases was performed for the TAPs identified in the inks used by IP, and all TAP increases were below de minimis or small quantity emission rate (SQER) thresholds with the exception of acrylic acid. A refined modeling analysis was performed for the increase in acrylic acid emissions associated with the project, and the analysis showed that ambient air concentrations will be below the acceptable source impact level (ASIL) for this TAP.

2.0 INTRODUCTION

The facility operates rotary die cutters, Flexo folder gluers, and a corrugator in support of the production of corrugated boxes. The facility location is shown in Figure 1 and Figure 2 below.

Facility Name:	International Paper Company – Moses Lake
Facility Address:	13594 Wheeler Road NE Moses Lake, WA 98837

Figure 1. General Location Map

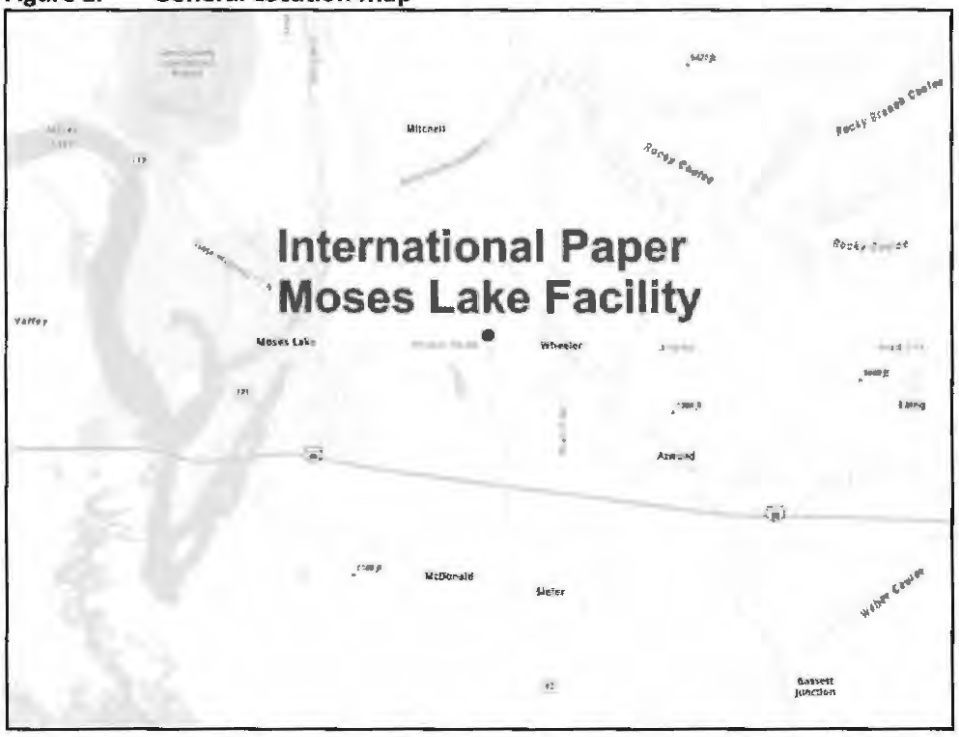
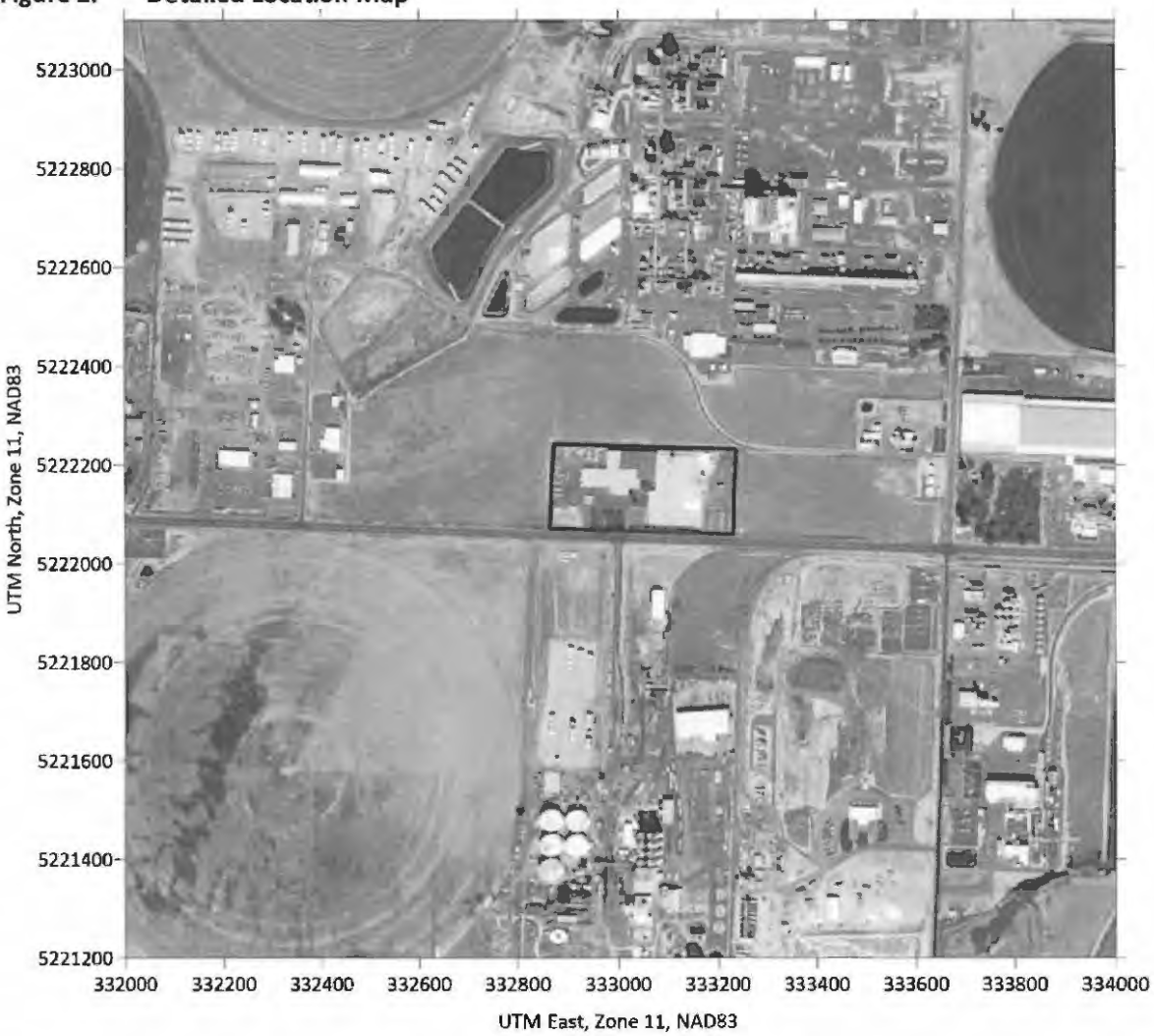


