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FEDERAL EXPRESS

May 15, 2023

Arizona Department of Environmental Quality
Air Quality Division – Air Permits Unit
Attention: Mr. Vivek Rajaraman
1110 West Washington Street
Phoenix, Arizona 85007
airpermits@azdeq.gov

RE: Printpack, Inc. – Class I Permit Renewal Application
ADEQ Air Quality Control Permit No. 71374 (Class I)
Prescott Valley, Yavapai County, Arizona

Dear Mr. Rajaraman:

Printpack owns and operates a flexible packaging plant located at 6800 East 2nd Street in Prescott Valley, Yavapai County, Arizona. The Prescott Valley facility maintains a Class I Air Quality Permit (71374) using federally enforceable air emission control equipment. Emissions from printing and lamination operations are largely volatile organic compounds (VOCs) with small quantities of combustion by-products or particulate.

Printpack hereby requests renewal of Permit Number 71374 in advance of the November 19, 2023 expiration date. The Printpack facility is currently classified as a minor source under the New Source Review (NSR) program, this renewal application will not change the NSR status. Printpack has included all necessary application forms and support documents as part of this application. Printpack also requests ADEQ's assistance in the timely processing of this permitting process. If you have any questions or comments regarding this submission, please contact me at (864) 414-2371.

Sincerely,

A handwritten signature in blue ink that reads 'Robert A. Cullom'.

Robert A. Cullom
Corporate Environmental Engineer
Printpack, Inc.

CC Dave Ellison, EH&S Director
Lonnie McKinley, Prescott Valley Plant Manager
Tim Coyne, Prescott Valley EHS Coordinator
Sheila Tsai, U.S. EPA, Pacific Southwest, Region 9, 75 Hawthorn Street, San Francisco, 94105

ADEQ Air Quality Class I Renewal Application

Printpack, Inc.
6800 East 2nd Street
Prescott Valley, Arizona 86314

May 2023

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1. Class I Permit Application Forms
2. Facility Drawings or Figures
3. Process Flow Diagrams
4. Emission Estimates and Calculations
5. Reasonably Available Control Technology (RACT) Analysis
6. Compliance Assurance Monitoring (CAM) Plan
7. Draft Air Permit Suggestions

1.0 Project Description

Printpack has operated its flexible packing and converting plant located at 6800 East 2nd Street in Prescott Valley, Yavapai County, Arizona under Class I Permit Number 71374 as of November 20, 2018. As part of this air permit renewal application, Printpack hereby requests that the existing federally enforceable permit limitations for hazardous air pollutants (HAPs) or Major New Source Review threshold for VOCs be retained. Printpack is requesting minor changes to Permit Number 71374 including removal of equipment has been taken out of service from the facility, movement of equipment inside the building, and minor changes in stack locations to ensure all records are complete and accurate for air permit compliance reporting efforts.

Printpack's operations within Permit 71374 include:

- One (1) flexographic printing press with coating station (Press 1) (Emission Point UTM moved slightly).
- One outboard coating station (OP-03) (Emission Point UTM moved slightly).
- One (1) flexographic printing press (Press 3) has been physically removed from the facility. (Remove from permit)
- A 10-color flexographic printing press with automatic cleaning (Press 4) was constructed and continues to be operated (Emission Point UTM moved slightly; PTE expanded)
- A 10-color flexographic printing press with automatic cleaning (Press 5) was diverted to another Printpack facility and was never installed. (Remove from Permit)
- One (1) adhesive laminator (AL-32) with 2 coating stations was constructed and continues to be operated (Emission Point UTM moved slightly).
- One (1) extrusion laminator (EL-31) with 2 coating stations was constructed and continues to be operated (No changes).
- One (1) Manual parts washer (PW-01) unit (No changes).
- One (1) automatic parts washer and solvent distillation system (PW-03) was constructed and continues to be operated (Emission Point UTM moved slightly)
- Three (3) 10,000-gallon above ground storage tanks divided into 3 compartments each for the storage of solvents (No changes)
- One (1) plate washer unit (PW-04) was constructed and continues to be operated (equipment relocated, new fugitive EPN)
- One (1) 7,000-gallon vertical storage tanks with cone bottom is used for the storage of dirty process solvent (Emission Point UTM moved slightly).
- One (1) new 7,000-gallon vertical storage tanks with cone bottom is used for the storage of still bottoms waste (Emission Point UTM moved slightly).
- An Adwest regenerative thermal oxidizer (RTO) was placed into service and continues to be operated (Emission Point UTM moved slightly).
- An Anguil catalytic oxidizer was shutdown and removed from the facility (Remove from permit).

Printpack maintains multiple slitters, resin silos, edge trim cyclones that are insignificant sources of air emissions and are not listed in the permit. As part of this renewal application, Printpack requests that the plate washer (PW-04) be removed from the ink room enclosure and be positioned within the expansion building without controls. No changes to equipment design or specifications or operational considerations are being made in this application.

The Printpack Prescott Valley operation is classified as a minor source under the New Source Review (NSR) program. The potential emissions remain below the 250 tons per year NSR threshold. Removal of sources that were not constructed makes the NSR permit limitation no longer necessary. Since Air

Quality Control Permit No. 71374 expires November 19, 2023, this application also includes the information necessary to amend and renew the facility's permit. All forms have been included in Attachments 1 and 6.

1. Facility Location

The Prescott Valley manufacturing facility is located southwest of the Town & Country Industrial Park which is located south of East State Route 69, see Figure 1. The facility is bordered to the south by the Mesa Reservoir and to the north by the Stepping Stones Thrift store. An ADOT Fueling station is located east of the property, while commercial properties are located to the west. The Printpack facility is in Yavapai County, Arizona. This area is in attainment with all ambient air quality standards.

2. Process Description

Printpack owns and operates a flexible packing printing and converting plant in Prescott Valley, Arizona. Manufacturing operations includes the flexographic printing of paper and film substrates, lamination (adhesive or polymer extrusion) of individual substrate layers to form multi-layer products, and the slitting of large width rolls into customer specified sizes.

For each step of the manufacturing process, Printpack has provided a basic description of the operations, points of air emissions, and basic flow diagrams as provided in Attachment 3.

Figure 1: Site Location



A. Raw Material Receiving

Printpack receives raw materials at the shipping/receiving docks located on the east side of the property. Narrow and wide-width rolls of plastic films, metalized films, or paper substrates are stored on metal racking within the warehouse. Other materials received at the shipping/receiving docks and warehoused include wooden pallets, cardboard, or equipment. These substrates or raw materials are sent to the press department and lamination for use in specific jobs. A forklift battery charging station located in the southeastern corner of the warehouse. The charging area is designed with a collection hood for safety reasons. No sources of air emissions are present in the warehouse area.

Wet chemicals that include purchased inks, adhesives, or drummed solvents are received in 55-gallon drums (steel or plastic) or tote tanks at a southern loading dock near the ink room. All drums and containers are received and stored in the ink room warehouse in a closed condition. No sources of air emissions are present in the ink room storage area.

Bulk solvents, alcohols and acetates, are received in tanker trucks on the south side of the facility. Three (3) 10,000-gallon above ground storage tanks are located in a concrete secondary containment structure. Each of the bulk solvent tanks are divided

into three (3) compartments: two (2) 2,500-gallon compartments and one (1) 5,000-gallon compartment. All compartments are designed with submerged fill lines to minimize air emissions. Volatile organic compound (VOC) air emissions from working and breathing losses are released to atmosphere. Potential emissions from the bulk storage tanks are based upon the conservative estimate of 1 tank turnover per week.

Printpack utilizes two (2) 7,000-gallon conical storage tanks within the tank for the storage of dirty solvent and still bottom waste. Dirty solvent (hazardous secondary material) is accumulated within Tank 4 from the cleaning of each flexographic printing press, the automatic parts washer, the manual parts washer, or general solvent cleaning activities. The dirty solvent shall be pumped to a distillation system for reclamation and reuse. Still bottoms from the distillation unit are pumped to Tank 5 for storage prior to disposal as hazardous waste. Volatile organic compound (VOC) air emissions from working and breathing losses are captured as part of a VOC collection system and routed to the Adwest regenerative thermal oxidizer for control. Potential emissions from the two (2) waste tanks based upon the maximum designed throughput of the distillation system.

B. Ink Room

Finished inks are received from suppliers in 55-gallon drums and tote tanks. Inks, coatings, drummed solvent, vehicles, and laminating adhesives are stored in the ink room. Ink is sent to the press department for specific jobs. The ink may be finished (ready to use) or it may be mixed to specification in the ink room by combining specific vehicles and bases. Unused ink is sent back to the ink room after a job. This recovered ink will be used as a component in ink for future jobs. Adhesives and coatings used in the lamination process are stored, mixed, and distributed from the Ink Room. The small amount of VOC emissions from cleaning the ink room are accounted for in emission estimates for cleaning presses and laminators.

All emissions of volatile organic compounds (VOC) from this ink room are inside the permanent total enclosure (PTE) room is currently routed to the Adwest RTO (I02) with a destruction efficiency of 97.5%.

C. Pre-Press Department

Printpack has transitioned from making photopolymer plates onsite and begin receiving materials from other Printpack locations. Equipment within this area includes plate mounting tables, cylinder/plate storage, and plate washing.

Printpack has relocated the plate washer (PW-04) from the ink room total enclosure to the pre-press department. Dirty flexographic printing plates are fed into a plate washer that spray applies a cleaning solvent and scrubs any dried inks from the plate surface. Volatile organic compound (VOC) air emissions from the plate washing solution are released into the pre-press department as a fugitive emission.

D. Press Department

Paper, plastic, and metalized films are printed by a flexographic process. The printing process uses various solvent based inks, all of which have unique formulas. Inks must

be created in-house by mixing base colors together, adding toning agents, or pre-cut to the appropriate viscosity within the ink room prior to being delivered to the press. Press operators may cut inks to the proper running viscosity at the press. Unused ink is returned to the ink room following completion of the job. Spent ink, solvent from pump purging, and clean-up solvent is sent to the integrated still/parts washer for reclamation. The printed film is sent to in-process storage area until further processing.

Press 1 with coating station (Press-01) and an outboard coating station (OP-03) is located in a permanent total enclosure (PTE) Press Room in the southwestern corner of the building. The entire Press Room is designed with a VOC collection system from key emission points. Air emissions (VOCs) from the press department or press room are currently routed to the Adwest RTO (I02) with a destruction efficiency of 97.5%.

Aside from VOC emissions from inks and solvents, each press and coating station is equipped with dryers that cure inks as they pass along the manufacturing path. In-between each print deck, the press supplies heated air from direct fired, natural gas burners to dry the ink on the moving web. After all printing is completed, the printed web passes through a tunnel dryer to evaporate any remaining VOCs and cure the ink prior to product winding efforts. The natural gas burners on each press emit small amounts of combustion by-products (NO_x, SO₂, CO, particulates, and NMOC). All VOC and combustion emissions from the press room are collected and routed to the Adwest RTO (I02).

Press 4 is a wide-width, high speed flexographic printing press with enclosures and floor sweeps to ensure 100% capture of any VOC chemicals from the line. Adjacent to the central impression drum, Printpack has installed a small room PTE (100% capture) to capture emissions from all ink containers and press ink reservoirs. As part of a Section 317 change, Printpack extended the area of the PTE without impacting throughput or emissions.

Press 4 is equipped with an automatic press washer function that is connected to the plant solvent reclamation/distillation system. Instead of hand washing equipment like Press 1, Press 4 pumps inks from the print decks and return the ink to the covered press reservoir. The automatic washer flushes each print deck and the central impression drum with the solvent being collected and recycled. The elimination of solvent evaporation and spills significantly decreases solvent emissions from cleanup activities.

E. Extrusion/Lamination Department

Film from in-process storage (i.e. printed material) is laminated to one or more purchased film materials using either extruded polymer or adhesive as the bonding agent. In many cases, a single film structure will not possess all the physical attributes required by the customer to protect and market the product being packaged. Once laminated, the web is wound on a core for shipment to customers or furthering handling.

Extrusion Laminator EL-31 combines two purchased or printed sheets of film into a laminate by using extruded (melted) polyethylene as the bonding agent. Depending on the substrates, it is sometimes necessary to apply an adhesion promoter (primer) or other secondary coating on one of the substrates being laminated. EL-31 is also designed with a secondary coating station. Emissions from the Egan extruder laminator

are collected from key points and routed through roof openings with emissions to atmosphere. The secondary coating station for the Egan extruder has a gas fired dryer that generates small amounts of combustion by-products (NO_x, SO₂, CO, particulates, and NMOC). The second coating station includes two (2) corona treaters (10 and 15 kW) that apply an electric charge to the plastic film to improve the adhesion of coatings. The process of corona treatment generates ozone as a byproduct emission. All extrusion lamination (EL-31) emissions are ducted to atmosphere.

A solvent-based laminator (AL-32) is equipped with two coating decks that apply solvent, solventless, and water-based coatings. AL-32 is located in the new building expansion west of the existing extrusion laminator. Small amounts of solvent may be used for cleaning operations. The laminator will utilize multiple corona treaters (10 and 15 kW) that apply an electric charge to the plastic film to improve the adhesion of coatings. The process of corona treatment generates ozone as a byproduct emission.

Each coating station will be equipped with an enclosure capable of capturing 100% of any VOC emissions. Each coating station for the Bobst laminator will be equipped with a gas fired dryer that generates small amounts of combustion by-products (NO_x, SO₂, CO, particulates, and NMOC). All emissions from the coating stations and dryers shall be collected and routed to the Adwest RTO (I02).

Printpack maintains an alternate operating condition for AL-32 which allows for solventless, water-based, or coating containing less than 1% VOC by weight to be exhausted to atmosphere instead of directing emissions to I02. Printpack requests that this operating condition remain as part of the application renewal.

F. Bulk Solvent Tanks

Bulk solvents are stored in 3 above ground horizontal tanks. These tanks are subdivided into three (3) compartments for storing different formulations of process solvent and wash-up solvent. Process solvent is used to cut inks to appropriate running viscosity in the ink room, and wash-up solvent is used to clean up ink spills. Additionally, wash-up solvent is piped to the automatic parts washer where it is used to clean ink kits, anilox rollers, and ink pans. The 3 bulk storage tanks are designated as ST-01, ST-02, and ST-03 in the current permit. These bulk storage tanks emit small amounts of VOC – as part of normal tank breathing due to temperature and pressure changes – directly to atmosphere. These three (3) aboveground storage are equipped with pressure relief valves that release emissions to atmosphere.

The Prescott Valley plant maintains two (2) 7,000-gallon vertical, conical tanks for the management of dirty solvent. Spent wash-up solvent (dirty solvent) is distilled, and reclaimed solvent is returned to bulk storage for reuse. One (1) bulk storage tank (ST-04) will receive dirty solvent from the press wash systems, the automatic parts washer, manual parts washer, or manual equipment cleaning activities. Tank 04 will feed the solvent distillation unit for solvent recovery and reuse. A second tank, Tank 05 (ST-05), will receive still bottoms waste (pumpable solids) from the distillation system prior to disposal as hazardous waste. Both Tanks 04 and 05 will emit small amounts of VOC as part of normal tank breathing due to temperature and pressure changes. Emission from both tanks are collected and routed to the Adwest regenerative thermal oxidizer (I02).

G. Parts Washing / Distillation Unit

Wash-up solvent, or mop solvent, from bulk storage (Tank 03) will be piped to a new automatic parts washer (PW03). Dirty kits, anilox rollers, and ink trays are placed on a roll-in dolly. The dolly is placed in the parts washer. Parts are spray washed and rinsed. Following the wash and rinse cycle, off gas is vented to the Adwest RTO (I02). The automatic parts washer (PW03) is located inside the permanent total enclosure, therefore its capture efficiency is 100%.

Dirty wash-up solvent from PW03 is pumped to a dirty solvent holding tank (Tank 04) where it can be recirculated to the parts washer for use in another wash cycle, or directed to the distillation system. Spent ink and solvent from the press department also may be processed through the distillation system. Clean solvent generated by solvent distillation system is pumped back to bulk solvent storage. Sludge from the distillation process is pumped to a hazardous waste storage tank (Tank 05) in preparation for waste removal.

A manual parts washer (PW01) is located with the automatic parts washer room. This equipment is used to manually wash bulky items and parts that do not get clean in the automatic parts washer. Emissions of VOC from FIN PW01 and PW03 are routed to the Adwest RTO (I01). The distillation system and manual parts washer (PW01 and PW03) are located inside the permanent total enclosure, therefore their capture efficiency is 100%.

3. Emission Unit Details

Printpack maintains manufacturing equipment that requires permitting and exempt/insignificant sources. Sources subject to permitting have been included in Table 1.

Table 1: Emission Unit Details

Modification	Equip. ID	Equipment Description	Manufacturer	Model	Size/ Capacity	Manuf. Date	Capture System	Control Device
Control Device Emission Point Change	Press-01	8-color Flexo press/Coater	PCMC	7270	57" web width; 1,500 fpm	1991	Building PTE (Press Room)	I02 (Adwest RTO)
Equipment removed	Press-03	8-color Flexo press/Coater	PCMC	7270	57" web width; 1,500 fpm	1991	Building PTE (Press Room)	I02 (Adwest RTO)
Control Device Emission Point Change	Press-04	10-color Flexo press	Uteco	170	67" print width; 2,000 fpm	2018	Machine PTE	I02 (Adwest RTO)
Control Device Emission Point Change	OP-03	Outboard Coating Station (Anti-Fog)	N/A	N/A	57" print width; 1,200 fpm	2006	Machine PTE/Building PTE (Press Room)	I02 (Adwest RTO)

Modification	Equip. ID	Equipment Description	Manufacturer	Model	Size/ Capacity	Manuf. Date	Capture System	Control Device
Control Device Emission Point Change	AL-32	Solvent/Solventless Laminator with Coating Deck	Bobst	CL 1000	68" coat width, 1,470 fpm	2018	Machine PTE	I02 (Adwest RTO)
No changes	L31	Extruder/Laminator	Egan	N/A	56" web width; 1,200 fpm	1991	None	None
Control Device Emission Point Change	PW-01	Manual Parts Washer	N/A	N/A	23"72"X45"	1991	Building PTE	I02 (Adwest RTO)
Control Device Emission Point Change	PW-03	Automatic Parts Washer	PRI	SWS-308	8' X 14' chamber	2018	Building PTE	I02 (Adwest RTO)
No changes	N/A	Distillation Unit Feed Tank	PRI	DST-300	320 gallons	2018	None	None
Equipment Relocated / No controls	PW-04	Plate Washer	Flexowash	PW-92	36" Width	2018	Building PTE	None
No changes	ST-01	Bulk Solvent Tank N0.1	N/A	N/A	10,000 gal, 3 sect.	1991	None	None
No changes	ST-02	Bulk Solvent Tank N0.2	N/A	N/A	10,000 gal, 3 sect.	1991	None	None
No changes	ST-03	Bulk Solvent Tank N0.3	N/A	N/A	10,000 gal, 3 sect.	1991	None	None
Control Device Emission Point Change	ST-04	Bulk Solvent Tank N0.4	N/A	N/A	7,000 gal, vert, cone	1991	Direct Vent	I02 (Adwest RTO)
Control Device Emission Point Change	ST-05	Bulk Solvent Tank N0.5	N/A	N/A	7,000 gal, vert, cone	2018	Direct Vent	I02 (Adwest RTO)
Control Device Emission Point Change	I02	Regenerative Thermal Oxidizer	Adwest	N/A	80,000 SCFM	2008	Press PTE, Equipment PTEs	I02 (Adwest RTO)

2.0 Alternate Operating Scenarios

The Printpack Prescott Valley converting plant does maintain an alternate operating scenario for AL-32. While using solvent less or water-based inks, Printpack requests to maintain the ability to divert air emissions from AL-32 to atmosphere rather than routing non-VOC containing streams to the RTO unit. Printpack requests Condition B.II be retained for Laminator AL-32 when operating with water-based, or other coating formulations that contain no more than 1% VOC by weight.

3.0 Project Emissions

Emissions estimates have been calculated using U. S. EPA AP-42 or company developed emission factors. Emission estimates have been included as Attachment 4 of this application. Printpack has removed equipment that was not installed as part of the previous plant expansion. Printpack has also relocated the plate washer into the pre-press department. Emissions from the plate washer are fugitive and are no longer captured/controlled. The Prescott Valley facility PTE decreases 36.1 tons per year VOCs and hazardous air pollutants. Elimination of emissions from combustion or fuel burning operations from equipment that was never constructed results in a decrease in carbon monoxide, nitrogen oxides, sulfur oxides, and particulate matter. A summary of emissions is included in Tables 2, 3, 4, and 5. Emission calculations and estimates are included in Attachment 4.0.

1. Raw Material Descriptions

Manufacturing operations at the flexible packaging plant include the use of solvent-containing inks, primers (normally water-based), and adhesives (normally water-based). Many raw materials are received ready-to-run, the facility may perform blending, color matching, toning, and/or viscosity adjustments. All inks and coatings have unique formulations. Printpack requests to retain the existing 25 ton per year limitation for all hazardous air pollutants (HAPs) or 10 tons per year of any individual HAP in accordance with Section 112 of the Clean Air Act (minor/area source of HAPs). Volatile Organic compounds (VOCs) of Hazardous Air Pollutants (HAPs) used at the facility are included in Table 2.

Table 2: Chemical Usage

Chemical	CAS No.	Acute/Chronic AAC	HAP
Normal Propyl Alcohol	71-23-8	No	No
Ethyl Acetate	141-78-6	No	No
Isopropyl Alcohol	67-63-0	No	No
Normal Propyl Acetate	109-60-4	No	No
Ethyl Alcohol	67-17-5	No	No
Propylene Glycol N-Propyl Ether	1569-01-3	No	No
Glycol Ether Acetate PM	108-65-6	No	No
1-Ethoxy-2-Propanol	1569-02-4	No	No
Dipropylene Glycol Methyl Ether	34590-94-8	No	No
Normal Butyl Acetate	123-86-4	No	No
Fatty Acids, C16-18 & C18 Unsat	67762-38-3	No	No
2-Propoxy-1-Propanol	10215-30-2	No	No
2-EthoxyPropanol	19089-47-5	No	No
Heptane	142-82-5	No	No
Petroleum Spirits	8052-41-3	No	No
Isophorone Diamine	2855-13-2	No	No
SVM&P Naptha	64742-49-0	No	No
Petroleum HVY Aromatic SLV Naptha	64742-94-5	No	No
Hexamethylene Diisocyanate (HDI)	822-06-0	No	Yes
2-Methoxy-1-Propanol Acetate	70657-70-4	No	No
Propylene Glycol Methyl Ether	107-98-2	No	No
Methylene Bisphenyl Isocyanate (MDI)	101-68-8	No	Yes
Methylcyclohexane	108-87-2	No	No

Dipropylene Glycol N. Butyl Ether	29911-28-2	No	No
Methanol	67-56-1	Yes	Yes
Propylene Glycol	57-55-6	No	No
Tripropylene Glycol Monomethyl Ether	25498-49-1	No	No
Hydrotreated Distillate	64742-47-8	No	No
2,6-Di-T-Butyl-P-Cresol	128-37-0	No	No
Ethyl-diisopropylamine	7087-68-5	No	No
Phosphoric Acid Butyl Ester	12788-93-1	No	No
Butylaldehyde	123-72-8	No	No
T-Butanol	75-65-0	No	No
2-Hydroxyethyl Acrylate	818-61-1	No	No
Toluene	108-88-3	Yes	Yes
Lacquer Diluent		No	No
Diethylene Glycol Monobutyl Ether (Butyl Carbitol)	112-34-5	Yes	Yes
Normal Butanol	71-36-3	No	No
Lactol Spirits	64742-89-8	No	No
Acetone	67-64-1	No	No
Methyl Ethyl Ketone	78-93-3	No	Yes
Diocetyl Phthalate	117-84-2	No	No
Tetrahydrofuran	109-99-9	No	No
Dowanol (1-Methoxy-2-Propanol)	107-98-2	No	No
Butyl Phthalate	84-74-2	No	No
Methyl Isobutyl Ketone	108-10-1	Yes	Yes
Butyl Benzyl Phthalate	85-68-7	No	No
Amyl Alcohol (pentyl alcohol)	71-41-0	No	No
1-Methoxy-1-Propanol	107-98-2	No	No
2-Ethoxy Ethanol Acetate	111-15-9	No	No
Methyl 2-Pyrrolidone	872-50-4	No	No
Diethylene Glycol	111-46-6	No	No
Formaldehyde	50-00-0	Yes	Yes
Vinylidene Chloride Monomer	75-35-4	Yes	Yes
Hexalene Glycol	107-41-5	No	No
Triethylenetetramine	112-24-3	No	No
Propylene Glycol Phenyl Ether	770-35-4	No	No
Butyl Acetate	123-86-4	No	No
Ethylene Glycol Monopropyl Ether	2807-30-9	Yes	Yes
Styrene	100-42-5	Yes	Yes
Tridecyl Alcohol	112-70-9	No	No
Diacetone Alcohol	123-42-2	No	No
Zinc (II) Dibutyldithiocarbamate	136-23-2	No	No
Propylene Glycol Monoethyl Ether	52125-53-8	No	No
Naphtha (petroleum) hydrotreated heavy	64742-48-9	No	No
Heavy aromatic solvent naphtha	64742-94-5	No	No

2. Facility Emissions Summary

The Prescott Valley facility is in Yavapai County, Arizona which is in attainment with all ambient air quality standards. For the purposes of determining compliance with A.A. C. R18-2-2-406. Since the source does not classify as a categorical source, the NSR major source threshold for the site is a potential-to-emit (PTE) of 250 tons per year or more for any NSR pollutant. The Prescott Valley facility is currently permitted as a Minor Source under PSD/NSR and a Class I facility under the Title V program. Printpack's facility-wide potential to emit (PTE) VOC emissions is 201 tons per year using federally enforceable permit conditions or control requirements. To ensure the facility remains a NSR Minor Source, Printpack currently maintains a site-wide emission limitation of 225 tons per year of VOC emissions (90% of the NSR major source threshold). With the removal of equipment that was never installed, the PDS/NSR site-wide emission limitation is no longer needed. Printpack requests that the 225 tons per year emission limit be removed from the permit for compliance reporting purposes.

