SWCAA
Southwest Clean Air Agency

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June 7, 2017

Mr. Kurt Humphrey, Environmental Manager
Northwest Innovation Works Kalama, LLC
380 W. Marine Drive
Kalama, WA 98625

Subject: Final Air Discharge Permit for Methanol Production Plant

Dear Mr. Humphrey:

The public comment period for the preliminary determination to issue Air Discharge Permit 16-3204 (ADP 16-3204) in response to ADP Application CO-964 concluded on February 6, 2017. The Southwest Clean Air Agency (SWCAA) received significant public comment on the preliminary determination during the comment period. Revisions made to the permit based on public comments are described in Sections 10 and 14 of the Technical Support Document for ADP 16-3204.

SWCAA has made a final determination to issue ADP 16-3204 pursuant to Section 400-110(4) of SWCAA's General Regulations for Air Pollution Sources. Electronic copies of ADP 16-3204 and the associated supporting documents are available in the permit section of SWCAA's website at (http://www.swcleanair.org/permits/adpfinal.asp). Original copies are enclosed for your files.

This Air Discharge Permit may be appealed directly to the Pollution Control Hearings Board (PCHB) at P.O. Box 40903, Olympia, Washington 98504-0903 within 30 days of receipt as provided in RCW 43.21B.

If you have any comments, or desire additional information, please contact Wess Safford at (360) 574-3058, extension 126.

Sincerely,

Uri Papish
Executive Director

UP:wls
Attachment

SOUTHWEST CLEAN AIR AGENCY

AIR DISCHARGE PERMIT
16-3204

Final Date: June 7, 2017

Facility Name:	Northwest Innovation Works Kalama
Physical Location:	222 Tradewinds Drive Kalama, WA 98625
SWCAA ID:	2455

REVIEWED BY: _____
Paul T. Mairose, Chief Engineer

APPROVED BY: _____
Uri Papish, Executive Director

TABLE OF CONTENTS

1. Equipment/Activity Identification

ID No.	Generating Equipment/Activity	# of Units	Control Measure/Equipment	# of Units
1	Power Generation Unit #1 (LM6000-PF w/duct burner - 558 MMBtu/hr)	1	Low Sulfur Fuel, Low NO_X Burner, NO_X/CO/VOC Catalyst Systems	1
2	Power Generation Unit #2 (LM6000-PF w/duct burner - 558 MMBtu/hr)	1	Low Sulfur Fuel, Low NO_X Burner, NO_X/CO/VOC Catalyst Systems	1
3	Process Boiler #1 (530 MMBtu/hr)	1	Low Sulfur Fuel, Low NO_X Burner, NO_X/CO/VOC Catalyst Systems	1
4	Process Boiler #2 (530 MMBtu/hr)	1	Low Sulfur Fuel, Low NO_X Burner, NO_X/CO/VOC Catalyst Systems	1
5	Process Boiler #3 (530 MMBtu/hr)	1	Low Sulfur Fuel, Low NO_X Burner, NO_X/CO/VOC Catalyst Systems	1
6	Process Heater #1 (74.5 MMBtu/hr)	1	Low Sulfur Fuel, Low NO_X Burner	1
7	Process Heater #2 (74.5 MMBtu/hr)	1	Low Sulfur Fuel, Low NO_X Burner	1
8	Process Flare (6,150 MMBtu/hr)	1	High Temperature Combustion	N/A
9	Syngas Converter - Line #1	1	Process Enclosure, High Temperature Combustion	N/A
10	Syngas Converter - Line #2	1	Process Enclosure, High Temperature Combustion	N/A
11	Crude Methanol Distillation Unit - Line #1	1	Process Enclosure, High Temperature Combustion	N/A
12	Crude Methanol Distillation Unit - Line #2	1	Process Enclosure, High Temperature Combustion	N/A
13	Methanol Storage - Crude Methanol Tank #1 (2,275,000 gal)	1	Vapor Capture, Wet Scrubber	1
14	Methanol Storage - Crude Methanol Tank #2 (2,275,000 gal)	1	Vapor Capture, Wet Scrubber	1
15	Methanol Storage - Shift Tank #1 (1,000,000 gal)	1	Internal Floating Roof, Vapor Capture, Wet Scrubber	1
16	Methanol Storage - Shift Tank #2 (1,000,000 gal)	1	Internal Floating Roof, Vapor Capture, Wet Scrubber	1
17	Methanol Storage - Shift Tank #3 (1,000,000 gal)	1	Internal Floating Roof, Vapor Capture, Wet Scrubber	1
18	Methanol Storage - Shift Tank #4 (1,000,000 gal)	1	Internal Floating Roof, Vapor Capture, Wet Scrubber	1