Figure 2. Detailed Location Map



3.0 MODELING APPROACH

The modeling was performed as part of a first tier review for the project. Emission increases associated with the project must be modeled and resulting ambient air concentrations at any location outside of the property boundary must be below the acceptable source impact level (ASIL) for each TAP with an emission rate above de minimis thresholds and small quantity emission rates (SQER) defined in WAC 173-460-150. For this project, only acrylic acid emissions exceeded de minimis and SQER thresholds. The ASIL for acrylic acid is 1.0 $\mu g/m^3$ as a 24-hr average.

3.1 Emission Sources

As described above, the proposed project includes the replacement of two flexo folder gluer (FFG) units and an increase to the permitted annual production limit. Emissions from the FFG units are fugitive and vent through openings in the manufacturing building (roof vents, windows, doors).

3.2 Air Dispersion Model and Inputs

The AERMOD (v. 24142) air dispersion model, the model currently preferred by U.S. EPA and accepted by the Washington Department of Ecology (DOE), was used for this analysis. AERMOD simulates the atmospheric transport and dilution of emissions from project sources. This mathematical model estimates dilution of emissions by diffusion and turbulent mixing with ambient air as the emissions travel downwind from a source. AERMOD can predict the resulting concentrations at specified locations of interest (commonly referred to as receptors). The model is capable of predicting impacts from any combination of point, area, and volume sources in terrain ranging from flat to complex.

3.2.1 TAP Emissions

As described above, the only TAP requiring a dispersion modeling analysis is acrylic acid. The acrylic acid emission rate used in the modeling is shown in Table 1 below. Emissions are assumed to occur 24 hours per day, 7 days per week.