Based upon emission calculations and estimates as provided in Attachment 4.0, Table 3 provides a summary of potential to emit (PTE) for each source.

3. Hazardous Air Pollutants (HAPs) Emissions Summary

The flexible packaging converting operations performed in Prescott Valley, Arizona includes the use of printing inks, solvents, and adhesives. Each material has unique formulations that are reviewed and evaluated as part of a new chemical approval process. Since Printpack manufactures packaging materials that contact food products, Printpack works with material suppliers to eliminate any hazardous air pollutants (HAPs) or other toxic chemicals from the raw materials. Printpack manages the facility as a minor or area source of HAPs through the oversight of chemical approvals and air emission capture/control. Printpack requests to retain the existing 25 ton per year limitation for all hazardous air pollutants (HAPs) or 10 tons per year of any individual HAP in accordance with Section 112 of the Clean Air Act.

From January 1, 2022 through March 31, 2023, Printpack utilized 848 pounds of hazardous air pollutants as a component of ink or adhesive mixtures. This 848 pounds of HAPs does not account any capture and control of emissions. HAP chemicals utilized during this period include methylene bisphenyl isocyanate (CAS:101-68-8), methanol (CAS: 67-56-1), diethylene glycol (CAS:111-46-6), styrene (CAS:100-42-5), and hexamethylene diisocyanate (CAS: 822-06-0). Please note, approximately 813.7 pounds of the HAPs are isocyanates found in water-based adhesives that heavily react rather than emit as an air emission. The U.S. EPA has investigated isocyanates in coating operations and determined that actual emissions would be around 3 pounds per year for similar operations. Due to the insignificant quantities of HAPs found in material formulations, Printpack has not included emissions estimates of HAPs in this application.

Table 3: Overall Site-Wide Controlled Emissions for the Prescott Valley Facility

Source	CO Emissions (tpy)	NOx Emissions (tpy)	PM/PM10/PM2.5 Emissions (tpy)	SO2 Emissions (tpy)	VOC Emissions (tpy)	CO2 Emissions (tpy)
Press 1 (Press/Dryer/Coating)	2.26	2.69	0.20	0.02	16.71	3,252
Outboard Coating Station (Anti-Fog)	0	0	0	0	9.79	0
Press 4 (Press/Dryer)	0.75	0.89	0.07	0.01	25.63	1,074
AL-32 Solvent Laminator	0.34	0.41	0.03	0.00	37.63	495
EL-31 Extrusion Laminator	1.99	2.37	0.18	0.01	105.13	2,856
Automatic Parts Washer	0	0	0	0	2.02	0
Manual Parts Washer	0	0	0	0	0.32	0
Spill and Floor Cleaning	0	0	0	0	1.15	0
Distillation System Feed Tank	0	0	0	0	0.08	0
Bulk Solvent Storage Tanks (ST-01, ST-02, ST-03)	0	0	0	0	1.53	0
Bulk Dirty Solvent/Waste Storage Tanks (ST-04, ST-05)	0	0	0	0	0.01	0
Plate Washer	0	0	0	0	0.61	0
Adwest Regenerative Thermal Oxidizer	8.36	9.95	0.76	0.06	0.55	21,702
Overall PV Facility	19.60	23.33	1.77	0.14	201.08	38,038
NSR Major Source Threshold	250	250	250	250	250	
NSR Source Category	Minor	Minor	Minor	Minor	Minor	

4. Project Emissions Summary

The permit renewal application does not change emissions for existing equipment other than the plate washer unit. Printpack requests that permit-listed sources be removed from the permit since they were either removed from the facility or never constructed. Items removed include the catalytic oxidizer, press 3, and press 5. The relocation of the plate washer from within a total enclosure to an uncontrolled source will result in a slight increase (0.59 tons per year) in overall facility potential VOC emissions. Likewise, combustion emissions will decrease slightly by the removal of equipment from the permit. A summary of net change in potential emissions have been summarized in Table 3 below.

Table 4: Change in PTE for the Prescott Valley Facility

Pollutant	Existing PTE (tpy)	Proposed PTE (tpy)	Net Change in PTE (tpy)
Carbon Monoxide (CO)	19.60	12.66	- 6.94
Nitrogen Oxides (NO _x)	23.33	15.08	- 8.25
Particulate Mater (PM/PM10/PM2.5)	1.77	1.15	- 0.62
Sulfur Dioxide (SO ₂)	0.14	0.09	- 0.05
VOCs	247.09	201.08	- 36.06
Carbon Dioxide (CO ₂)	38,038	26,389	- 11,649

As indicated in Attachment 4.0, potential to emit calculation for each emission unit is based upon conservative estimates and process knowledge. For example, the existing printing presses operate between 4,000 and 5,000 hours per year. Due to job or production changeover timing, equipment cleaning, and maintenance downtime, Printpack established a maximum operating time of 68% uptime or 6,000 hours per year for press operations. Table 4 has been included to document when PTE calculations are not based upon 8,760 hours per year.

Table 5: Maximum Operating Conditions for the Prescott Valley Facility

Source	Maximum Operating Hours (hrs/year)	Source	Maximum Operating Hours (hrs/year)
Press 1 (Press/Coating)	6,550	Solvent Laminator (Coating)	6,000
Press 1 (Dryer)	8,760	Solvent Laminator (Dryers)	8,760
Press 1 (Corona Treaters)	8,760	Automatic Parts Washer	8,760
Outboard Coating Station (Anti-Fog)	8,760	Manual Parts Washer	8,760
Press 4 (Press)	6,000	Spill and Floor Cleaning	8,760
Press 4 (Dryer)	8,760	Distillation System Feed Tank	8,760
Press 4 (Corona Treater)	8,760	Bulk Solvent Storage Tanks (ST-01, ST-02, ST-03)	8,760
Extrusion Laminator (Extrusion/Coating)	3,500	Bulk Dirty Solvent/Waste Storage Tanks (ST-04, ST-05)	8,760
Extrusion Laminator (Dryers)	8,760	Plate Washer	8,760

4.0 Regulatory Applicability

Printpack has included this regulatory applicability summary to identify potential regulatory requirements, emission limitations, or other reporting concerns. These requirements will be discussed individually.

1. Title V Applicability

Printpack currently manages the facility in Prescott Valley under a Class I Permit (No. 71374). Potential emissions for the facility exceed the Title V major source threshold of 100 tons per year of VOCs. No other pollutant has potential emissions that could exceed the Title V major source threshold. The Prescott Valley manufacturing facility averages around 50 tons per year for VOCs in actual emissions.

2. New Source Review (NSR) Applicability

Under A.A.C. R18-2-334, Minor New Source Review provisions apply to the following:

- 1) the construction of a Class I or Class II source; or
- 2) any modification to a minor NSR Class I or Class II facility.

The Printpack facility is located in Yavapai County, Arizona which is in attainment with all ambient air quality standards. The Prescott Valley facility has accepted federally enforceable permit conditions that ensure all NSR pollutants do not exceed the major source threshold of 250 tons per year under Class I Permit (No. 71374).

This renewal application involves the physical change in an emission unit or stationary source that results in emissions of a minor NSR pollutant that was either not previously emitted or in a quantity greater than the permitting exemption threshold. An increase in emissions at a minor source shall be determined by comparing the source's potential to emit before and after the modification. This plant modification involves the relocation of one emission unit that will result in 0.6 tons per year of VOCs. No NSR pollutants exceed the permitting exemption threshold. This Class I Permit renewal is not subject to the requirements established under the Minor New Source Review program for VOC emissions.

For each regulated minor NSR pollutant (i.e. VOCs), A.A.C. R18-2-334.C establishes the requirement for Printpack to either implement Reasonably Available Control Technology (RACT) or perform an ambient air quality assessment to demonstrate the project will not impact ambient air quality standards. Rather than performing air modeling, Printpack has included the necessary application forms for a Class I permit (Attachment 1) and a RACT determination as found in Attachment 5.

Printpack requests the removal of the federally enforceable permit condition to limit site-wide emissions to less than 225 tons of VOC per year. Based upon PTE calculations of all equipment, the NSR major source threshold value is not exceeded or approached. This permit limitation is no longer needed following the removal of equipment that was never constructed.

3. Prevention of Significant Deterioration (PSD) Applicability (40 CFR, Part 52)

Printpack is a Minor Source with respect to Prevention of Significant Deterioration (PSD). This project is neither a new source or a modification of an existing source that exceeds

the NSR major source threshold of 250 tons per year of any NSR pollutant. Yavapai County, Arizona is in attainment for all ambient air quality standards. PSD requirements do not apply.

4. New Source Performance Standards (NSPS) Applicability (40 CFR Part 60/61)

There is not a New Source Performance Standards (NSPS) that applies to flexographic printing or adhesive laminating processes. The bulk solvent storage tanks are not of sufficient size for coverage under storage tank regulations. NSPS requirements do not apply.

5. Nation Emissions Standards for Hazardous Air Pollutants (NESHAPs) Applicability

Printpack's Prescott Valley facility has a federally enforceable permit condition that limits the emissions of hazardous air pollutants (HAPs) to less than 25 tons per year total HAPS and less than 10 tons per year of any individual HAP. This permit condition ensures the facility remains an "area source" under the NESHAP program. Printpack requests to retain this enforceable permit condition.

40 CFR, Part 63, Subpart KK

Printpack is an Area Source with respect to HAP emissions. Usage is less than 10 tons per year (TPY) for each individual HAP, and less than 25 TPY for all HAPs combined. Printpack has a federally enforceable permit limit of 25 tons of total HAP emissions or 10 tons of each individual HAP emitted from the Prescott Valley facility. Subpart KK applies to new or existing **major sources** of HAPs where publication rotogravure, product and packaging rotogravure, or narrow/wide web flexographic printing presses are operated. Printpack is subject to the requirements of Subpart KK. Section 63.820(a)(2) of this subpart states that each new or existing facility may choose to commit to criteria of less than 10 tpy (12-month rolling total) of a single HAP or 25 tpy (12-month rolling total) of total HAPs. The standard did not require federally enforceable permit conditions at the time of original publication. Since the facility has accepted the federally enforceable emission limitations for HAPs and performs the prescribed tracking, only provision 63.829(d) and 63.830(b)(1) of this subpart apply. Notifications and area source requirements are currently maintained.

40 CFR, Part 63, Subpart JJJJ

Printpack is an Area Source with respect to HAP emissions at the Arizona facility. Usage is less than 10 tons per year (TPY) for each individual HAP, and less than 25 TPY for all HAPs combined. Subpart JJJJ applies to new or existing **major sources** of HAPs where paper and other web coating operations occur. Although operations involves laminating or coating equipment, the facility is not a major source of HAPs. Printpack has a federally enforceable permit limit of 25 tons of

total HAP emissions or 10 tons of each individual HAP emitted from the facility. This subpart does not apply. Printpack hereby requests that the existing HAP limitation be retained as part of this permit modification.

6. Arizona Regulations – A.A.C. Title 18, Chapter 2

R-18-2-602

This subpart applies to non-point source emissions such as open areas, roadways, streets, open burning, and any external material handling. This standard applies to the parking lots, access roads, and undeveloped land at the facility. Section 602 prohibits outdoor burning. Section 604 requires reasonable precautions to limit excessive particulate emissions from roadways, and vacant lots. Section 605 requires efforts to control particulate matter from becoming airborne from construction or repair of roadways. Section 605 establishes precautions from particulate matter becoming airborne from handling or transporting raw materials.

R-18-2-730.A-C

This subpart applies to unclassified sources and establishes emission limits for particulate matter, sulfur dioxide, and nitrogen oxides. This standard applies to the facility. Sources of all three pollutants are associated with the regenerative thermal oxidizer and the extruder laminator exhaust points.

R-18-2-730.D

This subpart applies to unclassified sources and establishes a requirement to limit gaseous or odorous materials in quantities or concentrations that cause air emissions. This standard applies to the facility site-wide.

R-18-2-730.F

This subpart applies to unclassified sources and establishes requirement that all inks, solvent, adhesives, or other VOC containing materials be managed to prevent spills, evaporation, or air emissions from storage, use, or transport. This standard applies to the facility site-wide. Printpack complies using solvent management practices. Containers shall remain closed except while being used.

R-18-2-730.G

This subpart applies to unclassified sources and establishes requirements regarding the discharge of air pollution from a stack, vent, or other outlet that could result in impact to a neighboring property. This standard could require the facility to install abatement equipment or alter the emission point to adequately dilute, reduce, or eliminate such emissions. This standard applies to the facility site-wide.

The facility has installed control equipment for most emission sources. The Director has not required additional efforts to date.

7. Acid Rain Program

Printpack is not subject to the acid rain program based upon operations and emissions.

5.0 Pollution Control Strategy

Printpack currently employs an Adwest 80,000 SCFM regenerative thermal oxidizer to control air emissions from a permanent total enclosure (PTE) room. Sources captured and controlled within the Press Department enclosure includes one printing press, the outboard coating station, the ink room, automatic parts washer, the manual parts washer, and any cleaning operations.

Printpack collects emissions from printing press 4 and AL-32 solvent-based laminator enclosures. Each new device was installed with process enclosures that will ensure 100% capture. An enclosure room will be installed on the central impression drum side of the press to capture and control emissions from any ink or solvent storage or transfer activities. Emissions from the printing and lamination equipment, along with smaller PTE rooms, will be collected and routed to the Adwest RTO (97.5% destruction efficiency).

Printpack requests a federally enforceable permit condition to capture and control emissions from process equipment as specified in Class I Permit (No. 71374). The collection and control system will be designed with process interlocks that will automatically shut down any controlled source in the event that the oxidizer is not achieving the desired operating temperature or the process ductwork pressure does not ensure 100% capture.

For energy efficiency purposes, Printpack requests permission to shutdown capture and control systems when all processes are down and solvent containers are closed. Example language has been included in Attachment 7.

Printpack requests the continuance of the AL-32 laminator alternate operating scenario as established in Class I Permit (No. 71374). Laminator AL-32 is capable of applying solvent-based, water-based, or solventless coatings. Printpack requests permission to exhaust air emissions from the laminator to atmosphere while applying water-based or solventless coatings. Since VOC emissions will be low or negligible, routing these emissions to the RTO will supply a lean air stream and decrease the bed temperature of the control device. To continue RTO compliance temperatures, Printpack would have to supply additional natural gas and create actual combustion byproducts while no additional VOC control occurs.

Printpack requests the extension of requirements track material usage and to monthly inspect/monitor dampers to ensure proper operation. The collection system will be designed to operate under pressure. Should a bypass damper not seal properly when routing to a control device, the negative pressure on the system would cause external air to be pulled into the collection system and reduce the negative pressure on the system. If the pressure inside the capture system becomes more positive (compared to a compliance setpoint), an interlock would

immediately shutdown all associated manufacturing processes. At no time will equipment be able to operate without controls, unless allowed for solventless or water-based coatings on the laminator.

Under Class I Permit (No. 71374), Printpack and ADEQ established that the use of the Adwest RTO represents RACT under A.A.C. R18-2-334.C. Printpack has updated a RACT determination under Attachment 5. Compliance assurance monitoring elements for the Adwest control device are include in Attachment 6.

6.0 Exempt, Insignificant, or Trivial Activities

Printpack has included this list of insignificant, categorically exempt, or trivial activities that are not otherwise subject to any requirement as defined in A.A.C. Title 18, Chapter 2. Contents of this list are either exempt from permitting or exempt from inclusion in the air permit application.

Table 6: Exemptions, Insignificant Activities

Source or Activity	Citation or Basis	Description
Emergency Generator or Stand-by engines Operated less than 500 hours per year	R18-2-302.C	None present onsite currently. Printpack requests this be listed in the permit to accommodate future changes should the need arise.
Liquid Storage and Piping Liquid Storage and piping: Storage piping of natural gas, butane, propane, or lpg with a volume of 350 gallons or more.	Insignificant Activity	Inks and solvent totes and drums
Liquid Storage and Piping Liquid Storage and piping: Storage and Handling of Drums or other transportable sealed containers	Insignificant Activity	Inks and solvent totes and drums
Storage tanks of any size that contain solutions of soaps, detergents, waxes, greases, aqueous salts that are not regulated.	Insignificant Activity	Caustic or other aqueous chemicals including Cylinder cleaner
Internal combustion engine driven water pumps or generator sets used for less than 500 hours per year	Insignificant Activity	None present onsite currently. Printpack requests this be listed in the permit to accommodate future changes should the need arise.
Low emitting processes: Batch mixers with a rated capacity of 5 cubic feet or less	Insignificant Activity	Agitators or mixers associated with coating or ink reservoirs.
Low emitting processes: Equipment using water soap or detergent for cleaning	Insignificant Activity	Floor cleaners and scrubbers
Site Maintenance: housekeeping activities and associated products used for cleaning purposes	Insignificant Activity	Normal maintenance activity
Site Maintenance: Sanding of streets and roads to abate traffic hazards caused by snow or ice.	Insignificant Activity	Normal maintenance activity
Site Maintenance: Street and parking lot striping	Insignificant Activity	Normal maintenance activity
Site Maintenance: Architectural painting and surface preparation	Insignificant Activity	Normal maintenance activity
Sampling and Testing: Non-commercial (in-	Insignificant Activity	QC laboratory equipment

house) experimental, analytical laboratory equipment including QC labs		
Sampling and Testing: Individual sampling points, analyzers, and process instrumentation whose operation may result in emissions	Insignificant Activity	Stack testing ports, monitoring equipment & connections (i.e. LEL sensors, flow sensors, ect.), calibration equipment and/or gases
Non-Industrial Activities: General office activities such as shredding, copying, photographic activities	Insignificant Activity	Standard office and support equipment and operations
Non-Industrial Activities: Use of consumer products used in a manner as a normal consumer	Insignificant Activity	Housekeeping efforts and cleaning chemicals
Misc. Activities: Installation and operation of potable, process, and wastewater observation wells	Insignificant Activity	None present onsite currently. Printpack requests this be listed in the permit to accommodate future changes should the need arise.
Low-Emitting Combustion: Combustion emissions from propulsion of mobile sources	Trivial Activity	Forklift or other mobile sources.
Low-Emitting Combustion: Portable emergency generators moved by hand	Trivial Activity	None present onsite currently. Printpack requests this be listed in the permit to accommodate future changes should the need arise.
Low- or Non-Emitting Industrial Activities: Hand-held or manually operated equipment for buffing, cutting, drilling, sawing, machining	Trivial Activity	Normal maintenance equipment
Low- or Non-Emitting Industrial Activities: Brazing, welding, cutting torches, or soldering equipment for plant maintenance	Trivial Activity	Normal maintenance equipment
Low- or Non-Emitting Industrial Activities: Drop hammers or hydraulic presses	Trivial Activity	Normal maintenance equipment
Low- or Non-Emitting Industrial Activities: Air compressors and pneumatically operated equipment	Trivial Activity	Normal maintenance equipment
Low- or Non-Emitting Industrial Activities: Batteries and battery charging stations	Trivial Activity	Normal maintenance equipment
Low- or Non-Emitting Industrial Activities: Electric or steam heated drying ovens or autoclaves	Trivial Activity	Electric heaters
Low- or Non-Emitting Industrial Activities: Laser trimmers using dust collection to prevent fugitive emissions	Trivial Activity	Laser Cylinder Cleaner
Low- or Non-Emitting Industrial Activities: Ozone Generators	Trivial Activity	Corona Treaters
Low- or Non-Emitting Industrial Activities: Process water filtration systems and demineralizers	Trivial Activity	None present onsite currently. Printpack requests this be listed in the permit to accommodate future changes should the need arise.
Low- or Non-Emitting Industrial Activities: Vacuum trucks and high-pressure washer/cleaning equipment	Trivial Activity	Emergency response activities for spills or cleanup
Building & Site Maintenance: building maintenance, ground keeping, general repairs,	Trivial Activity	Normal maintenance activities

painting, welding.		
Building & Site Maintenance: Maintenance shop activities from degreasing, solvent metal cleaning activities.	Trivial Activity	Normal maintenance activities
Building & Site Maintenance: Janitorial services and consumer use of janitorial products.	Trivial Activity	Normal housekeeping or janitorial activities
Building & Site Maintenance: Landscaping services	Trivial Activity	Normal maintenance activities
Building & Site Maintenance: Routine calibration and maintenance of laboratory or other analytical instruments.	Trivial Activity	Normal maintenance activities
Building & Site Maintenance: Street and parking lot striping	Trivial Activity	Normal maintenance activities
Building & Site Maintenance: Caulking operations which are not part of production process.	Trivial Activity	Normal maintenance activities
Incidental, Non-Industrial Activities: Air conditioning units	Trivial Activity	Multiple units onsite
Incidental, Non-Industrial Activities: Ventilation units for human comfort that do not exhaust air pollutants	Trivial Activity	Normal maintenance activities
Incidental, Non-Industrial Activities: general office activities such as paper shredding, copying, photographic activities, pencil sharpening, and blueprinting	Trivial Activity	Normal office activities
Incidental, Non-Industrial Activities: Ventilation from bathrooms and toilets	Trivial Activity	Normal maintenance activities
Building & Site Maintenance: Adhesive use not related to production	Trivial Activity	Normal maintenance activities
Storage, Piping, and Packaging: Storage tanks, vessels or containers containing liquids that do not emit VOC or HAP.	Trivial Activity	water/condensate tanks
Storage, Piping, and Packaging: Storage cabinets for flammable products.	Trivial Activity	Flammable storage cabinets throughout facility
Storage, Piping, and Packaging: Natural gas pressure regulator vents	Trivial Activity	All natural gas firing equipment including control devices.
Storage, Piping, and Packaging: Sampling and testing	Trivial Activity	Normal plant activities
Storage, Piping, and Packaging: bench-scale laboratory equipment for chemical or physical analysis	Trivial Activity	Normal plant activities
Storage, Piping, and Packaging: Equipment used for quality control, quality assurance, or inspection purposes	Trivial Activity	Normal plant activities
Safety Activities: Fire suppression systems	Trivial Activity	Normal plant activities
Safety Activities: High voltage induced corona	Trivial Activity	Normal plant activities
Safety Activities: Filter	Trivial Activity	Normal plant activities

Further discussion of insignificant sources is found in Attachment 4.