ID No.	Generating Equipment/Activity	# of Units	Control Measure/Equipment	# of Units
19	Methanol Storage - Finished Methanol Tank #1 (9,400,000 gal)	1	Internal Floating Roof, Vapor Capture, Wet Scrubber	1
20	Methanol Storage - Finished Methanol Tank #2 (9,400,000 gal)	1	Internal Floating Roof, Vapor Capture, Wet Scrubber	1
21	Methanol Storage - Finished Methanol Tank #3 (9,400,000 gal)	1	Internal Floating Roof, Vapor Capture, Wet Scrubber	1
22	Methanol Storage - Finished Methanol Tank #4 (9,400,000 gal)	1	Internal Floating Roof, Vapor Capture, Wet Scrubber	1
23	Methanol Storage - Finished Methanol Tank #5 (9,400,000 gal)	1	Internal Floating Roof, Vapor Capture, Wet Scrubber	1
24	Methanol Storage - Finished Methanol Tank #6 (9,400,000 gal)	1	Internal Floating Roof, Vapor Capture, Wet Scrubber	1
25	Methanol Storage - Finished Methanol Tank #7 (9,400,000 gal)	1	Internal Floating Roof, Vapor Capture, Wet Scrubber	1
26	Methanol Storage - Finished Methanol Tank #8 (9,400,000 gal)	1	Internal Floating Roof, Vapor Capture, Wet Scrubber	1
27	Marine Vessel Loading Operations	1	Submerged Fill, Vapor Capture, Wet Scrubber	1
28	Fugitive Component Leaks	N/A	Process Enclosure, LDAR Program	N/A
29	Ammonia Storage - SCR Tank #1 (9,000 gal)	1	P/V Valve	N/A
30	Ammonia Storage - SCR Tank #2 (9,000 gal)	1	P/V Valve	N/A
31	Ammonia Storage - SCR Tank #3 (9,000 gal)	1	P/V Valve	N/A
32	Cooling Tower (260,400 gal/min)	1	Drift Eliminators	N/A
33	Diesel Engine - Emergency Generator #1 (4,628 bhp)	1	Ultra-low Sulfur Diesel EPA Tier Certification	N/A
34	Diesel engine - Emergency Generator #2 (4,628 bhp)	1	Ultra-low Sulfur Diesel EPA Tier Certification	N/A
35	Diesel Engine - Fire Pump #1 (1,600 bhp)	1	Ultra-low Sulfur Diesel EPA Tier Certification	N/A

2. Approval Conditions

The following tables detail the specific requirements of this permit. In addition to the requirements listed below, equipment at this facility may be subject to other federal, state, and local regulations. The permit requirement number is identified in the left hand column. The text of the permit requirement is contained in the middle column. The emission unit, equipment, or activity to which the permit requirement applies is listed in the right hand column.

2.1 Emission Limits

No.	Emission Limits	Equipment/ Activity
1.	Combined greenhouse gas emissions from approved emission units shall not exceed 1,076,000 tons of CO_{2e} per calendar year. Annual emissions shall be calculated using procedures consistent with the provisions of 40 CFR 98.	1-35
2.	Combined emissions from power generation unit operation shall not exceed: Pollutant — Emission Limit NO_x — 44.28 tpy CO — 43.08 tpy VOC — 18.49 tpy SO_2 — 17.42 tpy $PM_{10}/PM_{2.5}$ — 32.82 tpy NH_3 — 13.06 tpy Compliance shall be determined on a rolling 12 month basis. Emissions shall be calculated from actual operation, continuous emission monitor data, and applicable emission factors. Emission factors shall be taken from the most recent emission test, if available. If not available, calculations shall use emission factors from Section 6 of the Technical Support Document for this Permit. Emissions from periods of startup and shutdown shall be counted towards compliance with the above emission limits.	1-2
3.	Emission concentrations from each power generation unit shall not exceed the following: Pollutant — Emission Limit NO_X — 2.5 ppmvd @ 15% O_2 (1-hr avg) CO — 4.0 ppmvd @ 15% O_2 (1-hr avg) NH_3 — 2 ppmvd @ 15% O_2 (1-hr avg) Compliance with the above emission limits shall be based on continuous emission monitoring data and periodic emission testing results. Hourly emission limits apply to discrete CEM clock hours (block average). The above emission limits do not apply during startup, shutdown, and approved periods of turbine adjustment/tuning. The Permittee shall notify SWCAA in writing at least 30 days prior to occurrence of any affected turbine adjustment/tuning period. Each adjustment/tuning period must be approved by SWCAA for it to qualify under the provisions of this permit condition.	1-2

