September 10, 2021

Via Electronic Mail

Thomas Rhodes (rhodes.thomas@deq.state.or.us)
CAO Source Test Coordinator
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232

Re: Hydro Extrusion Portland, Inc
EPA Method 204 Enclosure Verification Testing

Dear Mr. Rhodes:

Hydro Extrusion Portland, Inc. (Hydro) received a letter dated June 21, 2021 from the Oregon Department of Environmental Quality (DEQ) providing a written notice that Hydro was required to perform source testing to verify 100% capture efficiency for the Vertical Paint Line (VPL) and Paint Room by August 20, 2021. On August 13, 2021, Montrose Air Quality Services, LLC conducted EPA Method 204 testing according to the DEQ approved test plan submitted July 28, 2021 and approved by DEQ July 30, 2021. The VPL and Paint Room met all of the criteria of a permanent enclosure as defined by applicable EPA Method 204 criteria 5.1, 5.3, 5.4, and 5.5. The attached 2021 Enclosure Verification Testing Report constitutes our timely source test report submittal.

Please do not hesitate to contact me if you have any questions after reviewing our enclosure verification testing. We look forward to the next steps in the Cleaner Air Oregon program. Please let me know if we can answer any questions.

Thank you,

Jennifer Garcia
Regional Environmental Engineer - West
Hydro Extrusion Portland, Inc.

cc: Jeremy Basler (Hydro)
Peter Becker, (Montrose Air Quality Services)
Leslie Riley (MFA)
Keith Johnson (DEQ)
J.R. Giska (DEQ)
Matt Hoffman (DEQ)
Weston Li (DEQ)

Attachments:
Source Test Report – 2021 Enclosure Verification Testing

SOURCE TEST REPORT
2021 ENCLOSURE VERIFICATION TESTING
HYDRO EXTRUSION PORTLAND, INC.
PORTLAND COATINGS FACILITY
VERTICAL PAINT LINE & PAINT ROOM
PORTLAND, OREGON

Prepared For:

Hydro Extrusion Portland, Inc.
Coatings Division
7933 NE 21st Avenue
Portland, OR 97221

For Submittal To:

Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232

Prepared By:

Montrose Air Quality Services, LLC
13585 NE Whitaker Way
Portland, OR 97230

Document Number:	**W006AS-010226-RT-1714**
Test Date:	**August 13, 2021**
Submittal Date:	**September 10, 2021**

STAC STACK TESTING ACCREDITATION COUNCIL
ACCREDITED TO ASTM D7036 ONLY CERT #3925.01

MONTROSE AIR QUALITY SERVICES

REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature: _____ Date: 09 / 09 / 2021

Name: Peter Becker Title: Client Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature: _____ Date: 09 / 09 / 2021

Name: Amber Little Title: Reporting Hub Manager

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LIST OF APPENDICES

LIST OF TABLES

1.0 INTRODUCTION

1.1 SUMMARY OF TEST PROGRAM

Hydro Extrusion Portland, Inc. (Hydro) contracted Montrose Air Quality Services, LLC (Montrose) to perform an enclosure verification test program on the sources listed in Table 1-1 at the Portland Coatings Facility located in Portland, Oregon. The tests were conducted to verify 100% capture efficiency at the request of an Oregon Department of Environmental Quality (ODEQ) letter dated June 21, 2021 for compliance with the Cleaner Air Oregon Program.

The specific objectives were to determine the capture efficiency by means of EPA Method 204 enclosure verification on the emission units listed in Section 2.1 of the permit. In agreement with ODEQ the Horizontal Paint Line and the Horizontal Paint Line Paint Room are currently anticipated to be decommissioned in 2021 and were not addressed in the enclosure verification. Emission units are listed below as defined in the permit that are to be tested.

- Vertical Paint Line (VPL) Coating Area
- VPL Flash Off Tunnel
- VPL Curing Oven
- Paint Room

Since the VPL areas defined above are all interconnected without walled separation, the individual VPL areas are defined as the VPL.

Montrose performed the tests to measure the emission parameters listed in Table 1-1.

TABLE 1-1
SUMMARY OF TEST PROGRAM

Test Date	Unit ID/ Source Name	Activity/ Parameters	Test Methods	No. of Runs	Duration (Minutes)
8/13/2021	VPL	Enclosure Verification	EPA 204	3 runs/NDO; 5 readings/run	~1 min. per reading/60 mins between runs
“”	Paint Room	Enclosure Verification	EPA 204	3 runs/NDO 5 readings/run	~1 min. per reading/60 mins between runs

To simplify this report, a list of Units and Abbreviations is included in Appendix C.1. Throughout this report, chemical nomenclature, acronyms, and reporting units are not defined. Please refer to the list for specific details.

This report presents the test results and supporting data, descriptions of the testing procedures, descriptions of the facility and sampling locations, and a summary of the quality assurance procedures used by Montrose. The average emission test results are summarized and compared

to the respective method criteria in Table 1-2. Detailed results for individual test runs can be found in Section 4.0. All supporting data can be found in the appendices.

The testing was conducted by the Montrose personnel listed in Table 1-3. The tests were conducted according to the test plan (protocol) dated July 28, 2021 that was submitted to and approved by the ODEQ.

TABLE 1-2
SUMMARY OF ENCLOSURE VERIFICATION RESULTS -
VPL AND PAINT ROOM
AUGUST 13, 2021

Parameter/Units	VPL Result	Paint Room Result	Method Criterion[1]
Criterion 5.1[2]	39.4” ≤ 120” (PASS) 39.4” ≤ 360” (PASS) 89.2” ≤ 125” (PASS)	128” ≤ 216” (PASS) 128” ≤ 288” (PASS)	See Section 4
Criterion 5.2	not required	not required	--
Criterion 5.3[3]	0.28% ≤ 5% (PASS)	0.34% ≤ 5% (PASS)	See Section 4
Criterion 5.4[4]	FV≥200 fpm (0.007 in. H_2O) directed into enclosure (PASS)	FV≥200 fpm (0.007 in. H_2O) directed into enclosure (PASS)	See Section 4
Criterion 5.5	All doors/windows closed (PASS)	All doors/windows closed (PASS)	See Section 4

1 See Section 4 of this report for additional details on method criteria and results for each enclosure
2 VOC emitting points must be located at least four equivalent opening diameters away from the NDO
3 The total area of NDOs must be less than 5% of the total surface area
4 The average facial velocity of air through all NDOs shall be at least 3,600 m/hr (200 fpm). The direction of air flow through all NDOs shall be into the enclosure. Alternatively, the pressure differential across the enclosure of less than 0.013 mm Hg (0.007 in. H_2O) corresponds to a facial velocity of 3,600 m/hr (200 fpm). See Section 4 for additional details.

1.2 KEY PERSONNEL

A list of project participants is included below:

Facility Information

Source Location:	Hydro Extrusion Portland, Inc. Hydro Coating Division 5325 NE Skyport Way Portland, OR 97221	
Project Contact:	Jeremy Basler	Jennifer Garcia
Role:	Regional HSE Manager	Regional Environmental Manager
Company:	Hydro Extrusion Portland	Hydro Extrusion Portland
Telephone:	605-760-3548	503-680-4440
Email:	jeremy.basler@hydro.com	jennifer.garcia@hydro.com

Agency Information

Regulatory Agency:	Oregon Department of Environmental Quality
Agency Contact:	Thomas Rhodes
Telephone:	503-229-5534
Email:	thomas.rhodes@deq.state.or.us

Testing Company Information

Testing Firm:	Montrose Air Quality Services, LLC	
Contact:	Peter Becker	Kristina Schafer
Title:	Client Project Manager	Hub District Manager
Telephone:	330-285-6884	253-480-3801
Email:	pbecker@montrose-env.com	kschafer@montrose-env.com

Test personnel and observers are summarized in Table 1-3.

TABLE 1-3
TEST PERSONNEL AND OBSERVERS

Name	Affiliation	Role/Responsibility
Peter Becker	Montrose	Project Manager/Field Team Leader/Qualified Individual (QI)/Data Collection
Andy Vella	Montrose	Calculations and report preparation
Jennifer Garcia	Hydro Extrusion Portland	Observer/Client Liaison/Test Coordinator
Thomas Rhodes	Oregon DEQ	Regulatory review

2.0 PLANT AND SAMPLING LOCATION DESCRIPTIONS

2.1 PROCESS DESCRIPTION, OPERATION, AND CONTROL EQUIPMENT

The Hydro Extrusion facility located at 5325 NE Skyport Way, Portland, Oregon provides extruded aluminum finishing services. The VPL, and Paint Room, described in this report, are routed to a regenerative thermal oxidizer for abatement.

2.2 FLUE GAS SAMPLING LOCATIONS

Measurement of facial velocity (FV) was conducted on the entrance of the product into the VPL paint booth and the exit of the product from the VPL curing oven.

2.3 OPERATING CONDITIONS AND PROCESS DATA

Emission tests were performed while the VPL and air pollution control devices were operating at the conditions required by the permit. The VPL was tested when operating normally. The HPL was not operating.

Plant personnel were responsible for establishing the test conditions and collecting all applicable unit-operating data. The process data that was provided is presented in Appendix B. Data collected includes the following parameters:

- Production rate of the VPL

3.0 SAMPLING AND ANALYTICAL PROCEDURES

3.1 TEST METHODS

The test methods for this test program were presented previously in Table 1-1. Additional information regarding specific applications or modifications to standard procedures is presented below.

3.1.1 EPA Method 204, Criteria for and Verification of a Permanent or Temporary Total Enclosure

An enclosure is evaluated against a set of criteria. If the criteria are met and if all the exhaust gases from the enclosure are ducted to a control device, then the volatile organic compounds (VOC) capture efficiency (CE) is assumed to be 100 percent, and CE need not be measured. However, if part of the exhaust gas stream is not ducted to a control device, CE must be determined.

Pertinent information regarding the performance of the method is presented below:

- Method Options:
  - Facial velocity was determined using a Shortridge micromanometer
  - Facial velocity was determined by the alternative criteria in Section 8.3 of the method by measuring the pressure drop. A pressure drop of 0.007 inches of water corresponds to a facial velocity of 200 feet per minute (fpm).
  - Measurements were recorded in a series of three rounds; during each round, five measurements were recorded at each NDO
  - The facial velocity was less than 500 fpm. The continuous inward flow was verified per Method 204. Photographs with the date and time stamp documented the checks made no more than 10 minutes apart as required under Method 204 when monitoring the direction of the air flow for at least one hour.
- Method Exceptions:
  - Facial velocity measurements were taken at the base of each NDO due to lack of access and safety concerns

3.2 PROCESS TEST METHODS

The test plan did not require that process samples be collected during this test program; therefore, no process sample data are presented in this test report.

4.0 TEST DISCUSSION AND RESULTS

4.1 FIELD TEST DEVIATIONS AND EXCEPTIONS

See Section 4.2 below regarding measurement site of facial velocity due to safety concerns. No other field deviations or exceptions from the test plan or test methods occurred during this test program.

4.2 PRESENTATION OF RESULTS

The VPL and paint mixing room met all of the criteria of a permanent enclosure as defined by EPA Method 204 criteria (§5.1, 5.3, 5.4 and 5.5). If the Method 204 criteria are met and all exhaust gases from the enclosure are ducted to a control device, then capture efficiency is assumed to be 100% and no further testing is necessary. Results are summarized and discussed below, and the field measurements and calculations are in worksheets in Appendix A of this test report.

VPL

Criterion 5.1: There are two NDOs in the VPL; one on the line into the paint booth and another on the face of the exit tunnel. Each of the VOC emitting points is located at least four equivalent opening diameters away from the NDOs, thus meeting Criterion 5.1.

Criterion 5.3: The total area of NDOs must be less than 5% of the total surface area. The total area of all NDOs was 0.3% of the total surface area of enclosure (walls, bottom, and top of enclosure), thus meeting Criterion 5.3. Documentation for the measurements is in Appendix A.2 of this report.

Criterion 5.4: The facial velocity across the NDOs was sampled at the each of the two NDOs. The NDOs were measured at the base of each opening due to lack of access and safety concerns in reaching the upper portion of the NDO with the line operational. Facial velocities of greater than 200 fpm/0.007 in. H_2O pressure were measured at each NDO. Smoke tubes and/or streamers were used to verify the inward flow of air once per hour for three hours. Five measurements of the facial velocity were made during each run. By doing so, the airflow direction and confirmation of negative pressure inside the total enclosure was confirmed, thus meeting Criterion 5.4. Photographs of smoke tubes and streamers are presented in Appendix A.1 of this test report to show certainty of flow direction.

Criterion 5.5: All access doors and windows whose areas were not included in 5.3 and that were not included in the calculation of 5.4 were closed during routine operation of the process, thus meeting Criterion 5.5.

Paint Room

Criterion 5.1: There are two NDOs in the Paint Room. Each VOC emitting point is located at least four equivalent opening diameters away from the NDOs, thus meeting Criterion 5.1.

Criterion 5.3: The total area of NDOs must be less than 5% of the total surface area. The total area of all NDOs was 0.3% of the total surface area of enclosure (walls, bottom, and top of enclosure), thus meeting Criterion 5.3. Documentation for the measurements is in the Appendix.

Criterion 5.4: The facial velocity across the NDOs was sampled at the each of the two NDOs. Facial velocities of greater than 200 fpm/0.007 in. H_2O pressure were measured at each NDO. Smoke tubes and/or streamers were used to verify the inward flow of air once per hour for three hours. Five measurements of the facial velocity were made during each run. By doing so, the airflow direction and confirmation of negative pressure inside the total enclosure was confirmed, thus meeting Criterion 5.4. Photographs are presented in Appendix A.1 of this test report.

Criterion 5.5: All access doors and windows whose areas were not included in 5.3 and that were not included in the calculation of 5.4 were closed during routine operation of the process, thus meeting Criterion 5.5.

Additional information is included in the appendices as presented in the Table of Contents.

5.0 INTERNAL QA/QC ACTIVITIES

5.1 QA/QC AUDITS

EPA Method 204 applicable QA/QC criteria were met.

5.2 QA/QC DISCUSSION

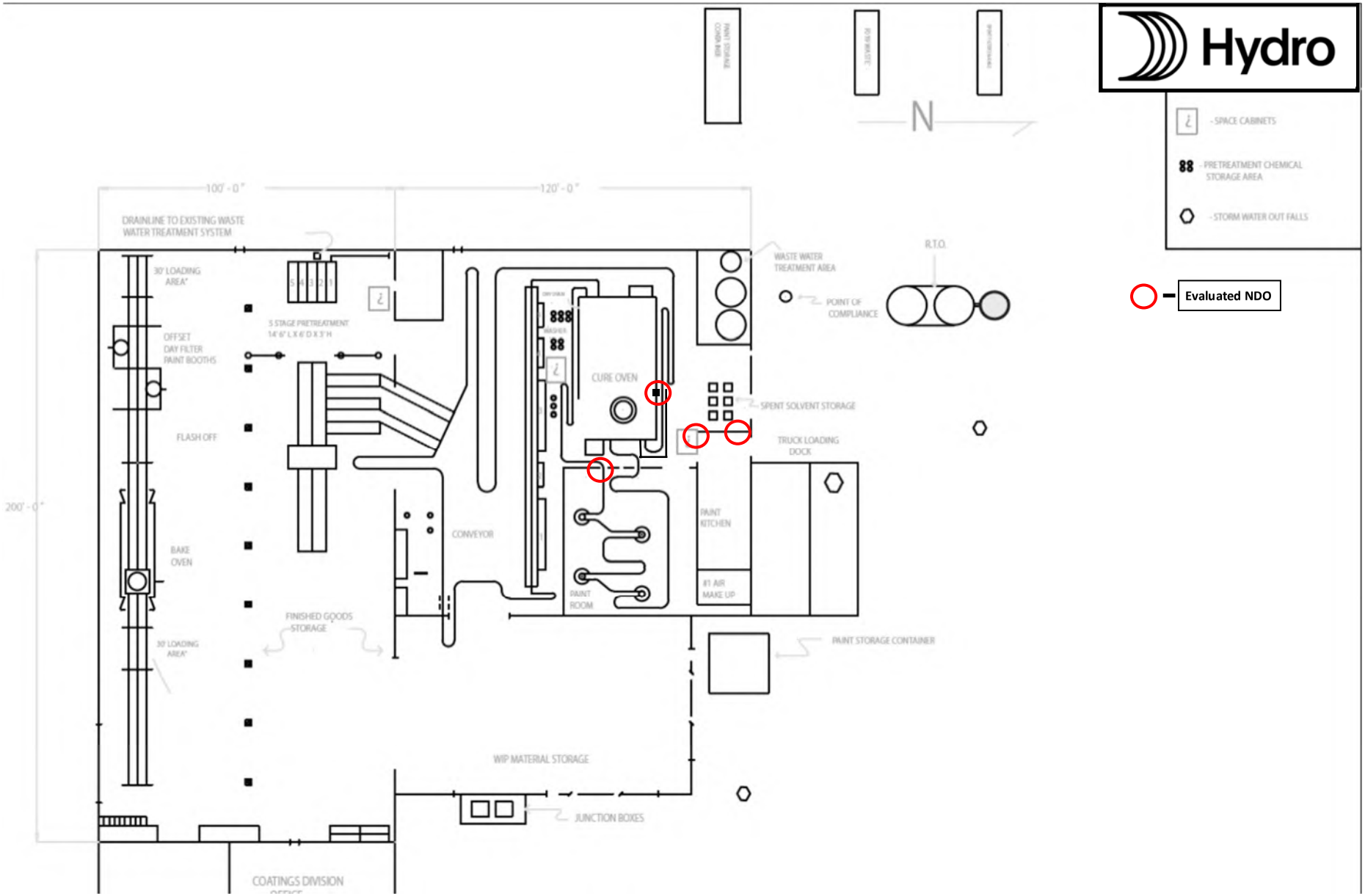
All QA/QC criteria were met during this test program.

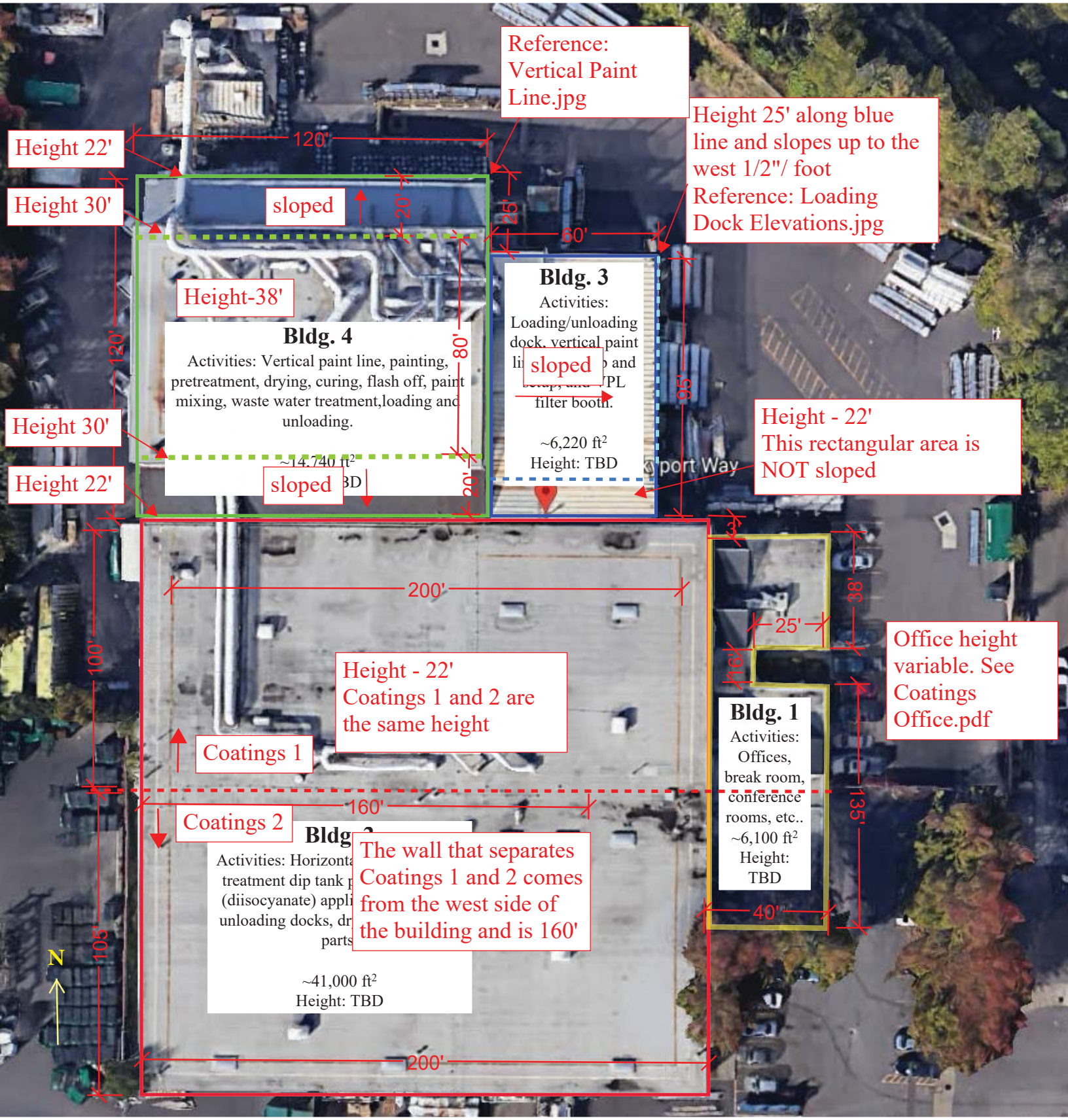
5.3 QUALITY STATEMENT

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is included in the report appendices. The content of this report is modeled after the EPA Emission Measurement Center Guideline Document (GD-043).