7.0 Emission Modeling

In accordance with the Arizona Minor NSR Permitting program (A.A.C. R18-2-334), Printpack must include either a RACT determination to minimize air emissions or perform approved air modeling to demonstrate compliance with ambient air quality standards. Following the completion of the proposed modification, PTE emissions from combustion by-products (ie. CO, PM10, PM2.5, SO2, and NOx) are below the permitting exemption threshold. VOC emissions from the renewal will not exceed the permitting exemption threshold. As such, Printpack continues to opt to implement RACT controls to minimize VOC emissions from the site. No ambient air quality modeling demonstration has been included as part of his application.

8.0 Compliance Certification and/or Plan

The Printpack facility located at 6800 East 2nd Street in Prescott Valley, Arizona is in compliance with all applicable rules and permit conditions with the exception of the control of emissions of the plate washer. Printpack has notified the agency that emissions are monitored and tracked as uncontrolled emissions until the permit is re-opened and modified. This renewal application documents the change in equipment location. The facility currently is operating under Air Quality Control Permit No. 71374. Prevention of Significant Deterioration, Major source New Source Review, and New Source Performance Standard (NSPS) do not apply to the facility or application. The facility continues to monitor Hazardous Air Pollutants (HAPs) utilized and emitted to ensure a minor or area source designation.

This certification is based on a review of the conditions found in the ADEQ Class I Permit 71374. Compliance with all limits and conditions are tracked via a comprehensive solvent, ink, and adhesive computer tracking system. The oxidizer destruction efficiency has been determined to meet the 97.5% destruction efficiency using ADEQ approved test protocols and EPA test methods. EPA Method 201 has been used to verify the capture efficiency of the press room total enclosure. Continuing compliance is demonstrated by monitoring the oxidizers operating conditions. No compliance plan is required at this time.

Based upon the information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.


Lonnie McKinley

Plant Manager and Responsible Official

May 15, 2023

Date

9.0 Requested Permit Conditions

Printpack hereby requests the renewal of Class I Permit Number 71374. Printpack has made edits to Permit 71374 with redline markups of requested changes as provided in Attachment 7.

Attachment 1

Class I Permit Application Forms

SECTION 2.1
ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
Air Quality Division
1110 West Washington • Phoenix, AZ 85007 • Phone: (602) 771-2338

STANDARD CLASS I PERMIT APPLICATION FORM

(As required by A.R.S. § 49-426, and Chapter 2, Article 3, Arizona Administrative Code)

1. Permit to be issued to (Business license name of organization that is to receive permit):

2. Mailing Address: _____
City: _____ State: _____ ZIP: _____
3. Name (or names) of Owners/ Principals: _____
Phone: _____ Fax: _____ Email: _____
4. Name of Owner's Agent: _____
Phone: _____ Fax: _____ Email: _____
5. Plant/Site Manager/ Contact Person and Title: _____
Phone: _____ Fax: _____ Email: _____
6. Plant Site Name: _____
7. Plant Site Location Address: _____
City: _____ County: _____ Zip Code: _____
Indian Reservation (if applicable, which one): _____
Latitude/ Longitude, Elevation: _____
Section/ Township/ Range: _____
8. General Nature of Business: _____
9. Type of Organization:
 Corporation Individual Owner Partnership Government Entity (Government Facility Code-----)
 Other _____
8. Permit Application Basis: New Source Revision Renewal of Existing Permit
(Check all that apply.)
For renewal or modification, include existing permit number (and exp. date): _____
Date of Commencement of Construction or Modification: _____
Primary Standard Industrial Classification Code: _____
9. I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by ADEQ as public record. I also attest that I am in compliance with the applicable requirements of the Permit and will continue to comply with such requirements and any future requirements that become effective during the life of the Permit. I will present a certification of compliance to ADEQ no less than annually and more frequently if specified by ADEQ. I further state that I will assume responsibility for the construction, modification,

or operation of the source in accordance with Arizona Administrative Code, Title 18, Chapter 2 and any permit issued thereof.

Signature of Responsible Official: Lonnie McKinley

Official Title of Signer: Plant Manager

Typed or Printed Name of Signer: Lonnie McKinley

Date: May 15, 2023 Telephone Number: (404) 460-7413

SECTION 2.2 - EMISSION SOURCES

Estimated "Potential to Emit" per A.A.C. R18-2-101.

Review of applications and issuance of permits will be expedited by supplying all necessary information on this Table.

REGULATED AIR POLLUTANT DATA					EMISSION POINT DISCHARGE PARAMETERS									
EMISSION POINT [1]		CHEMICAL COMPOSITION OF TOTAL STREAM	AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION POINT [5]			STACK SOURCES [6]			NONPOINT			
NUMBER	NAME	REGULATED AIR POLLUTANT NAME [2]	#/HR. [3]	TONS/YEAR [4]	ZONE	EAST (Mtrs)	NORTH (Mtrs)	HEIGHT ABOVE GROUND (feet)	HEIGHT ABOVE STRUC. (feet)	EXIT DATA			SOURCES [7]	
										DIA (ft.)	VEL. (fps)	TEMP. (°F)	LENGTH (ft.)	WIDTH (ft.)

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL _____ feet
 ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

****Submit emission calculations spreadsheet with your application****

General Instructions:

1. Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.
2. Components to be listed include regulated air pollutants as defined in A.A.C. R18-2-101. Examples of typical component names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO₂), Volatile Organic Compounds (VOC), particulate matter (PM), particulate less than 10 microns (PM₁₀), etc. Abbreviations are O.K.
3. Pounds per hour (#/HR) is maximum potential emission rate expected by applicant.
4. Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule.
5. As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.
6. Supply additional information as follows if appropriate:
 - (a) Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.
 - (b) Stack's height above supporting or adjacent structures if structure is within 3 "stack height above the ground" of stack.
7. Dimensions of nonpoint sources as defined in A.A.C. R18-2-101.

SECTION 2.2 - EMISSION SOURCES

Estimated "Potential to Emit" per A.A.C. R18-2-101.

Review of applications and issuance of permits will be expedited by supplying all necessary information on this Table.

REGULATED AIR POLLUTANT DATA					EMISSION POINT DISCHARGE PARAMETERS									
EMISSION POINT [1]		CHEMICAL COMPOSITION OF TOTAL STREAM	AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION POINT [5]			STACK SOURCES [6]			NONPOINT			
NUMBER	NAME	REGULATED AIR POLLUTANT NAME [2]	#/HR. [3]	TONS/YEAR [4]	ZONE	EAST (Mtrs)	NORTH (Mtrs)	HEIGHT ABOVE GROUND (feet)	HEIGHT ABOVE STRUC. (feet)	EXIT DATA			SOURCES [7]	
										DIA (ft.)	VEL. (fps)	TEMP. (°F)	LENGTH (ft.)	WIDTH (ft.)

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL _____ feet
ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

****Submit emission calculations spreadsheet with your application****

General Instructions:

1. Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.
2. Components to be listed include regulated air pollutants as defined in A.A.C. R18-2-101. Examples of typical component names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO₂), Volatile Organic Compounds (VOC), particulate matter (PM), particulate less than 10 microns (PM₁₀), etc. Abbreviations are O.K.
3. Pounds per hour (#/HR) is maximum potential emission rate expected by applicant.
4. Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule.
5. As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.
6. Supply additional information as follows if appropriate:
 - (a) Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.
 - (b) Stack's height above supporting or adjacent structures if structure is within 3 "stack height above the ground" of stack.
7. Dimensions of nonpoint sources as defined in A.A.C. R18-2-101.

SECTION 2.2 - EMISSION SOURCES

Estimated "Potential to Emit" per A.A.C. R18-2-101.

Review of applications and issuance of permits will be expedited by supplying all necessary information on this Table.

REGULATED AIR POLLUTANT DATA					EMISSION POINT DISCHARGE PARAMETERS									
EMISSION POINT [1]		CHEMICAL COMPOSITION OF TOTAL STREAM	AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION POINT [5]			STACK SOURCES [6]			NONPOINT			
NUMBER	NAME	REGULATED AIR POLLUTANT NAME [2]	#/HR. [3]	TONS/YEAR [4]	ZONE	EAST (Mtrs)	NORTH (Mtrs)	HEIGHT ABOVE GROUND (feet)	HEIGHT ABOVE STRUC. (feet)	EXIT DATA			SOURCES [7]	
										DIA (ft.)	VEL. (fps)	TEMP. (°F)	LENGTH (ft.)	WIDTH (ft.)

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL _____ feet
 ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

****Submit emission calculations spreadsheet with your application****

General Instructions:

1. Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.
2. Components to be listed include regulated air pollutants as defined in A.A.C. R18-2-101. Examples of typical component names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO₂), Volatile Organic Compounds (VOC), particulate matter (PM), particulate less than 10 microns (PM₁₀), etc. Abbreviations are O.K.
3. Pounds per hour (#/HR) is maximum potential emission rate expected by applicant.
4. Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule.
5. As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.
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										DIA (ft.)	VEL. (fps)	TEMP. (°F)	LENGTH (ft.)	WIDTH (ft.)

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL _____ feet
ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

****Submit emission calculations spreadsheet with your application****

General Instructions:

1. Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.
2. Components to be listed include regulated air pollutants as defined in A.A.C. R18-2-101. Examples of typical component names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO₂), Volatile Organic Compounds (VOC), particulate matter (PM), particulate less than 10 microns (PM₁₀), etc. Abbreviations are O.K.
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5. As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.
6. Supply additional information as follows if appropriate:
 - (a) Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.
 - (b) Stack's height above supporting or adjacent structures if structure is within 3 "stack height above the ground" of stack.
7. Dimensions of nonpoint sources as defined in A.A.C. R18-2-101.

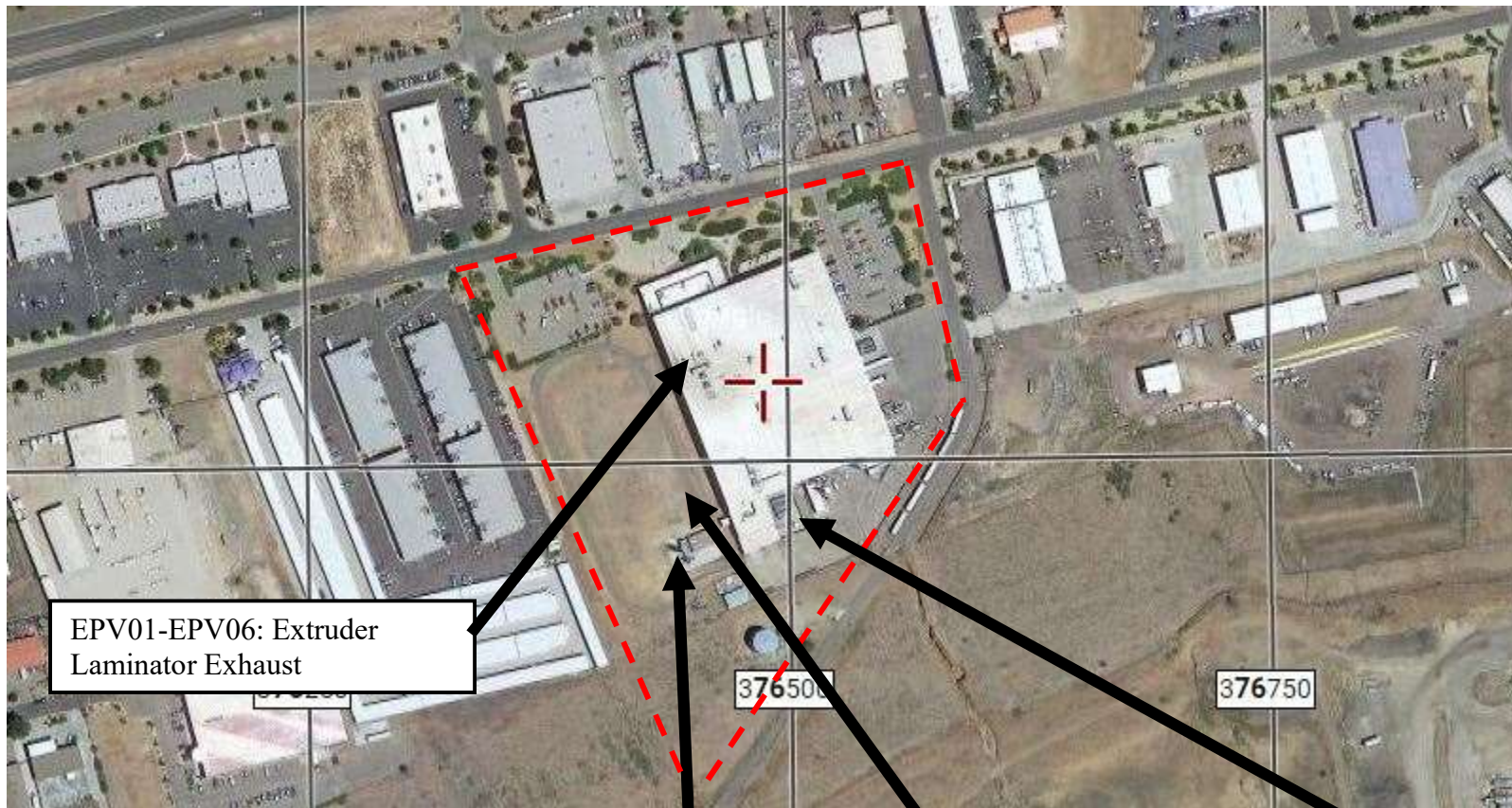
SECTION 4.0 - APPLICATION ADMINISTRATIVE COMPLETENESS CHECKLIST

	REQUIREMENT	MEETS REQUIREMENTS			COMMENT
		YES	NO	N/A	
1	Has the standard application form been completed?				
2	Has the responsible official signed the standard application form?				
3	Has a process description been provided?				
4	Are the facility's emissions documented with all appropriate supporting information?				
5	Is the facility subject to Minor NSR requirements? If the answer is "YES", answer 6a, 6b and 6c as applicable. If the answer is "NO", skip to 7.				
6.a	If the facility chooses to implement RACT, is the RACT determination included for the affected pollutants for all affected emission units?				
6.b	If the facility chooses to demonstrate compliance with NAAQS by screen modeling, is the modeling analysis included?				
6.c	If refined modeling has been conducted, is a comprehensive modeling report along with all modeling files included?				
7	Does the application include an equipment list with the type, name, make, model, serial number, maximum rated capacity, and date of manufacture?				
8	Does the application include an identification and description of Pollution Controls? (if applicable)				
9	For any application component claimed as confidential, are the requirements of AR.S. 49-432 and A.A.C. R18-2-305 addressed?				
10	For any current non-compliance issue, is a compliance schedule attached?				
11	For minor permit revision that will make a modification upon submittal of application, has a suggested draft permit been attached?				
12	For major sources, have all applicable requirements been identified?				
13	For major sources, has a CAM applicability analysis been provided? For CAM applicable units, have CAM plans been provided?				
14	For major sources subject to requirements under Article 4 of the A.A.C., have all necessary New Source Review analyses identified in the application been presented?				

Attachment 2

Facility Drawings or Figures

Property Boundary & Emission Points



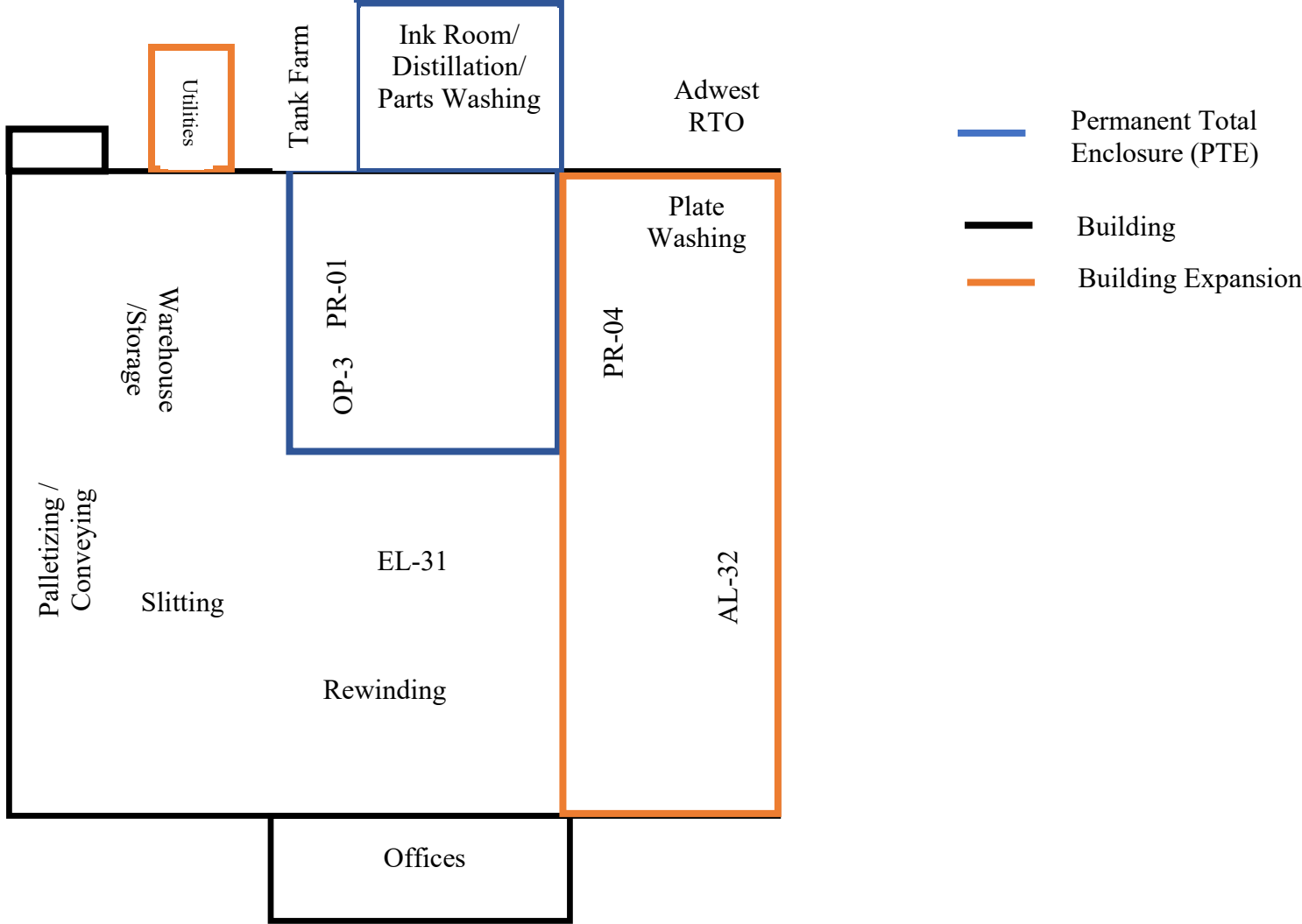
- - - Property Boundary

I02: Adwest RTO

Plate Washer: Building fugitives.
Building expansion not visible in aerial photo.

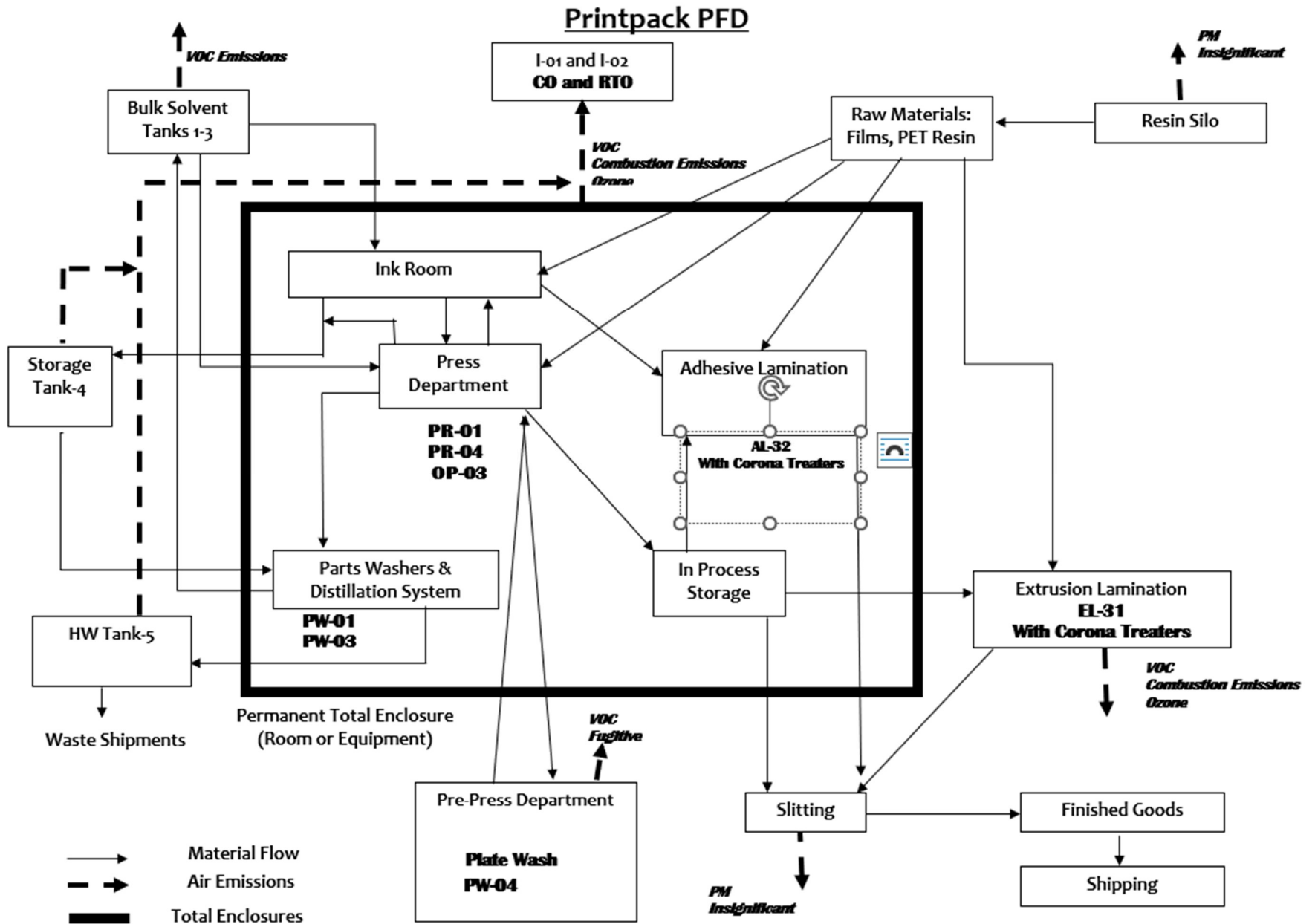
STV-01	Bulk
STV-02	Storage
STV-03	Tanks
STV-04	
STV-05	

Building Layout



Attachment 3

Process Flow Diagram



Attachment 4

Emission Estimates & Calculations

Emission Estimates and Calculations

The Printpack facility's flexible packaging operation results in air emissions from the use of inks, solvents, adhesives as part of converting operations. Prior to any printing or coating, Printpack utilizes corona treaters to prepare the film surface. Corona treaters use electrical arcs that convert atmospheric oxygen to ozone. Once printing or lamination occurs, dryers utilize natural gas as a combustion fuel. Printed or laminated, wide-web films are slit into smaller rolls and prepared for delivery to customers. Air emissions from collected sources are routed to a control device which is heated using natural gas.

The press department at Printpack's Prescott Valley facility is totally enclosed and operated under a negative pressure. Total enclosure of the press room is constructed of permanent walls that separate it from the rest of the plant. Access to the press room is through self-closing man doors and overhead doors. Floor sweeps for the press room total enclosure include the ink room and pan cleaning room is ducted to the oxidizer. The effect of this design is that all emissions (both fugitive and process) from the ink room, press room, and parts washer room are captured and delivered to the oxidizer. Off-gas from the extruder, inside the total enclosure, is captured and sent through a ceramic filter before it is delivered to the oxidizer.

The enclosure also contains atmospheric pressure relief dampers in one wall. The enclosure has been designed to meet EPA's total enclosure design requirements.

As part of the proposed recapitalization project, Printpack proposes the addition of one flexographic printing press within the existing press department total enclosure. The project also includes a 38,000 square foot expansion adjacent to the press enclosure. This expansion will not be designed as a total enclosure room, rather each device utilizing VOC containing materials shall be designed with total enclosures or 100% capture around all VOC sections (individual enclosures).