No.	Emission Limits	Equipment/ Activity
3. Con't	For the purposes of Condition #3, startup and shutdown periods shall be defined as follows: A startup period begins with the introduction of fuel to the combustion turbine. A startup period ends when the earlier of the following events occurs: (a) The combustion turbine achieves stable operation and maintains compliance with the short-term emission limits established in Conditions #1 and #2; (b) 240 minutes have elapsed since fuel was first introduced to the combustion turbine on a cold startup. A cold startup is any startup occurring after the steam turbine has been offline for a period of more than 8 hours; or (c) 120 minutes have elapsed since fuel was first introduced to the combustion turbine on a warm startup. A warm startup is any startup occurring after the steam turbine has been offline for a period of 8 hours or less. A shutdown period begins at any time all of the following are true: (a) The combustion turbine/HRSG is not in compliance with any short-term emission limit in Condition #3; and (b) The combustion turbine is ramping down from normal load for the purpose of ceasing operation. A shutdown period ends when the earlier of the following events occurs: (a) Fuel is no longer being combusted by the turbine; (b) The unit ramps back up after an aborted shutdown, achieves stable operation, and maintains compliance with the short-term emission limits in Condition #3; or (c) 30 minutes has elapsed since the shutdown period began.	
4.	Emission rates from each power generation unit shall not exceed the following based on a one hour average. Normal operation includes all operating conditions except startup and shutdown. Pollutant / Mode / Emission Limit NO_X Normal 5.4 lb/hr Startup 9.6 lb/hr Shutdown 3.2 lb/hr CO Normal 5.3 lb/hr Startup 5.7 lb/hr Shutdown 1.9 lb/hr VOC Normal 2.3 lb/hr Startup 6.0 lb/hr Shutdown 2.0 lb/hr SO_2 Normal 3.9 lb/hr Startup 2.7 lb/hr Shutdown 2.7 lb/hr $PM_{10}/PM_{2.5}$ Normal 3.8 lb/hr Startup 2.5 lb/hr Shutdown 2.5 lb/hr NH_3 All 1.6 lb/hr	1-2

No.	Emission Limits	Equipment/ Activity
5.	Combined emissions from process boiler operation shall not exceed the following: Pollutant — Emission Limit NO_x — 22.80 tpy CO — 17.74 tpy VOC — 11.64 tpy SO_2 — 0.03 tpy $PM_{10}/PM_{2.5}$ — 27.79 tpy NH_3 — 21.02 tpy Compliance shall be determined on a rolling 12 month basis. Emissions shall be calculated from actual operation, continuous emission monitor data, and applicable emission factors. Emission factors shall be taken from the most recent emission test, if available. If not available, calculations shall use emission factors from Section 6 of the Technical Support Document for this Permit. Emissions from periods of startup and shutdown shall be counted towards compliance with the above emission limits.	3-5
6.	Emissions from each process boiler shall not exceed the following. Normal operation includes all operating conditions except startup and shutdown. Pollutant — Mode — Emission Limit NO_X — Normal — 4.0 ppmvd @ 3% O_2 (1-hr avg) Startup — 30.0 ppmvd @ 3% O_2 (1-hr avg) CO — Normal — 5.0 ppmvd @ 3% O_2 (1-hr avg) Startup — 200.0 ppmvd @ 3% O_2 (1-hr avg) VOC — Normal — 0.0025 lb/MMBtu (1-hr avg) Startup — 0.02 lb/MMBtu (1-hr avg) SO_2 — All — 0.006 lb/MMBtu (1-hr avg) $PM_{10}/PM_{2.5}$ — All — 0.006 lb/MMBtu (1-hr avg) NH_3 — All — 10.0 ppmvd @ 3% O_2 (1-hr avg)	3-5
7.	Combined emissions from process heater operation shall not exceed the following: Pollutant — Emission Limit NO_X — 0.42 tpy CO — 0.43 tpy VOC — 0.07 tpy SO_2 — 0.05 tpy $PM_{10}/PM_{2.5}$ — 0.10 tpy Compliance shall be determined on a rolling 12 month basis. Emissions shall be calculated from actual fuel consumption and applicable emission factors. Emission calculations shall use data from the most recent emission test, if available. If not available, calculations shall use emission factors from Section 6 of the Technical Support Document for this Permit.	6-7