APPENDIX A
FIELD DATA AND CALCULATIONS

Appendix A.1
Sampling Locations


Hydro
- SPACE CABINETS
- PRETREATMENT CHEMICAL STORAGE AREA
- STORM WATER OUT FALLS
Evaluated NDO
N
100' - 0"
120' - 0"
200' - 0"
DRAINLINE TO EXISTING WASTE WATER TREATMENT SYSTEM
30' LOADING AREA"
OFFSET DAY FILTER PAINT BOOTHS
5 STAGE PRETREATMENT 14'-6" L X 6'-0" D X 3'-3" H
FLASH OFF
BAKE OVEN
30' LOADING AREA"
FINISHED GOODS STORAGE
CONVEYOR
CURE OVEN
PAINT ROOM
PAINT KITCHEN
#1 AIR MAKE UP
WASTE WATER TREATMENT AREA
R.T.O.
POINT OF COMPLIANCE
SPENT SOLVENT STORAGE
TRUCK LOADING DOCK
PAINT STORAGE CONTAINER
WIP MATERIAL STORAGE
JUNCTION BOXES
COATINGS DIVISION


Reference: Vertical Paint Line.jpg
Height 25' along blue line and slopes up to the west 1/2"/ foot
Reference: Loading Dock Elevations.jpg
Height 22'
Height 30'
120'
sloped
20'
25'
60'
Height-38'
Bldg. 4
Activities: Vertical paint line, painting, pretreatment, drying, curing, flash off, paint mixing, waste water treatment,loading and unloading.
~14,740 ft²
Height: TBD
80'
120'
Bldg. 3
Activities: Loading/unloading dock, vertical paint li and filter booth.
~6,220 ft²
Height: TBD
sloped
95'
Height 30'
Height 22'
sloped
Height - 22'
This rectangular area is NOT sloped
200'
100'
Height - 22'
Coatings 1 and 2 are the same height
Coatings 1
Coatings 2
160'
Bldg
Activities: Horizonta treatment dip tank p (diisocyanate) appli unloading docks, dr parts
~41,000 ft²
Height: TBD
The wall that separates Coatings 1 and 2 comes from the west side of the building and is 160'
105'
N
200'
38'
25'
Office height variable. See Coatings Office.pdf
Bldg. 1
Activities: Offices, break room, conference rooms, etc..
~6,100 ft²
Height: TBD
135'
40'


Referred to as Thermally Improved Extrusions (T.I.E.) Line
Updated VPL Dry Oven Area
Referred to as Paint Kitchen
WW treatment
Poly (diisocyanate) line
HZPL & Dry Oven
HZPL Pre-treat
VPL Pre-treat
VPL Dry Oven
VPL Cure Oven
VPL
Paint Room
RTO
VPL Flash Off
5325 NE Skyport Way
N


Building 4 Roof Vents
1. VPL Pre-treat burner exhaust, 14" D x 48" H, (x1).
2. VPL Pre-treat tank exhaust (caustic), 24" D x 64" H, (x1).
3. VPL Wash tank burner exhaust, 12" D x 40" H, (x1).
4. VPL Wash tank exhaust, 24" D x 57" H, (x1).
5. Dry Oven heat exhaust, 14" D x 96" H, (x1).
6a. Ambient heat exhaust fan (for heat around curing oven), 17" x 24" vent x 62" H (x1).
6b. Ambient heat exhaust fan (for heat around drying oven), 19" x 26" vent x 38" H, (x1).
7. Roof vents, general (x15), (varying sizes and styles).
8. VPL Pre-treat burner exhaust, 12"D x 40" H.
Building 4
5325 NE Skyport Way

VPL - Inside Paint Booth Looking NE

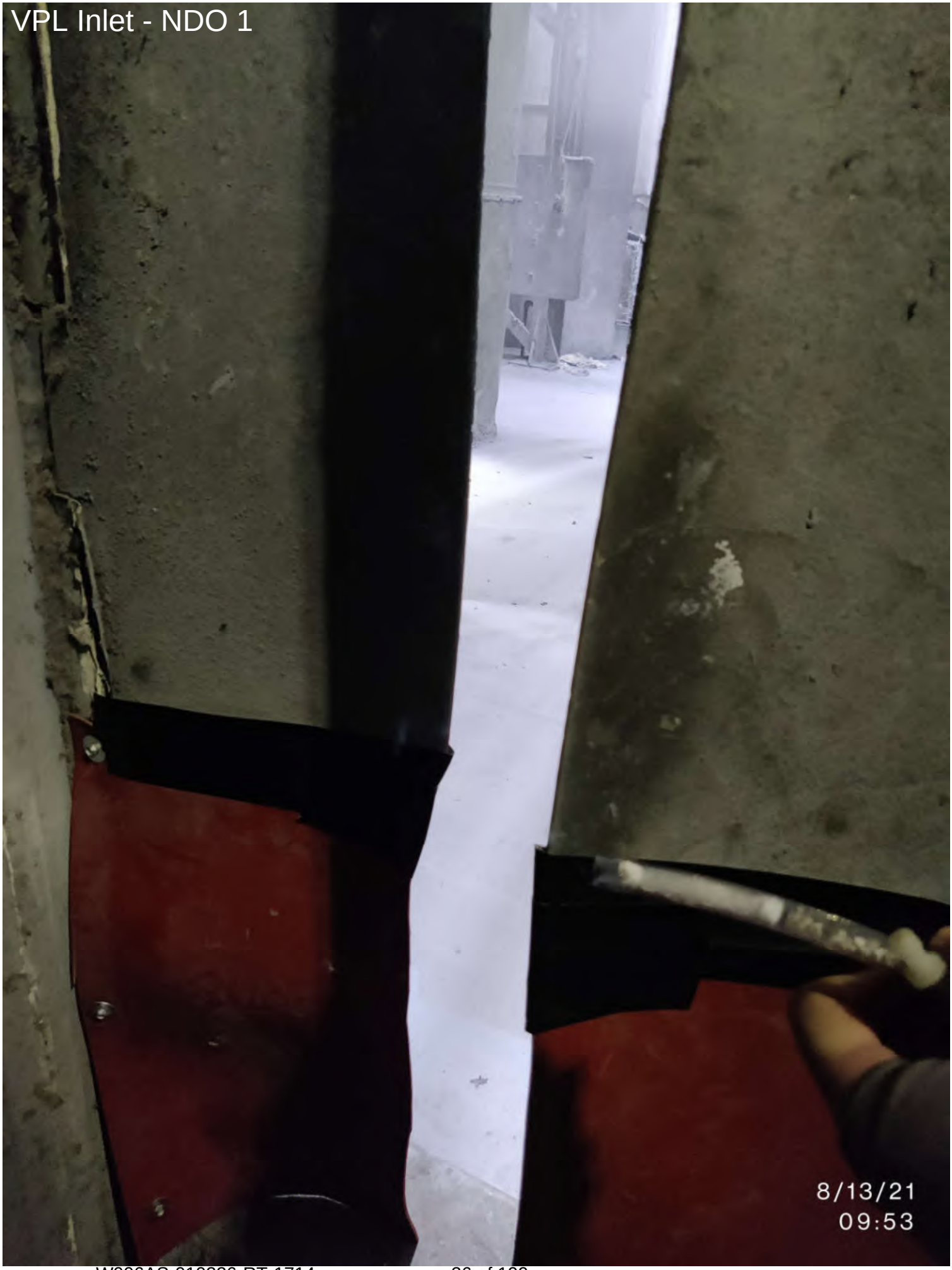
VPL - Inside Paint Booth Looking NE

VPL - Inside Paint Booth Looking NW

VPL - VPL Flash Off Room Ducting into Main VPL Duct

Inked Paint Room Looking W

VPL Inlet - NDO 1


VPL Inlet - NDO 1
8/13/21
09:53


VPL Inlet - NDO 1
8/13/21
10:03


VPL Inlet - NDO 1
8/13/21
10:13


VPL Inlet - NDO 1
8/13/21
10:22


VPL Inlet - NDO 1
8/13/21
10:33


VPL Inlet - NDO 1
8/13/21
10:42

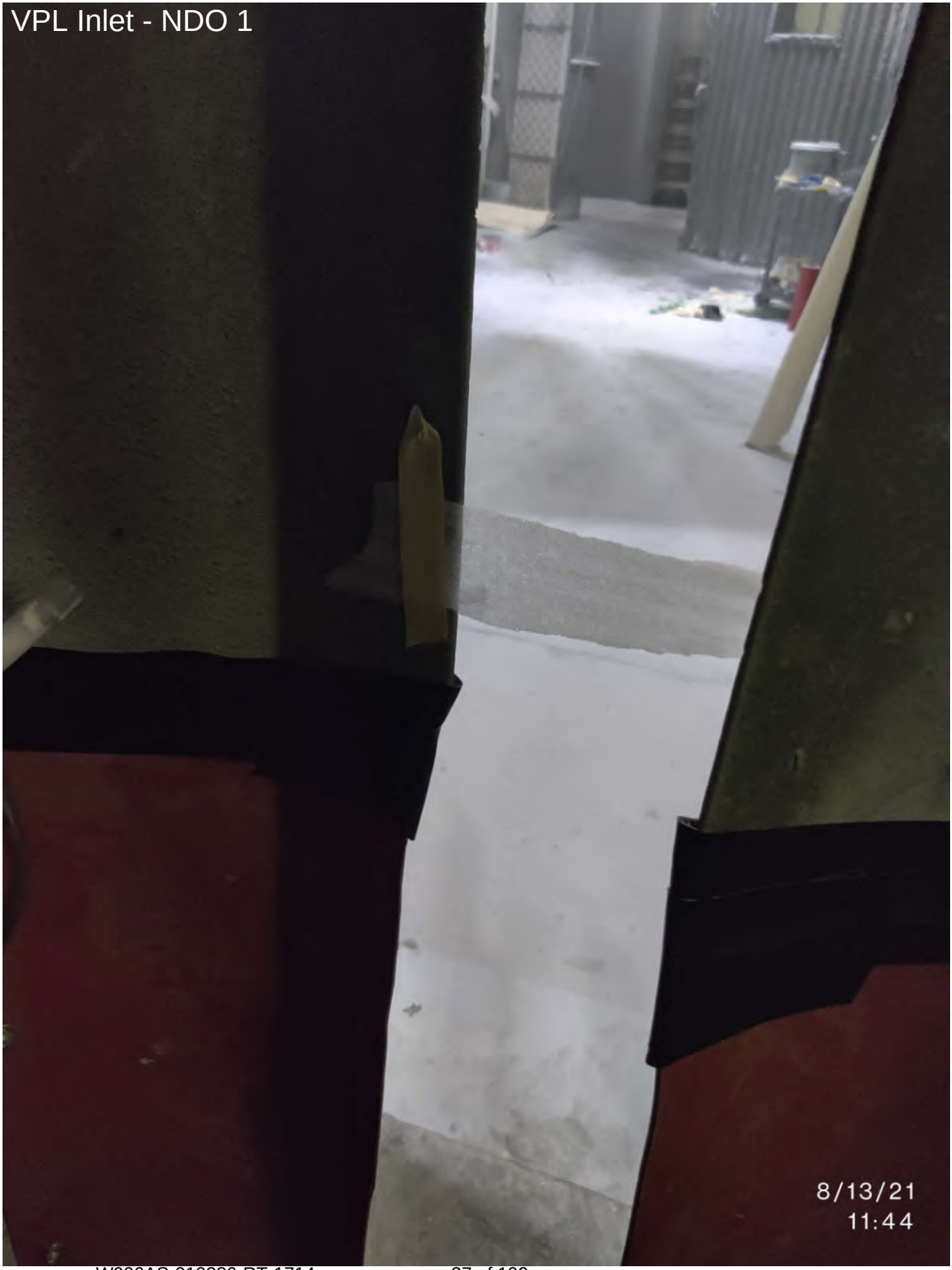

VPL Inlet - NDO 1
8/13/21
10:56


VPL Inlet - NDO 1
8/13/21
11:06


VPL Inlet - NDO 1
8/13/21
11:16


VPL Inlet - NDO 1
8/13/21
11:27

VPL Inlet - NDO 1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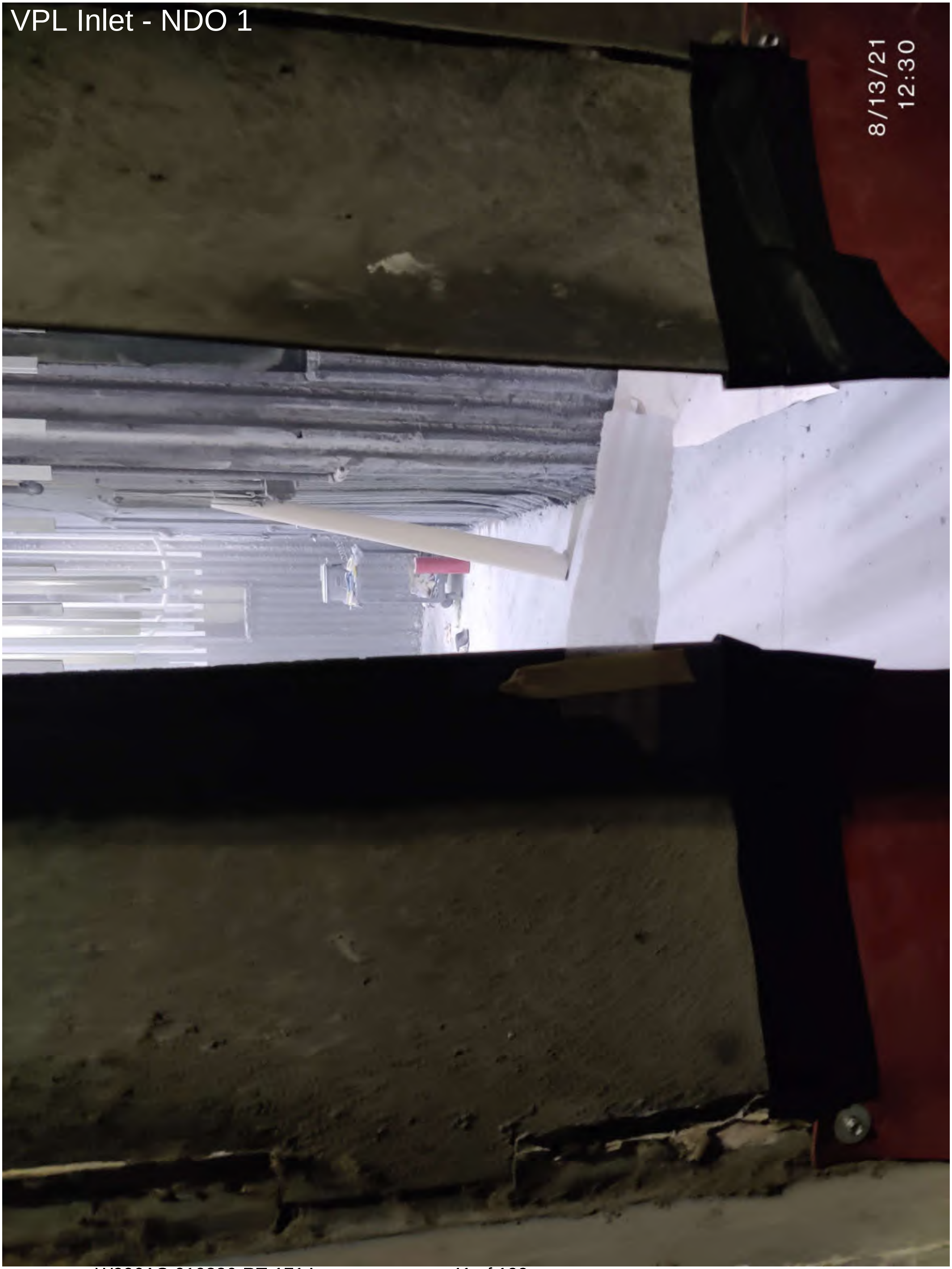
8/13/21
11:44


VPL Inlet - NDO 1
8/13/21
11:58

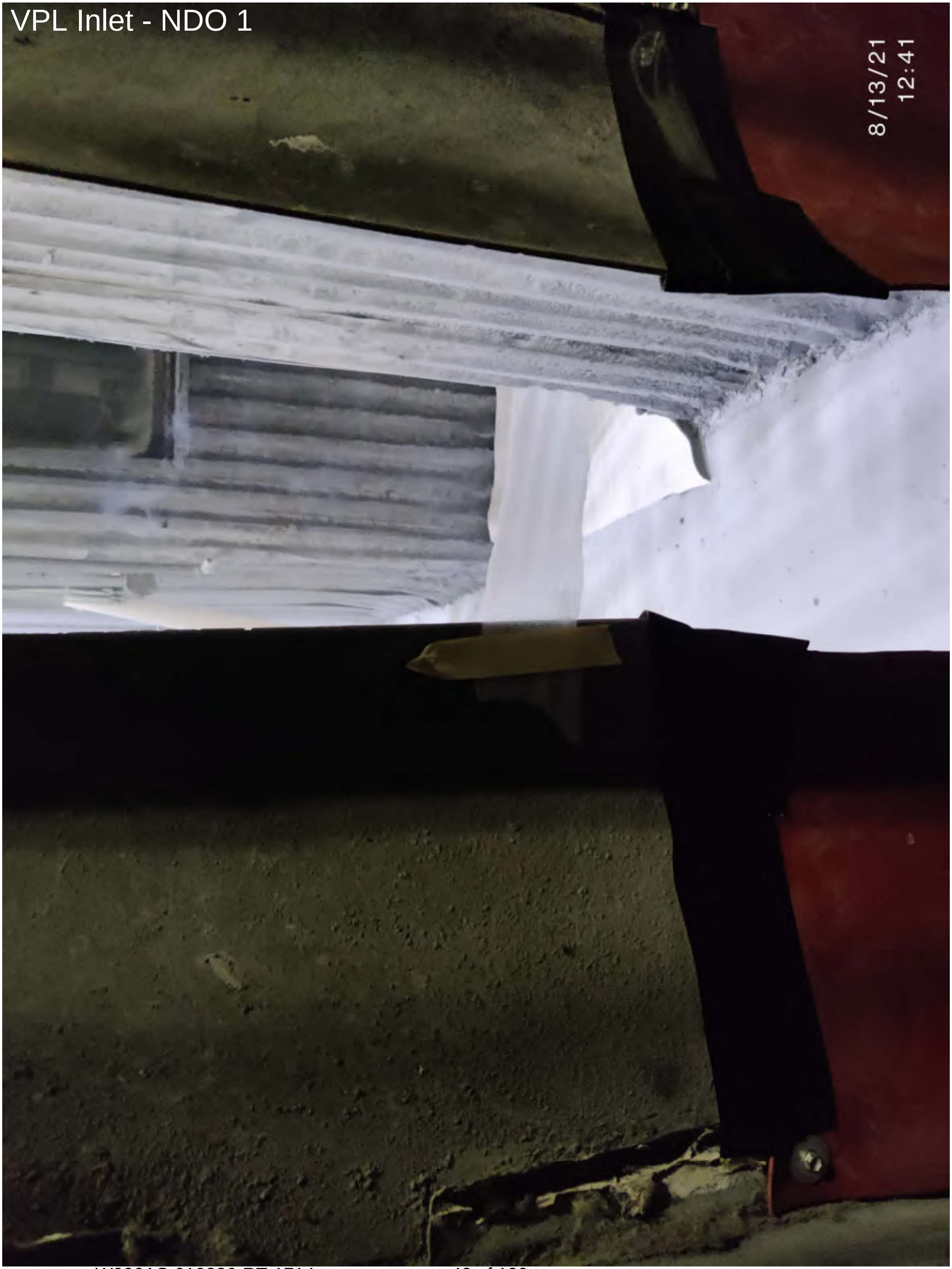

VPL Inlet - NDO 1
8/13/21
12:10


VPL Inlet - NDO 1
8/13/21
12:21

VPL Inlet - NDO 1



VPL Inlet - NDO 1



VPL Inlet - NDO 1


VPL Inlet - NDO 1
8/13/21
13:00

VPL Outlet - NDO 2


VPL Outlet - NDO 2
NOTICE
HARD HATS
MUST BE WORN
IN THIS AREA
8/13/21
12:52


PL Outlet - NDO 2
8/13/21
12:52


VPL Outlet - NDO 2
8/13/21
09:55


VPL Outlet - NDO 2
8/13/21
10:04


VPL Outlet - NDO 2
8/13/21
10:15


VPL Outlet - NDO 2
8/13/21
10:24


VPL Outlet - NDO 2
8/13/21
10:34


VPL Outlet - NDO 2
8/13/21
10:46


VPL Outlet - NDO 2
8/13/21
10:57


VPL Outlet - NDO 2
8/13/21
11:07


VPL Outlet - NDO 2
8/13/21
11:17


VPL Outlet - NDO 2
8/13/21
11:28


VPL Outlet - NDO 2
8/13/21
11:35


VPL Outlet - NDO 2
8/13/21
11:45


VPL Outlet - NDO 2
8/13/21
12:01


VPL Outlet - NDO 2
8/13/21
12:14


VPL Outlet - NDO 2
8/13/21
12:22


VPL Outlet - NDO 2
8/13/21
12:32


VPL Outlet - NDO 2
8/13/21
12:42


VPL Outlet - NDO 2
8/13/21
12:52


VPL Outlet - NDO 2
8/13/21
13:02


VPL Paint Room - NDO 1
In: -0.0333
AIRDATA® MULTIMETER ADM-860
ELECTRONIC MICROMANOMETER
MADE IN U.S.A.
CLEAR
MODE
UNITS
STORE
ON OFF
◄RCL
RCL►
READ
KEEP
CLOSE
ALL T
8/13/21
11:56


VPL Paint Room - NDO 1
8/13/21
09:56


VPL Paint Room - NDO 1
8/13/21
10:05


VPL Paint Room - NDO 1
8/13/21
10:16

VPL Paint Room - NDO 1

VPL Paint Room - NDO 1


VPL Paint Room - NDO 1
8/13/21
10:48


VPL Paint Room - NDO 1
8/13/21
10:57


VPL Paint Room - NDO 1
8/13/21
11:07

VPL Paint Room - NDO 1


VPL Paint Room - NDO 1
8/13/21
11:29


VPL Paint Room - NDO 1
8/13/21
11:35


VPL Paint Room - NDO 1
8/13/21
11:45


VPL Paint Room - NDO 1
8/13/21
12:02


VPL Paint Room - NDO 1
8/13/21
12:14


VPL Paint Room - NDO 1
8/13/21
12:23


VPL Paint Room - NDO 1
8/13/21
12:33


VPL Paint Room - NDO 1
8/13/21
12:42


VPL Paint Room - NDO 1
8/13/21
12:52


VPL Paint Room - NDO 1
8/13/21
13:02


LOUISVILLE
375 Lb LOAD CAPACITY
In: - 0.03 16
AIRDATA MULTIMETER ADM-860
ELECTRONIC MICROMANOMETER
MADE IN U.S.A.
CLEAR
MODE
UNITS
STORE
ON OFF
◄RCL
RCL►
READ
8/13/21
11:54


VPL Paint Room - NDO 2
8/13/21
09:57


VPL Paint Room - NDO 2
8/13/21
10:05


VPL Paint Room - NDO 2
8/13/21
10:16


VPL Paint Room - NDO 2
8/13/21
10:35


VPL Paint Room - NDO 2
8/13/21
10:48


VPL Paint Room - NDO 2
WERNE
8/13/21
10:57


VPL Paint Room - NDO 2
WERN
8/13/21
11:08


VPL Paint Room - NDO 2
8/13/21
11:18


VPL Paint Room - NDO 2
8/13/21
11:29


VPL Paint Room - NDO 2
WERNER
8/13/21
11:36


VPL Paint Room - NDO 2
8/13/21
11:46
WERNER


VPL Paint Room - NDO 2
8/13/21
12:02
WERNER

VPL Paint Room - NDO 2


VPL Paint Room - NDO 2
8/13/21
12:23
WERNER


VPL Paint Room - NDO 2
8/13/21
12:33
WERNER


VPL Paint Room - NDO 2
WERNER
8/13/21
12:43


VPL Paint Room - NDO 2
WERNER
8/13/21
12:53


VPL Paint Room - NDO 2
8/13/21
13:03
WERNER

Appendix A.2
Permanent Enclosure Verification Data

MONTROSE
AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: Vertical Paint Line
Sample Location: Vertical Paint Line
Operator: PB

Method 204 Criteria For and Verification of a Permanent or Temporary Total Enclosure (PE or TTE))

Definitions:
NDO: natural draft opening, remains open during operations, not connected to duct w/fan
PE: permanent, completely surrounds, all VOC are captured and contained
TTE: temporary, completely surrounds, uncaptured emissions (not ducted to control device) are contained for discharge through ducts measurable for VOC
BE: building used as TTE

Procedure:
1. measure and map the enclosure
2. calculate if meets each criteria

The enclosure is assumed to have 100% Capture Efficiency (and does not need to be measured) if it meets the following criteria:
- PE must meet criteria 5.1, 5.3, 5.4, 5.5
- PE must also meet: all VOC emissions captured and contained for discharge through a control device
- BE and TTE must meet criteria 5.1, 5.2, 5.3, 5.4, 5.5