Table 1. TAP Emission Rates

Toxic Air Pollutant	CAS	lb/day	lb/hr
Acrylic acid	79-10-7	0.217	0.0091

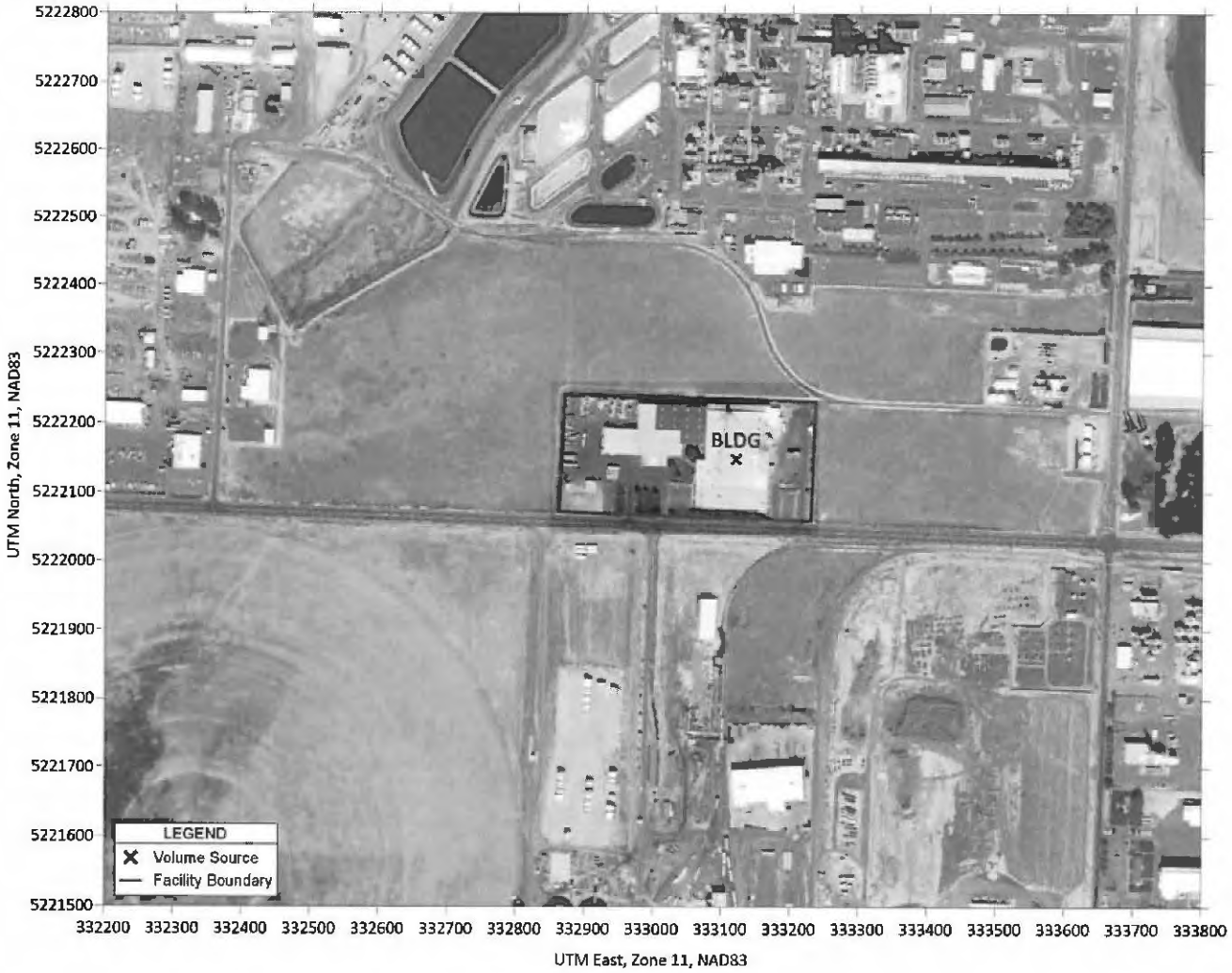
3.2.2 Source Release Parameters

Emissions from the FFG units are vented passively to the atmosphere through roof vents, windows, and doorways. The source is assumed to essentially be the entire manufacturing building as all the FFG units are in one contiguous area. The building was modeled as a volume source with dimensions based on the height and width of the building. Release parameters are shown in Table 2 below. The source location (center) is shown in Figure 3 below.