Off-gas from the extrusion lamination equipment outside of the total enclosure is release to atmosphere. Slitting operations and bag machines emit inside the manufacturing building and represent fugitive sources.

Emission estimates have been included for all emission sources found at the Prescott Valley Facility. Some details or sources may apply to insignificant or exempt sources. Table 1, as found below, identifies equipment and connections to any capture and control system. Table 2 provides a site-wide summary of emissions.

Table 1: Potential Pollutants by Source

Source	Capture/Control System	Pollutants
Press-01 (Press/Coating/ Dryers)	I02: Adwest RTO	CO, NO _x , SO ₂ , PM10/2.5, VOC, HAP, Ozone
OP-03: Outboard Coating Station	I02: Adwest RTO	VOC, HAP
Press-04	I02: Adwest RTO	CO, NO _x , SO ₂ , PM10/2.5, VOC, HAP, Ozone
AL-32: (Laminator/Coating/ Dryers)	I02: Adwest RTO	CO, NO _x , SO ₂ , PM10/2.5, VOC, HAP, Ozone
PW-01: Manual Part Washer	I02: Adwest RTO	VOC, HAP
PW-03: Automatic Part Washer	I02: Adwest RTO	VOC, HAP
PW-04: Plate Washer	None	VOC, HAP
Spill and Floor Cleaning	I02: Adwest RTO	VOC, HAP
ST-04: Dirty/Mop Solvent Tank	I02: Adwest RTO	VOC, HAP
ST-05: Still Bottoms Waste Tank	I02: Adwest RTO	VOC, HAP
EL-31: Extrusion Laminator	None	CO, NO _x , SO ₂ , PM10/2.5, VOC, HAP, Ozone
DFT-01: Distillation Feed Tank	None	VOC, HAP
ST-01: Bulk Solvent Tank No.1	None	VOC, HAP
ST-01: Bulk Solvent Tank No.2	None	VOC, HAP
ST-01: Bulk Solvent Tank No.3	None	VOC, HAP
Slitter No. 61	None	PM (Fugitive)
Slitter No. 64	None	PM (Insignificant)
Slitter No. 67	None	PM (Insignificant)
Slitter No. 68	None	PM (Insignificant)
Slitter No. 69	None	PM (Fugitive)
Resin Silo	None	PM (Insignificant)
Anilox Washer	None	None (Caustic)
Anilox Laser Cleaner	None	None (Trivial)
Edge Trim Cyclones	None	None/PM (Insignificant)

1. Natural Gas Combustion Sources

Emission estimates from the combustion of natural gas are based upon U.S. EPA AP-42 factors (Fifth Edition). The AP-42 emissions factors utilized in emissions estimates are included in Table 3.

Each printing press is equipped with in-between dryers and finish dryers that utilize natural gas combustion to supply process heat. The extrusion and solvent-based laminator are designed with natural gas fired dryers. Overhead dryer temperature is 150°F and between color and outboard coating dryer temperature are 250°F. No solvent or VOC combustion occurs within the dryer ovens. The facility also maintains multiple natural gas fired space heaters for comfort heating. A summary of the maximum gas firing rate is outlined in Table 4.

Table 3: AP-42 Natural Gas Emission Factors

Pollutant	Emission Factor (lb/MMft ³)
NMOC (VOC)	5.5
NO _x	100
CO	84
SO ₂	0.6
TSP (PM/PM10/PM2.5)	7.6

Table 4: Combustion Source Details by Source

Source	Maximum Hourly Firing Rate (MMBTU/hr)	Annual Operating Hours (hrs/yr)	Annual Gas Usage (ft ³)
Press-01 Dryers	6.27	8,760	53,874,000
Press-04 Dryers	2.07	8,760	17,792,788
AL-32 Dryers	0.95	8,760	8,193,176
EL-31 Dryers	5.51	8,760	47,304,000
I02: Adwest RTO	20.3	8,760	174,341,176
Total	35.10		301,455,140
Space Heater/Unit #1	0.25	8,760	2,147,059
Space Heater/Unit #2	0.25	8,760	2,147,059
Space Heater/Unit #3	0.25	8,760	2,147,059
Space Heater/Unit #4	0.35	8,760	3,005,882
Space Heater/Unit #5	0.5	8,760	4,294,118
Space Heater/Unit #6	0.5	8,760	4,294,118
Space Heater/Unit #7	0.85	8,760	7,300,000
Space Heater/Unit #8	0.85	8,760	7,300,000
Space Heater/Unit #9	0.85	8,760	7,300,000
Water Heater	0.19	8,760	
AHU#12	Electric	8,760	--
Laboratory	Electric	8,760	--
Comp Unit	Electric	8,760	--
Warehouse	Electric	8,760	--
Total	4.65		39,935,294
Site-Wide Total	39.75		341,390,435

Oxidizer emissions result from the partial combustion of natural gas and the incomplete conversion of captured process off gas. The emissions from process gas combustion are discussed later in this Attachment. Natural gas usage by the control equipment is a function of the amount of supplemental energy required to maintain proper combustion temperature or the

control device and the heat recovery efficiency of the primary heat exchanger in the oxidizer's system.

Emission calculations, as shown in Table 5, are performed using the following equation:

$$(\text{MMBtu/Hr}) \times (\text{Hrs/Yr}) \times (\text{CF}/1020 \text{ Btu}) = \text{MMCF/Yr}$$

$$(\text{MMCF/Yr}) \times (1,000,000 \text{ CF/MMCF}) \times (1 \text{ yr}/8760) = \text{CF/hr}$$

$$(\text{CF/hr}) \times (\text{AP-42 Emission Factor lbs/CF}) = \text{lbs Pollutant/hr}$$

$$(\text{lbs Pollutant/hr}) \times (8760 \text{ hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs}) = \text{tons Pollutant/yr}$$

For CO₂ equivalents calculations, the methodology is the same using EPA AP-42 factors for CO₂, N₂O, and CH₄. Using a global warming potential conversion factor of 310 pounds of CO₂eq for every pound of N₂O and 21 pounds of CO₂eq for every pound of CH₄. CO₂eq emission calculations are shown on the calculation tables for each source.

Printpack has not included emissions from smaller/insignificant space heaters, water heaters, or other comfort heating processes found at the facility. This information has been provided for information purposes only.

2. Process Emissions routed to Oxidizers

Process emissions arise from evaporation of process solvent. Since the press room is enclosed and all exhausts will be directed to the oxidizer, all evaporative emissions will be captured.

A. Flexographic Printing Press No. 1

Printing press No. 1 operation is not being modified as part this project. Air emissions from the 8 printing decks, dryers, and an outboard coating station are collected (100% capture) and routed to the Adwest thermal oxidizer with a destruction efficiency of 97.5%. Emissions from inks and coatings are volatile organic compounds (VOC). Trace quantities of hazardous air pollutants may be present, but Printpack make every effort to reformulate and remove HAPs from raw materials. Combustion by-products are created from natural gas usage (as discussed in section 1 of this attachment). The RTO emission point stack location is being modified to reflect a Section 317 modification in 2022.

VOC emissions for Press No. 1 have been estimated based upon a worst-case printing and coating job performed at the facility. The worst-case job details for Press 1 is based upon the following:

Job: Keeblers Fudge Stripes
Impression Width: 2.776 ft
Maximum Run Speed: 1,000 fpm

One Ream: 3000 square feet

Throughput: (1,000 fpm) X (60 min/hr) X (2.776 ft) X (1 ream/3000 ft²) =
 55.52 reams/hr

* Surface Coverage is:	
Black at 50% coverage and 0.70 dry lbs/ream laydown (Given process knowledge)	
VOC content: 3.18 lb VOC/lb solids (Given process knowledge)	
Total VOC = (0.5)*(0.7)*(3.18 lb VOC/lb solids)*(55.52 reams/hr) =	61.79376 lb VOC/hour
Gold at 20% coverage and 0.70 dry lbs/ream laydown (Given process knowledge)	
VOC content: 3.18 lb VOC/lb solids (Given process knowledge)	
Total VOC = (0.2)*(0.7)*(3.18 lb VOC/lb solids)*(55.52 reams/hr) =	24.7175 lb VOC/hour
Green at 2% coverage and 0.70 dry lbs/ream laydown (Given process knowledge)	
VOC content: 3.18 lb VOC/lb solids (Given process knowledge)	
Total VOC = (.02)*(0.7)*(3.18 lb VOC/lb solids)*(55.52 reams/hr) =	2.47175 lb VOC/hour
Red at 2% coverage and 0.70 dry lbs/ream laydown (Given process knowledge)	
VOC content: 3.18 lb VOC/lb solids (Given process knowledge)	
Total VOC = (.02)*(0.7)*(3.18 lb VOC/lb solids)*(55.52 reams/hr) =	2.47175 lb VOC/hour
White at 80% coverage and 1.25 dry lbs/ream laydown (Given process knowledge)	
VOC content: 1.32 lb VOC/lb solids (Given process knowledge)	
Total VOC = (.80)*(1.25)*(1.32 lb VOC/lb solids)*(55.52 reams/hr) =	73.2864 lb VOC/hour
VA-152 Adhesive Lamination at 100% coverage and 1.50 dry/lb ream laydown (Given process knowledge)	
VOC content: 0.45 lb VOC/lb solids (Given process knowledge)	
Total VOC = (1)*(1.50)*(0.45 lb VOC/lb solids)*(55.52 reams/hr) =	37.476 lb VOC/hour
Total VOC for this job =	202.217 lb VOC/hour

Equipment	Maximum Pounds/Hour Uncontrolled ¹	Annual Uncontrolled VOCs (Pounds) ²
Press 1 w/outboard	202.22	1,324,541

¹ Calculations for this value are inclusive of the coating station added in 2006.

² At 6550 run hours - press run hours should not exceed this level.

VOC emissions for Press No. 1 are included in Table 6.

B. Flexographic Printing Press No. 4

Press No. 4 is a 10-color wide-web, flexographic printing presses manufactured by Uteco. The central impression drum and wet end enclosures capture 100% of the air emission from the application or in-between color drying activities. Exhaust from the final dryer is capture as well. Printpack has designed a small

enclosure room surrounding the ink reservoirs, solvent dispensing, and ink container transfer operations. All VOC emissions from printing operations shall be collected (100% capture) and routed to the Adwest Regenerative Thermal Oxidizer with a destruction efficiency of 97.5%. Printpack extended the area of the enclosure room under a 317 notification in May 2023.

Unlike Press 1 at the Prescott Valley facility, the Press 4 is designed with automatic printing deck washing operations. When changing inks or during periodic cleaning, ink found in each deck is pumped back to the ink reservoirs for future reuse. Once all inks are removed, reclaimed mop solvent is used to rinse ink pans, blades, and the central impression drum to remove any residual ink. The rinsate is then pumped to a press-side reservoir for reuse or transfer to Storage Tank ST-04 prior to distillation or recovery. The automatic washer minimizes evaporation, hand cleaning, and material losses. Based upon information from other Printpack locations, VOC losses from automatic washers is minimal. Conservatively, Printpack has estimated 0.5 gallon of solvent is lost through evaporation which is captured and controlled.

Press 4 is capable of running at speeds of 2,000 feet per minute on a short basis. At similar operations, Printpack averages around 1,500 feet per minute to ensure product quantity and reduce press bounce. Due to press maintenance, cleaning, and printing job changeovers, a flexographic printing press can not operate 8760 hours per year. Printpack has permitted potential emissions based upon 6,000 hours per year.

$(2.0 \text{ lbs VOC/ream}) \times (1,005,000 \text{ reams/year}) + [(0.5 \text{ gal/deck}) \times (10 \text{ decks/changeover}) \times (3 \text{ changeovers/day}) \times (350 \text{ days/yr}) \times (7 \text{ lbs/gal})] = 2,046,750 \text{ lbs/yr}$

$2,046,750 \text{ lbs/yr} * (1-0.975) = 51,169 \text{ lbs VOC controlled}$

From process knowledge, the high-speed printing presses are capable of applying 2 pounds of VOCs per ream (or 3,000 square feet) of film processed. On an hourly basis, a press may be capable of emitting 11.28 lbs of VOC per hour. Annually, emissions are estimated at 25.58 tons per year controlled. VOC emissions for Press No. 4 and 5 are included in Tables 8 and 9.

C. Adhesive Laminator (AL-32)

Adhesive laminator (AL-32) is designed to utilize solvent-based, water-based, or solventless adhesives to adhere two (2) film webs. Once laminated, the web passes through a drying oven prior to a second coating deck. The secondary coating deck may apply solvent-based, water-based, or solventless varnishes, cold seals, or other coatings. Following the secondary coating station, the web passes through a final dryer oven to cure the structure and volatilize any VOCs.

Each coating station and the dryer sections capture 100% of the air emissions through the use of equipment PTE. Printpack has designed a small enclosure room surrounding each coating deck that allows coating transfer from storage

containers to reservoirs within a enclosed structure. All VOC emissions from printing operations shall be collected (100% capture) and routed to the Adwest Regenerative Thermal Oxidizer with a destruction efficiency of 97.5%. Printpack requests the state maintain an alternative scenario that allows emission to atmosphere when water-based or solventless coatings are applied.

From process knowledge, Bobst laminators with an additional coating deck is capable of applying 1.5 pounds of VOCs per ream (or 3,000 square feet) of film processed per coating station. On an hourly basis, the adhesive laminator may be capable of emitting 12.52 lbs of VOC per hour. Annually, emissions are estimated at 37.61 tons per year controlled. VOC emissions for AL-32 are included in Table 10.

D. Outboard Coating Station (Antifog)

The existing outboard coating station is designed for the application of antifog coatings. When applied, antifog coatings are only applied to 50% of the package surface area. At a maximum run speed of 1,200 feet per minute, the coating station can process 967,104 reams per year with a coating weight of 1.35 lbs of coating per ream. VOC emissions for OP-03 are included in Table 11.

E. Parts Washing (Manual and Automatic Parts Washers)

Ink pans, knife blades, ink pumps and other support materials from the printing presses are disassembled and placed in a automatic parts washer that utilizes reclaimed (mop) solvent as the cleaning agent. Parts are placed on a portable cart, equipped with solvent spray nozzles, before being placed in the 4'X4'X12' wash chamber. Following the wash cycle, solvent is captured in the parts washer for reuse or recycling using an integrated distillation system.

Automatic washing system will operate 20 cycles per day, 365 days per year at maximum usage rate. Wash tank volume is 128 ft³; estimates worst case solvent retention in cleaned parts is 2.5 gallons per cycle. VOC air emissions from the parts washer are estimated based upon saturated vapor concentration in wash tank air is 582 grams/m³ (per chemical speciation, not saturation concentrations). VOC emissions for PW-03 are included in Table 12.

Printpack operates an automatic parts washer to clean press parts using solvents. The distillation system operates continuously using Storage Tank ST-04 as the dirty solvent collection point. From the bulk storage tank, dirty solvent is transferred to the distillation feed tank to ensure continuous operation of the unit. The proposed distillation system will be designed to handle 1,050 gallons per day of dirty solvent. While in service, the distillation system is maintained under pressure and does not result in air emissions. In the event of a malfunction, VOCs would be vented from an emergency rupture disc. Using an overly conservative vapor concentration of 582 grams/m³, the tank emissions were estimated as follows:

$$(582.30 \text{ g/m}^3) \times (3.62 \text{ m}^3/\text{cycle}) \times (0.002205 \text{ lbs/g}) = 4.65 \text{ lbs VOC/cycle (Vapor losses)}$$

Printpack estimates the 2.5 gallons per cycle is retained in/on parts and not recovered.

$$(2.5 \text{ gal VOC/cycle}) \times (7 \text{ lbs VOC /gallon}) = 17.50 \text{ lbs/cycle}$$

Overall solvent losses per cycle

$$4.65 \text{ lbs VOC / Cycle} + 17.50 \text{ lbs/cycle} = 22.15 \text{ lbs/cycle}$$

Emissions

$$(22.15 \text{ lbs VOC/cycle}) \times (20 \text{ cycles/day}) \times (1 \text{ day/24 hours}) = 18.46 \text{ lbs VOC/hour (uncontrolled)}$$

$$18.46 \text{ lbs/hr} \times (1-0.975) = 0.46 \text{ lb/hr (controlled)}$$

$$(22.15 \text{ lbs VOC/cycle}) \times (7,300 \text{ cycles/year}) \times (2,000 \text{ lb/ton}) = 80.86 \text{ tons VOC/year (uncontrolled)}$$

$$80.86 \text{ tons/year} \times (1-0.975) = 2.02 \text{ tons/year (controlled)}$$

As part of the existing press maintains activities, the facility maintains and aboveground, stainless steel parts washing tank equipped with a lid and ventilation system (manual parts washer). A small blower extracts solvent from the surface of the parts washer when the lid is open. Exhaust from the manual parts washer is directed to the RTO for emission control. The room where the manual parts washer is located is equipped with floor sweeps that collect and fugitive VOC losses from the area. Based upon process knowledge, the facility uses up to 10 gallons of solvent per day to replenish the manual parts washer and perform room cleaning activities. VOC emissions for PW-01 are included in Table 13.

$$(10 \text{ gallons solvent/day}) \times (365 \text{ days/year}) = 3,650 \text{ gallons per year}$$

$$(3,650 \text{ gallons/yr}) \times (7 \text{ lbs Solvent/gallon}) \times (100\% \text{ VOC}) = 25,550 \text{ lbs VOC/yr}$$

G. Spills & Cleanup Efforts

To keep the manufacturing area clean, Printpack utilizes recovered solvent from the distillation system for mopping or cleaning efforts. Printpack utilizes approximately 3 gallons of solvent to mop or clean four different manufacturing areas. Each area is cleaned up to 3 times per day. As a conservative estimate, all solvent is assumed to volatile as air emissions, none is recycled for reuse.

$(3 \text{ gal/area/cleaning}) \times (3 \text{ cleanings /day}) \times (4 \text{ areas}) = 36 \text{ gal/day} = 1.5 \text{ gal/hr}$

$(36 \text{ gallons/day}) \times (365 \text{ days/yr}) \times (7 \text{ lbs/gal}) = 91,980 \text{ lbs VOC uncontrolled/yr}$

All air emissions are collected and routed to the RTO. A summary of VOC emissions from the tanks program has been included in Table 15.

H. Bulk solvent storage tanks (ST-04 & ST-05)

Printpack utilizes a 7,000 gallon aboveground storage tank (AST) for the storage of dirty or mop solvent. Mop solvent is used on presses to cleanup equipment and parts. The dirty solvent is then transferred to the storage tank farm until it can be transferred to the distillation system for recovery. Storage tank ST-05 receives pumpable still bottoms from the solvent distillation system. Still bottoms wastes are stored within the tanks until transport for disposal as hazardous waste.

Air emissions from the dirty/waste solvent tanks have been performed using the EPA tanks modeling software. A summary of VOC emissions from the tanks program has been included in Table 16. Annual throughputs are based upon solvent usage for press cleanup, auto parts washer, and the manual parts washer. All emissions from ST-04 and ST-05 tanks are collected and routed to the RTO for emission controls.

3. Press Emissions routed to Atmosphere

Printpack operates a limited number of sources whose emissions are released directly to atmosphere. No capture or control systems are in place.

A. Extrusion Laminator (EL-31)

Extruder laminator EL-31 begins with the application of primers or varnishes to a single film web prior to two (2) polymer lamination stages. Melted polymer or resin adheres a second film or even a third web film to structure. Once the film layers are adhered by polymer, a second coating station applies varnished or antifog coatings. Coatings used in EL-31 coating station are largely water-based formulations, solvent-based coatings may be applied.

Air emissions from EL-31 are not routed to a control device. The manufacturing line is equipped with 4 exhaust points from the primary coating deck and extrusion vents. An additional two exhaust points are located at the secondary coating station. Air emissions from the process are evenly divided between the six (6) exhaust points.

Process knowledge has established a worst-case or potential emissions from solvent-based coatings as 60 pounds per hour VOCs. The proposed modification will not result in any change in emissions or controls. Process emission estimates from this equipment are summarized below.

Vent¹	Lbs/Hour to Atmosphere	Tons/Year to Atmosphere
Prime Station E	10	17.5
Prime Station E	10	17.5
Extruder Thermal Strip Vent	10	17.5
Extruder Heater Vent	10	17.5
Post Extruder Coater Dryer Vent 1	10	17.5
Post Extruder Coater Dryer Vent 2	10	17.5

NOTE: The lbs/hour to atmosphere is taken from the current permit limits of 60.00lbs/hr divided over six vents which yields 10 lb/hour. The number of hours is the same as the current permit, 3500.

10 lbs/hr * 6 vents * 3500 hours = 210,000 lbs/yr = 105 tpy or 17.5 tpy for each vent.

VOC emissions for EL-31 are included in Table 17.

B. Plate Washer (PW-04)

As part of the proposed expansion, Printpack intends to install a small plate washer that utilizes a VOC containing solvent to remove any residual ink from press plates prior to storage. The Parts washer has a reservoir that holds approximately 7.5 gallons of solvent. The solvent is sprayed on the flexographic plate with small brushes that remove ink. The solvent is collected within the system and reused for the next plate. Emissions are fugitive in nature.

The solvent is 75% VOC and does not contain HAPs. As the solvent builds up solids from the ink, the contents of the reservoir are drained and replaced with fresh solvent weekly. Printpack conservatively assumes that 50% of the solvent is lost during this 1 week period. Emissions have been estimated in Table 14.

$$(7.5 \text{ gallons of solvent}) \times (50\% \text{ evaporated}) = 3.75 \text{ gallons lost/week}$$

$$(3.75 \text{ gallons/week}) \times (52 \text{ weeks /year}) = 390 \text{ gallons per year}$$

$$(390 \text{ gallons solvent/year}) \times (75\% \text{ VOC}) = 292.5 \text{ gallons VOC/year}$$

¹ See March 12, 1990 permit

$$(292.5 \text{ gallons/year}) \times (8.34 \text{ lbs/gal}) = 1,219 \text{ lbs /year uncontrolled}$$

C. Bulk Solvent Tanks (ST-01, ST-02, ST-03)

Printpack receives virgin solvent or reclaimed solvent in three (3) existing 10,000 gallon AST. Each AST is divided into three sections and has been designed with submerged filling. Air emissions from the waste solvent tanks have been performed using the EPA tanks modeling software. A summary of VOC emissions from the tanks program has been included in Table 16. Annual throughputs are based upon solvent usage or the maximum number of filling operations annually.

4. Ozone Emissions

Prior to any printing or coating deck, Printpack has installed corona treaters that utilize an electrical current to modify the surface of plastic films to improve adhesion. According to ADEQ, these corona treaters meet the definition of a trivial activity – ozone generator. The electrical current causes free oxygen to be converted to ozone. Ozone emissions from controlled sources are routed to the catalytic or thermal oxidizer for treatment. Information included in Table 18 has been provided for informational purposes only. These emissions and sources should be classified as exempt from permitting.

5. Particulate Emissions

Printpack operates several sources that generate trace quantities of particulate matter from the equipment operation. Historically, the equipment listed in the section have been included in the insignificant activity or exempt sources. This information has been included for informational purposes only.

A. Resin Silo (Insignificant)

Printpack receives polyethylene or polypropylene resins from bulk tanker trucks. Blowers convey resin pellets to the top of the resin silo. A vent filter ensures resins separate from the air stream. Emissions from the silo have been based upon AP-42 emission Factors from Table 6.6.2.1 for polyethylene terephthalate processes. The emission factor for resin storage is 0.0003 grams/kg resin. Since trucks can be unloaded at 60,000 pounds/hour, the following calculations are used for potential emissions.

$$(0.0003 \text{ g/kg}) \times (1\text{lb}/453.6 \text{ kg}) \times (1 \text{ kg resin}/2,205 \text{ lb resin}) = 3.0\text{E}-07 \text{ lb PM/lb resin}$$

$$(3.0\text{E}-07 \text{ lb PM/lb resin}) \times (60,000 \text{ lbs resin/hr}) = 1.80\text{E}-02 \text{ lb PM/hr} = 157.56 \text{ lbs/yr}$$

B. Slitters (Insignificant)

Printpack operates five (5) slitters. Wide-web rolls or printed or laminated films are placed on slitters to cut rolls into the customers desired sizes. The plastic web is cut using small blades. No emission capture systems are present. Any dust or particulate generated from the process would be fugitive in nature. On three (3) of the 5 slitter lines, Printpack will install laser cutters to partially perforate the film leaving a tear line. Exhaust from the laser system is emitted to atmosphere to remove heat and ensure ant trace particulate does not impact the function of the laser itself.