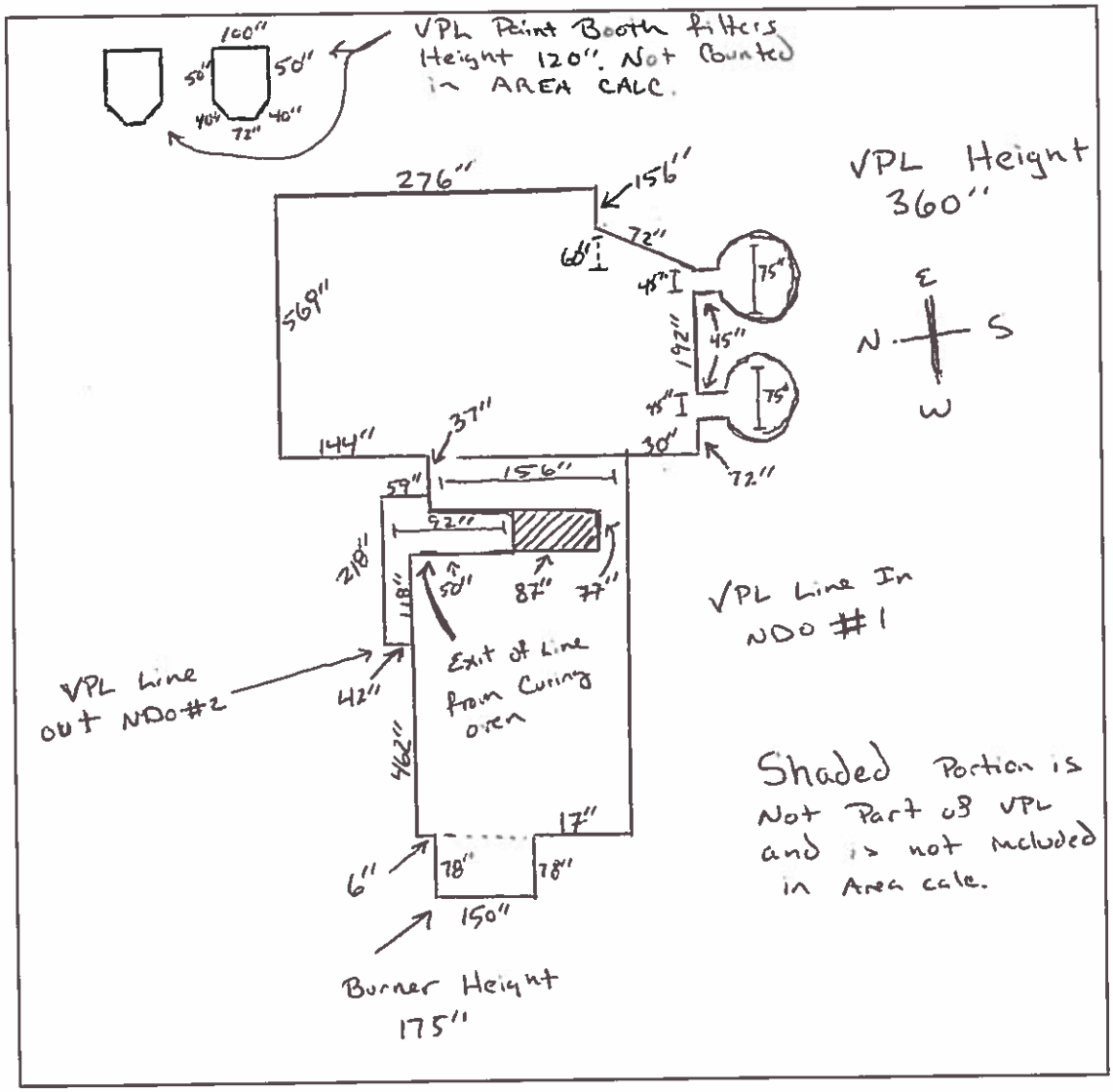
MONTROSE
AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: Vertical Paint Line
Sample Location: overview
Operator: RB

Method 204 Verification of a Permanent or Temporary Total Enclosure

Record measurements and/or locations:

- NDOs (natural draft opening, remains open during operations, not connected to duct w/fan)
- VOC emitting points
- exhaust points
- the ducts and hoods with fans to a control device
- surface area: dimensions of walls, floor, ceiling



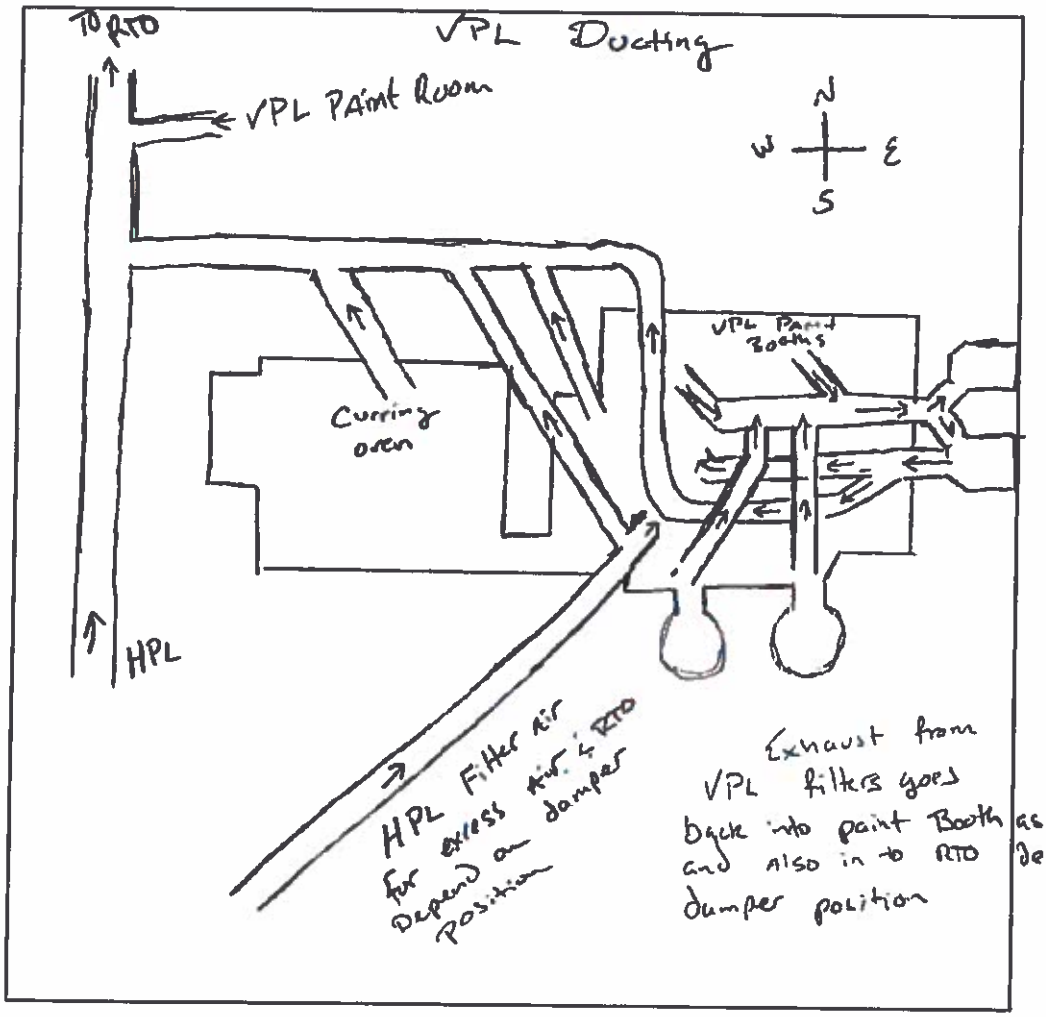
MONTROSE
AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.18.2021
Facility Location: Hydro Portland
Source: Vertical Paint Line
Sample Location: VPL ducting
Operator: TRB

Method 204 Verification of a Permanent or Temporary Total Enclosure

Record measurements and/or locations:

- NDOs (natural draft opening, remains open during operations, not connected to duct w/fan)
- VOC emitting points
- exhaust points
- the ducts and hoods with fans to a control device
- surface area: dimensions of walls, floor, ceiling



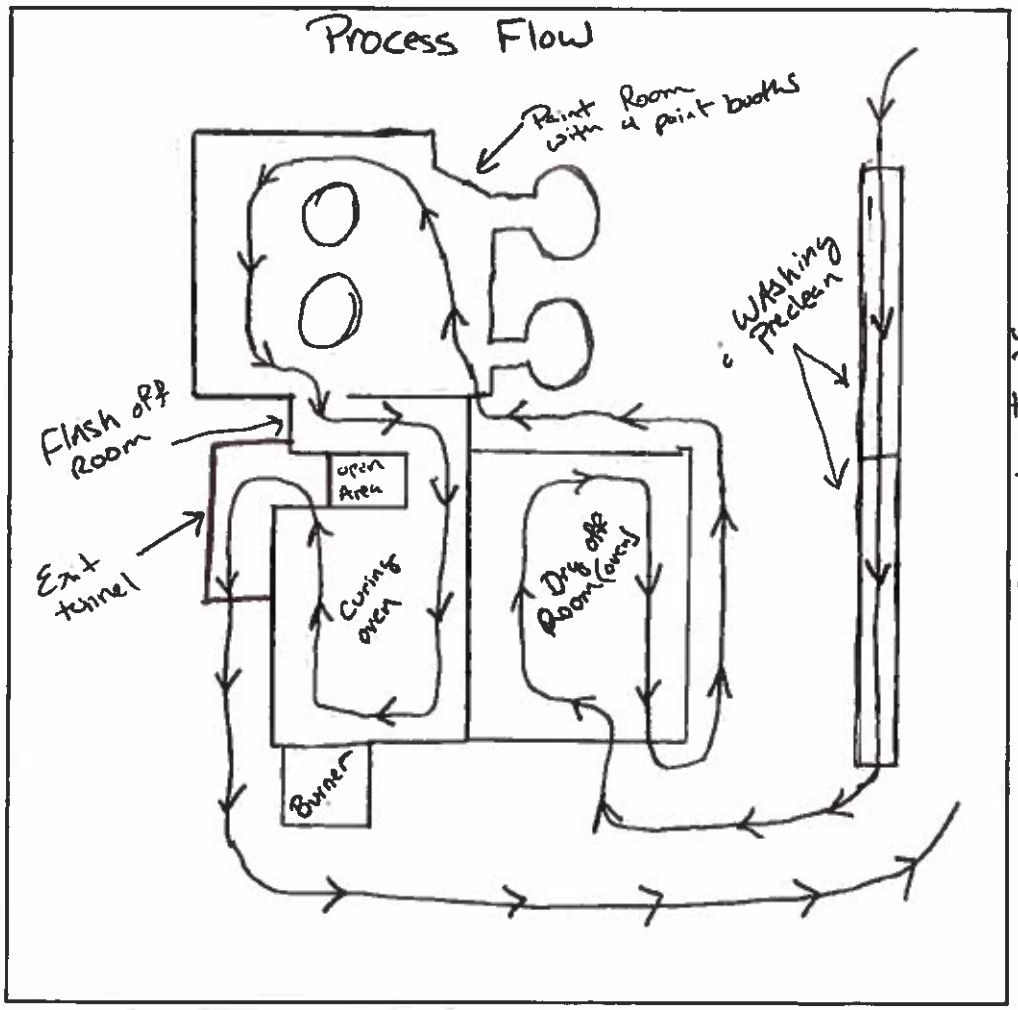
MONTROSE
AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: [redacted] 8.13.2021
Facility Location: Hydro Portland
Source: Vertical Paint Line
Sample Location: Process overview
Operator: PB

Method 204 Verification of a Permanent or Temporary Total Enclosure

Record measurements and/or locations:

- NDOs (natural draft opening, remains open during operations, not connected to duct w/fan)
- VOC emitting points
- exhaust points
- the ducts and hoods with fans to a control device
- surface area: dimensions of walls, floor, ceiling



Exhaust to RTO
- VPL Paint Room
- VPL Flash off Room
- VPL Burner
- VPL Curing Oven
- VPL Exit tunnel

Washing & Precleaning and the Dry oven are not vented to RTO

open Area in center not part of VPL line

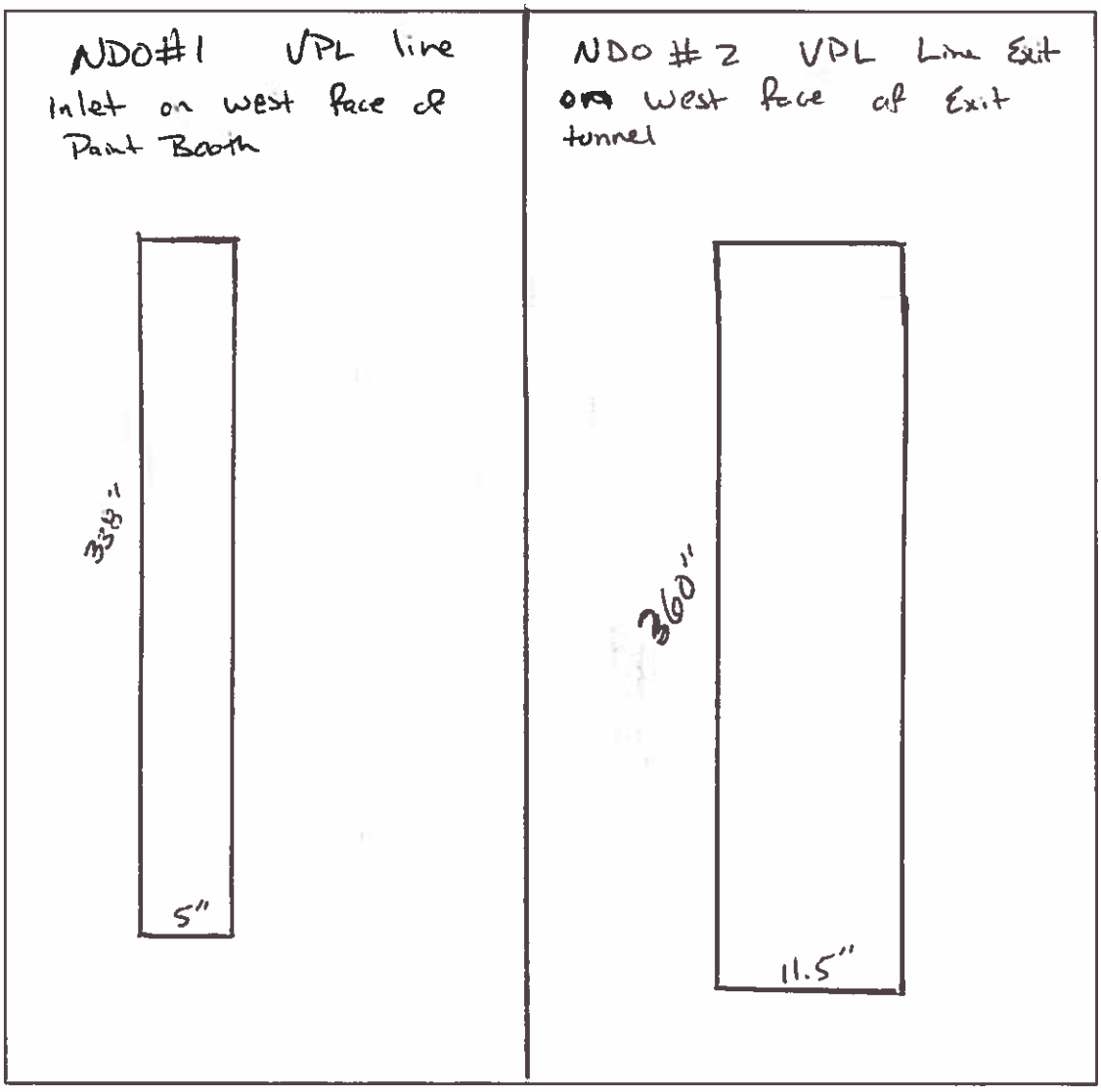
MONTROSE
AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: Vertical Paint Line
Sample Location: Vertical Paint Line NDOs
Operator: PB

Method 204 Verification of a Permanent or Temporary Total Enclosure

Record measurements and/or locations:

- NDOs (natural draft opening, remains open during operations, not connected to duct w/fan)
- VOC emitting points
- exhaust points
- the ducts and hoods with fans to a control device
- surface area: dimensions of walls, floor, ceiling



MONTROSE AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: Vertical Paint Line
Sample Location: Vertical Paint Line
Operator: PB

Method 204 Criteria 5.1:
Any NDO shall be at least four equivalent opening diameters from each VOC emitting point.

NDO Identification: NDO #1 Area Dimensions: 1,690 in (338 in x 5 in)
Calculate equivalent opening diameter: 9.854 inches
Calculate distance = four equivalent opening diameters: 39.416 inches

Distance to
VOC emitting point 1 ~120.0 Meet criteria? yes ← Closest Paint Booth to NDO
VOC emitting point 2 _____ Meet criteria? _____
VOC emitting point 3 _____ Meet criteria? _____
VOC emitting point 4 ~360.0 in Meet criteria? yes ← Furthest Paint Booth to NDO

Line into Paint Booth

NDO Identification: NDO #2 Area Dimensions: 4,140 in (11.5 in x 360 in)
Calculate equivalent opening diameter: 22.29 in
Calculate distance = four equivalent opening diameters: 89.16

Distance to
VOC emitting point 1 125.0 in Meet criteria? yes ← exit of Line from Curing oven
VOC emitting point 2 _____ Meet criteria? _____
VOC emitting point 3 _____ Meet criteria? _____
VOC emitting point 4 _____ Meet criteria? _____

Line out of Curing oven and tunnel

NDO Identification: _____ Area Dimensions: _____
Calculate equivalent opening diameter: _____
Calculate distance = four equivalent opening diameters: _____

Distance to
VOC emitting point 1 _____ Meet criteria? _____
VOC emitting point 2 _____ Meet criteria? _____
VOC emitting point 3 _____ Meet criteria? _____
VOC emitting point 4 _____ Meet criteria? _____

NDO Identification: _____ Area Dimensions: _____
Calculate equivalent opening diameter: _____
Calculate distance = four equivalent opening diameters: _____

Distance to
VOC emitting point 1 _____ Meet criteria? _____
VOC emitting point 2 _____ Meet criteria? _____
VOC emitting point 3 _____ Meet criteria? _____
VOC emitting point 4 _____ Meet criteria? _____

MONTROSE
AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13 2021
Facility Location: Hydro Portland
Source: Vertical Paint Line
Sample Location: Vertical Paint Line
Operator: RB

Criteria 5.3:
The total area of all NDOs shall not exceed 5% of the total surface area of enclosure (walls, floor, ceiling).

Total NDO area (An): 5,830 in^2

Total surface area of enclosure (At) 2,105,292 in^2 (see example calculation)

NDO area as percentage of total (NEAR) = An/At = 0.00277 (0.28%)

NEAR must be <+ 0.05 Meets criteria? yes

MONTROSE AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: Vertical Paint Line
Sample Location: Vertical Paint Line Exhaust
Operator: PB

Criteria 5.4:
The average facial velocity (FV) of air through all NDOs shall be at least 3,600 m/hr or 200 fpm; alternatively 200 fpm=0.007 inches H_2O pressure drop across room). The direction of air flow though all NDOs shall be into the enclosure.

Facial velocity (FV) air entering the enclosure through all NDOs feet/minute /
Meets criteria (>200fpm)? /
Eq. 204.3: $FV=(Q_O - Q_I) / A_N$; where
Q_O = sum of the volumetric flow from all gas streams exiting the enclosure through an exhaust duct or hood
Q_I = the sum of the vol. flow from all gas streams into the enclosure through a forced makeup air duct; zero, if there is no formed makeup air into the enclosure.
A_N = total area of all NDO's in enclosure

Alternatively 0.007 inches H_2O pressure drop across the room corresponds to 3600 m/hr (200 fpm)

Describe where pressure drops were measured:
NDO #2 Vertical Paint Line Exhaust. Facial Velocity measured at the base of the NDO due to lack of Access : Safety Concerns in Reaching the upper portion of NDO with Line operational

	Id				Meet criteria?
9:45	Id NDO #2	= -0.0124	inches H_2O.	Meet criteria?	yes
	Id	= -0.0126	inches H_2O.	Meet criteria?	
	Id	= -0.0108	inches H_2O.	Meet criteria?	
	Id	= -0.0122	inches H_2O.	Meet criteria?	
	Id	= -0.0124	inches H_2O.	Meet criteria?	
	Id	=	inches H_2O.	Meet criteria?	
10:47	Id NDO #2	= -0.0114	inches H_2O.	Meet criteria?	
	Id	= -0.0116	inches H_2O.	Meet criteria?	
	Id	= -0.0108	inches H_2O.	Meet criteria?	
	Id	= -0.0122	inches H_2O.	Meet criteria?	
	Id	= -0.0104	inches H_2O.	Meet criteria?	
	Id	=	inches H_2O.	Meet criteria?	
11:50	Id NDO#3	= -0.0096	inches H_2O.	Meet criteria?	
	Id	= -0.0098	inches H_2O.	Meet criteria?	
	Id	= -0.0098	inches H_2O.	Meet criteria?	
	Id	= -0.0108	inches H_2O.	Meet criteria?	
	Id	= -0.0106	inches H_2O.	Meet criteria?	
	Id	=	inches H_2O.	Meet criteria?	

FV direction, must be inward: yes Meets critieria? yes

If FV is less than 9000 m/hr or 500 fpm. (500 fpm corresponds to 0.0437 inches H_2O, but this is not in the method so must get permission to use)
Verify continuously inward using streamers, smoke tubes or tracer gases. One hour test:
Start time 9:45 End time 12:50
Measurement device Smoke tubes Check at least every 10 minutes.
5 streamers

If FV is greater than 9000 m/hr (500 fpm) the direction of air flow shall be presumed to be inward at all times (no verification needed).

MONTROSE AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: Vertical Paint Line
Sample Location: Vertical Paint Line Inlet
Operator: PB

Criteria 5.4:
The average facial velocity (FV) of air through all NDOs shall be at least 3,600 m/hr or 200 fpm; alternatively 200 fpm=0.007 inches H_2O pressure drop across room). The direction of air flow though all NDOs shall be into the enclosure.

Facial velocity (FV) air entering the enclosure through all NDOs feet/minute ✓
Meets criteria (>200fpm)? ✓
Eq. 204.3: $FV=(Q_O - Q_I) / A_N$; where
Q_O = sum of the volumetric flow from all gas streams exiting the enclosure through an exhaust duct or hood
Q_I = the sum of the vol. flow from all gas streams into the enclosure through a forced makeup air duct; zero, if there is no formed makeup air into the enclosure.
A_N = total area of all NDO's in enclosure

Alternatively 0.007 inches H_2O pressure drop across the room corresponds to 3600 m/hr (200 fpm)

Describe where pressure drops were measured:
Vertical Paint Line Inlet. NDO #1 Facial Velocity measured At the base of the NDO due to lack of access & Safety Concerns in Reaching upper portion of NDO with Line operational.