Table 2. Project VOLUME Source Parameters

Source Description	Model ID	Release Height		Init. Horizontal Dimension		Init. Vertical Dimension		UTM Coordinates (NAD83)		Base Elevation
		(ft)	(m)	(ft)	(m)	(ft)	(m)	East (m)	North (m)	(m)
Gluer units	BLDG	13.5	4.11	107.0	32.6	12.56	3.83	333120.5	5222148.2	367.1

Figure 3. Modeled Source Location



3.2.3 Terrain Characterization

AERMOD requires that each source in the analysis be categorized as being in either a rural or an urban setting. The International Paper facility is surrounded primarily by agricultural land; as such, all sources were designated as rural.

Per DOE guidance, the emission source and receptors were modeled with consideration of terrain elevations. The AERMOD terrain processor (AERMAP) was used to calculate terrain elevations for each source and receptor from the U.S. Geological Survey (USGS) National Elevation Dataset (NED).

3.2.4 Building Downwash

Building downwash effects are only considered in AERMOD for point sources. Since the only emission source modeled for this project is a volume source, building downwash was not considered.

3.2.5 Meteorological Data

The meteorological processed data was done in accordance with DOE modeling guidance[1]. The most recent 5-year (2020-2024) data set from the representative NWS sites, Moses Lake (24110), was chosen for the surface files and Spokane (USM00072786) was chosen for the upper air files. 1-min ASOS data (KMWH-1min) from Moses Lake was used to minimize calm hours for the 5-year data set.

The surface file for Moses Lake was processed in AERMET (v. 24142) in the ISHD file format utilizing the site ID 24110, latitude of 47.208 N, longitude of 119.319 W, elevation of 365 meters, and a time adjustment of 7 hours to account for the location of the project site in comparison to standard Greenwich time. The upper air file for Spokane was processed in AERMET in the IGRA file format utilizing the site ID 72786, latitude of 47.6806 N, longitude of 117.6267 W, elevation of 729 meters, and a time adjustment of 7 hours to account for the location of the project site in comparison to standard Greenwich time.

The surface data files and 1-min ASOS data files were downloaded from the EPA Automated Surface/Weather Observing Systems (ASOS/AWOS) website[2], while the upper air data files were downloaded from the EPA integrated Global Radiosonde Archive[3].

The AERMINUTE station KMWH is part of the Ice-Free Winds group with the commission date of August 1Sth, 2007. One-minute wind data files were utilized instead of five-minute wind data files to populate the calm wind sections in the surface meteorological data files.

---

[1] Department of Ecology, State of Washington, AQP-GUI-2021 AERMOD APP Review, Guidance on Typical AERMOD Modeling Protocol Parameters, November 2021.

[2] https://www.ncei.noaa.gov/products/land-based-station/automated-surface-weather-observing-systems

[3] https://www.ncei.noaa.gov/products/weather-balloon/integrated-global-radiosonde-archive

The AERMET processing options utilized randomized NWS wind directions, adjusted ASOS wind speeds, and adjusted surface friction velocity. The wind measurement height was set to 10 meters and the primary surface characteristics frequency was set to monthly with twelve primary wind sectors selected as in accordance with AERMET and Department of Ecology State of Washington.

AERSURFACE (v. 24142) was utilized with the facility project site set as the primary location: UTM Easting 333119.61 meters, Northing 5222142.24 meters, Zone 11, and NAD83. The season definition was set to default, the winter season snow cover was selected Yes as the project site experiences continuous snow cover for one or more months of winter, Arid was set to No as the project site receives enough rainfall throughout the year to not be considered arid, and the Moisture was set to Average as the project site did not experience exceptionally high or low rainfall during the 5 years chosen (2020-2024). Additionally, the calculation method was set to the default radius of 1.0 kilometers and the Non-Airport Wind Sectors were marked as "All" as the project site was chosen for the primary location and airport data was not utilized.

A windrose showing a graphical distribution of wind speed and wind direction for the time period modeled is included as Figure A-1 of the Appendices.