Using the maximum scoring depth of 0.01 inches (very conservative) and a run rate of 1000 feet per minute. The particulate emissions from a eight (8) laser assembly on a slitter results in 2.71E-05 pounds of PM per hour.

$$(2.71E-05 \text{ lbs PM/hr}) \times (8760 \text{ hours/year}) = 0.23 \text{ lbs/year}$$

These emissions should be classified as insignificant sources. For three (3) sources, the total annual emissions would be 0.69 pounds per year.

C. Edge Trim cyclone

Printpack utilizes two cyclones to physically separate ribbons of plastic films from a conveying air stream. Small knives on slitters on the press department enclosure have the edge trim material conveyed to a cyclone that separates the film for disposition in a solid waste compactor. Air from the cyclone is return to the total enclosure to ensure no process gasses are released to the environment without control.

The second cyclone received edge trim from slitters located outside the total enclosure. This cyclone does exhaust to atmosphere any air used to convey the film material. Since the slitting and conveying should not cause the release of particulates, Printpack has excluded this source as an exempt or trivial activity. The material is question is long strings of film that would settle to the ground if released from the cyclone and would not leave the confines of the property.

6. Exempt Emissions

Printpack utilizes a anilox cleaning system to wash anilox rollers to remove trace contaminates from the cylinder surface. The cylinder washer utilizes a caustic cleaning solution that does not contain VOCs or HAPs. No emission estimates have been provided for this source.

Attachment 5

Reasonably Available Control Technology Analysis

REASONABLY AVAILABLE CONTROL TECHNOLOGY ANALYSIS

Although the proposed modification to the Prescott Valley, Arizona facility does not exceed the PSD or NSR significance levels for any pollutant, Arizona standards require a Reasonably Available Control Technology (RACT) Evaluation be performed for any Minor NSR project. Since this this permit renewal application results in changes that are less than the permit exemption threshold for VOCs. In September 2006, the U.S. EPA published a Control Techniques Guidelines (CTG) for Flexible Packaging Printing operations to assist local and state authorities in determining RACT for VOC emissions from this industry. Printpack has been prepared this control technology evaluation using the top-down Best Available Control Technology (BACT) approach as a template for evaluating Volatile Organic Compound (VOC) emissions, while referencing the CTG document from the U.S. EPA.

RACT is defined by the U.S. EPA as “the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53761; Sept 17, 1979).” RACT is intended to be a case-by-case evaluation, implying individual case evaluations and decisions, rather than pre-set guidelines, that take into account various costs associated with implementing pollution controls [economic, environmental (air, water, or solid waste), energy, and other impacts] and technological feasibility (design, equipment, work practice, operations) for a specific process.

In no way has this Control Technology Analysis been developed for the purposes of establishing emission limits or reductions. Rather, Printpack has evaluated potential control technologies relating to the control of VOC emissions to ensure that the proposed technologies do align with state RACT requirements.

The **top-down** BACT approach for evaluating control technologies begins with the evaluation of the most stringent (or top) technology that has been applied to the same unit at other similar emission source types and provides a basis for rejecting the technology in favor of the next most stringent technology or proposing it as BACT. Prior to evaluating the control technologies, Printpack has included a summary of the process and operating conditions for the flexible packaging and converting operation.

Process Overview

Printpack operates a collection and control of process off-gases (i.e. VOCs) from multiple flexographic printing presses, an adhesive laminator, parts washers, and storage tanks associates with the flexible packaging industry. Additional equipment connected to the VOC capture and control system would include ink mixing operations and cleaning tasks. The flexographic printing operations used solvent-based inks or adhesives that include alcohols and acetates (i.e. isopropanol, n-propanol, n-propyl acetate, and lesser quantities of ethyl acetate). Hazardous air pollutants (HAPs) are not found as significant components in any material formulation as the materials are used for food-grade applications.

The Prescott Valley facility is approximately 163,000 square feet of conditioned space. The northwestern portion of the building, approximately 7,500 square feet, consists of office space. The manufacturing and warehouse space is approximately 118,000 square feet with 39 foot tall ceilings. The flexographic printing operations (press room) is located within a permanent total enclosure (PTE) located in the southwestern portion of the building. Air emissions from process equipment, mixing operations, and cleaning are collected from the estimated 43,000 square foot enclosure before being routed to the Adwest RTO.

Press 4 and AL-32 are located in a 38,000 square foot expansion on the west side of the property. Two processes (press, laminator) will be designed with an independent capture system.

Demonstrated Control Technologies

Printpack has evaluated control technologies for VOC emissions from flexographic or other film web printing operations through the review of the EPA RACT/BACT/LAER Clearinghouse (RBLC) database, the EPA NEET Clean Air Technologies Database, the California Air Pollution Control Officers Association (CAPCOA) Best Available Control Technology (BACT), the South Coast Air Quality Management District's (AQMD) Best Available Control Technology Guidelines, and the EPA Clean Air Technology Center's technical bulletins or fact sheets. Eleven flexographic printing or coating operations were identified in the RBLC, CAPCOA, or AQMD databases for the last 10 years (see Table 1). Search criteria included the following:

Process Type	Description
41.014	Paper, Plastic, Foil web surface coating
41.021	Printing- Packaging
41.999	Other Surface Coating/Printing/Graphic Arts Sources
42.009	Volatile Organic Liquid Storage

Of these seven (7) determinations for graphic arts, printing and coating sources, none of the entries represented RACT. All determinations were classified as Best Available Control Technologies (BACT) or Lowest Achievable Emission Rate (LAER). Although these determinations are useful in selecting technologies, the emission limitation may be overly restricted for Reasonably Available Control Technology (RACT purposes).

Fifty-four (54) determinations for volatile organic liquid storage sources were identified in the clearing house, none of the entries represented RACT. Technologies include submerged filling, white paint, internal floating roof design, scrubbers, thermal oxidizers, and vapor recovery. Most determinations were for storage tanks at refineries, methanol plants, or terminal. Determinations were not included.

Table 1: Summary of VOC RACT/BACT/LAER Clearinghouse Determinations

Flexographic Printing and Coating Operations

Date	RBL ID	FACILITY NAME	COUNTY	ST	Process	EMISSION RATE / LIMIT	UNITS	Basis	CONTROL DESCRIPTION
6/2016	WI-0277	Bemis Packaging	Grant	WI	Press 007 Outboard Stations	98%	Overall control; or < 1% VOC by weight	BACT-PSD	PTE; RTO for Press Outboard Station 1 or 2
6/2017	NY0105	American Packaging Corp.	Monroe	NY	Printing Presses, corona treaters, dryers, and laminators	98%	Overall control	LAER	PTE; RTO for Presses
7/2017	WI-0280	Bemis Packaging	Grant	WI	Flexo Press CI	98%	Overall control	BACT-PSD	PTE; RTO for Press
7/2017	WI-0280	Bemis Packaging	Grant	WI	Flexo Press Outboard Deck 1&2	98%	Overall control; or < 1% VOC by weight	BACT-PSD	PTE; RTO for Press Outboard Station 1 or 2
10/2013	WI-0254	Bemis Packaging - Lancaster	Outagamie	WI	Flexo Press 12	98%	Overall control	BACT-PSD	PTE; RTO for Presses
10/2013	WI-0254	Bemis - Appleton	Outagamie	WI	Flexo Press 13	98%	Overall control	BACT-PSD	PTE; RTO for Presses
10/2013	WI-0254	Bemis - Appleton	Outagamie	WI	Flexo Press 14 W/ Outboard Deck	98%	Overall control	BACT-PSD	PTE; RTO for Presses

Printpack has multiple flexible packing plants that involve printing and laminating operations. Printpack has successfully demonstrated the feasibility of regenerative thermal oxidation for this type of operation. Upon review of the RACT/BACT/LAER Clearinghouse, the selected technology within the printing industry is a RTO and permanent total enclosure. All identified control technologies were determined to be the best available control technologies with a destruction efficiency of 98%. No RACT determinations were found in the clearing house. Although not listed in the clearinghouse, Printpack's Prescott Valley plant had a previous RACT determination with ADEQ for using a catalytic oxidizer with 95% destruction or a regenerative thermal oxidizer with 97.5% destruction efficiency.

Potential Control Technologies

Emission control technologies potentially applicable for the removal or destruction of volatile organic compounds (VOCs) were initially evaluated based upon technical feasibility. Technologies determined to be technically infeasible were excluded from further evaluation. Control technologies evaluated include thermal oxidation, catalytic oxidation, adsorption, scrubbers, condensation and permanent total enclosures.

Table 2: Control Technologies

Control Description	Average Control Efficiency	Maximum Control Efficiency
Coating Replacement		100
Thermal Oxidation	95	>99
Catalytic Oxidation	95	99
Adsorption	88.5	98
Scrubbers	95	98

Coating Replacement

The RACT/BACT/LAER Clearinghouse identifies the use of low VOC coatings or inks to replace or in-lieu of solvent-based inks or coatings from converting operations. Due to the physical stresses and print quality concerns of our customers, low VOC inks are not viable at this time for the product in question. Printpack has designed the proposed laminator to utilize either water-based or solvent-based coatings depending on customer demands. Since solvent-based inks and adhesives are necessary from certain customers, coating replacement has been rejected as a feasible option at this time. As technology improvements occur, Printpack will continue to evaluate this as a potential emission reduction method.

Thermal Oxidation

Thermal oxidation is the process of oxidizing combustible materials by raising the temperature of the material above its auto-ignition point in the presence of oxygen and maintaining it at high temperature for sufficient time to complete combustion to carbon dioxide and water. Recuperative thermal oxidizers may incorporate shell and tube heat exchange systems, while Regenerative thermal oxidizers utilize a thermal mass (bed) to recover heat from the exhaust gases. Afterburners, or direct flame units, do not utilize heat exchange as part of the equipment design. Typical VOC control efficiencies range from 95 to >99 percent. Thermal oxidizing units are less susceptible to difficulties to particulate loading than catalytic oxidizing technologies. Typically,

thermal oxidation systems may be designed to handle airflows of 5,000 to 500,000 scfm with low inlet loading concentrations.

Printpack has determined that thermal oxidation represents a technically feasible control option. Printpack has a regenerative thermal oxidizer located at the subject property which has been in service and tested. The RTO was purchased in 2008 and installed at a Printpack facility in Saint Louis, Missouri. The equipment was transported to Prescott Valley in 2016 and was not placed into service immediately. Historical stack testing performed on this device has demonstrated a destruction efficiency of 96.9% while in Saint Louis, Missouri. Printpack rebuilt the RTO by replacing media, a, serviced the unit and controls, and upgrade the blower motor. Third-party contractors assured Printpack of a 97.5% destruction upon startup. In 2019 and 2020, Printpack performed performance testing that demonstrated 98.2% and 98.0% destruction. After rebuilding the unit in 2022, Printpack performed performance testing and demonstrated 98.2% destruction efficiency. Most new RTO units would be capable of 98% or greater destruction.

Catalytic Oxidation

Catalytic oxidation is a control technique that utilizes a catalyst bed to increase the oxidation reaction rate thus enabling conversion at lower reaction temperatures than in thermal incinerator units. Catalysts typically used for VOC incineration include platinum, palladium and mixed metal oxides. According to the U. S. EPA (EPA-452/F-03-021), catalytic oxidation is best suited to systems with low exhaust volumes with little variation on VOC concentrations and where catalyst poisons or other fouling contaminants are absent. In comparison to thermal oxidation, operating costs are lower due to lower auxiliary fuel usage while the capital costs are generally higher. According to the U.S. EPA (EPA-452/F-03-021), typical catalytic incinerator systems can achieve an VOC control efficiency of 95 percent. Higher control efficiencies, ranging from 98 to 99 percent, are achievable with larger catalyst volume or higher temperatures. Typically, catalytic oxidation systems may be designed to handle airflows of 700 to 50,000 scfm with very low inlet loading concentrations.

Printpack has determined that a catalytic oxidation represents a technically feasible control option. From historical knowledge, Printpack has been able to demonstrate 95% destruction from similar operations. This technology is prone to fouling from the buildup of silica or solids on the catalyst.

Adsorption

Adsorption involves the physical binding of pollutant on the surface of a granule, bead, or crystal of adsorbent material that can be released (desorbed) rather easily by either heat or vacuum. According to the EPA (EPA-456/F-99-004), adsorption may be used for gaseous streams containing VOC concentrations below 25 percent of the LEL. Based upon review of the BACT Clearinghouse, adsorption has not been employed as a pollution control device for VOCs from foam blowing operations. According to the U.S. EPA (EPA-456/F-99-004), VOC control efficiencies range from 95 to 98 percent at input concentrations between 500 and 2,000 ppm and depending on the pollutant in question.

Adsorption control systems are generally constructed as either a canister-type adsorber or fixed-bed units. Canister systems consist of small returnable containers (i.e. 55-gallon drums) for the control of low volume or intermittent gas streams. According to the EPA (EPA-452/B-02-001), canister systems have been sized to handle flow rates as large as 30,000 cfm. Once the media reaches a certain VOC content, the canister is replaced for off-site reclamation.

Fixed-bed adsorption systems are designed for continuous control of VOC streams over a wide flow rate range (i.e. 500-200,000 cfm) and wide concentration range (i.e. 10 ppb – 10,000 ppm).

Fixed-bed systems traditionally consist of multiple beds to facilitate adsorption. The active bed performs the separation of VOCs from the air stream through contact with a solid surface, while other beds are desorbing the VOC or remain idle. During desorption, steam or pressure causes VOCs to release to the air stream which enters a condenser or column for material recovery. Water from condensation systems traditionally enters a wastewater treatment system.

Printpack has determined that adsorption systems would be technically feasible; but based upon the proposed solvents and the low concentrations, the technology becomes an unnecessary costly. Printpack has not demonstrated this as an effective technology. The Prescott Valley facility does not have an existing wastewater treatment system or steam system to support this technology. Printpack requests this control technology be rejected with a demonstrated technology that has a higher destruction efficiency.

Scrubbers

Scrubbers involve the use of packed columns or trays to facilitate contact between either a water or chemical solution to facilitate the preferential absorption of pollutants from the air stream to scrubbing solution for collection, treatment, and disposal. According to the EPA (EPA-452/F-03-015), absorption (scrubbing) may be used for gaseous streams containing high VOC concentrations, especially for water-soluble compounds such as methanol, ethanol, isopropanol, etc. Scrubbers are more commonly employed for use in controlling low dust loadings or inorganic vapors.

Based upon review of the BACT Clearinghouse and contact with state agencies, scrubbers have not been employed as a pollution control device for VOCs within the printing industry. Due to the low solubility of many VOC constituents, Printpack has excluded the use of scrubbers as a technically feasible option. Furthermore, scrubbers generate large quantities of a wastewater with high disposal costs to achieve VOC removal.

Condensation

Condensation is a process in which an emission stream having organic vapors is cooled using a coolant to facilitate the phase change of the vapors to a liquid. Condensed organic vapors can be recovered, refined, and might be reused, preventing their release to the ambient air (EPA-456/R-03-003). Condensation systems are typically used on vapor streams having high VOC concentrations and may achieve control efficiencies between 50 and 90 percent.

Limitation to the use of condensers involves temperature control to prevent freezing of organics on the coils of the system thereby reducing the control efficiency. Based upon review of the BACT Clearinghouse, condensation has not been employed as a pollution control device for VOCs from the printing or coating industry. Printpack request the installation of the control technology with a much higher control efficiency.

Permanent Total Enclosures (PTE)

Permanent total enclosures (PTEs) are fixed structures that facilitate the complete (100%) capture of emissions prior to delivery to a control device. For an enclosure to meet the EPA's definition of a PTE, the five-point criteria under Method 204 includes the following:

1. Natural Draft Openings (NDOs) shall be at least 4 equivalent diameters from each emission point.
2. The total area of all NDOs shall not exceed 5% percent of the surface area of the enclosures four walls, floor and ceiling.

3. The average facial velocity (FV) of air through NDOs shall be at least 3,600 m/hr (200 ft/min) with the direction of airflow into the enclosure.
4. All access doors and windows whose areas are not included in item 2 or 3 shall be closed during routine operation of the process.
5. All VOC emissions must be captured and contained for discharge through a control device.

Printpack has designed the press department as a permanent total enclosure. The room is designed with quick rollup doors and fixed doors which remain closed during normal operations. To achieve an average facial velocity of 200 ft/min through all NDOs, the differential pressure between the warehouse and the enclosure must be maintained above 0.007 in WC. There are no NDOs planned for this PTE, however for control of leaks, the negative pressure will be maintained regardless.

Control Technology Cost Estimates

Printpack requests the existing controls represent reasonably available control technology in terms of VOC destruction efficiency, no cost estimates were performed.

Selection of RACT

The U.S. EPA established a Control Technology Guideline (CTG) for Flexible Package Printing operations in September 2006. The CTG document investigates RACT for this industry and provides guidance to local agencies on selecting RACT for these VOC sources. The EPA recommended work place controls for any processes that emit at least 15 pounds per day of VOCs before control. Any printing or coating that emitted 25 tons per year VOC uncontrolled should apply a control technology. Add-on controls for equipment with potential emissions below 25 tpy were not cost effective.

Flexographic printing operations can improve controls through capture systems. Older printing technologies, like Press 1 at the Prescott Valley site, generally have lower capture efficiencies (75%) due to the design of the equipment and air collection points. Manufacturer will often certify emission captures of 85-93% without a permanent total enclosure. Printpack has selected to implement the best available capture technology in the form of permanent total enclosures or 100% capture.

According to the EPA, many wide-web printing facilities use low VOC and low HAP inks and coatings to minimize emissions. Exhausts from these low-VOC work stations may be vented to atmosphere without the use of a control device. This aligns with Printpack's request to allow emissions from solventless or water-based coatings be exhausted to atmosphere without control.

As far as add-on control technologies, the U.S. EPA determined feasible technologies for flexible packaging operations include thermal oxidizers, catalytic oxidizers, and carbon absorption. The selection of the technology is influenced by the inks and coatings, volume of air, and the operating schedule of the facility. The CTG recommended 80% overall control for any press that was installed after March 14, 1995 and controlled with add on control devices.

Printpack's current operations require 80,000 SCFM of air to be controlled with concentrations under 3% of the lower explosive limit of the gasses. This high volume, low concentration air stream can be best controlled through the use of a regenerative thermal oxidizer with a high heat recovery. Catalytic systems are not capable of handling air volume of this magnitude. Printpack believes the installation of a permanent total enclosure and a regenerative thermal oxidizer with an overall destruction efficiency of 97.5% represents RACT.

The two (2) waste solvent tanks (SR04, ST05) holding hazardous waste and spent solvent emissions are vented to the regenerative thermal oxidizer (I02) and are filled with "submerged pipe fill" method. Printpack believes the installation of submerged filling and control of emissions with a regenerative thermal oxidizer with an overall destruction efficiency of 97.5% represents RACT.

Printpack will implement the following housekeeping practices to reduce emissions inside the PTE that are not a direct result of running the new equipment:

- All waste ink, solvents, and cleanup rags will be stored in closed containers until removed from the site by a licensed disposal service.
- All ink or solvent spills will be cleaned up promptly and thoroughly.

Attachment 6

Compliance Assurance Monitoring (CAM) Plan

Compliance Assurance Monitoring (CAM) Plan

Compliance assurance monitoring (CAM) is intended to provide a reasonable assurance of compliance with applicable requirements under the Clean Air Act (CAA) for large emission units that rely on pollution control device equipment to achieve compliance. Monitoring is conducted to determine that control measures, once installed or otherwise employed, are properly operated and maintained so that they continue to achieve a level of control that complies with applicable requirements.

CAM, otherwise known as Part 64, is applicable to emission units if the following apply:

1. The facility is a major source under Part 70 (Title V, Class I)
2. The emission unit is subject to an emission limitation
3. A control device is required for compliance
4. Has a potential pre-control emission of 100% the major source threshold (100 tpy)
5. Not otherwise exempt

Printpack has a federally enforceable permit condition to control air emissions from the flexographic printing presses and solvent-based laminator to remain a NSR minor source. The facility has a site-wide VOC emission limit of 225 tons per year of VOC emissions. Compliance with this VOC limitation shall be achieved through the use of a regenerative thermal oxidizer. In order to determine CAM applicability, the pre-control emissions must be compared against the Part 70 major source threshold.

Control Device	Emission Unit	Pre-Controlled Emissions (tpy)	CAM Applicable
I02: Adwest RTO	Press 1	662	Yes
I02: Adwest RTO	OP-03	392	Yes
I02: Adwest RTO	Press 4	1,023	Yes
I02: Adwest RTO	AL-32	1,504	Yes
Manual Parts Washer	PW-01	12.72	No
Automatic Parts Washer	PW-03	80.86	No
Distillation Feed Tank	DST-01	3.19	No
Bulk Waste Tanks	ST-04, ST-05	0.28	No

CAM documents have been supplied for each control device and the emission capture system. Furthermore, periodic monitoring for requirements for applicable standards has been included as well.

CAM Summary

Unit/Group/Process Information	
ID No.: Press-01, Press-04, AL-32, OP-3	
Control Device ID No.: IO2 Adwest Regenerative Thermal Oxidizer 80,000 SCFM	Control Device Type: Thermal Incinerator (Direct Flame Incinerator/Regenerative Thermal Oxidizer)
Applicable Regulatory Requirement	
Name: A.A.C. R18-2-334	Site-wide VOC limitation of 225 tons per year.
Pollutant: VOC	
Monitoring Information	
Indicator: Combustion Temperature / Exhaust Gas Temperature	
Basis: Combustion temperature will ensure the process emissions or VOCs reach sufficient temperature to ensure complete thermal breakdown of the chemical to CO2 and water.	
Minimum Frequency: Four times per hour	
Averaging Period: Three hours	
Deviation Limit: For IO1, any time the 3 hour average falls below 1500° F while the emission unit is in operation. Compliant temperature setpoints shall be based upon the most recent ADEQ-approved source testing efforts.	
CAM Text: The monitoring device should be installed in the combustion chamber or immediately downstream of the combustion chamber. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer’s specifications, other written procedures that provide an adequate assurance that the device is calibrated accurately, or at least annually, whichever is more frequent, and shall be accurate to within one of the following: ± 0.75% of the temperature being measured expressed in degrees Celsius; or ± 2.5 degrees Celsius.	

CAM Summary

Unit/Group/Process Information	
ID No.: Press-01, Press-04, AL-32, OP-3	
Control Device ID No.: IO2 Capture system	Control Device Type: Thermal Incinerator (Direct Flame Incinerator/Regenerative Thermal Oxidizer)
Applicable Regulatory Requirement	
Name: A.A.C. R18-2-334	Site-wide VOC limitation of 225 tons per year.
Pollutant: VOC	
Monitoring Information	
Indicator: Pressure Differential Measurement	
Basis: Differential pressure will ensure the capture system operates under a negative pressure this ensuring all air emissions are directed to the control device. In the event of any leaks, air would be pulled into the system rather than exhausting to atmosphere.	
Minimum Frequency: Four times per hour	
Averaging Period: Three hours	
Deviation Limit: Any time the 3-hour average pressure differential falls below -1" H ₂ O while the emission unit is in operation. Compliant pressure differential setpoints shall be based upon the most recent ADEQ-approved source testing efforts.	
CAM Text: The monitoring device should be installed in the VOC collection ductwork downstream of the control device blower or fan. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, other written procedures that provide an adequate assurance that the device is calibrated accurately, or at least annually.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: IO1	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: A.A.C. 18R-2-730.A	
Pollutant: PM, SO ₂ , NO _x	
Monitoring Information	
Indicator: Fuel Type	
Minimum Frequency: Annually	
Averaging Period: n/a	
Deviation Limit: If an alternate fuel is fired, either alone or in combination with the specified gas, it shall be considered and reported as a deviation.	
Periodic Monitoring Text: Record the type of fuel used by the unit. If an alternate fuel is fired, either alone or in combination with the specified gas, it shall be considered and reported as a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: IO2	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: A.A.C. 18R-2-730.A	
Pollutant: PM, SO ₂ , NO _x	
Monitoring Information	
Indicator: Fuel Type	
Minimum Frequency: Annually	
Averaging Period: n/a	
Deviation Limit: If an alternate fuel is fired, either alone or in combination with the specified gas, it shall be considered and reported as a deviation.	
Periodic Monitoring Text: Record the type of fuel used by the unit. If an alternate fuel is fired, either alone or in combination with the specified gas, it shall be considered and reported as a deviation.	