No.	Emission Limits	Equipment/ Activity
8.	Emissions from each process heater shall not exceed the following: Pollutant — Emission Limit NO_X — 30 ppmvd @ 3% O_2 (1-hr avg) CO — 50 ppmvd @ 3% O_2 (1-hr avg) VOC — 0.0052 lb/MMBtu (1-hr avg) SO_2 — 0.0070 lb/MMBtu (1-hr avg) $PM_{10}/PM_{2.5}$ — 0.0072 lb/MMBtu (1-hr avg)	6-7
9.	Emissions from process flare operation shall not exceed the following: Pollutant — Emission Limit NO_x — 6.95 tpy, 418.1 lb/hr CO — 10.02 tpy, 550.9 lb/hr VOC — 18.40 tpy, 1,012.9 lb/hr SO_2 — 0.01 tpy, 0.036 lb/hr $PM_{10}/PM_{2.5}$ — 1.01 tpy, 61.5 lb/hr Compliance with annual limits shall be determined on a rolling 12 month basis. Emissions shall be calculated from actual operation and emission factors from Section 6 of the Technical Support Document for this Permit.	8
10.	Combined fugitive VOC (methanol) emissions from methanol storage tank operation shall not exceed 2.53 tpy. Compliance shall be determined on a rolling 12 month basis. Emissions shall be calculated from actual material throughput and number of tank degassing events using the methodology outlined in Section 6 of the Technical Support Document for this Permit.	13-26
11.	Emissions from the methanol storage tank wet scrubber shall not exceed the following: Pollutant — Emission Limit CO — 0.72 tpy, 0.16 lb/hr VOC (methanol) — 2.50 tpy, 0.57 lb/hr Compliance with annual limits shall be determined on a rolling 12 month basis. Emissions shall be calculated from actual operation and applicable emission factors. Emission calculations shall use data from the most recent emission test, if available. If not available, calculations shall use emission factors from Section 6 of the Technical Support Document for this Permit.	13-26
12.	Emissions from marine vessel loading operations shall not exceed the following: Pollutant — Emission Limit VOC (methanol) — 1.21 tpy, 1.94 lb/hr Compliance with annual limits shall be determined on a rolling 12 month basis. Emissions shall be calculated from actual operation and data from the most recent emission test. If emission test data is not available, calculations shall use the emission factor from Section 6 of the Technical Support Document for this Permit.	27

No.	Emission Limits	Equipment/ Activity
13.	Combined fugitive VOC (methanol) emissions from equipment component leaks shall not exceed 0.55 tpy. Compliance shall be determined on a rolling 12 month basis. Emissions shall be calculated from the actual number of components in service and the duration of service using the methodology outlined in Section 6 of the Technical Support Document for this Permit.	28
14.	Combined fugitive NH_3 emissions from ammonia storage tank operation shall not exceed 1.38 tpy. Compliance shall be determined on a rolling 12 month basis. Emissions shall be calculated from actual material throughput using the methodology outlined in Section 6 of the Technical Support Document for this Permit.	29-31
15.	Emissions from cooling tower drift shall not exceed the following: Pollutant — Emission Limit PM — 3.53 tpy PM_{10} — 2.71 tpy $PM_{2.5}$ — 0.01 tpy Compliance shall be determined on a rolling 12 month basis. Emissions shall be calculated from actual operation, manufacturer's specified drift factor, and measurements of total dissolved solids (TDS) in the cooling water discharge consistent with Section 6 of the Technical Support Document for this Permit.	32
16.	Combined emissions from diesel engine power units shall not exceed the following: Pollutant — Emission Limit NO_X — 0.66 tpy, 24.5 lb/hr CO — 0.27 tpy, 10.2 lb/hr VOC — 0.11 tpy, 4.0 lb/hr SO_2 — 0.01 tpy, 0.1 lb/hr $PM_{10}/PM_{2.5}$ — 0.03 tpy, 1.1 lb/hr Annual emissions shall be calculated from actual hours of operation using the methodology outlined in Section 6 of the Technical Support Document for this Permit.	33-35
17.	Visible emissions shall not exceed the following for more than 3 minutes in any one hour period as determined by a Certified Observer in accordance with SWCAA Method 9 (Appendix A of SWCAA 400). Emission Unit — Opacity Limit Power Generation Units (regular operation) — 5% Power Generation Units (adjustment/tuning) — 20% All other equipment — 0% The Permittee shall notify SWCAA of combustion turbine/HRSG adjustment/tuning periods at least 30 days prior to scheduled occurrence. SWCAA must approve the proposed adjustment/tuning period for the alternative opacity limit to take effect.	1-32