3.2.6 Receptors

The receptors used to analyze project impacts include:

- 12.5-meter spaced receptors along the facility boundary and out to 150 meters from the facility boundary
- 25-m spaced receptors beyond 150 meters out to 400 meters from the facility boundary
- 50-m spaced receptors beyond 400 meters out to 900 meters from the facility boundary
- 25-m spaced receptors beyond 900 meters out to 2,000 meters from the facility boundary
- 250-m spaced receptors beyond 1,000 meters from the facility boundary

Receptor heights above ground ("flagpole" heights) were set to 1.5 meters. Receptor height and spacing were based on DOE modeling guidelines[4]. The receptor network is composed of Cartesian (X,Y) receptors with Universal Transverse Mercator (UTM) coordinates. The modeling was conducted using the North American Datum of 1983 (NAD83).

Figure B-1 of the Appendices shows a plot of the receptors. A total of 6,311 fenceline and grid receptors were included in the analysis.

4.0 MODELING RESULTS AND CONCLUSION

The modeling results are summarized in Table 3 below. The results show that the acrylic acid emissions increase will not cause an exceedance of the ASIL. Therefore, the project passes a first tier review.

[4] Department of Ecology, State of Washington, AQP-GUI-2021 AERMOD APP Review, Guidance on Typical AERMOD Modeling Protocol Parameters, November 2021.

Table 3. Modeling Results

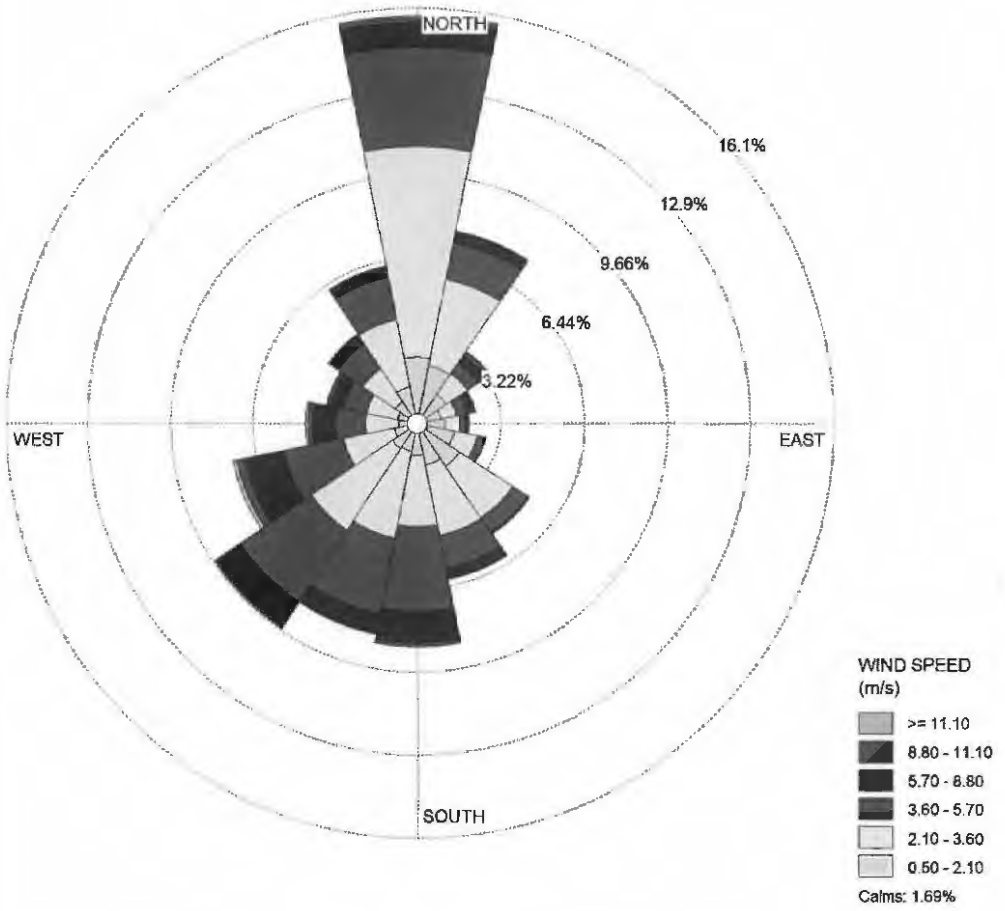
TAP	Averaging Period	Concentrations (µg/m³)		UTM Coordinates (m)	
		Modeled Maximum 24-hr Average	ASIL	X	Y
Acrylic acid	24 Hour	0.60	1.0	333125	5222062.5