Attachment 7

Draft Air Permit Suggestions



PERMIT

www.azdeq.gov

PERMIT #71374
PLACE ID #2094

PERMITTEE: **Printpack Inc.**
FACILITY: **Prescott Valley Facility**
PERMIT TYPE: **Class I Air Quality Permit**
DATE ISSUED: ~~November 20, 2018~~
EXPIRY DATE: ~~November 19, 2023~~

SUMMARY

This Class I air quality permit is issued to Printpack, Inc., the Permittee, for the continued operation of a flexographic printing and converting facility. The facility is located at 6800 E. 2nd St., Prescott Valley, Yavapai County, AZ, 86314. Place I.D. 2094. This permit modification and renewal updates is a new Class I Permit, No. 71374, ~~which supersedes Class II Synthetic Minor Permit No. 59842.~~

The Permittee is expanding the operation with a resultant potential to emit (PTE) of volatile organic compounds (VOC) greater than the Class II limit of 100 tons per year. ~~Thus a Class I permit, (including a facility-wide VOC limit to stay below the 250 tons per year Major New Source Review threshold) is required.~~

This permit is issued in accordance with Arizona Revised Statutes (ARS) 49-426. It contains requirements from Title 18, Chapter 2 of the A.A.C. and Title 40 of the Code of Federal Regulations. All definitions, terms, and conditions used in this permit conform to those in the Arizona Administrative Code R18-2-101 et. seq. (A.A.C.) and Title 40 of the Code of Federal Regulations (CFR), except as otherwise defined in this permit.

Commented [RAC1]: The removal of equipment that was never constructed changes the facility's PTE. As submitted, Printpack's Prescott Valley location can not exceed 250 tons per year of VOC. Furthermore, PTE emissions are approximately 80% of the NSR limit. Printpack believes the NSR threshold limit of 90% is no longer needed or required.

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ATTACHMENT "A": GENERAL PROVISIONS

I. PERMIT EXPIRATION AND RENEWAL

- A. This permit is valid for a period of five (5) years from the date of issuance.
[ARS § 49-426.F, A.A.C. R18-2-306.A.1]
- B. The Permittee shall submit an application for renewal of this permit at least six (6) months, but not more than eighteen (18) months, prior to the date of permit expiration.
[ARS § 49-426.F, A.A.C. R18-2-304.D.2]

II. COMPLIANCE WITH PERMIT CONDITIONS

- A. The Permittee shall comply with all conditions of this permit including all applicable requirements of the Arizona Revised Statutes (A.R.S.) Title 49, Chapter 3, and the air quality rules under Title 18, Chapter 2 of the Arizona Administrative Code. Any permit noncompliance is grounds for enforcement action; for permit termination, revocation and reissuance, revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.
[A.A.C. R18-2-306.A.8.a]
- B. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
[A.A.C. R18-2-306.A.8.b]

III. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE

- A. The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
[A.A.C. R18-2-306.A.8.c]
- B. The permit shall be reopened and revised under any of the following circumstances:
1. Additional applicable requirements under the Clean Air Act become applicable to the Class I source. Such a reopening shall only occur if there are three or more years remaining in the permit term. The reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to A.A.C. R18-2-322.B. Any permit revision required pursuant to this subparagraph shall comply with the provisions in A.A.C. R18-2-322 for permit renewal and shall reset the five-year permit term;
[A.A.C. R18-2-321.A.1.a]
 2. Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by

the Administrator, excess emissions offset plans shall be deemed to be incorporated into the Class I permit;

[A.A.C. R18-2-321.A.1.b]

3. The Director or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; and

[A.A.C. R18-2-321.A.1.c]

4. The Director or the Administrator determines that the permit needs to be revised or revoked to assure compliance with the applicable requirements.

[A.A.C. R18-2-321.A.1.d]

- C. Proceedings to reopen and issue a permit, including appeal of any final action relating to a permit reopening, shall follow the same procedures as apply to initial permit issuance and shall, except for reopenings under Condition III.B.1, affect only those parts of the permit for which cause to reopen exists. Such reopening shall be made as expeditiously as practicable. Permit reopenings for reasons other than those stated in Condition III.B.1 above shall not result in a resetting of the five-year permit term.

[A.A.C. R18-2-321.A.2]

IV. POSTING OF PERMIT

- A. The Permittee shall post this permit or a certificate of permit issuance at the facility in such a manner as to be clearly visible and accessible. All equipment covered by this permit shall be clearly marked with one of the following:

1. Current permit number; or
2. Serial number or other equipment identification number (equipment ID number) that is also listed in the permit to identify that piece of equipment.

[A.A.C. R18-2-315.A]

- B. A copy of the complete permit shall be kept on site.

[A.A.C. R18-2-315.B]

V. FEE PAYMENT

- A. The Permittee shall pay fees to the Director pursuant to ARS § 49-426(E) and A.A.C. R18-2-326.

[A.A.C. R18-2-306.A.9 and -326]

VI. ANNUAL EMISSION INVENTORY QUESTIONNAIRE

- A. The Permittee shall complete and submit to the Director an annual emissions inventory questionnaire. The questionnaire is due by March 31st or ninety (90) days after the Director makes the inventory form available each year, whichever occurs later, and shall include emission information for the previous calendar year.

[A.A.C. R18-2-327.A]

- B.** The questionnaire shall be on a form provided by the Director and shall include the information required by A.A.C. R18-2-327.B.

[A.A.C. R18-2-327.B]

VII. COMPLIANCE CERTIFICATION

- A.** The Permittee shall submit a compliance certification to the Director semiannually, which describes the compliance status of the source with respect to each permit condition. The first certification shall be submitted no later than May 15th, and shall report the compliance status of the source during the period between October 1st of the previous year and March 31st of the current year. The second certification shall be submitted no later than November 15th, and shall report the compliance status of the source during the period between April 1st and September 30th of the current year.

[A.A.C. R18-2-309.2.a]

- B.** The compliance certifications shall include the following:

1. Identification of each term or condition of the permit that is the basis of the certification;
[A.A.C. R18-2-309.2.c.i]
2. Identification of the methods or other means used by the Permittee for determining the compliance status with each term and condition during the certification period,
[A.A.C. R18-2-309.2.c.ii]
3. Status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the methods or means designated in Condition VII.B.2 above. The certifications shall identify each deviation and take it into account for consideration in the compliance certification;
[A.A.C. R18-2-309.2.c.iii]
4. For emission units subject to 40 CFR Part 64, the certification shall also identify as possible exceptions to compliance any period during which compliance is required and in which an excursion or exceedance defined under 40 CFR Part 64 occurred;
[A.A.C. R18-2-309.2.c.iii]
5. All instances of deviations from permit requirements reported pursuant to Condition XII.B; and
6. Other facts the Director may require to determine the compliance status of the source.

[A.A.C. R18-2-309.2.a, -309.2.c-d, and -309.5.d]

- C.** A copy of all compliance certifications shall also be submitted to the EPA Administrator.

- D.** If any outstanding compliance schedule exists, a progress report shall be submitted with the semi-annual compliance certifications required in Condition VII.A above.

VIII. CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS

Any document required to be submitted by this permit, including reports, shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

[A.A.C. R18-2-304.I]

IX. INSPECTION AND ENTRY

A. Upon presentation of proper credentials, the Permittee shall allow the Director or the authorized representative of the Director to:

B. Enter upon the Permittee's premises where a source is located, emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;

[A.A.C. R18-2-309.4.a]

C. Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;

[A.A.C. R18-2-309.4.b]

D. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

[A.A.C. R18-2-309.4.c]

E. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and

[A.A.C. R18-2-309.4.d]

F. Record any inspection by use of written, electronic, magnetic and photographic media.

[A.A.C. R18-2-309.4.e]

X. PERMIT REVISION PURSUANT TO FEDERAL HAZARDOUS AIR POLLUTANT STANDARD

If this source becomes subject to a standard promulgated by the Administrator pursuant to Section 112(d) of the Act, then the Permittee shall, within twelve months of the date on which the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard.

[A.A.C. R18-2-304.D.3]

XI. ACCIDENTAL RELEASE PROGRAM

If this source becomes subject to the provisions of 40 CFR Part 68, then the Permittee shall comply with these provisions according to the time line specified in 40 CFR Part 68.

[40 CFR Part 68]

XII. EXCESS EMISSIONS, PERMIT DEVIATIONS, AND EMERGENCY REPORTING

A. Excess Emissions Reporting

[A.A.C. R18-2-310.01.A, B, and C]

1. Excess emissions shall be reported as follows:
 - a. The Permittee shall report to the Director any emissions in excess of the limits established by this permit. Such report shall be in two parts as specified below:
 - (1) Notification by telephone or facsimile within 24 hours of the time when the Permittee first learned of the occurrence of excess emissions including all available information from Condition XII.A.1.b below.
 - (2) Detailed written notification by submission of an excess emissions report within 72 hours of the notification pursuant to Condition XII.A.1.a(1) above.

[A.A.C. R18-2-310.01.A]
 - b. The report shall contain the following information:
 - (1) Identity of each stack or other emission point where the excess emissions occurred;

[A.A.C. R18-2-310.01.B.1]
 - (2) Magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;

[A.A.C. R18-2-310.01.B.2]
 - (3) Date, time and duration, or expected duration, of the excess emissions;

[A.A.C. R18-2-310.01.B.3]
 - (4) Identity of the equipment from which the excess emissions emanated;

[A.A.C. R18-2-310.01.B.4]
 - (5) Nature and cause of such emissions;

[A.A.C. R18-2-310.01.B.5]
 - (6) If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions;

[A.A.C. R18-2-310.01.B.6]
 - (7) Steps taken to limit the excess emissions; and

[A.A.C. R18-2-310.01.B.7]

- (8) If the excess emissions resulted from start-up or malfunction, the report shall contain a list of the steps taken to comply with the permit procedures.

[A.A.C. R18-2-310.01.B.8]

2. In the case of continuous or recurring excess emissions, the notification requirements shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in such notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period, or changes in the nature of the emissions as originally reported, shall require additional notification pursuant to Condition XII.A.1 above.

[A.A.C. R18-2-310.01.C]

B. Permit Deviations Reporting

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Where the applicable requirement contains a definition of prompt or otherwise specifies a timeframe for reporting deviations, that definition or timeframe shall govern. Where the applicable requirement does not address the timeframe for reporting deviations, the Permittee shall submit reports of deviations according to the following schedule:

1. Notice that complies with A.A.C. R18-2-310.01.A is prompt for deviations that constitute excess emissions;
2. Notice regarding upset conditions, which are defined as malfunctions or breakdowns of pollution control equipment, continuous emissions monitoring systems (CEMS), or continuous opacity monitoring systems (COMS) that are submitted within two working days of discovery shall be considered prompt; and
3. Except as provided in Conditions XII.B.1 and 2, prompt notification of all other types of deviations shall be every 6-months, concurrent with the semi-annual compliance certifications required in Condition VII, and can be submitted on the annual/semiannual deviation monitoring report form located on the Arizona Department of Environmental Quality Website.

[A.A.C. R18-2-306.A.5.b.i]

[A.A.C. R18-2-306.A.5.b.ii]

[A.A.C. R18-2-306.A.5.a]

C. Emergency Provision

1. An “emergency” means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

[A.A.C. R18-2-306.E.1]

2. An emergency constitutes an affirmative defense to an action brought for noncompliance with technology-based emission limitations if Condition XII.C.3 is met.

[A.A.C. R18-2-306.E.2]

3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

[A.A.C. R18-2-306.E.3]

- a. An emergency occurred and that the Permittee can identify the cause(s) of the emergency;

[A.A.C. R18-2-306.E.3.a]

- b. The permitted facility was being properly operated at the time of the emergency;

[A.A.C. R18-2-306.E.3.b]

- c. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and

[A.A.C. R18-2-306.E.3.c]

- d. The Permittee submitted notice of the emergency to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.

[A.A.C. R18-2-306.E.3.d]

4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

[A.A.C. R18-2-306.E.4]

5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

[A.A.C. R18-2-306.E.5]

D. Compliance Schedule

For any excess emission or permit deviation that cannot be corrected within 72 hours, the Permittee is required to submit a compliance schedule to the Director within 21 days of such occurrence. The compliance schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with the permit terms or conditions that have been violated.

[ARS § 49-426.1.3]

E. Affirmative Defenses for Excess Emissions Due to Malfunctions, Startup, and Shutdown

1. Applicability

A.A.C. R18-2-310 establishes affirmative defenses for certain emissions in excess of an emission standard or limitation and applies to all emission standards or limitations except for standards or limitations:

- a. Promulgated pursuant to Sections 111 or 112 of the Act;
[A.A.C. R18-2-310.A.1]
- b. Promulgated pursuant to Titles IV or VI of the Clean Air Act;
[A.A.C. R18-2-310.A.2]
- c. Contained in any Prevention of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the U.S. EPA;
[A.A.C. R18-2-310.A.3]
- d. Contained in A.A.C. R18-2-715.F; or
[A.A.C. R18-2-310.A.4]
- e. Included in a permit to meet the requirements of A.A.C. R18-2-406.A.5.
[A.A.C. R18-2-310.A.5]

2. Affirmative Defense for Malfunctions

Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. When emissions in excess of an applicable emission limitation are due to a malfunction, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

[A.A.C. R18-2-310.B]

- a. The excess emissions resulted from a sudden and unavoidable breakdown of process equipment or air pollution control equipment beyond the reasonable control of the Permittee;
[A.A.C. R18-2-310.B.1]
- b. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
[A.A.C. R18-2-310.B.2]
- c. If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, the Permittee satisfactorily demonstrated that the measures were impracticable;
[A.A.C. R18-2-310.B.3]

- d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
[A.A.C. R18-2-310.B.4]
 - e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
[A.A.C. R18-2-310.B.5]
 - f. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;
[A.A.C. R18-2-310.B.6]
 - g. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;
[A.A.C. R18-2-310.B.7]
 - h. The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;
[A.A.C. R18-2-310.B.8]
 - i. All emissions monitoring systems were kept in operation if at all practicable; and
[A.A.C. R18-2-310.B.9]
 - j. The Permittee's actions in response to the excess emissions were documented by contemporaneous records.
[A.A.C. R18-2-310.B.10]
3. Affirmative Defense for Startup and Shutdown
- a. Except as provided in Condition XII.E.3.b, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. When emissions in excess of an applicable emission limitation are due to startup and shutdown, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:
[A.A.C. R18-2-310.C.1]
 - (1) The excess emissions could not have been prevented through careful and prudent planning and design;
[A.A.C. R18-2-310.C.1.a]
 - (2) If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life,

- personal injury, or severe damage to air pollution control equipment, production equipment, or other property;
[A.A.C. R18-2-310.C.1.b]
- (3) The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
[A.A.C. R18-2-310.C.1.c]
- (4) The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
[A.A.C. R18-2-310.C.1.d]
- (5) All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
[A.A.C. R18-2-310.C.1.e]
- (6) During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;
[A.A.C. R18-2-310.C.1.f]
- (7) All emissions monitoring systems were kept in operation if at all practicable; and
[A.A.C. R18-2-310.C.1.g]
- (8) Contemporaneous records documented the Permittee's actions in response to the excess emissions.
[A.A.C. R18-2-310.C.1.h]
- b. If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to Condition XII.E.2 above.
[A.A.C. R18-2-310.C.2]
4. Affirmative Defense for Malfunctions during Scheduled Maintenance
- If excess emissions occur due to a malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to Condition XII.E.2.
[A.A.C. R18-2-310.D]
5. Demonstration of Reasonable and Practicable Measures
- For an affirmative defense under Condition XII.E.2 or XII.E.3, the Permittee shall demonstrate, through submission of the data and information required by Condition XII.E and A.A.C. R18-2-310.01, that all reasonable and practicable measures within the Permittee's control were implemented to prevent the occurrence of the excess emissions.
[A.A.C. R18-2-310.E]

XIII. RECORDKEEPING REQUIREMENTS

- A. The Permittee shall keep records of all required monitoring information including, but not limited to, the following: [A.A.C. R18-2-306.A.4.a]
1. The date, place as defined in the permit, and time of sampling or measurements; [A.A.C. R18-2-306.A.4.a.i]
 2. The date(s) any analyses were performed; [A.A.C. R18-2-306.A.4.a.ii]
 3. The name of the company or entity that performed the analyses; [A.A.C. R18-2-306.A.4.a.iii]
 4. A description of the analytical techniques or methods used; [A.A.C. R18-2-306.A.4.a.iv]
 5. The results of analyses; and [A.A.C. R18-2-306.A.4.a.v]
 6. The operating conditions as existing at the time of sampling or measurement. [A.A.C. R18-2-306.A.4.a.vi]
- B. The Permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings or other data recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. [A.A.C. R18-2-306.A.4.b]

XIV. REPORTING REQUIREMENTS

- A. The Permittee shall submit the following reports:
- B. Compliance certifications in accordance with Condition VII. [A.A.C. R18-2-306.A.5.a]
- C. Excess emission; permit deviation, and emergency reports in accordance with Condition XII. [A.A.C. R18-2-306.A.5.b]
- D. Other reports required by any condition of Attachment "B".

XV. DUTY TO PROVIDE INFORMATION

- A. The Permittee shall furnish to the Director, within a reasonable time, any information that the Director may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Director copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish

an additional copy of such records directly to the Administrator along with a claim of confidentiality.

[A.A.C. R18-2-304.G and -306.A.8.e]

- B.** If the Permittee has failed to submit any relevant facts or has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

[A.A.C. R18-2-304.H]

XVI. PERMIT AMENDMENT OR REVISION

The Permittee shall apply for a permit amendment or revision for changes to the facility which do not qualify for a facility change without revision under Condition XVII, as follows:

- A.** Administrative Permit Amendment (A.A.C. R18-2-318);
[A.A.C. R18-2-318]
- B.** Minor Permit Revision (A.A.C. R18-2-319); and
[A.A.C. R18-2-319]
- C.** Significant Permit Revision (A.A.C. R18-2-320)
[A.A.C. R18-2-320]
- D.** The applicability and requirements for such action are defined in the above referenced regulations.

XVII. FACILITY CHANGE WITHOUT A PERMIT REVISION

- A.** The Permittee may make changes at the permitted source without a permit revision if all of the following apply:
[A.A.C. R18-2-317]
1. The changes are not modifications under any provision of Title I of the Act or under ARS § 49-401.01(24);
[A.A.C. R18-2-317.A.1]
 2. The changes do not exceed the emissions allowable under the permit whether expressed therein as a rate of emissions or in terms of total emissions;
[A.A.C. R18-2-317.A.2]
 3. The changes do not violate any applicable requirements or trigger any additional applicable requirements;
[A.A.C. R18-2-317.A.3]
 4. The changes satisfy all requirements for a minor permit revision under A.A.C. R18-2-319.A;
[A.A.C. R18-2-317.A.4]

5. The changes do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements; and
[A.A.C. R18-2-317.A.5]
6. The changes do not constitute a minor NSR modification.
[A.A.C. R18-2-317.A.6]
- B.** The substitution of an item of process or pollution control equipment for an identical or substantially similar item of process or pollution control equipment shall qualify as a change that does not require a permit revision, if it meets all of the requirements of Conditions XVII.A and XVII.C of this Attachment.
[A.A.C. R18-2-317.B]
- C.** For each change under Conditions XVII.A and XVII.B above, a written notice by certified mail or hand delivery shall be received by the Director and the Administrator a minimum of 7 working days in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided less than 7 working days in advance of the change, but must be provided as far in advance of the change as possible or, if advance notification is not practicable, as soon after the change as possible.
[A.A.C. R18-2-317.D]
- D.** Each notification shall include:
1. When the proposed change will occur;
[A.A.C. R18-2-317.E.1]
 2. A description of the change;
[A.A.C. R18-2-317.E.2]
 3. Any change in emissions of regulated air pollutants; and
[A.A.C. R18-2-317.E.3]
 4. Any permit term or condition that is no longer applicable as a result of the change.
[A.A.C. R18-2-317.E.7]
- E.** The permit shield described in A.A.C. R18-2-325 shall not apply to any change made under this Section.
[A.A.C. R18-2-317.F]
- F.** Except as otherwise provided for in the permit, making a change from one alternative operating scenario to another as provided under A.A.C. R18-2-306.A.11 shall not require any prior notice under this Section.
[A.A.C. R18-2-317.G]
- G.** Notwithstanding any other part of this Section, the Director may require a permit to be revised for any change that, when considered together with any other changes submitted by the same source under this Section over the term of the permit, do not satisfy Condition XVII.A above.
[A.A.C. R18-2-317.H]

XVIII. TESTING REQUIREMENTS

[A.A.C. R18-2-312]

A. The Permittee shall conduct performance tests as specified in the permit and at such other times as may be required by the Director.

B. Operational Conditions during Performance Testing

Performance tests shall be conducted under such conditions as the Director shall specify to the plant operator based on representative performance of the source. The Permittee shall make available to the Director such records as may be necessary to determine the conditions of the performance tests. Operations during periods of start-up, shutdown, and malfunction (as defined in A.A.C. R18-2-101) shall not constitute representative conditions of performance tests unless otherwise specified in the applicable standard.

C. Performance Tests shall be conducted and data reduced in accordance with the test methods and procedures contained in the Arizona Testing Manual unless modified by the Director pursuant to A.A.C. R18-2-312.B.

D. Test Plan

At least 14 working days prior to performing a test, the Permittee shall submit a test plan to the Director in accordance with A.A.C. R18-2-312.B and the Arizona Testing Manual. This test plan must include the following:

1. Test duration;
2. Test location(s);
3. Test method(s); and
4. Source operation and other parameters that may affect test results.

E. Stack Sampling Facilities

The Permittee shall provide, or cause to be provided, performance testing facilities as follows:

1. Sampling ports adequate for test methods applicable to the facility;
2. Safe sampling platform(s);
3. Safe access to sampling platform(s); and
4. Utilities for sampling and testing equipment.

F. Interpretation of Final Results

Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the

applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs is required to be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control, compliance may, upon the Director's approval, be determined using the arithmetic mean of the results of the other two runs. If the Director or the Director's designee is present, tests may only be stopped with the Director's or such designee's approval. If the Director or the Director's designee is not present, tests may only be stopped for good cause. Good cause includes: forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of any test without good cause after the first run is commenced shall constitute a failure of the test. Supporting documentation, which demonstrates good cause, must be submitted.

G. Report of Final Test Results

A written report of the results of performance tests conducted pursuant to 40 CFR 63, shall be submitted to the Director within 60 days after the test is performed. A written report of the results of all other performance tests shall be submitted within 30 days after the test is performed, or as otherwise provided in the Arizona Testing Manual. All performance testing reports shall be submitted in accordance with the Arizona Testing Manual and A.A.C. R18-2-312.A.

H. Extension of Performance Test Deadline

[A.A.C. R18-2-312.J]

For performance testing required under Condition XVIII.A above, the Permittee may request an extension to a performance test deadline due to a force majeure event as follows:

[A.A.C. R18-2-312.J]

1. If a force majeure event is about to occur, occurs, or has occurred for which the Permittee intends to assert a claim of force majeure, the Permittee shall notify the Director in writing as soon as practicable following the date the Permittee first knew, or through due diligence should have known that the event may cause or caused a delay in testing beyond the regulatory deadline. The notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification shall be given as soon as practicable.

[A.A.C. R18-2-312.J.1]

2. The Permittee shall provide to the Director a written description of the force majeure event and a rationale for attributing the delay in testing beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which the Permittee proposes to conduct the performance test. The performance test shall be conducted as soon as practicable after the force majeure event occurs.