No.	Emission Limits	Equipment/ Activity
18.	Visible emissions from diesel engine power units shall not exceed the values listed below for more than 3 minutes in any one hour period as determined by a Certified Observer in accordance with SWCAA Method 9. Operating Mode — Opacity Limit Regular Operation — 5% Cold Start-up — 20% Cold start-up is defined as the time it takes the engine to attain normal operating temperature or 15 minutes from initial start-up, whichever is less.	33-35

2.2 Operating Limits and Requirements

No.	Operating Limits and Requirements	Equipment/ Activity
19.	Reasonable precautions shall be taken at all times to prevent and minimize fugitive emissions from plant operations.	Facilitywide
20.	Operations that cause or contribute to a nuisance odor shall use recognized good practice and procedures to reduce these odors to a reasonable minimum.	Facilitywide
21.	Emission units identified in this Permit shall be maintained and operated in total and continuous conformity with the conditions identified in this Permit. SWCAA reserves the right to take any and all appropriate action to maintain the conditions of this Permit, including directing the facility to cease operations until corrective action can be completed.	1-35
22.	Each pollution control device shall be operated whenever the processing equipment served by that control device is in operation. Control devices shall be operated and maintained in accordance with the manufacturer's specifications. Furthermore, control devices shall be operated in a manner that minimizes emissions.	1-35
23.	Exhaust streams from approved equipment shall be discharged vertically into the ambient air. Any device that obstructs or prevents vertical discharge is prohibited.	1-35
24.	Each power generation unit shall be fired on natural gas only.	1-2
25.	Each power generation unit shall be equipped with a dedicated fuelmeter.	1-2
26.	Each power generation unit shall be operated and maintained in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.	1-2
27.	The NO_X emission control system installed for use with each power generation unit shall be designed to reduce NO_X emission concentrations to 2.5 ppm or less and maintain NH_3 slip at 2 ppm or less while firing on natural gas.	1-2
28.	Each process boiler shall only be fired on natural gas and/or process byproduct gas.	3-5
29.	Each process boiler shall be equipped with a dedicated steam meter. The steam meter shall be regularly inspected and maintained in working order at all times during boiler operation.	3-5
30.	The heat transfer efficiency of each process boiler shall be determined concurrent with initial emission testing.	3-5
31.	Each process heater shall only be fired on natural gas.	6-7

No.	Operating Limits and Requirements	Equipment/ Activity
32.	Heat input to each process heater shall not exceed 13,196 MMBtu per year.	6-7
33.	Each process heater shall be equipped with a dedicated fuelmeter.	6-7
34.	Corrective action shall be taken within three days of emission monitoring if monitoring results indicate emissions in excess of applicable emission concentration limits. Corrective action includes, but is not limited to, maintenance activity and retesting. Corrective action shall be pursued until emission concentrations are demonstrated to be in compliance with applicable limits.	6-7
35.	The process flare shall be designed and operated in compliance with the requirements of 40 CFR 63.11(b).	8
36.	The process flare shall only use natural gas for assist/pilot gas.	8
37.	Heat input to the process flare shall not exceed 201,448 MMBtu per year.	8
38.	The permittee shall install, maintain and operate a monitoring system to determine and record gas flow and heat input to the process flare.	8
39.	Process gases shall be vented to the process flare only during periods of process startup, process shutdown, and while process upset conditions exist.	8
40.	Total organic compound content in syngas converter vent streams shall be reduced by 98% by weight prior to atmospheric discharge. If a boiler or process heater is used to comply with this requirement, vent streams shall be introduced into the flame zone of the boiler or heater.	9-10
41.	If a boiler or process heater is used to control vent stream emissions from the syngas converters, the permittee shall be install, calibrate, maintain and operate a flow indicator that provides a record of vent stream flow diverted from the boiler or process heater at least once every 15 minutes for each affected facility. The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the boiler or process heater, resulting in its emission to the atmosphere. Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.	9-10
42.	Total organic compound content in distillation unit vent streams shall be reduced by 98% by weight prior to atmospheric discharge. If a boiler or process heater is used to comply with this requirement, vent streams shall be introduced into the flame zone of the boiler or heater.	11-12
43.	If a boiler or process heater is used to control vent stream emissions from the distillation units, the permittee shall install, calibrate, maintain and operate a flow indicator that provides a record of vent stream flow to the boiler or process heater at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each distillation unit within an affected facility at a point closest to the inlet of each boiler or process heater and before being joined with any other vent stream.	11-12
44.	All vapor emissions from methanol storage tank operation shall be captured and routed to the methanol storage tank scrubber at all times when in use.	13-26