APPENDIX A. WINDROSE

Figure A-1. Windrose

WIND ROSE PLOT:
Station #24110
Moses Lake, WA

DISPLAY:
Wind Speed
Direction (blowing from)

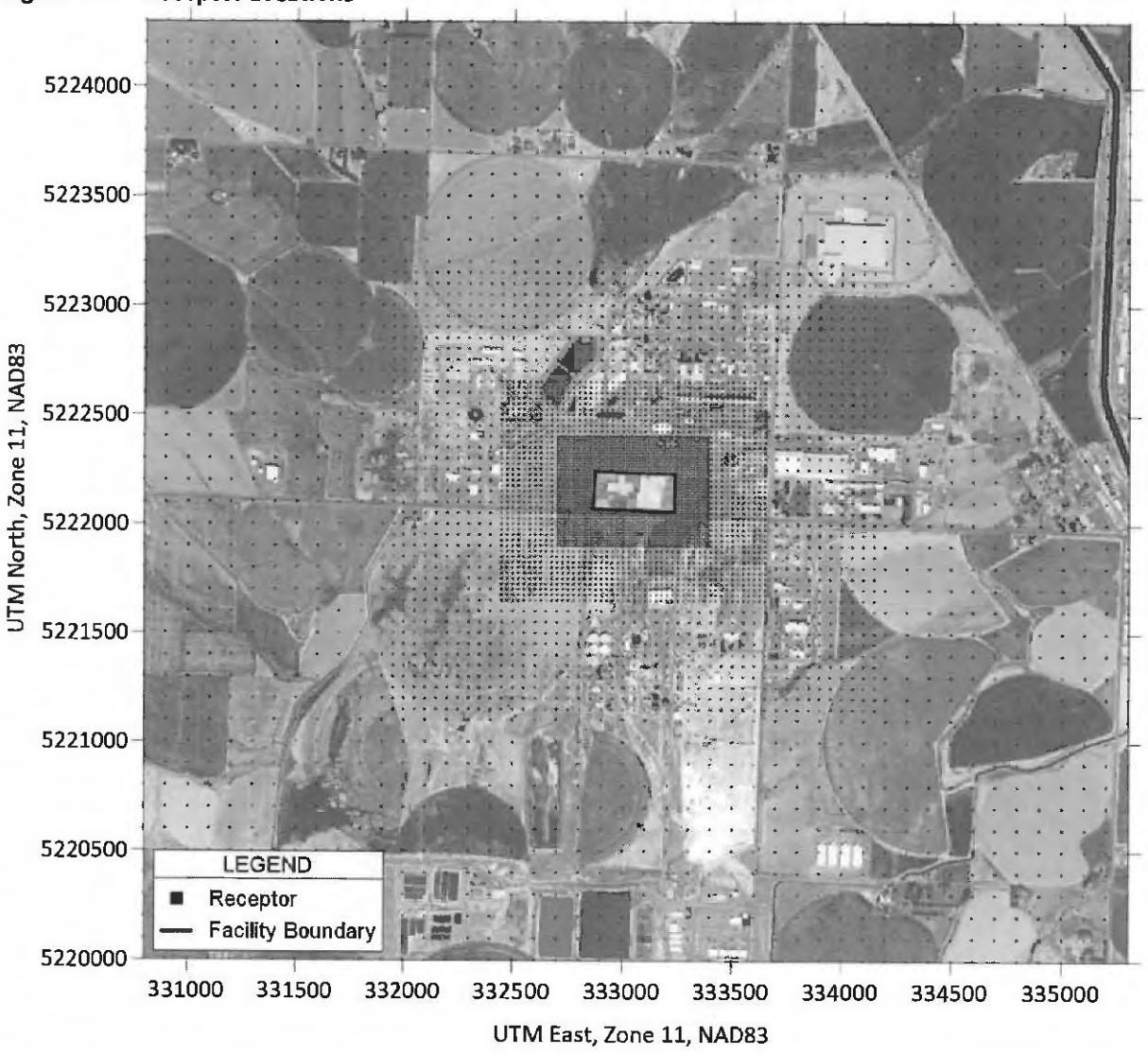


COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	Start Date: 1/1/2020 - 00:00 **End Date: 12/31/2024 - 23:59**	MODELER:	
	CALM WINDS: **1.69%**	TOTAL COUNT: **43451 hrs.**	
	AVG. WIND SPEED: **3.45 m/s**	DATE: **3/13/2025**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