[A.A.C. R18-2-312.J.2]

3. The decision as to whether or not to grant an extension to the performance test deadline is solely within the discretion of the Director. The Director shall notify the Permittee in writing of approval or disapproval of the request for an extension as soon as practicable.
[A.A.C. R18-2-312.J.3]
4. Until an extension of the performance test deadline has been approved by the Director under subsections Conditions XVIII.H.1, 2, and 3 above, the Permittee remains subject to the requirements of Condition XVII of Attachment A.
[A.A.C. R18-2-312.J.4]
5. For purposes of Condition XVIII, a “force majeure event” means an event that will be or has been caused by circumstances beyond the control of the Permittee, its contractors, or any entity controlled by the Permittee that prevents it from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the Permittee's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the Permittee.
[A.A.C. R18-2-312.J.1]

XIX. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.
[A.A.C. R18-2-306.A.8.d]

XX. SEVERABILITY CLAUSE

The provisions of this permit are severable. In the event of a challenge to any portion of this permit, or if any portion of this permit is held invalid, the remaining permit conditions remain valid and in force.
[A.A.C. R18-2-306.A.7]

XXI. PERMIT SHIELD

Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements identified in the portions of this permit subtitled “Permit Shield”. The permit shield shall not apply to minor revisions pursuant to Condition XVI.B of this Attachment and any facility changes without a permit revision pursuant to Condition XVII of this Attachment.
[A.A.C. R18-2-317.F, - 320, and -325]

XXII. PROTECTION OF STRATOSPHERIC OZONE

If this source becomes subject to the provisions of 40 CFR Part 82, then the Permittee shall comply with these provisions accordingly.
[40 CFR Part 82]

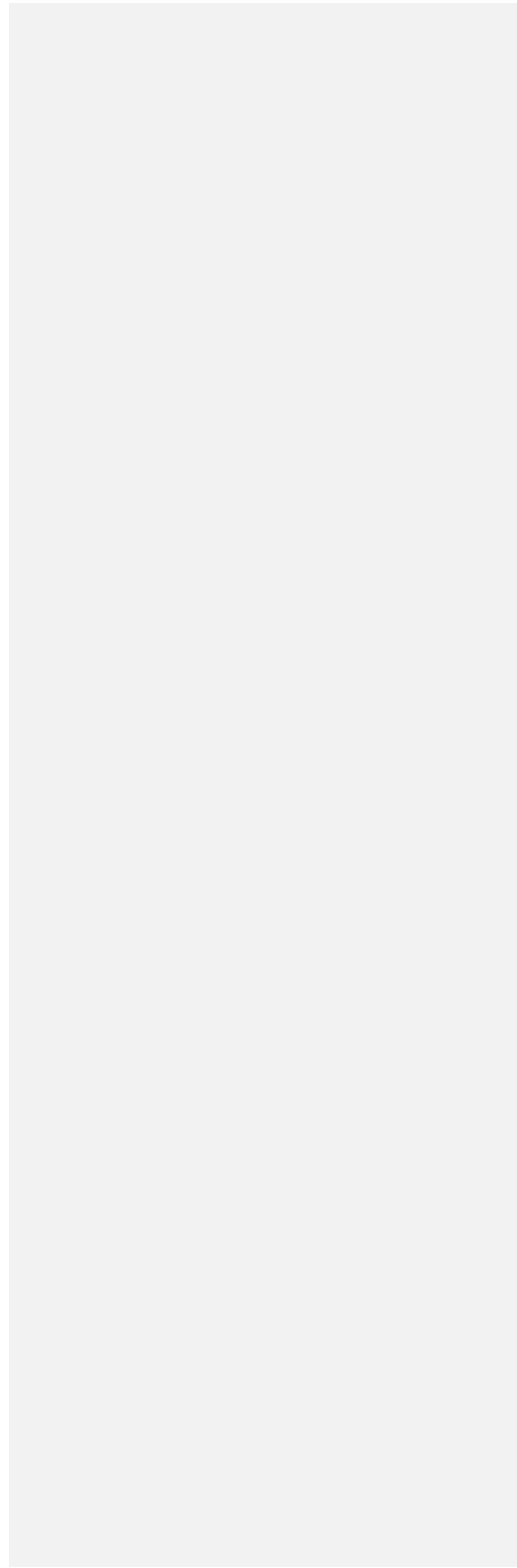
XXIII. APPLICABILITY OF NSPS/NESHAP GENERAL PROVISIONS

For all equipment subject to a New Source Performance Standard or a National Emission Standard for Hazardous Air Pollutants, the Permittee shall comply with all applicable requirements contained in Subpart A of Title 40, Chapter 60 and Chapter 63 of the Code of Federal Regulations.



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[40 CFR Part 60 and Part 63]



ATTACHMENT "B": SPECIFIC CONDITIONS

I. FACILITY-WIDE REQUIREMENTS

A. Opacity

1. Instantaneous Surveys and Six-Minute Observations

a. Instantaneous Surveys

Any instantaneous survey required by this permit shall be determined by either option listed in Conditions I.A.1.a(1) and (2).

(1) Alternative Method ALT-082 (Digital Camera Operating Technique)

(a) The Permittee, or Permittee representative, shall be certified in the use of Alternative Method ALT-082.

(b) The results of all instantaneous surveys and six-minute observations shall be obtained within 30 minutes.

[A.A.C. R18-2-311.b]

(2) EPA Reference Method 9 Certified Observer.

[A.A.C. R18-2-306.A.3.c]

b. Six-Minute Observations

Any six-minute observation required by this permit shall be determined by either option listed in Conditions I.A.1.b(1) and (2).

(1) Alternative Method ALT-082 (Digital Camera Operating Technique)

(a) The Permittee, or Permittee representative, shall be certified in the use of Alternative Method ALT-082.

(b) The results of all instantaneous surveys and six-minute observations shall be obtained within 30 minutes.

[A.A.C. R18-2-311.b]

(2) EPA Reference Method 9.

c. The Permittee shall have on site or on call a person certified in EPA Reference Method 9 unless all 6-minute Method 9 observations required by this permit are conducted as a 6-minute Alternative Method-082 (Digital Camera Operating Technique) and all instantaneous visual surveys required by this permit are conducted as an instantaneous Alt-082 camera survey. Any 6-minute Method 9 observation required by this permit can be conducted as a 6-minute Alternative Method-082 and any

instantaneous visual survey required by this permit can be conducted as an instantaneous Alt-082 camera survey.

[A.A.C. R18-2-306.A.3.e]

2. Monitoring, Recordkeeping, and Reporting Requirements

- a. At the frequency specified in the following sections of this permit, the Permittee shall conduct an instantaneous survey of visible emissions from both process stack sources, when in operation, and fugitive dust sources.
- b. If the plume on an instantaneous basis appears less than or equal to the applicable opacity standard, then the Permittee shall keep a record of the name of the observer, the date on which the instantaneous survey was made, and the results of the instantaneous survey.
- c. If the plume on an instantaneous basis appears greater than the applicable opacity standard, then the Permittee shall immediately conduct a six-minute observation of the plume.
 - (1) If the six-minute observation of the plume is less than or equal to the applicable opacity standard, then the Permittee shall record the name of the observer, the date on which the six-minute observation was made, and the results of the six-minute observation.
 - (2) If the six-minute observation of the plume is greater than the applicable opacity standard, then the Permittee shall do the following:
 - (a) Adjust or repair the controls or equipment to reduce opacity to less than or equal to the opacity standard;
 - (b) Record the name of the observer, the date on which the six-minute observation was made, the results of the six-minute observation, and all corrective action taken; and
 - (c) Report the event as an excess emission for opacity in accordance with Condition XII.A of Attachment "A".
 - (d) Conduct another six-minute observation to document the effectiveness of the adjustments or repairs completed.

[A.A.C. R18-2-306.A.3.e]

B. General Requirements for Compliance Assurance Monitoring (CAM)

The following requirements shall be applicable to any equipment that is subject to CAM requirements:

1. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable,

calibration checks and required zero and span adjustments), the Permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the emission points are operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The Permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

[40 CFR 64.7(c)]

2. Response to excursions

a. Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emission point (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable, but no later than 24 hours following detection of an excursion, in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown, or malfunction, and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action, or any necessary follow-up actions to return operations to within the indicator range, designated condition, or below applicable emission limitation or standard, as applicable.

[40 CFR 64.7(d)(1)]

b. Determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation, and maintenance procedures and records, and inspection of the control device, associated capture system, and process.

[40 CFR 64.7(d)(2)]

3. If the Permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the Permittee shall promptly notify the Department, and if necessary, submit a proposed modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, re-establishing indicator ranges or designated conditions, modifying the frequency of conduction monitoring and collecting data, or the monitoring of additional parameters.

[40 CFR 64.7(e)]

4. Excursions shall be reported as required by Condition VII.B.4 of Attachment “A” of this permit. The compliance certification shall include, at a minimum, the following:

[A.A.C. R18-2-309(2)(c)(iii)]

- (1) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursion or exceedances, as applicable, and the corrective actions taken; and
[40 CFR 64.9(a) (2)(i)]
- (2) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitoring downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable)
[40 CFR 64.9(a) (2)(ii)]

C. Operational Limitations and Standards

1. Operation and Maintenance

The Permittee shall operate all equipment identified in Attachment “C” in accordance with vendor-supplied operations and maintenance instructions. If vendor-supplied operations and maintenance instructions are not available, the Permittee shall prepare an Operation and Maintenance Plan, which provides adequate information to properly operate and maintain the equipment in good working order. In the absence of vendor-supplied operations and maintenance instructions, the Permittee shall operate the equipment in accordance with the Operation and Maintenance Plan.

[A.A.C. R18-2-306.A.2]

2. Emission Limits/Standards

~~a. The Permittee shall not discharge or cause to be discharged into the atmosphere from the facility volatile organic compound (VOC) emissions that exceed 225 tons per year, based on a 12-month rolling total.~~

~~[A.A.C. R18-2-306.01 & -331.A.3.a]~~

~~[Material Permit Condition identified by italics and underline]~~

~~b.a. The Permittee shall use less than 9 tons of any individual federal hazardous air pollutant (HAP), and less than 22.5 tons of any combination of HAP based on a 12-month rolling total.~~

~~[A.A.C. R18-2-306.01 & -331.A.3.a]~~

~~[Material Permit Condition identified by italics and underline]~~

~~e. The Permittee shall not operate emission units Press 04, Press 05 or Laminator AL-32 prior to the installation and operation of RTO-102 to control VOC emissions from each emission unit respectively.~~

~~[A.A.C. R18-2-306.01 & -331.A.3.e]~~

~~[Material Permit Condition identified by italics and underline]~~

Commented [RAC2]: No longer necessary. Printpack requests the removal of this permit condition based upon PTE emissions as provided.

Commented [RAC3]: No longer required. Construction activities complete. RTO in service. Other conditions apply now. Please removed.

~~d.b.~~ The Permittee shall not emit gaseous or odorous materials from equipment, operations, or premises under their control in such quantities or concentrations as to cause air pollution.

[A.A.C. R18-2-730.D]

~~e.c.~~ The Permittee shall not process, store, use, or transport materials including solvents or other volatile compounds in such a manner and by such means that they will evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air pollution.

[A.A.C. R18-2-730.F]

~~f.d.~~ Where a stack, vent, or other outlet is at such a level that odor, smoke, vapor or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet by the Permittee to a degree that will adequately dilute, reduce, or eliminate the discharge of air pollution into adjoining property.

[A.A.C. R18-2-730.G]

3. Monitoring, Recordkeeping, and Reporting Requirements

a. Operations and Maintenance

The Permittee shall maintain, on-site, records of the manufacturer's specifications or Operation and Maintenance Plan for minimizing emissions for all process and control equipment listed in Attachment "C".

[A.A.C. R18-2-306.A.4]

b. VOC Emissions Monitoring, Recordkeeping, and Reporting

[A.A.C. R18-2-306 A.3.e]

(1) The Permittee shall keep records of purchase orders, invoices, and either certified product data sheets or manufacturer formulation data sheets for all VOC containing materials.

(2) The Permittee shall maintain a monthly accounting of all VOC containing ink, coating, adhesive and solvent materials used individually in each of the following: Presses 01, 02, 03, 04 and 05, Outboard Coater OP-03, Extruder/Laminator EL-31, Laminator/Coater AL-32, all Parts and Plate Washers, as well as ink preparation, cleanup and other associated support operations. Supporting records used to develop the accounting, including purchase orders, invoices, production usage logs and safety data sheets (SDS) necessary to verify the type and amount of each material used, shall be maintained on site and shall be readily available to ADEQ upon request.

(3) The Permittee shall process the monthly accounting of VOC containing material usage, described in Condition I.C.3.b(2) through the materials management database to convert the data to

VOC total emissions, taking into account the status of each emission unit, process or activity as uncaptured or captured, controlled or uncontrolled and the respective control efficiency for controlled emissions.

(a) The Permittee shall use ~~as the respective control efficiency, 95% for I01 and 97.5% for I02~~; or the control efficiency documented in the most recent performance test results approved by ADEQ.

Commented [RAC4]: Equipment removed. Reference no longer needed.

(b) The Permittee shall include emissions from solvent storage tanks ST-01 through ST-05 in the monthly accounting of emissions

(4) Each month the Permittee shall record a total of VOC emissions, in tons per month (tpm).

(5) The total monthly VOC emissions shall be added to the total monthly VOC emissions for each of the previous consecutive 11 calendar months to establish the 12-month rolling total emissions for the facility. ~~This rolling 12 month VOC emissions total shall be used to determine compliance with the emission limit specified in Condition I.C.2.a~~

Commented [RAC5]: Printpack agrees to maintain all the necessary records as a Class I facility. These records are not necessary for Condition I.C.2.a. Printpack has requested that this condition/limitation be removed from the permit.

c. HAP Emissions Monitoring, Recordkeeping, and Reporting
[A.A.C. R18-2-306.A.3.c]

(1) The Permittee shall keep records of purchase orders, invoices, and either certified product data sheets or manufacturer formulation data sheets for all HAP-containing materials.

(2) Monthly usage of all HAP-containing materials shall be recorded. Based on the HAP content in each material, the monthly total of HAP consumed shall be calculated and recorded.

(3) At the end of each month, the Permittee shall calculate the rolling 12-month totals of all HAP consumed to show compliance with Condition ~~I.C.2.a-I.C.2.b~~.

4. Permit Shield
[A.A.C. R18-2-325]

Compliance with the conditions of this Part shall be deemed compliance with A.A.C R18-2-730.D, F, and G.

D. National Emission Standards for Hazardous Air Pollutants

1. The existing facility, at which wide-web flexographic printing presses are operated, is subject to the provisions of 40 CFR 63 Subpart KK-National Emission Standards for the Printing and Publishing Industry. Compliance with the

requirements of Conditions I.C.2.a-I.C.2.b of Attachment “B” of this permit establish the facility to be an area source with respect to 40 CFR 63 Subpart KK and thus the Permittee is only subject to certain recordkeeping and notification requirements of Subpart KK.

[40 CFR 63.820(a)(2) and (3)]

2. Compliance with Condition I.C.3.c of Attachment “B” of this permit meet the applicable recordkeeping requirements of 40 CFR 63.829(d).
[40 CFR 63.829(d)]
3. Compliance with Condition XVI of Attachment “A” of this permit meet the applicable notification requirements of 40 CFR 63.830(b)(1).
[40 CFR 63.830(b)(1)]

II. ALTERNATE OPERATING SCENARIO USING LOW VOC MATERIALS

A. Applicability

This Section is applicable to Laminator AL-32 when operated under Alternate Operating Scenario 1 (AOS-1), which is defined as operating with water-based, or other coating formulations that contain no more than 1% VOC by weight.

B. Operational Limits

1. The Permittee may direct exhaust emissions from AL-32 to atmosphere only when operating with water-based, or other coating formulations that contain no more than 1% VOC by weight.
[A.A.C. R18-2-306.01 & -331.A.3.a]
[Material Permit Condition identified by italics and underline]
2. All operations of AL-32 other than AOS-1 are subject to the Conditions of Section III of this Attachment.
[A.A.C. R18-2-306.01 & -331.A.3.a]
[Material Permit Condition identified by italics and underline]
3. The exhaust ductwork of AL-32 shall be equipped with sensors, controls and interlocks to prevent the diversion of exhaust to atmosphere any time the concentration of VOC in the exhaust stream is greater than 5% of the lower explosion limit of propane.
[A.A.C. R18-2-306.A.2 & -331.A.3.c]
[Material Permit Condition identified by italics and underline]

C. Monitoring, Recordkeeping, and Reporting Requirements

1. The Permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications a damper position indicator at the entrance to any bypass line that could divert the exhaust stream away from the control device to the atmosphere.
[A.A.C. R18-2-306.01 & -331.A.3.a]
[Material Permit Condition identified by italics and underline]

2. The Permittee shall at all times the process is operating, continuously monitor as practicable, and record, electronically, or by chart recorder, whether the flow is directed to the control device or diverted to atmosphere. This record shall be maintained on site and readily available to ADEQ upon request.
[A.A.C. R18-2-306.A.4]
3. The Permittee shall contemporaneously with making the change from one operating scenario to another, record in a log or other electronic means a record of the scenario under which it is operating. This log shall be maintained on site and readily available to ADEQ upon request.
[A.A.C. R18-2-306.A.4 & -A.11.a]

III. VOC CAPTURE AND CONTROL

A. Applicability

1. This Section is applicable to Presses 01, ~~02, 03, and~~ 04 and ~~05~~, coaters associated with Presses 01, ~~02, and 03~~, Coater OP-03 the press room total enclosure, the equipment enclosures for Press 04 and ~~05~~, Parts Washers PW-01, PW-02 and PW-03, ~~Plate Washer PW 04~~, the Solvent Distillation Tank, Solvent Storage Tanks ST-04 and ST-05 and the associated ink, solvent and adhesive material handling support operations at the facility.
2. This Section is applicable to Laminator AL-32 and the equipment enclosures for Laminator AL-32, except when operating under AOS-1 per the requirements of Section II of this Attachment.
3. This Section is applicable to ~~Catalytic Oxidizer IO1 and~~ Regenerative Thermal Oxidizer IO2.

Commented [RAC6]: Equipment relocated. Equipment emissions no longer controlled. Emissions accounted for as uncontrolled emissions.

Commented [RAC7]: Equipment removed.

B. Air Pollution Control Requirements

1. *The Permittee shall maintain and operate VOC capture systems in accordance with manufacturer's specifications and consistent with good air pollution control practice to capture 100% of VOC emissions from the equipment and processes identified in Conditions III.A.1 and III.A.2 at all times when VOC containing materials are being processed, including associated and support material handling and cleaning operations.*
- 1- *If all applicable sources are shutdown, VOC containing materials are closed, and cleaning operations ceased, the VOC collection and control system may be shutdown.*
[A.A.C. R18-2-306.A.2 and -.331.A.3.e]
[Material Permit Condition identified by italics and underline]
2. *The Permittee shall maintain and operate thermal oxidizer s ~~(IO1 and IO2)~~ in accordance with manufacturer's specifications and consistent with good air pollution control practice to control emissions from the equipment and processes identified in Conditions III.A.1 and III.A.2. at all times when VOC containing materials are being processed, including associated and support material*

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Commented [RAC8]: Printpack would like permission to shutdown the collection and control system on weekends and holidays when all source of emissions are managed.

Commented [RAC9]: Catalytic oxidizer removed. Reference no longer needed.

handling and cleaning operations. The Permittee shall make the manufacturer's specifications available to ADEQ upon request.

[A.A.C. R18-2-306.A.2 and -.331.A.3.e]
[Material Permit Condition identified by italics and underline]

3. ~~*Presses 01, 02, 03 and 04 and 05, associated coaters and Laminator AL-32 shall each have an interlock device to prevent their operation unless the thermal oxidizer temperature to which the emissions are routed has reached the minimum operating temperature and minimum pressure specified in Conditions I.A.1.a(1)H.B.5.b(1) or III.B.5.a(1)H.B.5.e(1) and Conditions I.A.1.a(1)H.B.5.b(2) and III.B.5.a(2)H.B.5.e(2) as appropriate.*~~

[A.A.C. R18-2-306.A.2 and -.331.A.3.e]
[Material Permit Condition identified by italics and underline]

4. ~~*The exhaust ductwork of AL-32 shall be equipped with sensors, controls and interlocks to prevent the diversion of exhaust to atmosphere any time the concentration of VOC in the exhaust stream is greater than 5% of the lower explosion limit of propane.*~~

[A.A.C. R18-2-306.A.2 & -.331.A.3.e]
[Material Permit Condition identified by italics and underline]

5. Thermal Oxidizing Control Devices

~~a. *At all times VOC emissions from the equipment and processes identified in Conditions III.A.1 and III.A.2 shall be routed to either Catalytic Oxidizer (I01) or Regenerative Thermal Oxidizer (I02).*~~

[A.A.C. R18-2-306.A.2 and -.331.A.3.e]
[Material Permit Condition identified by italics and underline]

~~b. *Catalytic Oxidizer (I01)*~~

~~(1) *The Permittee shall maintain the average catalyst bed temperature reported from the most recent performance test results approved by ADEQ as the minimum average temperature for normal operation of the catalytic oxidizer.*~~

[A.A.C. R18-2-306.A.2 and -.331.A.3.e]
[Material Permit Condition identified by italics and underline]

~~(2) *The Permittee shall maintain the differential pressure between the press room total enclosure and the maintenance department at a minimum negative value of -0.007 inches of water.*~~

[A.A.C. R18-2-306.A.2 and -.331.A.3.e]
[Material Permit Condition identified by italics and underline]

~~(3) *The catalytic oxidizer shall have a minimum VOC destruction efficiency of 95 percent.*~~

[A.A.C. R18-2-306.01.A and -.331.A.3.a]
[Material Permit Condition identified by italics and underline]

~~e.a. *Regenerative Thermal Oxidizer (I02)*~~

Commented [RAC10]: Equipment removed.

Commented [RAC11]: No longer necessary. Only one system (I002) in service. This condition is not longer needed. This is covered in conditions above.

Commented [RAC12]: Equipment removed. Conditions are no longer applicable. Please remove.

- (1) The Permittee shall maintain the average combustion chamber temperature reported from the most recent performance test results approved by ADEQ as the minimum average temperature for normal operation of the RTO. Prior to obtaining results from the initial performance test, the Permittee shall maintain 1500°F as the minimum average combustion chamber temperature.
[A.A.C. R18-2-306.A.2 and -.331.A.3.e]
[Material Permit Condition identified by italics and underline]
- (2) The Permittee shall maintain the average static pressure in the final trunk line inlet duct prior to the regenerative thermal oxidizer blower, at a pressure no less negative than that specified based upon final system design. The Permittee shall assure the static pressure specified by final system design will maintain a minimum negative pressure of -0.007 inches of water at each permanent enclosure under all representative operating conditions. Prior to placing the RTO in operation as a control device, the Permittee shall provide notification to the Director of the static pressure specified by final system design.
[A.A.C. R18-2-306.A.2 and -.331.A.3.e]
[Material Permit Condition identified by italics and underline]
- (3) The regenerative thermal oxidizer shall have a minimum VOC destruction efficiency of 97.5 percent.
[A.A.C. R18-2-306.A.2 and -.331.A.3.e]
[Material Permit Condition identified by italics and underline]

6. Permanent Total Enclosures (PTE)

- a. This Section is applicable to:
 - (1) The Press Room PTE,
 - (2) Each material handling area PTE for Press 4 and 5, and
 - (3) Each material handling area PTE for Laminator/Coater AL-32.
- b. The Permittee shall ensure that each PTE conforms to the following 4-point criteria:
[A.A.C. R 18-2-306.A.2]
 - (1) Any natural draft opening (NDO) shall be at least four equivalent opening diameters from each VOC emitting point unless otherwise specified by the Administrator.
 - (2) The total area of all NDO's shall not exceed 5 percent of the surface area of enclosure's four walls, floor, and ceiling.
 - (3) The average facial velocity of air through all NDO's shall be at least 3600 m/hr (200 fpm). The direction of airflow through all NDO's shall be into the enclosure.

- (4) All access doors and windows whose areas are not included in Condition III.B.6.b(2) and are not included in the calculation of Condition III.B.6.b(3) shall be closed during routine operation of the process.