	Id		=		inches H_2O.	Meet criteria?
9:43	Id	NDO #1	=	-0.0073	inches H_2O.	Meet criteria? yes
	Id		=	-0.0075	inches H_2O.	Meet criteria?
	Id		=	-0.0078	inches H_2O.	Meet criteria?
	Id		=	-0.0080	inches H_2O.	Meet criteria?
	Id		=	-0.0072	inches H_2O.	Meet criteria?
	Id		=		inches H_2O.	Meet criteria?
10:45	Id	NDO #1	=	-0.0071	inches H_2O.	Meet criteria?
	Id		=	-0.0077	inches H_2O.	Meet criteria?
	Id		=	-0.0076	inches H_2O.	Meet criteria?
	Id		=	-0.0078	inches H_2O.	Meet criteria?
	Id		=	-0.0072	inches H_2O.	Meet criteria?
	Id		=		inches H_2O.	Meet criteria?
11:48	Id	NDO #1	=	-0.0084	inches H_2O.	Meet criteria?
	Id		=	-0.0088	inches H_2O.	Meet criteria?
	Id		=	-0.0080	inches H_2O.	Meet criteria?
	Id		=	-0.0086	inches H_2O.	Meet criteria?
	Id		=	-0.0089	inches H_2O.	Meet criteria? ✓
	Id		=		inches H_2O.	Meet criteria?

FV direction, must be inward: yes Meets critieria? yes

If FV is less than 9000 m/hr or 500 fpm. (500 fpm corresponds to 0.0437 inches H_2O, but this is not in the method so must get permission to use)
Verify continuously inward using streamers, smoke tubes or tracer gases. One hour test:
Start time 9:43 End time 12:50
Measurement device smoke tubes & streamers Check at least every 10 minutes.

If FV is greater than 9000 m/hr (500 fpm) the direction of air flow shall be presumed to be inward at all times (no verification needed).

MONTROSE
AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: Vertical Paint Line
Sample Location: Vertical Paint Line
Operator: PB

Procedure 8.4 (For TTE only) (Variation of Criteria 5.4)

The average facial velocity (FV) of air exiting through an exhaust duct or hood shall be at least 3,600 m/hr (200 fpm).
Can measure pressure drop across room and 0.007 inches H_2O corresponds to an FV of 3600 m/hr (200 fpm)

Total flow rate of air exiting the enclosure through all exhaust ducts or hoods (Q_0) : /
Total flow rate of makeup air (Q_1): /
Total NDO area (An): /
$FV=Q_0 - Q_1 / An$ = /

Meets criteria (>200fpm)? /
Alternatively 0.007 inches H2O pressure drop across the room corresponds to 3600 m/hr (200 fpm)
Meets alternative criteria? /

Criteria 5.5

All access doors and windows whose areas are not included in 5.3 and are not included in the calculation 5.4, shall be closed during routine operation of the process.

All door and windows, not considered NDOs: are they kept closed during operations? Yes

MONTROSE
AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: VPL (Paint Room)
Sample Location: VPL Paint mixing Room
Operator: DB

Method 204 Criteria For and Verification of a Permanent or Temporary Total Enclosure (PE or TTE))

Definitions:
NDO: natural draft opening, remains open during operations, not connected to duct w/fan
PE: permanent, completely surrounds, all VOC are captured and contained
TTE: temporary, completely surrounds, uncaptured emissions (not ducted to control device) are contained for discharge through ducts measurable for VOC
BE: building used as TTE

Procedure:
1. measure and map the enclosure
2. calculate if meets each criteria

The enclosure is assumed to have 100% Capture Efficiency (and does not need to be measured) if it meets the following criteria:
- PE must meet criteria 5.1, 5.3, 5.4, 5.5
- PE must also meet: all VOC emissions captured and contained for discharge through a control device
- BE and TTE must meet criteria 5.1, 5.2, 5.3, 5.4, 5.5

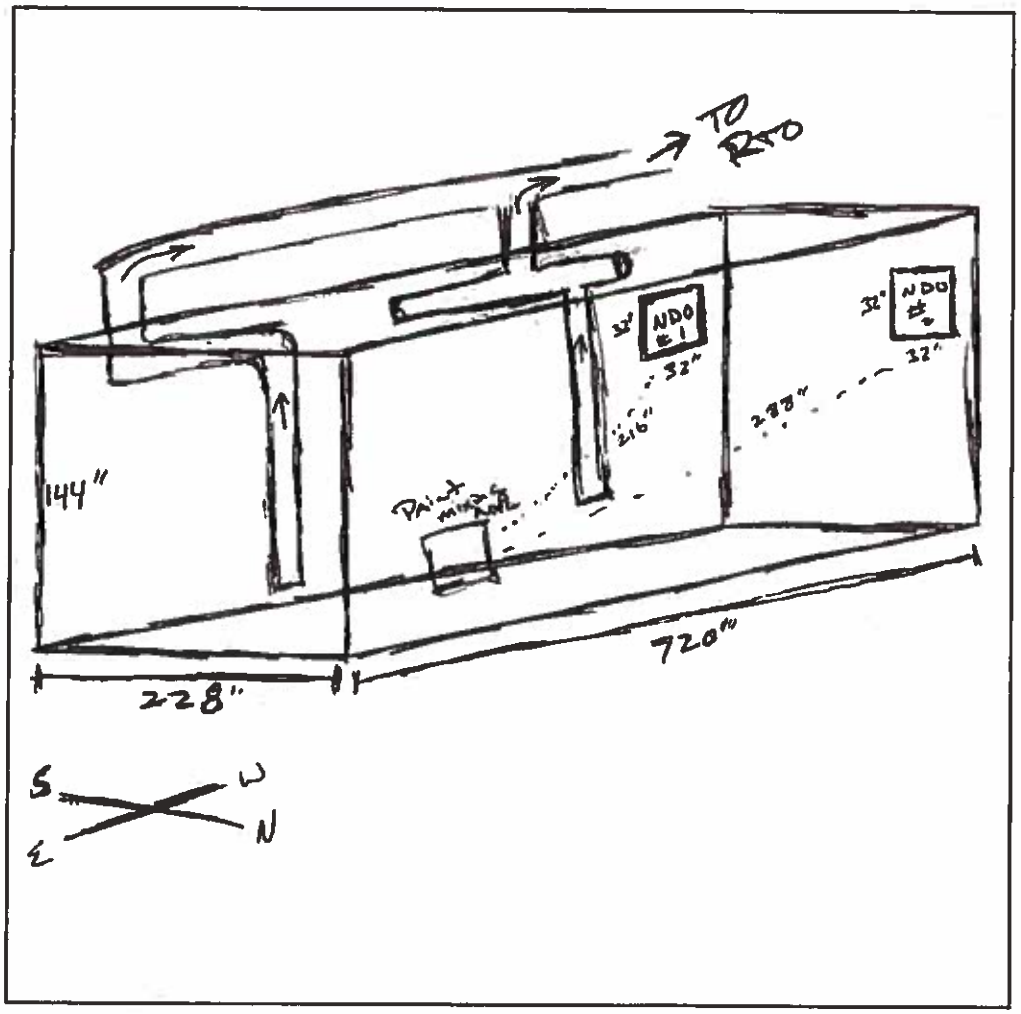
MONTROSE
AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13 2021
Facility Location: Hydro (Portland)
Source: VPL (Paint Room)
Sample Location: VPL Paint Mixing Room
Operator: PTB

Method 204 Verification of a Permanent or Temporary Total Enclosure

Record measurements and/or locations:

- NDOs (natural draft opening, remains open during operations, not connected to duct w/fan)
- VOC emitting points
- exhaust points
- the ducts and hoods with fans to a control device
- surface area: dimensions of walls, floor, ceiling



MONTROSE
AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: VPL (Vertical Paint Line)
Sample Location: VPL Paint Mixing Room
Operator: PJB

Method 204 Criteria 5.1:
Any NDO shall be at least four equivalent opening diameters from each VOC emitting point.

NDO Identification: NDO #1 Area Dimensions: 32"x 32" = 1024in²
Calculate equivalent opening diameter: 32.0 inches
Calculate distance = four equivalent opening diameters: 128 inches

Distance to
VOC emitting point 1 216 inches Meet criteria? yes
VOC emitting point 2 _____ Meet criteria? _____
VOC emitting point 3 _____ Meet criteria? _____
VOC emitting point 4 _____ Meet criteria? _____

NDO Identification: NDO #2 Area Dimensions: 32" x 32" = 1024in²
Calculate equivalent opening diameter: 32.0
Calculate distance = four equivalent opening diameters: 128.0 inches

Distance to
VOC emitting point 1 288.0 inches Meet criteria? yes
VOC emitting point 2 _____ Meet criteria? _____
VOC emitting point 3 _____ Meet criteria? _____
VOC emitting point 4 _____ Meet criteria? _____

NDO Identification: _____ Area Dimensions: _____
Calculate equivalent opening diameter: _____
Calculate distance = four equivalent opening diameters: _____

Distance to
VOC emitting point 1 _____ Meet criteria? _____
VOC emitting point 2 _____ Meet criteria? _____
VOC emitting point 3 _____ Meet criteria? _____
VOC emitting point 4 _____ Meet criteria? _____

NDO Identification: _____ Area Dimensions: _____
Calculate equivalent opening diameter: _____
Calculate distance = four equivalent opening diameters: _____

Distance to
VOC emitting point 1 _____ Meet criteria? _____
VOC emitting point 2 _____ Meet criteria? _____
VOC emitting point 3 _____ Meet criteria? _____
VOC emitting point 4 _____ Meet criteria? _____

MONTROSE
AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: VPL (Vertical Paint Line)
Sample Location: VPL Paint Mixing Room
Operator: PB

Criteria 5.3:
The total area of all NDOs shall not exceed 5% of the total surface area of enclosure (walls, floor, ceiling).

Total NDO area (An): 2048 in

Total surface area of enclosure (At) 601,344

NDO area as percentage of total (NEAR) = An/At = 0.34%
NEAR must be <+ 0.05 Meets criteria? (yes)

MONTROSE AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: VPL (Paint Room)
Sample Location: VPL Paint mixing Room
Operator: PB

Criteria 5.4:
The average facial velocity (FV) of air through all NDOs shall be at least 3,600 m/hr or 200 fpm; alternatively 200 fpm=0.007 inches H_2O pressure drop across room). The direction of air flow though all NDOs shall be into the enclosure.

Facial velocity (FV) air entering the enclosure through all NDOs feet/minute /
Meets criteria (>200fpm)? /
Eq. 204.3: $FV=(Q_O - Q_I) / A_N$; where
Q_O = sum of the volumetric flow from all gas streams exiting the enclosure through an exhaust duct or hood
Q_I = the sum of the vol. flow from all gas streams into the enclosure through a forced makeup air duct, zero, if there is no formed makeup air into the enclosure.
A_N = total area of all NDO's in enclosure

Alternatively 0.007 inches H_2O pressure drop across the room corresponds to 3600 m/hr (200 fpm)

Describe where pressure drops were measured: NDO #1 ~~NDO #2~~. Measurements were done for facial velocity utilizing 5 successive reading once per hour, over 3 hours.

9:47	Id NDO#1	=-0.0323	inches H_2O. Meet criteria?	yes
	Id	=-0.0317	inches H_2O. Meet criteria?	
	Id	=-0.0318	inches H_2O. Meet criteria?	
	Id	=-0.0323	inches H_2O. Meet criteria?	
	Id	=-0.0323	inches H_2O. Meet criteria?	
10:49	Id NDO #1	=	inches H_2O. Meet criteria?	
	Id	=-0.0339	inches H_2O. Meet criteria?	yes
	Id	=-0.0319	inches H_2O. Meet criteria?	
	Id	=-0.0320	inches H_2O. Meet criteria?	
	Id	=-0.0329	inches H_2O. Meet criteria?	
	Id	=-0.0319	inches H_2O. Meet criteria?	
11:51	Id NDO#1	=	inches H_2O. Meet criteria?	
	Id	=-0.0300	inches H_2O. Meet criteria?	yes
	Id	=-0.0302	inches H_2O. Meet criteria?	
	Id	=-0.0306	inches H_2O. Meet criteria?	
	Id	=-0.0302	inches H_2O. Meet criteria?	
	Id	=-0.0306	inches H_2O. Meet criteria?	
	Id	=	inches H_2O. Meet criteria?	

Excess measurement and photographic evidence done per request of ODEQ

FV direction, must be inward: yes Meets critieria? yes

If FV is less than 9000 m/hr or 500 fpm. (500 fpm corresponds to 0.0437 inches H_2O, but this is not in the method so must get permission to use)
Verify continuously inward using streamers, smoke tubes or tracer gases. One hour test: Three
Start time 9:47 End time 12:51
Measurement device Smoke tube Check at least every 10 minutes.
plus streamers

If FV is greater than 9000 m/hr (500 fpm) the direction of air flow shall be presumed to be inward at all times (no verification needed).

MONTROSE AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: VPL (Paint Room)
Sample Location: VPL Paint Mixing Room
Operator: RJB

Criteria 5.4:
The average facial velocity (FV) of air through all NDOs shall be at least 3,600 m/hr or 200 fpm; alternatively 200 fpm=0.007 inches H_2O pressure drop across room). The direction of air flow though all NDOs shall be into the enclosure.

Facial velocity (FV) air entering the enclosure through all NDOs feet/minute ✓
Meets criteria (>200fpm)? ✓
Eq. 204.3: $FV=(Q_O - Q_I) / A_N$; where
Q_O = sum of the volumetric flow from all gas streams exiting the enclosure through an exhaust duct or hood
Q_I = the sum of the vol. flow from all gas streams into the enclosure through a forced makeup air duct; zero, if there is no formed makeup air into the enclosure.
A_N = total area of all NDO's in enclosure

Alternatively 0.007 inches H_2O pressure drop across the room corresponds to 3600 m/hr (200 fpm)

Describe where pressure drops were measured:
NDO #2 Measurements done for facial velocity utilizing 5 successive readings once per hour over 3 hours per Request of ODEQ.

9:49	Id NDO #2	= -0.0326	inches H_2O. Meet criteria?	yes
	Id	= -0.0325	inches H_2O. Meet criteria?	
	Id	= -0.0326	inches H_2O. Meet criteria?	
	Id	= -0.0325	inches H_2O. Meet criteria?	
	Id	= -0.0320	inches H_2O. Meet criteria?	
10:51	Id NDO #2	=	inches H_2O. Meet criteria?	
	Id	= -0.0338	inches H_2O. Meet criteria?	yes
	Id	= -0.0334	inches H_2O. Meet criteria?	
	Id	= -0.0331	inches H_2O. Meet criteria?	
	Id	= -0.0334	inches H_2O. Meet criteria?	
	Id	= -0.0334	inches H_2O. Meet criteria?	
11:52	Id NDO #3	=	inches H_2O. Meet criteria?	
	Id	= -0.0316	inches H_2O. Meet criteria?	yes
	Id	= -0.0318	inches H_2O. Meet criteria?	
	Id	= -0.0319	inches H_2O. Meet criteria?	
	Id	= -0.0320	inches H_2O. Meet criteria?	
	Id	= -0.0316	inches H_2O. Meet criteria?	
	Id	=	inches H_2O. Meet criteria?	

FV direction, must be inward: yes Meets critieria? yes

If FV is less than 9000 m/hr or 500 fpm. (500 fpm corresponds to 0.0437 inches H_2O, but this is not in the method so must get permission to use)
Verify continuously inward using streamers, smoke tubes or tracer gases. One hour test: Three
Start time 9:49 End time 12:59
Measurement device Smoke tubes + Streamers Check at least every 10 minutes.

If FV is greater than 9000 m/hr (500 fpm) the direction of air flow shall be presumed to be inward at all times (no verification needed).

MONTROSE
AIR QUALITY SERVICES

Client: Hydro Extrusions
Date/Time: 8.13.2021
Facility Location: Hydro Portland
Source: VPL (Paint Room)
Sample Location: VPL Paint Mixing Room
Operator: PB

Procedure 8.4 (For TTE only) (Variation of Criteria 5.4)

The average facial velocity (FV) of air exiting through an exhaust duct or hood shall be at least 3,600 m/hr (200 fpm).
Can measure pressure drop across room and 0.007 inches H_2O corresponds to an FV of 3600 m/hr (200 fpm)

Total flow rate of air exiting the enclosure through all exhaust ducts or hoods (Q_0) : /
Total flow rate of makeup air (Q_1): /
Total NDO area (An): /
$FV=Q_0 - Q_1 / An$ = /

Meets criteria (>200fpm)? /
Alternatively 0.007 inches H2O pressure drop across the room corresponds to 3600 m/hr (200 fpm)
Meets alternative criteria? /

Criteria 5.5

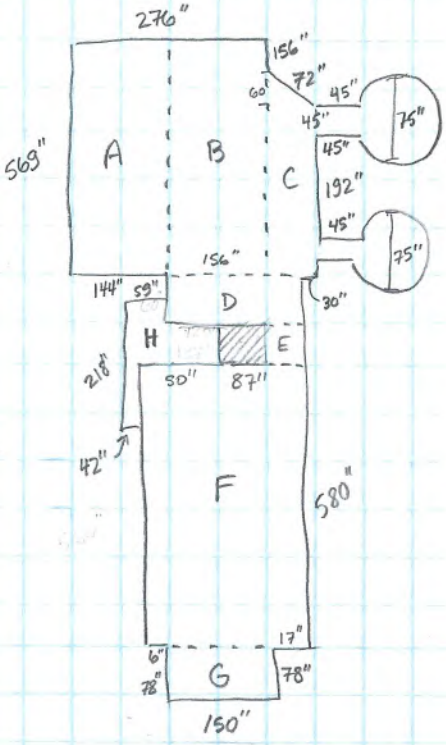
All access doors and windows whose areas are not included in 5.3 and are not included in the calculation 5.4, shall be closed during routine operation of the process.

All door and windows, not considered NDOs: are they kept closed during operations? Yes

Appendix A.3
Example Calculations

VPL enclosure area

Hydro Extrusion
Vertical Paint Line
EPA 204



Area $A = 144" \times 569" = 81{,}936\ in^2$

Area $B = (276"-144") \times 569" = 132" \times 569" = 75{,}108\ in^2$

Area $C = C_1 + C_2 + C_3 + C_4$, where C_1 = rectangle
C_2 = triangle
C_3 = 2 squares
C_4 = 2 circles

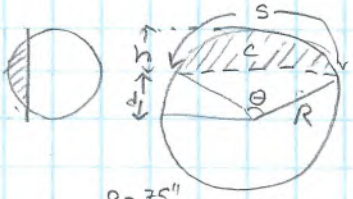
$C_1 = \sqrt{(72^2)-(60^2)} \times (45+192+45+72)$
$= \sqrt{1584} \times 354 = 39.8 \times 354 = 14{,}089\ in^2$

$C_2 = 60 \times \sqrt{(72^2)-(60^2)} \cdot 1/2 = 60 \times 39.8 \times 1/2 = 1{,}194\ in^2$

$C_3 = 2 \times (45 \times 45) = 2 \times 2025 = 4050\ in^2$

$C_4 = 2 \times \pi\left(\frac{D}{2}\right)^2 = 2 \times \pi \times \left(\frac{75"}{2}\right)^2 = 8{,}835.7\ in^2$

Area $C = 14{,}089 + 1{,}194 + 4{,}050 + 8836 = 28{,}169$ but need to account for circle/square overlap



$R = h + d \Rightarrow (2R-h) \cdot h = \frac{c}{2} \cdot \frac{c}{2} = \frac{c^2}{4}$

$2R = \frac{c^2}{4h} + h$

$R = \frac{c^2}{8h} + \frac{h}{2}$

$R = \frac{75"}{2} = 37.5"$

$\therefore\ 37.5 = \frac{45^2}{8h} + \frac{h}{2} = \frac{253.125}{h} + \frac{h}{2}$

$c = 45"$

$37.5h = 253.125 + h^2/2 \Rightarrow h = 7.5$

$d = R - h = 37.5 - 7.5 = 30$

$\text{area} = \frac{R^2}{2}(\theta - \sin\theta) = R^2\left(\arcsin\frac{c}{2R} - \frac{c}{2R}\sqrt{1-\left(\frac{c}{2R}\right)^2}\right) = R\left(R\arccos\frac{d}{R} - d\sqrt{1-\frac{d^2}{R^2}}\right)$

$= R^2 \arccos\left(1-\frac{h}{R}\right) - (R-h)\sqrt{R^2-(R-h)^2} = (37.5^2)\arccos\left(1-\frac{7.5}{37.5}\right) - (37.5-7.5)\sqrt{37.5^2-(37.5-7.5)^2}$

$= 1406.25 \cdot \arccos(1-0.2) - (30)\sqrt{1406.25-900} = 1406.25(0.6435) - (30)(22.5) = 229.9$

$\therefore$ Area $C = 28{,}169 - 2(229.9) = 27{,}709\ in^2$

Area $D = 156" \times [(218" - 118" - 77") + 37"] = 156" \times 60" = 9360\ in^2$

Area $E = 77" \times [156" - 87" - (92-59)] = 77" \times 36" = 2772\ in^2$

continued →

Hydro Extrusion
Vertical Paint Line
EPA 204

VPL Enclosure Area

Area F = (6" + 150" + 17") x (462" + 118") = 173" x 580"
= 100,340 in²

Area G = 150" x 78" = 11,700 in²

Area H = $H_1 + H_2 + H_3$ H_1 = 118" x 42" = 4956 in²
H_2 = 92" x 77" = 7084 in²
H_3 = (218" - 118" - 77") x 59" = 23" x 59" = 1357 in²

∴ Area H = 4956 + 7084 + 1357 = 13,397 in²

Total floor area = $\sum_{A}^{H}$ = 81,936 + 75,108 + 27,709 + 9360 + 2772 + 100,340
+ 11,700 + 13,397 = 322,322

There are two NDOs: A_1 = 338" x 5" = 1690 in²
A_2 = 360" x 11.5" = 4140 in²

Wall perimeter = 276" + 156" + 72" + 45" + [circle arc length] + 45" + 192" + 45" + [+interior] [circle arc length] + 45" + 72" + 30" + (462" + 218" + 37") + 17" + 78" + 150" + 78" + 6" + 462" + 42" + 218" + 59" + 37" + 144" + 569" + [118" + 50" + 77" + (92 - 59) + (218 - 118 - 77)]

circular wall arc length = circumference − inner arc length
= π d − r θ, where θ = arcsin (a/c) = arcsin (45/2 / 75/2) = 0.6435
for ½ the angle

= π (75") − (75/2 · 0.6435 · 2) = 187.4

Wall area = (perimeter + interior walls − burner section) x 360" + burner section x 175"

= 3924.8 x 360" + 306" x 175" = 1,466,478 in²

∴ Total surface area = floor + ceiling + walls − NDO

= (322,322 x 2) + 1,466,478 − 1690 − 4140 = **2,105,292 in²**

Hydro Extrusions
Paint Mixing Room
EPA 2014

Length = 720 in.
Width = 228 in.
Height = 144 in.