No.	Operating Limits and Requirements	Equipment/ Activity
45.	The methanol storage tank scrubber shall be designed by the manufacturer to achieve and maintain a minimum capture efficiency of 99% by weight.	13-26
46.	The methanol storage tank scrubber shall be operated and maintained in accordance with manufacturer's specifications.	13-26
47.	An operating plan that meets the requirements of 40 CFR 60.113b(c)(1) shall be developed and submitted to SWCAA for approval within 90 days of commencing regular operation. The methanol storage tank scrubber shall be operated in accordance with the approved operating plan at all times when in use.	13-26
48.	The methanol storage tank scrubber shall be equipped with an operable pressure gauge capable of continuously measuring the differential pressure across the scrubbing section.	13-26
49.	A visual inspection of the internal components of the methanol storage tank scrubber shall be performed at least once per calendar quarter. Defective components shall be repaired as soon as possible.	13-26
50.	When any methanol storage tank is degassed, the vapor space of the tank shall be vented to a control device consistent with the requirements of BACT. The vapor space of the tank shall be vented to an approved control device until the volatile organic concentration within the tank is reduced to less than 5,000 parts per million, measured as methane, for at least one hour after degassing operations have ceased	13-26
51.	Each methanol storage tank equipped with an internal floating roof shall meet the applicable specifications contained in 40 CFR 60.112b(a).	15-26
52.	A visual inspection of the internal floating roof and seals in each storage tank shall be performed prior to initial filling. Any hole, tear or other opening in the seals or defect in the internal floating roof shall be repaired prior to filling the affected storage tank.	15-26
53.	A visual inspection of the internal floating roof and seals in each storage tank through manholes and roof hatches shall be performed at least once every 12 months. Any determination of leaks shall be repaired as required by 40 CFR 60.113b(a)(2).	15-26
54.	A visual inspection of the internal floating roof, seals and gaskets shall be performed each time a storage tank is emptied and degassed, and at least once every ten years. Any hole, tear or other opening in the seals or defect in the internal floating roof shall be repaired prior to refilling of the tank as required by 40 CFR 60.113b(a)(4).	15-26
55.	Methanol throughput for marine vessel loading operations shall not exceed 3,649,416 metric tons per year.	27
56.	All marine vessel product loading shall be performed using submerged or bottom loading configurations.	27
57.	Displaced headspace vapors from marine vessel loading operations shall be captured and routed to the vapor control system at all times during active loading operations.	27
58.	The marine vessel loading scrubber shall be designed by the manufacturer to achieve and maintain a minimum capture efficiency of 99% by weight.	27
59.	The marine vessel loading scrubber shall be operated and maintained in accordance with manufacturer's specifications.	27
60.	The marine vessel loading scrubber shall be equipped with an operable pressure gauge capable of continuously measuring the differential pressure across the scrubbing section.	27