C. Monitoring, Recordkeeping, and Reporting Requirements

~~1. Catalytic Oxidizer (I01)~~

- ~~a. The Permittee shall validate the catalyst bed temperature sensor as per the manufacturer's guidelines, at a minimum frequency of once per year.~~

~~[A.A.C. R 18-2-306.A.2 and 331.A.3.c]~~

~~[Material Permit Condition identified by italics and underline]~~

- ~~b. The Permittee shall record the temperature of the catalyst bed every fifteen minutes on a temperature chart or on an electronic data logger. For each hour the catalytic oxidizer is in operation to control VOC emissions, the Permittee shall record four readings. The average temperature shall be calculated as a 3-hour rolling average.~~

~~[A.A.C. R 18-2-306.A.3.c]~~

- ~~c. The Permittee shall perform vibration analysis on the forced draft fan/motor in compliance with the Operation and Maintenance Plan. In case the vibration analysis shows higher than normal range, appropriate corrective action shall be implemented to bring down the vibration levels to the normal range. Additionally any corrective action taken shall be documented.~~

~~[A.A.C. R 18-2-306.A.2 and 306.A.3.c]~~

- ~~d. The Permittee shall conduct the following annually:~~

- ~~(1) Visually inspect the level of catalyst media in each bed in relation to its pre-marked full level. If catalyst level is low, it shall be made up by addition of new catalyst;~~
- ~~(2) Check for cracks or physical damage to catalyst beds or chamber;~~
- ~~(3) Gently rake and smooth each bed to reorient catalyst without damaging the catalyst; and~~
- ~~(4) Inspect proper placing of the bed top screens.~~

~~[A.A.C. R 18-2-306.A.2]~~

- ~~e. The Permittee shall maintain a log and submit a report on the activities listed in Condition III.C.1 along with the next compliance certification report.~~

~~[A.A.C. R 18-2-306.A.5.]~~

~~2.1. Regenerative Thermal Oxidizer (I02)~~

Commented [RAC13]: Equipment removed. Conditions no longer applicable. Please remove.

- a. *The Permittee shall validate the combustion chamber temperature sensor as per the manufacturer's guidelines, at a minimum frequency of once per year.*
[A.A.C. R 18-2-306.A.2 and -331.A.3.c]
[Material Permit Condition identified by italics and underline]
- b. The Permittee shall record the temperature of the combustion chamber every fifteen minutes on a temperature chart or on an electronic data logger. For each hour the regenerative thermal oxidizer is in operation to control VOC emissions, the Permittee shall record four readings. The average temperature shall be calculated as a 3 hour rolling average.
[A.A.C. R 18-2-306.A.3.c]
- c. The Permittee shall take corrective action following the discovery of any abnormal operation of RTO-I02 or the combustion chamber temperature monitoring system as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.
[A.A.C. R 18-2-306.A.3.c]

3.2. AL-32 Bypass Damper Inspection

- a. The Permittee shall complete a visual, audio, and olfactory (AVO) operational inspection of each AL-32 bypass damper once every month. The inspection shall document any evidence of leaks or improper orientation.
[A.A.C. R18-2-306.A.3.c]
- b. If any conditions of improper operation or sealing are observed during the monthly inspection, the Permittee shall complete the necessary repairs prior to continuing production operation of AL-32.
[A.A.C. R18-2-306.A.3.c]

4.3. Compliance Assurance Monitoring (CAM)

- ~~a. Emission Units connected to Catalytic Oxidizer (I01)~~
- ~~(1) Indicators~~
- ~~(a) The Permittee shall monitor the catalyst bed temperature.~~
[40 CFR 64.6(e)(1)(i)]
- ~~(b) The Permittee shall monitor the differential pressure across the press room enclosure.~~
[40 CFR 64.6(e)(1)(i)]
- ~~(2) Monitoring Approach~~
[40 CFR 64.3]
- ~~(a) At all times when any emission unit is connected to the catalytic oxidizer, the Permittee shall continuously monitor as practicable, and record the catalyst bed~~

~~temperature with a temperature thermocouple installed at the inlet side of the catalyst bed. The thermocouple reflects temperature monitoring within the combustion chamber as opposed to inlet or exhaust air temperatures. The monitoring device shall be validated at a frequency in accordance with the manufacturer's specifications, or other written procedures that provide an adequate assurance that the device is calibrated accurately, or at least annually, whichever is more frequent, and shall be accurate to within one of the following:~~

~~± 0.75% of the temperature being measured expressed in degrees Celsius; or~~

~~± 2.5 degrees Celsius.~~

~~(b) The Permittee shall obtain a temperature reading once every 15 minutes and calculate a rolling 3 hour average.~~

~~(c) At all times when any emission unit is connected to the catalytic oxidizer, the Permittee shall monitor and record the differential pressure across the press room enclosure to ensure the negative pressure is sufficient to meet the requirement of 100% capture.~~

~~(d) The Permittee shall obtain a differential pressure reading at least once per shift. If more than one pressure reading is obtained during a shift the Permittee shall calculate a shift average.~~

~~(3) Excursion Determination~~

~~{40 CFR 64.6(c)92}~~

~~(a) At all times when any emission unit is connected to the catalytic oxidizer, any rolling 3 hour average below the catalyst bed temperature reported in the most recent performance test results approved by ADEQ shall constitute an excursion.~~

~~(b) At all times when any emission unit is connected to the catalytic oxidizer, any shift average below the value required by EPA Method 204 shall constitute an excursion.~~

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b.a. Emission Units connected to Regenerative Thermal Oxidizer (I02)

(1) Indicators

(a) The Permittee shall monitor the combustion chamber temperature.

[40 CFR 64.6(c)(1)(i)]

- (b) The Permittee shall monitor the static pressure in the final trunk line inlet duct prior to the oxidizer blower.

[40 CFR 64.6(c)(1)(i)]

(2) Monitoring Approach

[40 CFR 64.3]

- (a) At all times when ~~at least one~~any emission unit is connected to the regenerative thermal oxidizer, VOC containing materials are not closed, and cleaning operations ceased, the Permittee shall monitor and record the combustion chamber temperature with a temperature thermocouple installed in or immediately downstream of the combustion chamber. The monitoring device shall be validated at a frequency in accordance with the manufacturer's specifications, or other written procedures that provide an adequate assurance that the device is calibrated accurately, or at least annually, whichever is more frequent, and shall be accurate to within one of the following:

± 0.75% of the temperature being measured expressed in degrees Celsius; or

± 2.5 degrees Celsius.

- (b) The Permittee shall obtain a temperature reading once every 15 minutes and calculate a rolling 3 hour average.

- (c) At all times when ~~at least one any~~ emission unit is connected to the regenerative thermal oxidizer, VOC containing materials are not closed, and cleaning operations ceased, the Permittee shall continuously monitor as practicable, and record the static pressure in the final trunk line inlet duct prior to the oxidizer blower. The monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or other written procedures that provide an adequate assurance that the device is calibrated accurately, or at least annually, whichever is more frequent.

- (d) The Permittee shall obtain a static pressure reading once every 15 minutes and calculate a rolling 3 hour average.

(3) Excursion Determination

[40 CFR 64.6(c)(2)]

Commented [RAC15]: Printpack would like to request that this condition be modified to allow for equipment shutdowns to occur and the monitoring requirement cause a deviation.

- (a) ~~At all times when any~~Unless all emission units are properly shutdown, all VOC containing materials closed, and cleaning operations ceased, ~~is connected to the regenerative thermal oxidizer,~~ any 3 hour average below the combustion temperature reported in the most recent performance test results approved by ADEQ shall constitute an excursion. Prior to obtaining ADEQ approved results of the first performance test, any 3 hour average temperature below 1500°F shall constitute an excursion.
- (b) ~~At all times when any~~Unless all emission units are properly shutdown, all VOC containing materials closed, and cleaning operations ceased, ~~is connected to the regenerative thermal oxidizer,~~ any 3 hour average less negative than the static pressure reported in the most recent performance test results approved by ADEQ shall constitute an excursion. Prior to obtaining ADEQ approved results of the first performance test, any 3 hour average less negative than the static pressure specified by final system design shall constitute an excursion.

D. Testing Requirements

[A.A.C. R18-2-312]

~~1. Catalytic Oxidizer (101)~~

- ~~a. The Permittee shall complete performance tests to determine the VOC destruction efficiency of the Catalytic Oxidizer in accordance with EPA Reference Method 25A.~~
- ~~b. The performance testing shall be conducted per the following schedule:~~
- ~~(1) If Press 03 and the Catalytic Oxidizer are not permanently taken out of service by the end of August 2019, the Permittee shall complete a performance test on the Catalytic Oxidizer by the end of August 2019.~~
- ~~(2) If the Catalytic Oxidizer remains in service as a VOC control device after August 2019, the Permittee shall complete a subsequent performance test in the fourth calendar quarter of 2021.~~

~~2.1. Regenerative Thermal Oxidizer (102)~~

- a. The Permittee shall obtain from the manufacturer, ~~test results~~certifications which validate the RTO is capable of a minimum VOC destruction efficiency of 97.5%. ~~The Permittee shall obtain results of the validation test prior to placing the RTO in service as a control device for VOC emissions from production activities.~~ The Permittee shall provide ADEQ

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a copy of the manufacturer's ~~validation test certification documents~~ of the RTO, ~~including the results and details of the operating conditions under which the test was conducted. The Permittee shall submit the report within 15 days following the Permittee's receipt of the validation test results.~~

[A.A.C. R18-306.A.3.c]

- b. The Permittee shall complete performance tests to determine the VOC destruction efficiency of the RTO in accordance with EPA Reference Method 25A.

[A.A.C. R18-2-312]

- e. ~~The performance testing shall be conducted per the following schedule:~~

~~(1) The initial test under this permit shall be completed no later than 30 days after Press 04 has been released to production.~~

~~(2) The second test under this permit shall be complete no later than 30 days after Press 05 has been released to production.~~

~~(3)c. A subsequent test shall be completed in the fourth year of the permit term (CY 2022) or as requested by the agency.~~

3.2. Permanent Enclosures

- a. The Permittee shall complete an EPA Method 204 test to verify the 100% capture efficiency of the following.

- (1) The Press Room Permanent enclosure;
- (2) Each material handling area PTE for Press 4 and 5; and
- (3) Each material handling area PTE for Laminator/Coater AL-32.

- b. Concurrent with measurement of the pressure drop at each enclosure, the Permittee shall measure and record the static pressure in the final trunk line inlet duct of the corresponding thermal oxidizer control device as well as the operating status of each press and laminator ducted to the corresponding thermal oxidizer. The oxidizer duct static pressure and production equipment status shall be included in the test report.

- c. Testing Frequency

(1) The Permittee shall complete the testing specified in Conditions ~~III.D.2.aHH-D-3-a~~ and ~~III.D.2.bHH-D-3-b~~ for each enclosure concurrently with the destruction efficiency test required for each thermal oxidizer control device as specified in Conditions ~~I.A.1HH-D-1~~ and ~~III.D.1HH-D-2~~.

(2) The Permittee shall complete the testing specified in Conditions ~~III.D.2.aHH-D-3-a~~ and ~~III.D.2.bHH-D-3-b~~ for each enclosure at

Commented [RAC17]: This condition was added for operation of the equipment until such time as the performance test could be completed. Printpack would like to retain this condition in the event that the RTO is taken out of service for rebuild or repairs activities that will require new performance testing.

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every occurrence of a connection or removal of a press or laminator is made to the inlet header of either thermal oxidizer.

IV. SOLVENT STILL AND STORAGE TANKS 4 AND 5

The Permittee shall route VOC emissions from the solvent still feed tank and solvent storage tanks ST-04 and ST-05 to RTO -102.

[A.A.C. R18-2-306.A.2]

V. PARTICULATE MATTER AND OPACITY

A. Fuel Limitations

The Permittee shall only burn pipeline quality natural gas as fuel in the following equipment.

[A.A.C. R18-2-306.A.2]

1. The combustion burners of ~~Catalytic Oxidizer (I01) and~~ Regenerative Thermal Oxidizer (I02).
2. The dryers of Presses 01, ~~02, 03, and~~ 04 ~~and 05~~.
3. The dryers of Laminator/Coater AL-32 and Extrusion Laminator EL-31.
4. Space Heater Units #1 through #9 and Roof Top Units #1 through #12.

B. Emissions Limitations and Standards

1. The Permittee shall not cause, allow or permit the emission of pollutants, caused by combustion of fuel, from the equipment identified in Conditions V.A.1, V.A.2 and V.A.3, into the atmosphere in excess of the amounts greater than the following.

[A.A.C. R18-2-730.A]

a. Particulate Matter

For particulate matter discharged into the atmosphere in any one hour from any unclassified process source in total quantities in excess of the amounts calculated by one of the following equations:

[A.A.C. R18-2-730.A.1]

- (1) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$$E = 4.10P^{0.67}$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

[A.A.C. R18-2-730.A.1.a]

- (2) For process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$$E = 55.0P^{0.11-40}$$

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

P = the process weight rate in tons-mass per hour.

[A.A.C. R18-2-730.A.1.b]

- b. Sulfur dioxide – 600 parts per million.

[A.A.C. R18-2-730.A.2]

- c. Nitrogen oxides expressed as NO₂ – 500 parts per million.

[A.A.C. R18-2-730.A.3]

2. For purposes of this Subpart, the total process weight from all similar units employing a similar type process shall be used in determining the maximum allowable emission of particulate matter.

[A.A.C. R18-2-730.B]

3. Actual values shall be calculated from the applicable equations and rounded off to two decimal places.

[A.A.C. R18-2-730.C]

C. Opacity

1. This subsection is applicable to the exhaust stacks from the following:

a. Extrusion Laminator EL-31;

b. Adhesive Laminator/Coater AL-32 (in AOS-1 operating mode);

~~e. Catalytic Oxidizer I01; and~~

~~d.c.~~ Regenerative Thermal Oxidizer I02

2. The Permittee shall not cause, allow or permit to be emitted into the atmosphere any plume or effluent the opacity of which exceeds 20 percent.

[R18-2-702.B]

D. Monitoring, Recordkeeping, and Reporting

1. The Permittee shall keep records of fuel supplier certifications, letters from fuel suppliers, or other documentation such as results of laboratory tests containing information regarding the name of the fuel supplier, lower heating value and sulfur

content of the fuel. These records provide the monitoring requirements of Conditions V.B.1.a, -b and -c. and shall be made available to ADEQ upon request.
[A.A.C. R18-2-306.A.3.c]

2. In accordance with the procedures described in Condition I.A.2 of this Attachment, the Permittee shall monitor emissions from the sources identified in Condition V.C.1 quarterly (once every 3 months).
[A.A.C. R18-2-306.A.3.c]

E. Permit Shield

Compliance with the conditions of this Subpart shall be deemed compliance with A.A.C. R18-2-730.A, -B and -C.
[A.A.C. R18-2-325]

VI. FUGITIVE DUST REQUIREMENTS

A. Applicability

This Section applies to any non-point source of fugitive dust in the facility.

B. Particulate Matter and Opacity

Open Areas, Roadways & Streets, Storage Piles, and Material Handling

1. Emission Limitations/Standards

- a. Opacity of emissions from any fugitive dust non-point source shall not be greater than 40%.
[A.A.C. R18-2-614]

- b. The Permittee shall employ the following reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne:

- (1) Keep dust and other types of air contaminants to a minimum in an open area where construction operations, repair operations, demolition activities, clearing operations, leveling operations, or any earth moving or excavating activities are taking place, by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means;
[A.A.C. R18-2-604.A]

- (2) Keep dust to a minimum from driveways, parking areas, and vacant lots where motor vehicular activity occurs by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means;
[A.A.C. R18-2-604.B]

- (3) Keep dust and other particulates to a minimum by employing dust suppressants, temporary paving, detouring, wetting down or by other reasonable means when a roadway is repaired, constructed, or reconstructed;
[A.A.C. R18-2-605.A]
- (4) Take reasonable precautions, such as wetting, applying dust suppressants, or covering the load when transporting material likely to give rise to airborne dust;
[A.A.C. R18-2-605.B]
- (5) Take reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods when crushing, handling, or conveying material likely to give rise to airborne dust;
[A.A.C. R18-2-606]
- (6) Take reasonable precautions such as chemical stabilization, wetting, or covering when organic or inorganic dust producing material is being stacked, piled, or otherwise stored;
[A.A.C. R18-2-607.A]
- (7) Operate stacking and reclaiming machinery utilized at storage piles at all times with a minimum fall of material, or with the use of spray bars and wetting agents;
[A.A.C. R18-2-607.B]
- (8) Any other method as proposed by the Permittee and approved by the Director.
[A.A.C. R18-2-306.A.3.c]
- (9) The Permittee shall take reasonable precautions, such as the use of dust suppressants, before the cleaning of a site, roadway, or alley. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.
[A.A.C. R18-2-804.B]

2. Air Pollution Control Requirements

Haul Roads and Storage Piles

Water, or an equivalent control, shall be used to control visible emissions from haul roads and storage piles.

[A.A.C. R18-2-306.A.2 and -331.A.3.d]
[Material Permit Condition is indicated by underline and italics]

3. Monitoring and Recordkeeping Requirements

- a. The Permittee shall maintain records of the dates on which any of the activities listed in Condition VI.B.1.b above were performed and the control measures that were adopted.

[A.A.C. R18-2-306.A.3.c]

- b. Opacity Monitoring Requirements

On a quarterly basis, the Permittee shall monitor visible emissions from fugitive sources in accordance with Condition I.A.2.

[A.A.C. R18-2-306.A.3.c]

4. Permit Shield

Compliance with the conditions of this Section shall be deemed compliance with A.A.C. R18-2-604, -605, -606, 607, -614, and -804.B.

[A.A.C. R18-2-325]

VII. OTHER PERIODIC ACTIVITIES

A. Abrasive Blasting

1. Particulate Matter and Opacity

- a. Emission Limitations/Standards

(1) The Permittee shall not cause or allow sandblasting or other abrasive blasting without minimizing dust emissions to the atmosphere through the use of good modern practices. Good modern practices include:

(2) Wet blasting;

(3) Effective enclosures with necessary dust collecting equipment; or

(4) Any other method approved by the Director.

[A.A.C. R18-2-726]

- b. Opacity

The Permittee shall not cause, allow or permit visible emissions from sandblasting or other abrasive blasting operations in excess of 20% opacity.

[A.A.C. R18-2-702.B.3]

2. Monitoring and Recordkeeping Requirement

Each time an abrasive blasting project is conducted, the Permittee shall make a record of the following:

- a. The date the project was conducted;

- b. The duration of the project; and
- c. Type of control measures employed.

[A.A.C. R18-2-306.A.3.c]

3. Permit Shield

Compliance with this Section shall be deemed compliance with A.A.C. R18-2-702.B.3 and -726.

[A.A.C.R18-2-325]

B. Use of Paints

1. Volatile Organic Compounds

a. Emission Limitations/Standards

- (1) While performing spray painting operations, the Permittee shall comply with the following requirements:
- (2) The Permittee shall not conduct or cause to be conducted any spray painting operation without minimizing organic solvent emissions. Such operations, other than architectural coating and spot painting, shall be conducted in an enclosed area equipped with controls containing no less than 96 percent of the overspray.
[A.A.C.R18-2-727.A]
- (3) The Permittee or their designated contractor shall not either:
 - (a) Employ, apply, evaporate, or dry any architectural coating containing photochemically reactive solvents for industrial or commercial purposes; or
 - (b) Thin or dilute any architectural coating with a photochemically reactive solvent.
[A.A.C.R18-2-727.B]
- (4) For the purposes of Condition VII.B.1.a(2), a photochemically reactive solvent shall be any solvent with an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified in Condition VII.B.1.a(3), or which exceeds any of the following percentage composition limitations, referred to the total volume of solvent:
 - (a) A combination of the following types of compounds having an olefinic or cyclo-olefinic type of unsaturation-hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones: 5 percent.

(b) A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene: 8 percent.

(c) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: 20 percent.

[A.A.C. R18-2-727.C]

(5) Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the groups of organic compounds described in Condition VII.B.1.a(3), it shall be considered to be a member of the group having the least allowable percent of the total volume of solvents.

[A.A.C. R18-2-727.D]

b. Monitoring and Recordkeeping Requirements

(1) Each time a spray painting project is conducted, the Permittee shall make a record of the following:

- (a) The date the project was conducted;
- (b) The duration of the project;
- (c) Type of control measures employed;
- (d) Safety Data Sheets (SDS) for all paints and solvents used in the project; and
- (e) The amount of paint consumed during the project.

(2) Architectural coating and spot painting projects shall be exempt from the recordkeeping requirements of Condition VII.B.1.b(1).

[A.A.C. R18-2-306.A.3.c]

c. Permit Shield

Compliance with this Section shall be deemed compliance with A.A.C.R18-2-727.

[A.A.C. R18-2-325]

2. Opacity

a. Emission Limitation/Standard

The Permittee shall not cause, allow or permit visible emissions from painting operations in excess of 20% opacity.

[A.A.C. R18-2-702.B.3]



b. Permit Shield

Compliance with the conditions of this Section shall be deemed compliance with A.A.C.R18-2-702.B.3.

[A.A.C. R18-2-325]

C. Demolition/Renovation - Hazardous Air Pollutants

1. Emission Limitation/Standard

The Permittee shall comply with all of the requirements of 40 CFR 61 Subpart M (National Emissions Standards for Hazardous Air Pollutants - Asbestos).

[A.A.C. R18-2-1101.A.12]

2. Monitoring and Recordkeeping Requirement

The Permittee shall keep all required records in a file. The required records shall include the "NESHAP Notification for Renovation and Demolition Activities" form and all supporting documents.

[A.A.C. R18-2-306.A.3.c]

3. Permit Shield

Compliance with the conditions of this Section shall be deemed compliance with A.A.C. R18-2-1101.A.12.

[A.A.C. R18-2-325]

ATTACHMENT “C”: EQUIPMENT LIST

Type of Equipment	Maximum Rated Capacity	Make/Model	Serial Number	Date of Manufacture	Equipment ID Number
8-color Flexo press/coater	57” web width, 1,500 fpm.	PCMC/7270	n.p.*	1991	Press-01
6-color Flexo press/coater	57” web width, 1,500 fpm	PCMC/7267	n.p.	1991	Press-02
8-color Flexo press/coater	57” web width, 1,500 fpm	PCMC/7208	n.p.	1994	Press-03
10-color Flexo press	67” print width, 2,000 fpm	Uteco/170	n.p.	2018	Press-04
10-color Flexo press, E-Beam Ready	67” print width, 2,000 fpm.	Uteco/170	n.p.	2018	Press-05
Outboard Coating Station, (Anti-Fog)	57” print width, 1,200 fpm.	n.p.	n.p.	2006	OP-03
Extruder/Laminator	56” web width, 1,200 fpm	Egan/n.p.	n.p.	1991	EL-31
Adhesive Laminator with Coating Deck	68” coat width, 1,470 fpm	Bobst/CL 1000	n.p.	2018	AL-32
Manual Parts Washer	23” × 72” × 45”	n.p./n.p.	n.p.	1991	PW-01
Automatic Parts Washer	120 gallons at 50% full	PRI/SW-5400	n.p.	1991	PW-02
Automatic Parts Washer & Still	4’ × 4 × 8’ Chamber	PRI/SWS-308	n.p.	2018	PW-03
Plate Washer	36” width	FlexoWash/PW-92	n.p.	2018	PW-04
Distillation Surge Tank	240 gallons	n.p./SU-01	n.p.	1991	n.p.
Distillation Feed Tank	320 gallons	PRI/DST-300	n.p.	2018	DFT-01
Photopolymer Plate Maker	120 gallons at 50% full	Eske/CDI 4260	n.p.	2006	PHO-02
Bulk Solvent Tank No. 1	10,000 gallon, (3 section)	n.p.	n.p.	1991	ST-01
Bulk Solvent Tank No. 2	10,000 gallon, (3 section)	n.p.	n.p.	1991	ST-02



[Status]

Type of Equipment	Maximum Rated Capacity	Make/Model	Serial Number	Date of Manufacture	Equipment ID Number
Bulk Solvent Tank No. 3	10,000 gal, (3 section)	n.p.	n.p.	1991	ST-03
Waste Solvent Tank No. 4	7,000 gallon	n.p.	n.p.	1991	ST-04
Waste Solvent Tank No. 5	7,000 gallon	n.p.	n.p.	2018	ST-05
Catalytic Oxidizer	35,000 SCFM	Anguil/n.p.	n.p.	1991	I01
Regenerative Thermal Oxidizer	80,000 SFCM	Adwest/n.p.	n.p.	2008	I02

* none provided in application