Surface Area = $2(L \times W) + 2(L \times H) + 2(W \times H)$

$= 2(720 \times 228) + 2(720 \times 144) + 2(228 \times 144)$

$= 2(164,160) + 2(103,680) + 2(32,832)$

$= 328,320 + 207,360 + 65,664$

$= \boxed{601,344 \text{ in}^2}$

Appendix A.4
General Equations

EMISSION CALCULATIONS

1. Volumetric Flow and Isokinetics

   a. Standard sample gas volume, dscf

   $$V_{m\,std} = 17.636 \times (V_m)(Y)\frac{\left(P_{bar} + \frac{\Delta H}{13.6}\right)}{(T_m + 460)}$$

   b. Water vapor volume, scf

   $$V_{w\,std} = (0.04715)(V_{lc})\left(\frac{T_{std} + 460}{528}\right)$$

   c. Moisture content, non-dimensional

   $$B_{ws} = \frac{V_{w\,std}}{(V_{m\,std} + V_{w\,std})}$$

   d. Stack gas molecular weight, lb/lb mole (dry)

   $$MW_{dry} = [0.44(\%CO_2)] + [0.32(\%O_2)] + [0.28(\%N_2)]$$

   e. Stack gas molecular weight, lb/lb mole (wet)

   $$MW_{wet} = \left[MW_{dry}(1 - B_{ws})\right] + [18(B_{ws})]$$

   f. Absolute stack pressure, in Hg

   $$P_s = P_{bar} + \left(\frac{P_{sg}}{13.6}\right)$$

   g. Stack velocity, ft/sec

   $$v_s = (85.49)\left(C_p\right)\left(\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(MW_{wet})}}$$

   h. Actual stack flow rate, acfm

   $$Q = (v_s)(A_s)(60\ min/hr)$$

   i. Standard stack gas flow rate, wscfm

   $$Q_{ws} = (v_s)(A_s)(60\ min/hr)\left(\frac{T_{std} + 460}{T_s + 460}\right)\left(\frac{P_s}{P_{std}}\right)$$

   j. Standard stack gas flow rate, dscfm

   $$Q_{ds} = (v_s)(A_s)(60\ min/hr)(1 - B_{ws})\left(\frac{T_{std} + 460}{T_s + 460}\right)\left(\frac{P_s}{P_{std}}\right)$$

   k. Percent isokinetic

   $$I = \frac{(T_s)(V_{m\,std})(P_{std})(100)}{(T_{std} + 460)(v_s)(\theta)(A_n)(P_s)(60)(1 - B_{ws})}$$

2. Gaseous Emissions

a. Concentration, ppm volume wet (i.e. to calculate wet ppm from dry ppm)

$$C_w = (C)(1 - B_{ws})$$

b. Concentration, ppm @ 3% O_2 dry

$$C_3 = (C)\left[\frac{(20.9 - 3.0)}{(20.9 - \%\ O_2)}\right]$$

c. Concentration, ppm @ 12% CO_2 dry

$$C_{12} = (C)\left(\frac{12.0}{\%\ CO_2}\right)$$

d. Concentration, ppm volume dry (i.e. to calculate dry ppm from wet ppm)

$$C = \left[\frac{C_w}{(1 - B_{ws})}\right]$$

e. Mass emission rate, lb/hr

$$M = (C)(CF)(Q_{ds})(60\ min/hr)$$

where,

CF = conversion factor from ppm to lb/scf:

$$CF_{NOx} = 1.194 \times 10^{-7}\left(\frac{lb/scf}{ppm}\right)$$

$$CF_{SO2} = 1.660 \times 10^{-7}\left(\frac{lb/scf}{ppm}\right)$$

$CF_X = CF_{NOX}\left(\frac{MW_X}{MW_{NOX}}\right)$ for other compounds (x)

f. Emission rate, lb/MMBtu

$$E = (C)(CF)(F_d)\left(\frac{20.9}{20.9 - \%\ O_2}\right)$$

g. Mass emission rate, grams/bhp-hr

$$M_j = (M)\left(\frac{453.59\ g/lb}{J}\right)$$

3. Particulate Emissions

   a. Grain loading, gr/dscf

   $$G = (0.0154)\left(\frac{G_m}{V_{m\,std}}\right)$$

   b. Grain loading corrected to 12% CO_2, gr/dscf @ 12% CO_2

   $$G_{12} = (G)\left(\frac{12.0}{\%\ CO_2}\right)$$

   c. Mass emission rate, lb/hr

   $$M = (G)(Q_{ds})\left(\frac{60\ min/hr}{7{,}000\ gr/lb}\right)$$

   d. Emission rate, lb/MMBtu

   $$E = (G)\left(\frac{1\ lb}{7{,}000\ gr}\right)(F_d)\left(\frac{20.9}{20.9 - \%\ O_2}\right)$$

4. Fuel Factor "F"

   a. Choice #1 – use the values for F_d provided in Method 19, Table 19-1
   Choice #2 – if you have fuel ultimate and proximate analysis, calculate F_d (need fuel weight %CHONS, HHV)
   Stoichiometric fuel factor at 68 °F, dscf/MMBtu at 0% O_2:

   $$F_d = \frac{(10^6)[3.64(\%\ H) + 1.53(\%\ C) + 0.14(\%\ N) + 0.57(\%\ S) - 0.46(\%\ O)]}{HHV, Btu/lb}$$

   b. Fuel factor at 60 °F (use if all your volumes and flows are at 60 °F)

   $$F_{d\,60} = F_d\left(\frac{520°R}{528°R}\right)$$

5. Miscellaneous Equations

a. Standard stack gas flow rate, calculated from fuel flow and F factor, dscfm

Note: Q_f and HHV need to be in units of either lb/hr and Btu/lb, or scf/hr and Btu/scf. *Do not mix units!*

(calculation based on stack $\%O_2$)

$$Q_{ds} = (Q_f)(HHV)(10^{-6})(F_d)\left(\frac{20.9}{20.9 - \%\ O_2}\right)/(60\ min/hr)$$

or (calculation based on stack $\%CO_2$ – see EPA Method 19 for values of F_c)

$$Q_{ds} = (Q_f)(HHV)(10^{-6})(F_c)\left(\frac{100}{\%\ CO_2}\right)/(60\ min/hr)$$

b. Destruction efficiency of emission control device, %

$EFF = \left(\frac{C_{in} - C_{out}}{C_{in}}\right)(100\%)$ based on concentrations

or

$EFF = \left(\frac{M_{in} - M_{out}}{M_{in}}\right)(100\%)$ based on mass emission rates

c. Cylinder gas audit, % accuracy

$$A_c = \left(\frac{C_m - C_a}{C_a}\right)(100\%)$$

Nomenclature:

A_c	=	accuracy of CEMS during cylinder gas audit (CGA), % difference
A_n	=	nozzle area, in^2 (πr^2), where π = 3.1416 and r = radius (½ diameter) in inches
A_s	=	stack area, ft^2 (πr^2), where π = 3.1416 and r = radius (½ diameter) in feet
B_{ws}	=	flue gas moisture content (multiply by 100 for % by volume)
C	=	concentration of gaseous species, ppm volume dry
C_a	=	concentration of audit gas, ppm (for CGA, equation 5c)
C_m	=	concentration measured by CEMS, ppm (for CGA, equation 5c)
C_p	=	calibration factor for pitot tube, dimensionless
C_w	=	concentration of gaseous species, ppm volume wet
C_3	=	corrected concentration of gaseous species, ppm @ 3% O_2 dry
C_{12}	=	corrected concentration of gaseous species, ppm @ 12% CO_2 dry
E	=	mass emission rate, lb/MMBtu
EFF	=	destruction or removal efficiency of emission control device, % efficiency
F_c	=	stoichiometric “F” factor of fuel based on CO_2, dscf/MMBtu @ 100% CO_2
F_d	=	stoichiometric “F” factor of fuel based on O_2, dscf/MMBtu @ 0% O_2
G	=	particulate matter grain loading, grains/dscf
G_{12}	=	corrected particulate matter grain loading, grains/dscf @ 12% CO_2
G_m	=	mass of collected particulate matter, mg
HHV	=	higher heating value, Btu/cubic foot
I	=	% isokinetic sampling rate, %
J	=	brake horsepower, bhp
M_j	=	mass emission rate of measured species (s), g/hp-hr
M	=	mass emission rate, lb/hr
MW_{dry}	=	molecular weight of stack gas, dry basis
MW_{wet}	=	molecular weight of stack gas, wet basis
MW_s	=	molecular weight of gaseous species (s), lb/lb mole:

CO:	28.01	(can use 28)	NO_x as NO_2:	46.01	(can use 46)
SO_x as SO_2:	64.06	(can use 64)	Hydrocarbons as C:	12.01	(can use 12)
Hydrocarbons as CH_4:	16.04	(can use 16)	Hydrocarbons as C_3H_8:	44.10	(can use 44)
NH_3:	17.03	(can use 17)			

N_2	=	nitrogen content of stack gas, % volume dry
P_{bar}	=	barometric pressure, in. Hg
P_s	=	stack absolute pressure, in. Hg
P_{sg}	=	stack static pressure, inches of water, gauge (iwg)
Q	=	wet stack gas flow rate at actual conditions, acfm
Q_f	=	fuel flow rate, scfh or lb/hr (be careful of units)
Q_{ds}	=	dry stack gas flow rate at standard conditions, dscfm
Q_{ws}	=	wet stack gas flow rate at standard conditions, wscfm
SV	=	specific molar volume of an ideal gas at standard conditions, ft^3/lb mole
T_m	=	meter temperature, °R
T_{std}	=	reference temperature, °R
T_s	=	stack gas temperature, °R
v_s	=	stack gas velocity, ft/sec
V_{lc}	=	volume of liquid collected in impingers, ml
V_m	=	dry meter volume uncorrected, acf
$V_{m\ std}$	=	dry meter volume corrected to standard conditions, dscf
$V_{w\ std}$	=	volume of water vapor at standard conditions, scf
Y	=	meter calibration coefficient, dimensionless
ΔH	=	average pressure differential across meter, inches water
ΔP	=	average velocity head of stack gas, inches water
Θ	=	sampling time, minutes

APPENDIX B
PROCESS DATA

[EXTERNAL] Hydro Portland Coatings Facility Draft

Jeremy Basler Thu, Aug 26, 2021 at 3:00 PM
To: Andy Vella, Jennifer Garcia
Cc: Peter Becker

Andy,

On the test day we painted 6,620 pieces, equaling 34,455 pounds of metal. That equates to an average production rate of ~315 pieces/hour production rate for the VPL on 8/13/2021.

Thank you,

Jeremy C. Basler, M.S., MBA

Regional HSE Manager - West

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E: Jeremy.Basler@hydro.com

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APPENDIX C
QUALITY ASSURANCE/QUALITY CONTROL

Appendix C.1
Units and Abbreviations

UNITS AND ABBREVIATIONS

@ X% O_2	corrected to X% oxygen (corrected for dilution air)
|CC|	absolute value of the confidence coefficient
|d|	absolute value of the mean differences
ºC	degrees Celsius (centrigade)
ºF	degrees Fahrenheit
ºR	degrees Rankine
" H_2O	inches of water column
13.6	specific gravity of mercury
ΔH	pressure drop across orifice meter, inches H_2O
ΔP	velocity head of stack gas, inches H_2O
θ	total sampling time, minutes
µg	microgram
ρ_a	density of acetone, mg/ml
ρ_w	density of water, 0.9982 g/ml or 0.002201 lb/ml
acfm	actual cubic feet of gas per minute at stack conditions
A_n	cross-sectional area of nozzle, ft^2
A_s	cross-sectional area of stack, square feet (ft^2)
Btu	British thermal unit
B_{ws}	proportion by volume of water vapor in gas stream
C_a	particulate matter concentration in stack gas, gr/acf
C_{Avg}	average unadjusted gas concentration, ppmv
C_{Dir}	measured concentration of calibration gas, ppmv
cf or ft^3	cubic feet
cfm	cubic feet per minute
C_{Gas}	average gas concentration adjusted for bias, ppmv
C_M	average of initial and final system bias check responses from upscale calibration gas, ppmv
cm or m^3	cubic meters
C_{MA}	actual concentration of the upscale calibration gas, ppmv
C_O	average of initial and final system bias check responses from low-level calibration gas, ppmv
C_p	pitot tube coefficient
C_s	particulate matter concentration in stack gas, gr/dscf
CS	calibration span, % or ppmv
C_S	measured concentration of calibration gas, ppmv
C_V	manufactured certified concentration of calibration gas, ppmv
D	drift assessment, % of span
dcf	dry cubic feet
dcm	dry cubic meters
D_n	diameter of nozzle, inches
D_s	diameter of stack, inches
dscf	dry standard cubic feet
dscfm	dry standard cubic feet per minute
dscm	dry standard cubic meters
F_d	F-factor, dscf/MMBtu of heat input
fpm	feet per minute
fps	feet per second
ft	feet
ft^2	square feet
g	gram
gal	gallons
gr	grains (7000 grains per pound)

UNITS AND ABBREVIATIONS

gr/dscf	grains per dry standard cubic feet
hr	hour
I	percent of isokinetic sampling
in	inch
k	kilo or thousand (metric units, multiply by 10^3)
K	kelvin (temperature)
K_3	conversion factor 0.0154 gr/mg
K_4	conversion factor 0.002669 ((in. Hg)(ft^3))/((ml)(°R))
kg	kilogram
K_p	pitot tube constant (85.49 ft/sec)
kwscfh	thousand wet standard cubic feet per hour
l	liters
lb/hr	pounds per hour
lb/MMBtu	pounds per million Btu
lpm	liters per minute
m	meter or milli
M	thousand (English units) or mega (million, metric units)
m^3	cubic meters
m_a	mass of residue of acetone after evaporation, mg
M_d	molecular weight of stack gas; dry basis, lb/lb-mole
meq	milliequivalent
mg	milligram
Mg	megagram (10^6 grams)
min	minute
ml or mL	milliliter
mm	millimeter
MM	million (English units)
MMBtu/hr	million Btu per hour
m_n	total amount of particulate matter collected, mg
mol	mole
mol. wt. or MW	molecular weight
M_s	molecular weight of stack gas; wet basis, lb/lb-mole
MW	molecular weight or megawatt
n	number of data points
ng	nanogram
nm	nanometer
P_{bar}	barometric pressure, inches Hg
pg	picogram
P_g	stack static pressure, inches H_2O
P_m	barometric pressure of dry gas meter, inches Hg
ppb	parts per billion
ppbv	parts per billion, by volume
ppbvd	parts per billion by volume, dry basis
ppm	parts per million
ppmv	parts per million, by volume
ppmvd	parts per million by volume, dry basis
P_s	absolute stack gas pressure, inches Hg
psi	pounds per square inch
psia	pounds per square inch absolute
psig	pounds per square inch gauge
P_{std}	standard absolute pressure, 29.92 inches Hg
Q_a	volumetric flow rate, actual conditions, acfm

UNITS AND ABBREVIATIONS

Q_s	volumetric flow rate, standard conditions, scfm
Q_{std}	volumetric flow rate, dry standard conditions, dscfm
R	ideal gas constant 21.85 ((in. Hg) ($ft^{3)}$)/((°R) (lbmole))
SB_{final}	post-run system bias check, % of span
SB_i	pre-run system bias check, % of span
scf	standard cubic feet
scfh	standard cubic feet per hour
scfm	standard cubic feet per minute
scm	standard cubic meters
scmh	standard cubic meters per hour
sec	second
sf, sq. ft., or ft^2	square feet
std	standard
t	metric ton (1000 kg)
$T_{0.975}$	t-value
T_a	absolute average ambient temperature, ºR (+460 for English)
T_m	absolute average dry gas meter temperature, ºR (+460 for English)
ton or t	ton = 2000 pounds
tph or tons/hr	tons per hour
tpy or tons/yr	tons per year
T_s	absolute average stack gas meter temperature, ºR (+460 for English)
T_{std}	absolute temperature at standard conditions
V	volt
V_a	volume of acetone blank, ml
V_{aw}	volume of acetone used in wash, ml
V_{lc}	total volume H_2O collected in impingers and silica gel, grams
V_m	volume of gas sampled through dry gas meter, ft^3
$V_{m(std)}$	volume of gas measured by the dry gas meter, corrected to standard conditions, dscf
V_{ma}	stack gas volume sampled, acf
V_n	volume collected at stack conditions through nozzle, acf
V_s	average stack gas velocity, feet per second
$V_{wc(std)}$	volume of water vapor condensed, corrected to standard conditions, scf
$V_{wi(std)}$	volume of water vapor in gas sampled from impingers, scf
$V_{wsg(std)}$	volume of water vapor in gas sampled from silica gel, scf
W	watt
W_a	weight of residue in acetone wash, mg
W_{imp}	total weight of impingers, grams
W_{sg}	total weight of silica gel, grams
Y	dry gas meter calibration factor, dimensionless

ACRONYMS

AAS	atomic absorption spectroscopy
ACDP	air contaminant discharge permit
ACE	analyzer calibration error, percent of span
AD	absolute difference
ADL	above detection limit
AETB	Air Emissions Testing Body
AS	applicable standard (emission limit)
ASTM	American Society For Testing And Materials
BACT	best achievable control technology
BDL	below detection limit
BHP	brake horsepower
BIF	boiler and industrial furnace
BLS	black liquor solids
CC	confidence coefficient
CD	calibration drift
CE	calibration error
CEM	continuous emissions monitor
CEMS	continuous emissions monitoring system
CERMS	continuous emissions rate monitoring system
CET	calibration error test
CFR	Code of Federal Regulations
CGA	cylinder gas audit
CHNOS	elemental analysis for determination of C, H, N, O, and S content in fuels
CNCG	concentrated non-condensable gas
CO	catalytic oxidizer
COC	chain of custody
COMS	continuous opacity monitoring system
CPM	condensible particulate matter
CPMS	continuous parameter monitoring system
CT	combustion turbine
CTM	conditional test method
CTO	catalytic thermal oxidizer
CVAAS	cold vapor atomic absorption spectroscopy
D_e	equivalent diameter
DE	destruction efficiency
Dioxins	polychlorinated dibenzo-p-dioxins (pcdd's)
DLL	detection level limited
DNCG	dilute non-condensable gas
ECD	electron capture detector
EIT	Engineer In Training
ELCD	electoconductivity detector (hall detector)
EMPC	estimated maximum possible concentration
EPA	US Environmental Protection Agency
EPRI	Electric Power Research Institute
ES	emission standard (applicable limit)
ESP	electrostatic precipitator
EU	emission unit
FCCU	fluid catalytic cracking unit
FGD	flue gas desulfurization
FI	flame ionization
FIA	flame ionization analyzer
FID	flame ionization detector
FPD	flame photometric detector
FPM	filterable particulate matter

ACRONYMS

FTIR	Fourier-transform infrared spectroscopy
FTPB	field train proof blank
FTRB	field train recovery blank
Furans	polychlorinated dibenzofurans (pcdf's)
GC	gas chromatography
GC/MS	gas chromatography/mass spectroscopy
GFAAS	graphite furnace atomic absorption spectroscopy
GFC	gas filter correlation
GHG	greenhouse gas
HAP	hazardous air pollutant
HC	hydrocarbons
HHV	higher heating value
HPLC	high performance liquid chromatography
HRGC/HRMS	high-resolution gas chromatography/high-resolution mass spectroscopy
HRSG	heat recovery steam generator
IC	ion chromatography
ICAP	inductively-coupled argon plasmography
ICPCR	ion chromatography with a post-column reactor
IR	infrared radiation
ISO	International Standards Organization
kW	kilowatts
LFG	landfill gas
LHV	lower heating value
LPG	liquified petroleum gas
MACT	maximum achievable control technology
MDI	methylene diphyenyl diisocyanate
MDL	method detection limit
MNOC	maximum normal operating conditions
MRL	method reporting limit
MS	mass spectrometry
NA	not applicable or not available
NCASI	National Council For Air And Steam Improvement
NCG	non-condensable gases
NDIR	non-dispersive infrared
NESHAP	National Emissions Standards For Hazardous Air Pollutants
NG	natural gas
NIOSH	National Institute For Occupational Safety And Health
NIST	National Institute Of Standards And Technology
NMC	non-methane cutter
NMOC	non-methane organic compounds
NMVOC	non-methane volatile organic compounds
NPD	nitrogen phosphorus detector
NSPS	New Source Performance Standards
OSHA	Occupational Safety And Health Administration
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl compounds
PCWP	plywood and composite wood products
PE	Professional Engineer
PFAS	per- and polyfluoroalkyl substances (PFAS)
PI	photoionization
PID	photoionization detector
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in aerodynamic diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in aerodynamic diameter

ACRONYMS

POM	polycyclic organic matter
PS	performance specification
PSD	particle size distribution
PSEL	plant site emission limits
PST	performance specification test
PTE	permanent total enclosure
PTM	performance test method
QA/QC	quality assurance and quality control
QI	Qualified Individual
QSTI	Qualified Source Testing Individual
RA	relative accuracy
RAA	relative accuracy audit
RACT	reasonably available control technology
RATA	relative accuracy test audit
RCTO	rotary concentrator thermal oxidizer
RICE	stationary reciprocating internal combustion engine
RM	reference method
RTO	regenerative thermal oxidizer
SAM	sulfuric acid mist
SCD	sulfur chemiluminescent detector
SCR	selective catalytic reduction system
SD	standard deviation
Semi-VOST	semivolatile organic compounds sample train
SRM	standard reference material
TAP	toxic air pollutant
TBD	to be determined
TCA	thermal conductivity analyzer
TCD	thermal conductivity detector
TGNENMOC	total gaseous non-ethane non-methane organic compounds
TGNMOC	total gaseous non-methane organic compounds
TGOC	total gaseous organic compounds
THC	total hydrocarbons
TIC	tentatively identified compound
TO	thermal oxidizer
TO	toxic organic (as in EPA Method TO-15)
TPM	total particulate matter
TSP	total suspended particulate matter
TTE	temporary total enclosure
ULSD	ultra-low sulfur diesel
UV	ultraviolet radiation range
VE	visible emissions
VOC	volatile organic compounds
VOST	volatile organic sample train
WC	water column
WWTP	waste water treatment plant

CHEMICAL NOMENCLATURE

Ag	silver
As	arsenic
Ba	barium
Be	beryllium
C	carbon
Cd	cadmium
CdS	cadmium sulfide
CH_2O	formaldehyde
CH_3CHO	acetaldehyde
CH_3OH	methanol
CH_4	methane
C_2H_4O	ethylene oxide
C_2H_6	ethane
C_3H_4O	acrolein
C_3H_6O	propionaldehyde
C_3H_8	propane
C_6H_5OH	phenol
Cl_2	chlorine
ClO_2	chlorine dioxide
CO	carbon monoxide
Co	cobalt
CO_2	carbon dioxide
Cr	chromium
Cu	copper
EtO	ethylene oxide
EtOH	ethyl alcohol (ethanol)
H_2	hydrogen
H_2O	water
H_2O_2	hydrogen peroxide
H_2S	hydrogen sulfide
H_2SO_4	sulfuric acid
HCl	hydrogen chloride
Hg	mercury
IPA	isopropyl alcohol
MDI	methylene diphyenyl diisocyanate
MEK	methyl ethyl ketone
MeOH	methanol
Mn	manganese
N_2	nitrogen
NH_3	ammonia
Ni	nickel
NO	nitric oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
O_2	oxygen
P	phosphorus
Pb	lead
PCDD	polychlorinated dibenzo-p-dioxins
PCDF	polychlorinated dibenzofurans
Sb	antimony
Se	selenium
SO_2	sulfur dioxide
SO_3	sulfur trioxide
SO_x	sulfur oxides
TCDD	tetrachlorodibenzodioxin
TCDF	tetrachlorodibenzofuran
TGOC	total gaseous organic concentration
THC	total hydrocarbons
Tl	thallium
TRS	total reduced sulfur compounds
Zn	zinc

Appendix C.2
Accreditation Information/Certifications

STAC STACK TESTING ACCREDITATION COUNCIL

A2LA American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 11th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2022

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

CERTIFICATE OF COMPLETION

Peter Becker

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

Source Evaluation Society Group 1: *EPA Manual Gas Volume and Flow Measurements and Isokinetic Particulate Sampling Methods*

Certificate Number: 011-2017-10

Tate Strickler, Accreditation Director

DATE OF ISSUE: 8/4/17

DATE OF EXPIRATION: 8/4/22

MONTROSE ENVIRONMENTAL

CERTIFICATE OF COMPLETION

Peter Becker

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

EPA Method 204

Certificate Number: 006-2021-3

Tate Strickler, VP – Quality Systems

DATE OF ISSUE: 1/14/21

DATE OF EXPIRATION: 1/14/26

MONTROSE ENVIRONMENTAL

Appendix C.3
Quality Assurance Program Summary and Equipment Calibration Schedule

QUALITY ASSURANCE PROGRAM SUMMARY AND CERTIFICATIONS

Montrose Air Quality Services, LLC (Montrose) ensures the quality and validity of its emission measurement and reporting procedures through a rigorous quality assurance (QA) program. The program is developed and administered by internal QA personnel and encompasses seven major areas:

1. Development and use of an internal QA manual
2. QA reviews of reports, laboratory work, and field testing
3. Equipment calibration and maintenance
4. Chain of custody
5. Continuous training
6. Knowledge of current test methods
7. Audit program

Each of these areas is discussed individually below.