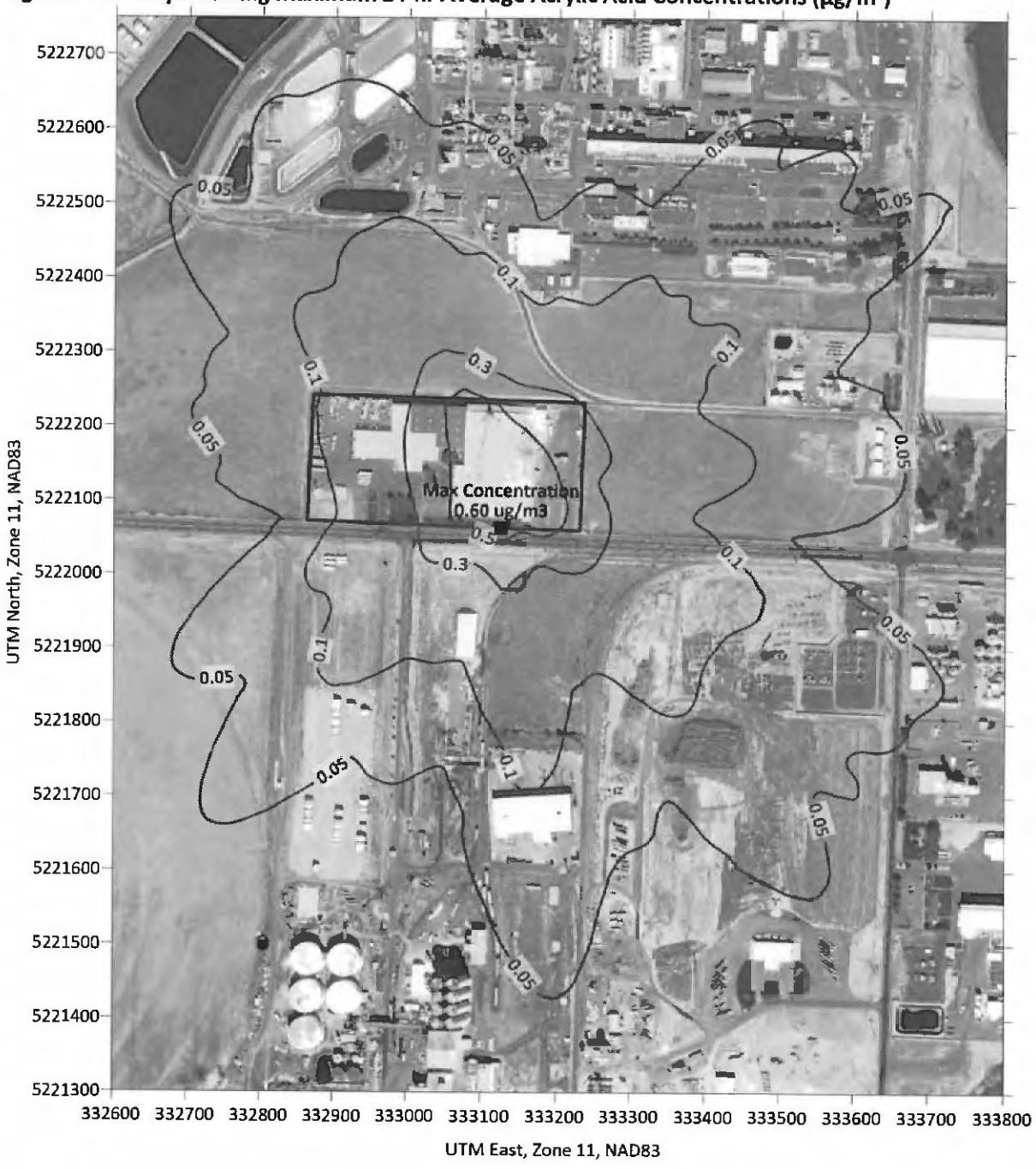
APPENDIX B. RECEPTOR GRID DIAGRAM

Figure B-1. Receptor Locations



APPENDIX C. MODELING RESULTS DIAGRAM

Figure C-1. Map Showing Maximum 24-hr Average Acrylic Acid Concentrations (µg/m³)



APPENDIX D. ELECTRONIC FILES

Electronic files will be provided via email or FTP.