Quality Assurance Manual. Montrose has prepared a QA Manual according to EPA guidelines and ASTM D-7036. The manual serves to document and formalize all of Montrose's QA efforts. The manual is constantly updated, and each employee involved in technical services for emission measurements is required to read, understand its contents, and sign a statement that all work they perform will conform to its practices. The manual includes details on the other seven QA areas discussed below.

QA Reviews. Montrose 's review procedure includes review of each source test report by the QA Manager or equivalent position including data input, calculations and averages, and report text. The laboratory manager or equivalent reviews all laboratory work, and the qualified individual on-site reviews all field work and data sheets.

The most important review is the one that takes place before a test program begins. The QA Manager works with testing personnel to prepare and review test protocols. Test protocol review includes selection of appropriate test procedures, evaluation of any interferences or other restrictions that might preclude use of standard test procedures, and evaluation and/or development of alternate procedures.

Equipment Calibration and Maintenance. The equipment used to conduct the emission measurements is maintained according to the manufacturer's instructions to ensure proper operation. In addition to the maintenance program, calibrations are carried out on each measurement device according to the schedule outlined below. The schedules for maintenance and calibrations are given in Tables A-1 and A-2.

Quality control checks are also conducted in the field for each test program. A partial list of checks made as part of each continuous analyzer system test series is included below as an example of the field QA procedures.

- Sample acquisition and conditioning system leak check
- 3-point analyzer calibrations (all analyzers)
- Complete system calibration check ("dynamic calibration" through entire sample system)

- Periodic analyzer calibration checks are conducted at the start and end of each test run. Any change between pre- and post-test readings are recorded.
- All calibrations are conducted using EPA Protocol gases certified by the manufacturer
- Calibration and continuous analyzer performance data are fully documented, and are included in each source test report

Chain of Custody. Montrose maintains full chain of custody documentation on all samples and data sheets. In addition to normal documentation of changes between field sample custodians, laboratory personnel, and field test personnel, Montrose documents every individual who handles any test component in the field (e.g., probe wash, impinger loading and recovery, filter loading and recovery, etc.).

Samples are stored in a locked area to which only laboratory personnel have access. Neither other Montrose employees nor cleaning crews have keys to this area.

Training. Personnel training is essential to ensure quality testing. Montrose has formal and informal training programs which may include some or all of the following:

1. Attendance at EPA-sponsored training courses
2. A requirement for all technicians to read, understand, and sign Montrose 's QA Manual
3. In-house training and Montrose meetings on a regular basis
4. Maintenance of training records
5. Administration of internal qualified individual (QI) tests for all methods performed
6. Participation in the Qualified Source Testing Individual (QSTI) program administered by the Source Evaluation Society (SES)

Knowledge of Current Test Methods. With the constant updating of standard test methods and the wide variety of emerging test methods, it is essential that any qualified source tester keep abreast of new developments. Montrose subscribes to services which provide updates on EPA reference methods, and on EPA and local agency rules and regulations. Additionally, source test personnel regularly attend and present papers at testing and emission-related seminars and conferences.

Audit Program. Montrose participates in the TNI Stationary Source Audit Sample (SSAS) audit program for all methods for which audit samples are available.

TABLE A-1
SAMPLING INSTRUMENTS AND
EQUIPMENT CALIBRATION SCHEDULE

Instrument Type	Frequency of Calibration[1]	Standard of Comparison or Method of Calibration	Acceptance Limits
Orifice Meter(large)	12 months	Calibrated dry test meter	± 2% of volume measured
Dry Gas Meter	6 months or when repaired	Calibrated dry test meter	± 2% of volume measured
Critical Orifice	6 months	Calibrated dry test meter	± 0.5% of average K’
S-Type Pitot (for use with EPA-type sampling train)	6 months	EPA Method 2	Geometric measurements within method-specified ranges
Vacuum Gauges	12 months	NIST-traceable gauge	≤ 1.0 in Hg difference
Temperature Measurement (thermocouples)	12 months	NBS mercury thermometer or NBS calibrated platinum RTD	±4 °F for <400 °F ± 1.5% for >400 °F
Temperature Readout Devices	6 months	Thermocouple simulator	± 2% full scale reading
Analytical Balance	12 months (check prior to each use)	NIST-traceable weights	± 0.5 mg of stated weight
Probe Nozzles	12 months	Nozzle diameter check	Range <± 0.10 mm for micrometer three measurements
Continuous Analyzers	Every field day, Depends upon use, frequency and performance	As specified by manufacturers’ operating manuals, EPA NBS gases and/or reference methods	Satisfy all limits specified in operating specifications

[1] The tabulated calibration frequencies are minimum standards. In certain instances, calibrations are performed more frequently.

TABLE A-2
EQUIPMENT MAINTENANCE SCHEDULE
Based on Manufacturer's Specifications and Montrose's Experience

Equipment	Performance Requirement	Maintenance Interval[2]	Corrective Action
Pumps	1. Absence of leaks 2. Ability to draw manufacturer required vacuum and flow	6 months	1. Visual inspection 2. Clean 3. Replace worn parts 4. Leak check
Flow Measuring Device	1. Free mechanical movement 2. Absence of malfunction	6 months	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero, span gas	As required by the manufacturer	As recommended by manufacturer
Mobile Van Sampling Systems	Absence of leaks	Depends on nature of use	1. Change filters 2. Leak check 3. Check for system contamination
Sampling Lines	Sample degradation less than 2%	After each test or test series	Blow filtered air through line until dry

[2] The tabulated maintenance intervals are minimum standards. In certain instances, maintenance is performed more frequently.

APPENDIX D
REGULATORY INFORMATION

Appendix D.1
Regulatory Correspondence

Oregon
Kate Brown, Governor

Department of Environmental Quality
Agency Headquarters
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5696
FAX (503) 229-6124
TTY 711

July 30, 2021

Jennifer Garcia
Hydro Extrusion Portland, Inc.
5325 NE Skyport Way
Portland, OR 97218

Ms. Garcia,

The Oregon Department of Environmental Quality (DEQ) received a revised source test plan from Hydro Extrusion Portland, Inc. (Hydro) on July 28, 2021 for verifying a Permanent Total Enclosure with 100% capture efficiency for the Vertical Paint Line and VPL paint mixing room. Based on our review the source test plan is approved.

Any modifications and/or alternatives to testing methods or procedures that are implemented to satisfy DEQ testing requirements must receive approval from DEQ prior to their use in the field. Changes not acknowledged by the DEQ could be the basis for invalidating an entire test run and potentially the entire testing program.

DEQ appreciates the continued assistance with this process. The results will provide valuable information that will help us better understand emissions from the facility. If you have any questions or concerns, please contact me directly.

Sincerely,

Thomas Rhodes

Thomas Rhodes
DEQ CAO Source Test Coordinator

Cc: Jeremy Basler, Hydro
Peter Becker, Montrose Air Quality Services
Keith Johnson, DEQ
J.R. Giska, DEQ
Matt Hoffman, DEQ
Weston Li, DEQ
File

SOURCE TEST PLAN
2021 ENCLOSURE VERIFICATION
HYDRO EXTRUSION
PORTLAND COATINGS FACILITY
PORTLAND, OREGON

Prepared For:

Hydro Extrusion Portland, Inc.
Coatings Division
7933 NE 21st Ave
Portland, OR 97221

For Submittal To:

Oregon Department of Environmental Quality
700 NE Multnomah St., Suite 600
Portland, OR 97232

Prepared By:

Montrose Air Quality Services, LLC
13585 NE Whitaker Way
Portland, OR 97230

Document Number:	**W006AS-010226-PP-805R2**
Proposed Test Date:	**August 13, 2021**
Submittal Date:	**July 28, 2021**

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LIST OF APPENDICES

LIST OF TABLES

1.0 INTRODUCTION

1.1 SUMMARY OF TEST PROGRAM

Hydro Extrusion Portland, Inc contracted Montrose Air Quality Services, LLC (Montrose) to perform an enclosure verification on the specific emission units ventilated to the regenerative thermal oxidizer at the Hydro Extrusion Coatings Division facility located in Portland, Oregon. The tests are conducted to verify 100% capture efficiency at the request of an Oregon Department of Environmental Quality (ODEQ) letter dated June 21, 2021 for compliance with the Cleaner Air Oregon Program.

The specific objectives are to determine the Capture efficiency by means of EPA 204 enclosure verification on the emission units listed in section 2.1 of the permit. In Agreement with ODEQ the Horizontal Paint Line and the Horizontal Paint Line Paint Room are currently anticipated to be decommissioned in 2021 and will not be addressed in the enclosure verification. Emission units are listed below as defined in the permit that are to be tested:

- Vertical Paint Line Coating Area
- Vertical Paint Line Flash Off Tunnel
- Vertical Paint Line Curing Oven
- Paint Room

Since the Vertical Paint Line (VPL) areas defined above are all interconnected without walled separation the individual vertical paint line areas are defined as the vertical paint line.

TABLE 1-1
SUMMARY OF TEST PROGRAM AND PROPOSED SCHEDULE

Proposed Test Date	Unit ID/ Source Name	Activity/ Parameters	Test Methods	No. of Runs	Duration (Minutes)
8/13/2021	Vertical Paint Line VPL Paint Mixing Room	Enclosure Verification	EPA 204	3	60

To simplify this test plan, a list of Units and Abbreviations is included in Appendix A. Throughout this test plan, chemical nomenclature, acronyms, and reporting units are not defined. Please refer to the list for specific details.

1.2 APPLICABLE REGULATIONS AND EMISSION LIMITS

The results from this test program are presented in units consistent with those listed in the applicable regulations or requirements. The reporting units and emission limits are presented in Table 1-2.

TABLE 1-2
REPORTING UNITS AND EMISSION LIMITS

Unit ID/ Source Name	Parameter	Reporting Units
System Capture Efficiency[1]	Capture Efficiency	% capture

[1]If all EPA 204 criteria are met the system will be shown to demonstrate 100% capture.

1.3 KEY PERSONNEL

A list of project participants is included below:

Facility Information

Source Location:	Hydro Extrusion Portland, Inc Hydro Coating Division 5325 NE Skyport Way Portland, OR 97221	
Project Contact:	Jeremy Basler	Jennifer Garcia
Role:	Regional HSE Manager	Regional Environmental Engineer
Company:	Hydro Extrusion Portland	Hydro Extrusion Portland
Telephone:	605-760-3548	503-680-4440
Email:	Jeremy.Basler@hydro.com	Jennifer.Garcia@hydro.com

Agency Information

Regulatory Agency:	Oregon Department of Environmental Quality
Agency Contact:	Thomas Rhodes
Telephone:	503-229-5534
Email:	Thomas.Rhodes@deq.state.or.us

Testing Company Information

Testing Firm:	Montrose Air Quality Services, LLC (Montrose)	
Contact:	Peter Becker	Kristina Schafer
Title:	Client Project Manager	Hub District Manager
Telephone:	330-285-6884	253-480-3801
Email:	pbecker@montrose-env.com	kschafer@montrose-env.com

2.0 PLANT AND SAMPLING LOCATION DESCRIPTIONS

2.1 PROCESS DESCRIPTION, OPERATION, AND CONTROL EQUIPMENT

The Hydro Extrusion facility is located at 5325 NE Skyport Way in Portland, Oregon.

2.2 FLUE GAS SAMPLING LOCATION

Measurement of facial velocity will be conducted on locations meeting the definition of Natural Draft Openings (NDO) as defined by EPA Method 204. Refer to Appendix A.1 for a Plant Drawing and potential NDO locations identified for evaluation.

2.3 OPERATING CONDITIONS AND PROCESS DATA

Enclosure tests are performed while the source/units and air pollution control devices are operating at the conditions required by the permit. The units are tested when operating normally.

Plant personnel are responsible for establishing the test conditions and collecting all applicable unit-operating data. Data collected includes the following parameters:

- Production Rate of the Vertical Paint Line

2.4 PLANT SAFETY

Montrose will comply with all safety requirements at the facility. The facility Client Sponsor, or designated point of contact, is responsible for ensuring routine compliance with plant entry, health, and safety requirements. The Client Sponsor has the authority to impose or waive facility restrictions. The Montrose test team leader has the authority to negotiate any deviations from the facility restrictions with the Client Sponsor. Any deviations must be documented.

2.4.1 Safety Responsibilities

Planning

- Montrose must complete a field review with the Client Sponsor prior to the project date. The purpose of the review is to develop a scope of work that identifies the conditions, equipment, methods, and physical locations that will be utilized along with any policies or procedures that will affect our work.
- We must reach an agreement on the proper use of client emergency services and ensure that proper response personnel are available, as needed.
- The potential for chemical exposure and actions to be taken in case of exposure must be communicated to Montrose. This information must include expected concentrations of the chemicals and the equipment used to identify the substances.
- Montrose will provide a list of equipment being brought to the site, if required by the client.

Project Day

- Montrose personnel will arrive with the appropriate training and credentials for the activities they will be performing and the equipment that they will operate.
- Our team will meet daily to review the Project Scope, Job Hazard Assessment, and Work Permits. The Client Sponsor and Operations Team are invited to participate.
- Montrose will provide equipment that can interface with the client utilities previously identified in the planning phase and only work with equipment that our client has made ready and prepared for connection.
- We will follow client direction regarding driving safety, safe work permitting, staging of equipment, and other crafts or work in the area.
- As per 40 CFR Part 60 Subpart A, Section 60.8, the facility must provide the following provisions at each sample location:
  - Sampling ports, which meet EPA minimum requirements for testing. The caps should be removed or be hand-tight.
  - Safe sampling platforms.
  - Safe access to the platforms and test ports, including any scaffolding or man lifts.
  - Sufficient utilities to perform all necessary testing.
- Montrose will use the client communication system, as directed, in case of plant or project emergency.
- Any adverse conditions, unplanned shutdowns or other deviations to the agreed scope and project plan must be reviewed with the Client Sponsor prior to continuing work. This will include any safe work permit and hazard assessment updates.

Completion

- Montrose personnel will report any process concerns, incidents or near misses to the Client Sponsor prior to leaving the site.
- Montrose will clean up our work area to the same condition as it was prior to our arrival.
- We will ensure that all utilities, connection points or equipment have been returned to the pre-project condition or as stated in the safe work permit. In addition, we will walk out the job completion with Operations and the Client Sponsor if required by the facility.

2.4.2 Safety Program and Requirements

Montrose has a comprehensive health and safety program that satisfies State and Federal OSHA requirements. The program includes an Illness and Injury Prevention Program, site-specific safety meetings, and training in safety awareness and procedures. The basic elements include:

- All regulatory required policies/procedures and training for OSHA, EPA and FMCSA

- Medical monitoring, as necessary
- Use of Personal Protective Equipment (PPE) and chemical detection equipment
- Hazard communication
- Pre-test and daily toolbox meetings
- Continued evaluation of work and potential hazards.
- Near-miss and incident reporting procedures as required by Montrose and the Client

Montrose will provide standard PPE to employees. The PPE will include but is not limited to; hard hats, safety shoes, glasses with side shields or goggles, hearing protection, hand protections, and fall protection.

The detailed Site Safety Plan for this project is attached to this test plan in Appendix “S”.

3.0 SAMPLING AND ANALYTICAL PROCEDURES

3.1 TEST METHODS

The test methods for this test program were presented previously in Table 1-1. Additional information regarding specific applications or modifications to standard procedures is presented below.

3.1.1 EPA Method 204, Criteria for and Verification of a Permanent or Temporary Total Enclosure

An enclosure is evaluated against a set of criteria defined in EPA Method 204.

Pertinent information regarding the performance of the method is presented below:

- Method Options:
  - Facial velocity (FV) will be determined using a Shortridge micromanometer
  - Facial velocity will be determined by the alternative criteria in section 8.3 of the method by measuring the pressure drop. A pressure drop of -0.007 inches of water corresponds to an FV of 200 feet per minute.
  - Measurements will be recorded in a series of 3 rounds; during each round, five measurements will be recorded at each NDO.
  - If FV is less than 500 feet per minute, the continuous inward flow shall be verified per Method 204. Photographs with date and time stamp will document the checks made no more than 10 minutes apart as required under Method 204 when monitoring the direction of the air flow for at least one hour.
- Method Exceptions:
  - None

4.0 QUALITY ASSURANCE AND REPORTING

4.1 QA AUDITS

Montrose has instituted a rigorous QA/QC program for its air quality testing. Quality assurance audits are performed as part of the test program to ensure that the results are calculated using the highest quality data available. This program ensures that the emissions data we report are as accurate as possible. The procedures included in the cited reference methods are followed during preparation, sampling, calibration, and analysis. Montrose is responsible for preparation, calibration, and cleaning of the sampling apparatus. Montrose will also perform the sampling, sample recovery, storage, and shipping. Approved contract laboratories may perform some of the preparation and sample analyses, as needed.

4.2 QUALITY CONTROL PROCEDURES

Montrose calibrates and maintains equipment as required by the methods performed and applicable regulatory guidance. Montrose follows internal procedures to prevent the use of malfunctioning or inoperable equipment in test programs. All equipment is operated by trained personnel. Any incidence of nonconforming work encountered during testing is reported and addressed through the corrective action system.

4.2.1 Equipment Inspection and Maintenance

Each piece of field equipment that requires calibration is assigned a unique identification number to allow tracking of its calibration history. All field equipment is visually inspected prior to testing and includes pre-test calibration checks as required by the test method or regulatory agency. A calibration certificate for the digital manometer demonstrating accuracy to a differential pressure as low as 0.01 inches of water will be included in the report.

4.2.2 Audit Samples

When required by the test method and available, Montrose obtains EPA TNI SSAS audit samples from an accredited provider for analysis along with the samples. Currently, the SSAS program has been suspended pending the availability of a second accredited audit sample provider. If the program is reinstated, the audit samples will be ordered. If required as part of the test program, the audit samples are stored, shipped, and analyzed along with the emissions samples collected during the test program. The audit sample results are reported along with the emissions sample results.

4.3 DATA ANALYSIS AND VALIDATION

Montrose converts the raw field, laboratory, and process data to reporting units consistent with the permit or subpart. Calculations are made using proprietary computer spreadsheets or data acquisition systems. One run of each test method is also verified using a separate example calculation. The example calculations are checked against the spreadsheet results and are included in the final report. The “Standard Conditions” for this project are 29.92 inches of mercury and 68 °F.

4.4 SAMPLE IDENTIFICATION AND CUSTODY

No samples are required to be recovered for this test program.

4.5 QUALITY STATEMENT

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is included in the appendices. The content of this test plan is modeled after the EPA Emission Measurement Center Guideline Document (GD-042).

4.6 REPORTING

Montrose will prepare a final report to present the test data, calculations/equations, descriptions, and results. Prior to release by Montrose, each report is reviewed and certified by the project manager and their supervisor, or a peer. Source test reports will be submitted to the facility or appropriate regulatory agency (upon customer approval) within 30 days of the completion of the field work. The report will include a series of appendices to present copies of the intermediate calculations and example calculations, raw field data, laboratory analysis data, process data, and equipment calibration data.

4.6.1 Example Report Format

The report is divided into various sections describing the different aspects of the source testing program. Table 4-1 presents a typical Table of Contents for the final report.

TABLE 4-1
TYPICAL REPORT FORMAT

Cover Page	
Certification of Report	
Table of Contents	
Section	
1.0	INTRODUCTION
2.0	PLANT AND SAMPLING LOCATION DESCRIPTIONS
3.0	SAMPLING AND ANALYTICAL PROCEDURES
4.0	TEST DISCUSSION AND RESULTS
5.0	INTERNAL QA/QC ACTIVITIES
Appendices	
A	FIELD DATA AND CALCULATIONS
B	FACILITY PROCESS DATA
C	LABORATORY ANALYSIS DATA
D	QUALITY ASSURANCE/QUALITY CONTROL
E	REGULATORY INFORMATION

Appendix D.2
Permit Excerpts

Oregon
Kate Brown, Governor

Department of Environmental Quality
Northwest Region
700 NE Multnomah St Ste 600
Portland, OR 97232-4100
(503) 229-5263
FAX (503) 229-6945
TTY 711

November 21, 2018

Kristin Pauk
Hydro Extrusion Portland, Inc.
5325 NE Skyport Way
Portland OR 97218 1243

Re: Renewal of a Standard Air Contaminant Discharge Permit
Permit No.: 26-3241-ST-01 Application No.: 027738

The Department of Environmental Quality has completed its review and public notice of the renewal application for Hydro Extrusion Portland, Inc. The facility is located at 5325 NE Skyport Way in Portland, OR. Based on the information in the application, DEQ has issued the enclosed permit.

The effective date of the permit is the date it was signed by the regional Air Quality Manager. The signature and date appears on the first page of the document. The permit is issued pursuant to Oregon Revised Statutes 468A.040 and Oregon Administrative Rules Chapter 340 Division 216.

You may appeal conditions or limitations contained in the attached permit by applying to the Environmental Quality Commission, or its authorized representative, within twenty days from the date of this letter. Appeals are pursuant to ORS Chapter 183 and procedures are found in OAR Chapter 340, Division 11.

A copy of the current permit must be available at the facility at all times. Failure to comply with permit conditions may result in civil penalties. **You are expected to read the permit carefully and comply with all conditions** to protect the environment of Oregon.

If you have any questions, please contact David Graiver at 503-229-5690.

Sincerely,

Matt Hoffman
DEQ Northwest Region Air Quality Manager

Enclosure
Cc: HQ/AQ

State of Oregon
Department of
Environmental
Quality

STANDARD
AIR CONTAMINANT DISCHARGE PERMIT

Department of Environmental Quality
Northwest Region
700 NE Multnomah St., Suite 600
Portland, OR 97232

This permit is being issued in accordance with the provisions of ORS 468A.040 and based on the land use compatibility findings included in the permit record.

ISSUED TO:

Hydro Extrusion Portland, Inc.
Coatings Division
7933 NE 21st Avenue
Portland, OR 97221

PLANT SITE LOCATION:

5325 NE Skyport Way
Portland, OR 97221

INFORMATION RELIED UPON:

Application No.: 027738
Date Received: 05/02/2014

LAND USE COMPATIBILITY FINDING:

Approving Authority: City of Portland
Approval Date: 08/18/1988

PERMIT PREVIOUSLY ISSUED TO:

Sapa, Inc.

ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY

Matt Hoffman, DEQ Northwest Region Air Quality Manager — Dated 11/21/2018

Source(s) Permitted to Discharge Air Contaminants (OAR 340-216-8010):

Table 1 Code	Source Description	SIC (NAICS)
Part B, 78	Surface coating in manufacturing subject to RACT under OAR 340 Division 232.	3479 (332812)
Part B, 88	Sources subject to a NESHAP under OAR 340 Division 244 (NESHAP HHHHHH and WWWWWW).	

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1.0 GENERAL EMISSION STANDARDS AND LIMITS

1.1. Visible Emissions

The permittee must comply with the following visible emission limits from air contaminant sources other than fugitive emission sources, as applicable.

a. Opacity must be measured as a six-minute block average using EPA Method 9, a continuous opacity monitoring system (COMS) installed and operated in accordance with the DEQ Continuous Monitoring Manual or 40 CFR part 60, or an alternative monitoring method approved by DEQ that is equivalent to EPA Method 9.

b. Emissions from any air contaminant source must not equal or exceed 20% opacity.

1.2. Particulate Matter Emissions

The permittee must comply with the following particulate matter emission limits, as applicable:

a. Particulate matter emissions from any fuel burning equipment installed, constructed or modified on or after April 16, 2015 must not exceed 0.10 grains per dry standard cubic foot, corrected to 12% CO_2 or 50% excess air.

b. Particulate matter emissions from any fuel burning equipment installed, constructed, or modified on or after June 1, 1970 but before April 16, 2015 must not exceed 0.14 grains per dry standard cubic foot, corrected to 12% CO_2 or 50% excess air.

c. Particulate matter emissions from any air contaminant source installed, constructed or modified after April 16, 2015 other than fuel burning equipment and fugitive emission sources must not exceed 0.10 grains per standard cubic foot.

d. Particulate matter emissions from any air contaminant source installed, constructed, or modified on or after June 1, 1970 but before April 16, 2015 other than fuel burning equipment and fugitive emission sources must not exceed 0.14 grains per dry standard cubic foot.

1.3. Fugitive Emissions

The permittee must take reasonable precautions to prevent fugitive dust emissions, as measured by EPA method 22, by:

a. Using, where possible, water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land;

b. Applying water or other suitable chemicals on unpaved roads, materials stockpiles, and other surfaces which can create airborne dusts;

c. Enclosing (full or partial) materials stockpiles in cases where application of water or other suitable chemicals are not sufficient to prevent particulate matter from becoming airborne;

d. Installing and using hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;

e. Installing adequate containment during sandblasting or other similar operations;

f. Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne;

g. Promptly removing earth or other material that does or may become airborne from paved streets; and

h. Developing a DEQ approved fugitive emission control plan upon request by DEQ if the above precautions are not adequate and implementing the plan whenever fugitive emissions leave the property for more than 18 seconds in a six-minute period.

1.4. Particulate Matter Fallout The permittee must not cause or permit the deposition of any particulate matter larger than 250 microns in size at sufficient duration or quantity, as to create an observable deposition upon the real property of another person.

1.5. Nuisance and Odors The permittee must not cause or allow air contaminants from any source to cause a nuisance. Nuisance conditions will be verified by DEQ personnel.

1.6. Fuels and Fuel Sulfur Content The permittee must not use any fuel other than natural gas, propane, butane.

1.7. Operation of Pollution Control Devices and Processes The permittee must operate and maintain air pollution control devices and emission reduction processes at the highest reasonable efficiency and effectiveness to minimize emissions. Air pollution control devices and components must be in operation and functioning properly at all times when the associated emission source is operating. (OAR 340-226-0120)

2.0 SPECIFIC PERFORMANCE AND EMISSION STANDARDS

2.1. Device/Process Emission Units must be controlled as described in the table below:

Emission Unit	Control Device
HPL Coating Area	Regenerative Thermal Oxidizer
HZPL Flash Off Tunnel	
HPL Curing Oven	
VPL Coating Area	
VPL Flash Off Tunnel	
VP Curing Oven	
Paint Room	

2.2. Regenerative Thermal Oxidizer (RTO)

The permittee must operate and maintain its RTO as follows:

a. The on-line bed of the RTO must be maintained at an operating temperature that is equal to or greater than 1,525° F or the average operating temperature recorded during the most recent valid source test demonstrating compliance with Condition 2.3.b., based on a one hour average.

b. A continuous temperature monitoring system must be used to monitor the temperature in the combustion zone of the RTO at all times when surface coating is performed.

c. The RTO must be equipped with a temperature alarm that activates when the operating temperature falls twenty-five (25) or more degrees Fahrenheit below the required operating temperature for a period of ten (10) or more consecutive minutes. Following any alarm event, the permittee must take expeditious action to return the RTO's operating temperature to that required in Condition 2.2.a. above.

d. The permittee must document each event in which the RTO's average operating temperature falls twenty-five (25) or more degrees Fahrenheit below the temperature required in Condition 2.2.a. for ten or more consecutive minutes, in an upset condition log. Each such event must be evaluated in accordance with OAR 340-214-0330 to determine if the upset was avoidable or unavoidable. (See Condition 5.6.)

2.3. Surface Coating in Manufacturing RACT Emission Limitations

Pursuant to OAR 340-232-0160, the permittee must not exceed the following Surface Coating in Manufacturing Reasonably Available Control Technology (RACT) emission performance limitations for surface coating of metal parts:

a. VOC emissions from surface coating of metal parts must not exceed the RACT limit of 3.5 pounds VOC per gallon of coating excluding water. This limit is based on a daily weighted average of all coatings used; or

b. The RTO hydrocarbon thermal oxidation system, used by the permittee to comply with the emission limitation of Condition 2.3.a. above, must be operated and maintained so that at least 90% of the non-methane VOCs entering the control device are oxidized to carbon dioxide and water.

2.4. Coating Area Enclosure(s)

The permittee must comply with the following permit conditions pertaining to coating area enclosure(s) at all times when the RTO is utilized to comply with Surface Coating in Manufacturing RACT Emission Limitations:

a. Those areas of the facility where coating application and initial drying occurs must be enclosed and ducted to the RTO, and the enclosure(s) must meet the following requirements:

i. Ventilation systems supplying air to the enclosure must be designed, installed and operated in such a manner as to prevent outward air flow from the enclosed area when the RTO is in use; and

ii. All other openings must be equipped with closure devices (doors, flexible curtains, etc.) that are designed, installed and operated in such a manner as to prevent or restrict outward air flow from the enclosed area when the RTO is in use.

A. All closure devices must be self-closing; and

B. All closure devices must remain closed when coating application and/or initial drying is occurring, except when personnel, equipment or materials are actually passing through the opening.

b. Openings (such as ducts or hoods) through which air is conveyed to the RTO are exempt from the requirements of this condition;

c. The permittee must notify DEQ prior to making any change to any coating area enclosure, its air inflow, or its emission exhaust system which may affect its emission capture efficiency.

2.5. NESHAP - Subpart A – General Provisions

The permittee must comply with all provisions of 40 CFR 63 Subpart A – NESHAP General Provisions, as applicable.

a. See Condition 13.0. for reference/guidance to the applicability of the General Provisions to Subpart HHHHHH.

b. See Condition 14.0. for reference/guidance to the applicability of the General Provisions to Subpart WWWWWW.

2.6. NESHAP - Subpart HHHHHH - Standards for Paint Stripping and Miscellaneous Surface Coating Operations

The permittee must comply with all applicable provisions of 40 CFR 63.11169 to 63.11180 NESHAP Subpart HHHHHH (Note – refer to 40 CFR 63 Subpart HHHHHH and/or Subpart A for definitions of terminology stated in these associated conditions.). The following conditions summarize the applicable requirements of Subpart HHHHHH, but are not intended to supersede the Subpart:

a. If the permittee installs a new affected source, the source must be in compliance with the subpart upon startup. [40 CFR 63.11172(2)]

b. For the purpose of this Subpart, "Target HAP" means compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd). "Target HAP containing coating" means a spray-applied coating that contains any target HAP that is an OSHA - defined carcinogen [see 29 CFR 1910.1200(d)(4)] at a concentration greater than 0.1 percent by mass, or greater than 1.0 percent by mass for any other individual target HAP compound. For the purpose of determining whether materials in use contain the target HAP compounds, formulation data provided by the manufacturer or supplier, such as the MSDS may be relied upon provided it represents each target HAP compound in the material that is present at 0.1 percent by mass or more for OSHA-defined carcinogens and at 1.0 percent by mass or more for other target HAP compounds. (40 CFR 63.11180)

c. For the purpose of this Subpart, the affected source is the collection of some or all of the items listed below (as applicable): (40 CFR 63.11171)

   i. Mixing rooms and equipment;

   ii. Spray booths, ventilated prep stations, curing ovens, and associated equipment;

   iii. Spray guns and associated equipment;

   iv. Spray gun cleaning equipment;

   v. Equipment used for storage, handling, recovery, or recycling of cleaning solvent or waste paint; and

d. Each miscellaneous surface coating operation must meet the following requirements: [40 CFR 63.11173(e)]

   i. All painters must be certified to have completed training in the proper spray application of surface coatings and the proper setup and maintenance of spray equipment.

   ii. All spray-applied coatings must be applied in a spray booth or preparation station that meets the following requirements:

      A. All spray booths and preparation stations must be fitted with a type of filter technology that is demonstrated to achieve at least 98-percent capture of paint overspray. See Subpart HHHHHH for test method. The permittee may use published filter efficiency data provided by filter vendors to demonstrate compliance with

this requirement. The requirements of this paragraph do not apply to waterwash spray booths that are operated and maintained according to the manufacturer's specifications.

B. Spray booths and preparation stations that are used to coat miscellaneous parts and products or vehicle subassemblies must have a full roof, at least three complete walls or complete side curtains, and must be ventilated so that air is drawn into the booth. The walls and roof of a booth may have openings, if needed, to allow for conveyors and parts to pass through the booth during the coating process.

iii. All spray-applied coatings must be applied with a HVLP spray gun, electrostatic application, airless spray gun, air-assisted airless spray gun, or an equivalent technology that is demonstrated by the spray gun manufacturer to achieve transfer efficiency comparable to one of the spray gun technologies listed, and for which written approval has been obtained from the EPA Administrator.

iv. All paint spray gun cleaning must be done so that an atomized mist or spray of gun cleaning solvent and paint residue is not created outside of a container that collects used gun cleaning solvent. Spray gun cleaning may be done with, for example, hand cleaning of parts of the disassembled gun in a container of solvent, by flushing solvent through the gun without atomizing the solvent and paint residue, or by using a fully enclosed spray gun washer.

e. Painter Training and Certification Program - The permittee must ensure and certify that all new and existing personnel, including contract personnel, who spray apply surface coatings are trained in the proper application of surface coatings. The training program must include the following items: [40 CFR 63.11173(f)]

i. A list of all current personnel by name and job description who are required to be trained;

ii. Hands-on and classroom instruction that addresses, at a minimum, initial and refresher training in the topics listed below:

A. Spray gun equipment selection, set up, and operation, including measuring coating viscosity, selecting the proper fluid tip or nozzle, and achieving the proper spray pattern, air pressure and volume, and fluid delivery rate.

B. Spray technique for different types of coatings to improve transfer efficiency and minimize coating usage and overspray, including maintaining the correct spray gun distance and angle to the part, using proper banding and overlap, and reducing lead and lag spraying at the beginning and end of each stroke.

C. Routine spray booth and filter maintenance, including filter selection and installation.

D. Environmental compliance with the requirements of this subpart.

iii. A description of the methods to be used at the completion of initial or refresher training to demonstrate, document, and provide certification of successful completion of the required training. If the permittee can show by documentation or certification that a painter's work experience and/or training has resulted in training equivalent to the training required above, it is not required to provide the initial required training.

iv. All personnel must be trained and certified no later than 180 days after hiring. Painter training that was completed within five years prior to the date training is required and that meets the requirements above, satisfies this requirement.

v. Training and certification will be valid for a period not to exceed five years after the date the training is completed, and all personnel must receive refresher training that meets the requirements of this section and be re-certified every five years.

2.7. NESHAP - Subpart WWWWWW – Area Source Standards for Plating and Polishing Operations

The permittee must comply with all applicable provisions of 40 CFR 63.11504 to 63.11513 NESHAP Subpart WWWWWW (Note – refer to 40 CFR 63 Subpart WWWWWW and/or Subpart A for definitions of terminology stated in these associated conditions.). The following conditions summarize the applicable requirements of Subpart WWWWWW, but are not intended to supersede the Subpart:

a. If the permittee installs a new affected source, the source must be in compliance with the subpart upon startup. [40 CFR 63.11506(c)]

b. For the purpose of this Subpart, the affected source is the HPL chromate conversion dip tank.

c. For the purpose of this Subpart, the HPL chromate conversion dip tank is considered an existing affected source.

d. The permittee must implement the following management practices, as practical, for each affected source: [40 CFR 63.11507(g)]

i. Minimize bath agitation when removing any parts processed in the tank, as practicable except when necessary to meet part quality requirements.

ii. Maximize the draining of bath solution back into the tank, as practicable, by extending drip time when removing parts from the tank; using drain boards (also known as drip shields); or withdrawing parts slowly from the tank, as practicable.

iii. Optimize the design of barrels, racks, and parts to minimize dragout of bath solution (such as by using slotted barrels and tilted racks, or by designing parts with flow-through holes to allow the tank solution to drip back into the tank), as practicable.

iv. Use tank covers, if already owned and available at the facility, whenever practicable.

v. Minimize or reduce heating of process tanks, as practicable (e.g., when doing so would not interrupt production or adversely affect part quality).

vi. Perform regular repair, maintenance, and preventive maintenance of racks, barrels, and other equipment associated with affected sources, as practicable

vii. Minimize bath contamination, such as through the prevention or quick recovery of dropped parts, use of distilled/de-ionized water, water filtration, pre-cleaning of parts to be plated, and thorough rinsing of pre-treated parts to be plated, as practicable

viii. Maintain quality control of chemicals, and chemical and other bath ingredient concentrations in the tanks, as practicable.

ix. Perform general good housekeeping, such as regular sweeping or vacuuming, if needed, and periodic washdowns, as practicable.

x. Minimize spills and overflow of tanks, as practicable

xi. Use squeegee rolls in continuous or reel-to-reel plating tanks, as practicable.

xii. Perform regular inspections to identify leaks and other opportunities for pollution prevention

3.0 PLANT SITE EMISSION LIMITS

3.1. Plant Site Emission Limits (PSEL)

The permittee must not cause or allow plant site emissions to exceed the following:

Pollutant	Limit	Units
NO_X	39	tons per year
CO	99	tons per year
VOC	39	tons per year
Any Single HAP	9	tons per year
Combined HAPs	24	tons per year

3.2. Annual Period

The annual plant site emissions limits apply to any 12-consecutive calendar month period.

4.0 COMPLIANCE DEMONSTRATION AND SOURCE TESTING

4.1. RACT Compliance Monitoring

The permittee must demonstrate compliance with the RACT VOC limitation of Condition 2.3.a. for each day that surface coatings are applied. The permittee is presumed to be in compliance with the RACT emission limitation of Condition 2.3.a. for each 24-hour calendar day in which the RTO is continuously used for VOC emission control at all times that surface coating is performed and for which it is simultaneously in compliance with Conditions 2.2. and 2.4.

4.2. Combustion Emission Compliance Monitoring

Compliance with the NO_X, and CO PSELs is determined for each 12-consecutive calendar month period based on the following calculation for each pollutant:

$E = \Sigma(EF \times P)/2000$ lbs

where,

E = pollutant emissions (ton/yr);

EF = pollutant emission factor (see Condition 11.0.);

P = process parameter (see Condition 12.0.)

Note: VOC emissions from combustion are negligible and are addressed as an insignificant activity.

4.3. NOX & CO Emission Factors

For NO_X and CO PSEL compliance monitoring calculations the permittee must use the default emission factors provided in Condition 11.0 for calculating pollutant emissions unless alternate emission factors are approved by DEQ. The permittee may request or DEQ may require using alternate emission factors provided they are based on actual test data or other documentation (e.g., AP-42 compilation of emission factors) that has been reviewed and approved by DEQ.

4.4. VOC Emission Compliance Monitoring

VOC emissions for each 12 consecutive calendar month period are calculated by the following formulae:

$$VOC_{12-Month} = \sum (12\ consecutive\ VOC_{Monthly}\ rates) * \left(1\ ton / 2000\ lb\right)$$

$$VOC_{Monthly} = \sum VOC_{WC} + VOC_{NC}$$

$$VOC_{WC} = \sum \left[(C_X \times D_X \times K_X) - W_X \right] (1 - CE \times DE)$$

$$VOC_{NC} = \sum \left[(B_X \times D_X \times K_X) - W_X \right]$$

Where:

$VOC_{12\text{-}Month}$ = Plant site VOC emission rate in tons/yr for a respective 12-month monitoring period.

$VOC_{Monthly}$ = VOC emissions for a respective calendar month period (in pounds).

VOC_{WC} = VOC emissions from RTO controlled process for a respective calendar month period (in pounds).

VOC_{NC} = VOC emissions from uncontrolled process(es) for a respective calendar month period (in pounds).

and:

C = Material usage (in gallons) for the period that is controlled by the RTO.

B = Material usage (in gallons) for the period that is not controlled by the RTO.

D = Material density in pounds per gallon.

K = VOC concentration expressed as a decimal.

x = Subscript X represents a specific material.

CE = System capture efficiency expressed as a decimal. CE is presumed to be 92% unless an alternate CE is approved or determined by DEQ.

DE = Destruction efficiency of most recent valid source test; 98.0% as of permit issuance. DE equals 0 at times of control device bypass/shutdown.

W = Mass of pollutant not emitted (disposed of, shipped offsite, etc.).

4.5. HAP Emission Compliance Monitoring

Total combined and total individual HAP emissions for each 12 consecutive calendar month period are calculated by the following formulae:

$$Total\ HAP_{12-Month} = \sum HAP_{12-Month}$$

$$HAP_{12-Month} = \sum (12\ consecutive\ HAP_{Monthly}\ rates) * \left({}^{1\,ton}/_{2000\,lb} \right)$$

$$HAP_{Monthly} = \sum HAP_{WC} + HAP_{NC}$$

$$HAP_{WC} = \sum \left[(C_X \times D_X \times K_X) - W_X \right] (1 - CE \times DE)$$

$$HAP_{NC} = \sum \left[(B_X \times D_X \times K_X) - W_X \right]$$

Where:

Total $HAP_{12\text{-}Month}$ = Total (e.g., combined) plant site HAP emission rate in tons/yr for a respective 12-month monitoring period.

$HAP_{12\text{-}Month}$ = Plant site HAP emission rate in tons/yr for a respective 12-month monitoring period.

$HAP_{Monthly}$ = HAP emissions for a respective calendar month period (in pounds).

HAP_{WC} = HAP emissions from RTO controlled processes for a respective calendar month period (in pounds).

HAP_{NC} = HAP emissions from uncontrolled processes for a respective calendar month period (in pounds).

and:

C = Material usage (in gallons) for the period that is controlled by the RTO.

B = Material usage (in gallons) for the period that is not controlled by the RTO.

D = Material density in pounds per gallon.

K = HAP concentration expressed as a decimal.

X = Subscript X represents a specific material.

CE = System capture efficiency expressed as a decimal. CE is presumed to be 92% unless an alternate CE is approved or determined by DEQ.

DE = Destruction efficiency of most recent valid source test, 98.0% for VOC HAP as of permit issuance.
DE equals 0 at times of control device bypass/shutdown.

W = Mass of pollutant not emitted (disposed of, shipped offsite, etc.).

Note: HAP calculations are to be performed to calculate total combined HAPs and also total individual HAPs.

4.6. Source Testing Requirements

The permittee must perform a source test of the RTO (RTO-2) at least once during the permit period. Testing must be performed no later than 18 months prior to expiration of this permit unless an extension or waiver is granted by DEQ. The source test is to be performed as described below:

a. With both surface coating lines operating at normal maximum operating capacity, conduct a source test for VOC emissions using EPA Method 25A. During the source test the following parameters must be monitored unless approved otherwise in DEQ's pretest plan review:

   i. operating temperature in the combustion chamber;

   ii. exhaust gas flow rate;

   iii. natural gas combusted in the oxidizer;

   iv. exhaust gas VOC concentrations (ppm) at the inlet and outlet of the oxidizer;

   v. quantity of coating(s) used with weighted average VOC content;

   vi. VOC emission rate (lbs/hr) at the outlet measured as propane;

   vii. VOC destruction efficiency (DE);

   viii. other process/pollution control device operating parameters not identified above that is determined to be needed by DEQ and/or the permittee.

b. A pretest plan must be submitted to DEQ at least 30 days in advance and be approved by the Regional Source Test Coordinator. All tests must be conducted in accordance with DEQ's Source Sampling Manual and the approved pretest plan. Test data and results must be submitted for review to the Regional Source Test Coordinator within 60 days unless otherwise approved in the pretest plan. The pretest plan and test report are to be submitted to DEQ's regional office identified in Condition 9.3.

c. The source test report must provide a calculation of the RTO's emission control efficiency (DRE) demonstrated during each test run as well as the average DRE for the three test runs. The report also must identify the mass emission rate measured during each test run as well as the average mass emission rate of the three test runs, expressed as lbs VOC/hr and as lbs/gallon photoresist produced.

d. Only regular operating staff may adjust the combustion system or production processes and emission control parameters during the source test and within two hours prior to the tests. Any operating adjustments made during the source test, which are a result of consultation during the tests with source testing personnel, equipment vendors or consultants, may render the source test invalid.

e. DEQ may approve an extension of a testing deadline stated in this permit condition if the permittee provides adequate justification for the extension.

i. Extension requests must be submitted to DEQ in writing.

ii. The decision to grant an extension to a performance test deadline is solely within the discretion of DEQ.

iii. DEQ will notify the permittee in writing of approval or disapproval of the request for an extension as soon as practicable.

iv. Unless and until an extension of a performance test deadline is approved by DEQ, the permittee remains strictly subject to the testing deadline requirements of this condition.

f. Any required source test that is declared invalid by DEQ must be repeated. The permittee or its agent must submit a new pretest plan to DEQ for approval within 30 calendar days from the date DEQ declares a source test invalid.

5.0 MONITORING/RECORDKEEPING REQUIREMENTS

5.1. NESHAP - Subpart HHHHHH - Recordkeeping

The permittee must maintain the following Subpart HHHHHH related records for a minimum of 5 years. Records must be maintained onsite for at least 2 years and may be kept offsite for the remaining 3 years. [40 CFR 63.11178(a)]

a. Certification that each painter has completed the training specified in Condition 2.6.e. with the date the initial training and the most recent refresher training was completed. [40 CFR 63.11177(a)]

b. Documentation of the filter efficiency of any spray booth exhaust filter material. [40 CFR 63.11177(b)]

c. Documentation from the spray gun manufacturer that a spray gun with cup capacity $\geq$ 3.0 fluid ounces that does not meet the definition of an HVLP spray gun, electrostatic application, airless spray gun, or air assisted airless spray gun,

has been determined by the EPA Administrator to achieve a transfer efficiency equivalent to that of an HVLP spray gun. [40 CFR 63.11177(c)]

d. Copies of any notification submitted (Initial Notification/Compliance Status Notification) and copies of any Annual Notification of Changes Report submitted. [40 CFR 63.11177(d)]

e. Records of any deviation from the applicable requirements. These records must include the date and time period of the deviation, a description of the nature of the deviation and the actions taken to correct the deviation. [40 CFR 63.11177(g)]

f. Records of any assessments of source compliance performed in support of the Initial Notification, Compliance Status Notification or Annual Notification of Changes Report. [40 CFR 63.11177(h)]

5.2. General Monitoring-Recordkeeping

The permittee must monitor and maintain the following records as indicated:

a. The VOC content of all surface coatings used (lb/gal excluding water and exempt solvents, as-applied), updated upon each occurrence of product formulation change.

b. The VOC content (lb/gal) of all other materials used (e.g. cleanup solvents), updated upon each occurrence of product formulation change.

c. The HAP content of all coatings used (lb HAP/gal, as-applied), updated upon each occurrence of product formulation change.

d. The HAP content (lb HAP/gal) of all other materials used (e.g. cleanup solvents), updated upon each occurrence of product formulation change.

5.3. Continuous Monitoring

The permittee must continuously monitor and maintain records of the operating temperature RTO-2 thermal oxidizer necessary to demonstrate compliance with Condition 2.2.

5.4. Daily Monitoring

The permittee must monitor and maintain the following records related to the operation and maintenance of the plant and associated air contaminant control device on a daily basis:

a. The hours of operation of the RTO VOC abatement unit (RTO-2).

b. The hours of operation of each surface coating line.

c. The type and quantity of surface coatings applied at each surface coating line and the associated VOC/HAP content as applied.

d. The type and quantity of solvent used, with distinction emphasized for Total Virgin Toluene and Total Reclaimed Solvent usage. Reclaimed Solvent composition is to be associated with the respective Certificate of Analysis from solvent recycling services provider.

5.5. Monthly Monitoring

The permittee must monitor and maintain the following records related to the operation and maintenance of the plant and associated air contaminant control devices monthly:

a. Type and quantity of fuel(s) used.

b. The type and quantity of VOC/HAP containing materials used.

c. The amount of VOC/HAP-containing material shipped off site and its representative VOC/HAP content, monitored and recorded upon each occurrence. The quantity may be monitored by: % of initial VOCs/HAPs in product; analyzing for VOC/HAP content; or an equivalent method of determination approved by DEQ. If analyzed for VOC/HAP content, analysis must be based upon a test method approved by DEQ. (See Condition 5.5.d.)

The permittee is exempt from this monitoring requirement if it chooses not to take credit in its emission calculations for VOCs/HAPs that were not emitted and were shipped offsite.

d. The permittee must sample and analyze each lot of recovered waste solvent for % solids, % water and % VOC prior to shipping it off site. The permittee may use the results of these analyses to proportionally associate solvent and paint source waste credits for the emission rate calculation of the previous month (or months as applicable). A record of each analysis must be maintained on site.

DEQ may approve a request for a less frequent sampling/analysis schedule if monthly analyses demonstrate relative consistency.

This condition is not applicable at any time the permittee chooses not to take compliance credit for its recovered waste solvent or if it uses an alternate method of determination approved by DEQ.

e. Perform a 12-month emission rate calculation in accordance with Conditions 4.2. and 4.4. to demonstrate compliance with the PSELs of Condition 3.1.

f. Perform a 12-month emission rate calculation in accordance with Condition 4.5. to demonstrate compliance with the individual and total combined HAP emission limitations of Condition 3.1.

5.6. Excess Emissions

The permittee must maintain records of excess emissions as defined in OAR 340-214-0300 through 340-214-0340 (recorded on occurrence). Typically, excess emissions are caused by process upsets, startups, shutdowns, or scheduled maintenance. In many cases, excess emissions are evident when visible emissions are greater than 20% opacity as a six-minute block average. If there is an ongoing excess emission caused by an upset or breakdown, the permittee must cease operation of the equipment or facility no later than 48 hours after the beginning of the excess emissions, unless continued operation is approved by DEQ in accordance with OAR 340-214-0330(4).

5.7. Complaint Log

The permittee must maintain a log of all written complaints and complaints received via telephone that specifically refer to air pollution concerns associated to the permitted facility. The log must include a record of the permittee's actions to investigate the validity of each complaint and a record of actions taken for complaint resolution.

5.8. Retention of Records

Unless otherwise specified, the permittee must retain all records for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application and make them available to DEQ upon request. The permittee must maintain the two (2) most recent years of records onsite.

5.9. NESHAP - Subpart WWWWWW - Recordkeeping

The permittee must maintain the following Subpart WWWWWW related records for a minimum of 5 years. Records must be maintained onsite for at least 2 years and may be kept offsite for the remaining 3 years. [40 CFR 63.11509(f)]

a. Copies of Initial Notification and Notification of Compliance Status that you submitted and all documentation supporting those notifications. [40 CFR 63.11509(e)(1)]

b. Records required to show continuous compliance with management practice and equipment standard specified in Condition 2.7.c. [40 CFR 63.11509(e)(3)]

6.0 REPORTING REQUIREMENTS

6.1. Excess Emissions

The permittee must notify DEQ of excess emissions events if the excess emission is of a nature that could endanger public health.

a. Such notice must be provided as soon as possible, but never more than one hour after becoming aware of the problem. Notice must be made to the regional office identified in Condition 9.2. by email, telephone, facsimile, or in person.

b. If the excess emissions occur during non-business hours, the permittee must notify DEQ by calling the Oregon Emergency Response System (OERS). The current number is 1-800-452-0311.

c. The permittee must also submit follow-up reports when required by DEQ.

6.2. NESHAP - Subpart HHHHHH - Reporting

Subpart HHHHHH Annual Notification of Changes Report [40 CFR 63.11176(a)]

a. The permittee must prepare a Subpart HHHHHH Annual Notification of Changes Report in each calendar year in which information previously submitted in either the Initial Notification, Notification of Compliance Status, or a previous annual notification of changes report submitted under this paragraph, has changed. Deviations from the relevant requirements in Conditions 2.6.d. through 2.6.e. [40 CFR 63.11173(e) through (g)] on the date of the report will be deemed to be a change.

b. The Annual Notification of Changes Report must be submitted prior to March 1 of each calendar year when reportable changes have occurred and must include the following information:

i. The company's name, DEQ ACDP number, and the address of the affected source.

ii. The name, title, address, telephone, e-mail address (if available) and signature of the certifying company official, certifying the truth, accuracy, and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of Subpart HHHHHH or an explanation of any noncompliance and a description of corrective actions being taken to achieve compliance.

iii. The report must be submitted to DEQ and the EPA Administrator. See appropriate mailing addresses in Conditions 9.3. and 9.5.

6.3. Annual Report

For each year this permit is in effect, the permittee must submit to DEQ by February 15 two (2) copies of the following information for the previous calendar year:

a. Operating parameters:

i. A statement of the facility's compliance status with the conditions of the permit for the calendar year. Any violations or exceedances must be explained in detail including corrective actions taken.

ii. Quantity of natural gas combusted.

iii. RACT Compliance Verification:

A. Report the number of hours each surface coating line operated.

B. Report the number of hours the RTO operated.

C. Verify the operating temperature set point of RTO-2 as required by Condition 2.2.a. of the permit.

D. Identify all RTO operating temperature excursion events subject to upset log recording pursuant to Condition 2.2.d. and provide a summary of the avoidable/unavoidable determination for each event.

iv. Report the results of each recovered waste solvent analysis performed in accordance with Condition 5.5.d.

v. Report the calculated (Conditions 5.5.e. and 5.5.f.) 12-month rolling emission rates for NO_X, CO, VOC, combined HAPs and individual HAPs, for each month of the previous calendar year.

Note: reporting for individual HAPs is only required for pollutants with emission rates $\geq$ 1 ton/yr.

b. Records of all planned and unplanned excess emissions events.

c. Summary of complaints relating to air quality received by permittee during the year.

d. List permanent changes made in plant process, production levels, and pollution control equipment which affected air contaminant emissions.

e. List major maintenance performed on pollution control equipment.

6.4. Greenhouse Gas Registration and Reporting

If the calendar year emission rate of greenhouse gases (CO2e) is greater than or equal to 2,756 tons (2,500 metric tons), the permittee must register and report its greenhouse gas emissions with DEQ in accordance with OAR 340-215.

6.5. Notice of Change of Ownership or Company Name

The permittee must notify DEQ in writing using a DEQ "Transfer Application Form" within 60 days after the following:

a. Legal change of the name of the company as registered with the Corporations Division of the State of Oregon; or

b. Sale or exchange of the activity or facility.

6.6. Construction or Modification Notices

The permittee must notify DEQ in writing using a DEQ "Notice of Intent to Construct Form," or other permit application form and obtain approval in accordance with OAR 340-210-0205 through 340-210-0250 before:

a. Constructing, installing, or establishing a new stationary source that will cause an increase in any regulated pollutant emissions;

b. Making any physical change or change in operation of an existing stationary source that will cause an increase, on an hourly basis at full production, in any regulated pollutant emissions; or

c. Constructing or modifying any air pollution control equipment.

6.7. NESHAP - Subpart WWWWWW - Reporting

The permittee must submit the following as applicable:

a. An amended Notification of Compliance Status within 30 days of making a change to any of the following that do not result in a deviation: [40 CFR 63.11509(b)(2) and (3)]

i. List of affected sources and the plating and polishing metal HAP used in, or emitted by, those sources.

ii. Methods used to comply with the applicable management practices and equipment standards.

iii. Statement by the owner or operator of the affected source as to whether the source is in compliance with the applicable standards or other requirements.

b. An annual certification of compliance report as specified below. These reports do not need to be submitted unless a deviation from the requirements of this subpart has occurred during the reporting year, in which case, the annual compliance report must be submitted along with the deviation report. [40 CFR 63.11509 (c)]

i. State in your annual compliance certification that you have implemented the applicable management practices, as practicable.

ii. Each annual compliance report must be prepared no later than January 31 of the year immediately following the reporting period and kept in a readily-accessible location for inspector review. If a deviation has occurred during the year, each annual compliance report must be submitted along with the deviation report, and postmarked or delivered no later than January 31 of the year immediately following the reporting period.

c. Report all deviations that occurred during the year, along with the corrective action taken, and submit this report to the delegated authority. [40 CFR 63.11509 (d)]

7.0 ADMINISTRATIVE REQUIREMENTS

7.1.	**Permit Renewal Application**	The permittee must submit the completed application package for renewal of this permit no later than **180 days prior to the expiration date**. Two (2) copies of the application must be submitted to the DEQ Permit Coordinator listed in Condition 9.2.
7.2.	**Permit Modifications**	Application for a modification of this permit must be submitted within **60 days** prior to the source modification. When preparing an application, the applicant should also consider submitting the application 180 days prior to allow DEQ adequate time to process the application and issue a permit before it is needed. A special activity fee must be submitted with an application for the permit modification. The fees and two (2) copies of the application must be submitted to the DEQ Business Office.

8.0 FEES

8.1.	**Annual Compliance Fee**	The permittee must pay the annual fee specified in OAR 340-216-8020, Table 2, Part 2 for a Standard ACDP on **December 1** of each year this permit is in effect. An invoice indicating the amount, as determined by DEQ regulations will be mailed prior to the above date. **Late fees in accordance with Part 4 of the table will be assessed as appropriate.**
8.2.	**Change of Ownership or Company Name Fee**	The permittee must pay the non-technical permit modification fee specified in OAR 340-216-8020, Table 2, Part 3(a) with an application for changing the ownership or the name of the company.
8.3.	**Special Activity Fees**	The permittee must pay the special activity fees specified in OAR 340-216-8020, Table 2, Part 3 (b through k) with an application to modify the permit.

9.0 DEQ CONTACTS / ADDRESSES

9.1.	**Business Office**	The permittee must submit payments for invoices, applications to modify the permit, and any other payments to DEQ's Business Office: Department of Environmental Quality Accounting / Revenue 700 NE Multnomah St., Suite 600 Portland, Oregon 97232

9.2. Permit Coordinator

The permittee must submit all notices and applications that do not include payment to:

Northwest Region's AQ Permit Coordinator:

700 NE Multnomah St., Suite 600
Portland, OR 97232

9.3. Report Submittals

Unless otherwise notified, the permittee must submit all reports (annual reports, source test plans and reports, etc.) to DEQ's Region. If you know the name of the Air Quality staff member responsible for your permit, please include it:

Northwest Region AQ
700 NE Multnomah St., Suite 600
Portland, OR 97232

9.4. Web Site

Information about air quality permits and DEQ's regulations may be obtained from the DEQ web page at www.oregon.gov/deq

9.5. EPA Contact

The mailing address for the EPA Regional Office is as follows:

US EPA Region X
Mail Stop OAQ-108
1200 Sixth Avenue
Seattle, WA 98101

10.0 GENERAL CONDITIONS AND DISCLAIMERS

10.1. Permitted Activities

This permit allows the permittee to discharge air contaminants from processes and activities related to the air contaminant source(s) listed on the first page of this permit until this permit expires, is modified, or is revoked.

10.2. Other Regulations

In addition to the specific requirements listed in this permit, the permittee must comply with all other legal requirements enforceable by DEQ.

10.3. Conflicting Conditions

In any instance in which there is an apparent conflict relative to conditions in this permit, the most stringent conditions apply.

10.4. Masking of Emissions

The permittee must not cause or permit the installation of any device or use any means designed to mask the emissions of an air contaminant that causes or is likely to cause detriment to health, safety, or welfare of any person or otherwise violate any other regulation or requirement.

10.5. DEQ Access

The permittee must allow DEQ's representatives access to the plant site and pertinent records at all reasonable times for the purposes of performing inspections, surveys, collecting samples, obtaining data,

reviewing and copying air contaminant emissions discharge records and conducting all necessary functions related to this permit in accordance with ORS 468-095.

10.6. Permit Availability The permittee must have a copy of the permit available at the facility at all times.

10.7. Open Burning The permittee may not conduct any open burning except as allowed by OAR 340, division 264.

10.8. Asbestos The permittee must comply with the asbestos abatement requirements in OAR 340, division 248 for all activities involving asbestos-containing materials, including, but not limited to, demolition, renovation, repair, construction, and maintenance.

10.9. Property Rights The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

10.10. Permit Expiration

a. A source may not be operated after the expiration date of the permit, unless any of the following occur prior to the expiration date of the permit:

   i. A timely and complete application for renewal or for an Oregon Title V Operating Permit has been submitted, or

   ii. Another type of permit (ACDP or Oregon Title V Operating Permit) has been issued authorizing operation of the source.

b. For a source operating under an ACDP or Oregon Title V Operating Permit, a requirement established in an earlier ACDP remains in effect notwithstanding expiration of the ACDP, unless the provision expires by its terms or unless the provision is modified or terminated according to the procedures used to establish the requirement initially.

10.11. Permit Termination, Revocation, or Modification DEQ may modify or revoke this permit pursuant to OAR 340-216-0082 and 340-216-0084.

11.0 EMISSION FACTORS

Emissions device or activity	Pollutant	Emission Factor (EF)	EF units	EF Reference
RTO & Natural Gas fired Equipment	NO_X	100	lb/MM ft^3 Natural Gas	AP-42 1.4
	CO	84	lb/MM ft^3 Natural Gas	AP-42 1.4

12.0 PROCESS/PRODUCTION RECORDS

Emissions device or activity	Process or production parameter	Frequency
RTO	Operating Temperature	Continuous
Surface Coating	Coating Usage	Monthly
Surface Coating	VOC and HAP Content	Monthly
Natural Gas Combustion	MM ft^3 Natural Gas	Monthly

13.0 40 CFR 63, SUBPART HHHHHH, TABLE 1

Citation	Subject	Applicable to Subpart HHHHHH	Explanation
§63.1(a)(1)-(12)	General Applicability	Yes	
§63.1(b)(1)-(3)	Initial Applicability Determination	Yes	Applicability of subpart HHHHHH is also specified in §63.11170.
§63.1(c)(1)	Applicability After Standard Established	Yes	
§63.1(c)(2)	Applicability of Permit Program for Area Sources	Yes	(63.11174(b) of Subpart HHHHHH exempts area sources from the obligation to obtain Title V operating permits.
§63.1(c)(5)	Notifications	Yes	
§63.1(e)	Applicability of Permit Program to Major Sources Before Relevant Standard is Set	No	(63.11174(b) of Subpart HHHHHH exempts area sources from the obligation to obtain Title V operating permits.
§63.2	Definitions	Yes	Additional definitions are specified in §63.11180.
§63.3(a)-(c)	Units and Abbreviations	Yes	
§63.4(a)(1)-(5)	Prohibited Activities	Yes	
§63.4(b)-(c)	Circumvention/Fragmentation	Yes	
§63.5	Construction/Reconstruction of major sources	No	Subpart HHHHHH applies only to area sources.
§63.6(a)	Compliance With Standards and Maintenance Requirements—Applicability	Yes	
§63.6(b)(1)-(7)	Compliance Dates for New and Reconstructed Sources	Yes	§63.11172 specifies the compliance dates.

Citation	Subject	Applicable to Subpart HHHHHH	Explanation
§63.6(c)(1)-(5)	Compliance Dates for Existing Sources	Yes	§63.11172 specifies the compliance dates.
§63.6(e)(1)-(2)	Operation and Maintenance	Yes	
§63.6(e)(3)	Startup, Shutdown, and Malfunction Plan	No	No startup, shutdown, and malfunction plan is required by subpart HHHHHH.
§63.6(f)(1)	Compliance Except During Startup, Shutdown, and Malfunction	Yes	
§63.6(f)(2)-(3)	Methods for Determining Compliance	Yes	
§63.6(g)(1)-(3)	Use of an Alternative Standard	Yes	
§63.6(h)	Compliance With Opacity/Visible Emission Standards	No	Subpart HHHHHH does not establish opacity or visible emission standards.
§63.6(i)(1)-(16)	Extension of Compliance	Yes	
§63.6(j)	Presidential Compliance Exemption	Yes	
§63.7	Performance Testing Requirements	No	No performance testing is required by subpart HHHHHH.
§63.8	Monitoring Requirements	No	Subpart HHHHHH does not require the use of continuous monitoring systems.
§63.9(a)-(d)	Notification Requirements	Yes	§63.11175 specifies notification requirements.
§63.9(e)	Notification of Performance Test	No	Subpart HHHHHH does not require performance tests.
§63.9(f)	Notification of Visible Emissions/Opacity Test	No	Subpart HHHHHH does not have opacity or visible emission standards.
§63.9(g)	Additional Notifications When Using CMS	No	Subpart HHHHHH does not require the use of continuous monitoring systems.
§63.9(h)	Notification of Compliance Status	No	§63.11175 specifies the dates and required content for submitting the notification of compliance status.
§63.9(i)	Adjustment of Submittal Deadlines	Yes	

Citation	Subject	Applicable to Subpart HHHHHH	Explanation
§63.9(j)	Change in Previous Information	Yes	§63.11176(a) specifies the dates for submitting the notification of changes report.
§63.10(a)	Recordkeeping/Reporting—Applicability and General Information	Yes	
§63.10(b)(1)	General Recordkeeping Requirements	Yes	Additional requirements are specified in §63.11177.
§63.10(b)(2)(i)-(xi)	Recordkeeping Relevant to Startup, Shutdown, and Malfunction Periods and CMS	No	Subpart HHHHHH does not require startup, shutdown, and malfunction plans, or CMS.
§63.10(b)(2)(xii)	Waiver of recordkeeping requirements	Yes	
§63.10(b)(2)(xiii)	Alternatives to the relative accuracy test	No	Subpart HHHHHH does not require the use of CEMS.
§63.10(b)(2)(xiv)	Records supporting notifications	Yes	
§63.10(b)(3)	Recordkeeping Requirements for Applicability Determinations	Yes	
§63.10(c)	Additional Recordkeeping Requirements for Sources with CMS	No	Subpart HHHHHH does not require the use of CMS.
§63.10(d)(1)	General Reporting Requirements	Yes	Additional requirements are specified in §63.11176.
§63.10(d)(2)-(3)	Report of Performance Test Results, and Opacity or Visible Emissions Observations	No	Subpart HHHHHH does not require performance tests, or opacity or visible emissions observations.
§63.10(d)(4)	Progress Reports for Sources With Compliance Extensions	Yes	
§63.10(d)(5)	Startup, Shutdown, and Malfunction Reports	No	Subpart HHHHHH does not require startup, shutdown, and malfunction reports.
§63.10(e)	Additional Reporting requirements for Sources with CMS	No	Subpart HHHHHH does not require the use of CMS.
§63.10(f)	Recordkeeping/Reporting Waiver	Yes	
§63.11	Control Device Requirements/Flares	No	Subpart HHHHHH does not require the use of flares.
§63.12	State Authority and Delegations	Yes	

Citation	Subject	Applicable to Subpart HHHHHH	Explanation
§63.13	Addresses of State Air Pollution Control Agencies and EPA Regional Offices	Yes	
§63.14	Incorporation by Reference	Yes	Test methods for measuring paint booth filter efficiency and spray gun transfer efficiency in §63.11173(e)(2) and (3) are incorporated and included in §63.14.
§63.15	Availability of Information/Confidentiality	Yes	
§63.16(a)	Performance Track Provisions—reduced reporting	Yes	
§63.16(b)-(c)	Performance Track Provisions—reduced reporting	No	Subpart HHHHHH does not establish numerical emission limits.

14.0 40 CFR 63, SUBPART WWWWWW, TABLE 1

Citation	Subject
63.11	Applicability.
63.2	Definitions.
63.3	Units and abbreviations.
63.4	Prohibited activities.
63.6(a), (b)(1)-(b)(5), (c)(1), (c)(2), (c)(5), and (j)	Compliance with standards and maintenance requirements.
63.10(a), (b)(1), (b)(2)(i)-(iii), (xiv), (b)(3), (d)(1), (f)	Recordkeeping and reporting.
63.12	State authority and delegations.
63.13	Addresses of State air pollution control agencies and EPA regional offices.
63.14	Incorporation by reference.
63.15	Availability of information and confidentiality.

15.0 ABBREVIATIONS, ACRONYMS, AND DEFINITIONS

ACDP	Air Contaminant Discharge Permit
ASTM	American Society for Testing and Materials
AQMA	Air Quality Maintenance Area
calendar year	The 12-month period beginning January 1st and ending December 31st
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
DEQ	Oregon Department of Environmental Quality
dscf	dry standard cubic foot
EPA	US Environmental Protection Agency
FCAA	Federal Clean Air Act
Gal	gallon(s)
GHG	greenhouse gas
gr/dscf	grains per dry standard cubic foot
HAP	Hazardous Air Pollutant as defined by OAR 340-244-0040
HPL	Horizontal Paint Line
I&M	inspection and maintenance
lb	pound(s)
MMBtu	million British thermal units
NA	not applicable
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NO_X	nitrogen oxides
NSPS	New Source Performance Standard
NSR	New Source Review
O_2	oxygen
OAR	Oregon Administrative Rules
ORS	Oregon Revised Statutes
O&M	operation and maintenance
Pb	lead
PCD	pollution control device
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in size
$PM_{2.5}$	particulate matter less than 2.5 microns in size
ppm	part per million
PSD	Prevention of Significant Deterioration
PSEL	Plant Site Emission Limit
PTE	Potential to Emit
RACT	Reasonably Available Control Technology
scf	standard cubic foot
SER	Significant Emission Rate
SIC	Standard Industrial Code
SIP	State Implementation Plan
SO_2	sulfur dioxide
Special Control Area	as defined in OAR 340-204-0070
VE	visible emissions
VOC	volatile organic compound
VPL	Vertical Paint Line
year	A period consisting of any 12-consecutive calendar months

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If you have any questions, please contact one of the following individuals by email or phone.

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