No.	Operating Limits and Requirements	Equipment/ Activity
61.	A visual inspection of the internal components of the marine vessel loading scrubber shall be performed at least once per calendar quarter. Defective components shall be repaired as soon as possible.	27
62.	Marine tank vessel loading shall only be performed for marine tank vessels with a valid vapor tightness certification within the preceding 12-month using the vapor tightness test in 40 CFR 63.565(c) and documented pursuant to 40 CFR 63.567(i). Vessels without a valid vapor tightness certification may demonstrate "no detectible emissions" using EPA Method 21 or other methods approved in writing by SWCAA.	27
63.	Marine tank vessel loading shall only be performed for marine tank vessels that are in dedicated methanol service or have been purged and cleaned prior to loading.	27
64.	A visual inspection of product piping and vapor lines associated with loading operations at the marine dock shall be performed every two hours during marine vessel loading and offloading. The inspection shall verify that there are no visible signs, odors or sounds indicating a product leak.	27
65.	All product loading shall cease if visible liquid leaks are observed in the loading system.	27
66.	Each piece of equipment in a process unit subject to 40 CFR 63 Subpart VVa shall be identified such that it can be distinguished from equipment that is not subject to the subpart. Each affected piece of equipment shall comply with applicable standards found in 40 CFR 63.162 through 63.176.	28
67.	A leak detection and repair (LDAR) program meeting the requirements of 40 CFR 63 Subpart H shall be implemented for all equipment and/or components that handle methanol.	28
68.	Combined ammonia throughput shall not exceed 684,762 gallons per year.	29-31
69.	Cooling tower cells shall be equipped with drift eliminators that have a maximum rated drift rate of 0.0005%.	32
70.	The permittee shall develop and implement operational procedures to monitor for heat exchanger leaks in the cooling water system. Identified heat exchanger leaks shall be promptly repaired.	32
71.	Each diesel engine shall only be fired on #2 diesel or better. The sulfur content of fuel fired in each diesel engine shall not exceed 0.0015% by weight (15 ppmw). A fuel certification from the fuel supplier may be used to demonstrate compliance with this requirement.	33-35
72.	Each diesel engine shall be installed and configured according to the manufacturer's emission-related specifications. Each engine and associated emission control devices shall be operated and maintained according to the manufacturer's emission-related written instructions.	33-35
73.	Operation of each emergency generator and emergency fire pump shall be limited to maintenance checks, readiness testing, and actual emergencies.	33-35
74.	Operation of each emergency generator for the purposes of testing and readiness checks shall not exceed 52 hr/yr. A nonresettable time totalizer shall be installed and used to measure hours of operation.	33-34

No.	Operating Limits and Requirements	Equipment/ Activity
75.	Operation of the emergency fire pump for the purposes of testing and readiness checks shall not exceed 56 hr/yr. A nonresettable time totalizer shall be installed and used to measure hours of operation.	35

2.3 Monitoring and Recordkeeping Requirements

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
76.	All records required by this Permit shall be kept for a minimum period of no less than five years and shall be maintained in a form readily available for inspection by SWCAA representatives.	1-35
77.	With the exception of data logged by a computerized data acquisition system, each record required by this Air Discharge Permit shall include the date and the name of the person making the record entry.	1-35
78.	Excess emissions and upset conditions shall be recorded for each occurrence.	1-35
79.	The total annual benzene quantity from facility waste shall be determined using the procedure found in 40 CFR 61.355(a). The total annual benzene quantity shall be recalculated whenever there is a change in a process generating affected waste streams that could cause an increase in total annual benzene quantity.	Facilitywide
80.	The permittee shall maintain records that identify each waste stream at the facility subject to 40 CFR 61, Subpart FF, and whether the waste stream is controlled pursuant to that subpart.	Facilitywide
81.	Operation of the Power Generation Units shall be monitored and recorded as follows: a) Differential pressure across each catalyst bed — Monitored continuously, recorded once per workshift b) Temperature before and after each catalyst bed — Monitored continuously, recorded once per workshift c) Hours of Operation — Recorded monthly d) Start-up and shutdown periods — Recorded for each occurrence e) CEMS calibration results — Recorded for each occurrence f) CEMS cylinder gas audit results — Recorded for each occurrence g) Maintenance/repair activities — Recorded for each occurrence	1-2
82.	Hourly averages of the following data for the Power Generation Units shall be recorded and kept readily available for on-site inspection: a) Heat input (MMBtu/hr); b) NO_X emission concentration (ppmvd @ 15% O_2); c) NO_X emission rate (lb/hr); d) CO emission concentration (ppmvd @ 15% O_2); e) CO emission rate (lb/hr); f) O_2 concentration (% volume, dry); and g) NH_3 consumption (lb/hr).	1-2

No.	Monitoring and Recordkeeping Requirements		Equipment/ Activity
83.	Operation of the Process Boilers shall be monitored and recorded as follows:		3-5
	a) Differential pressure across each catalyst bed	Monitored continuously, recorded once per workshift	
	b) Temperature before and after each catalyst bed	Monitored continuously, recorded once per workshift	
	c) Hours of Operation	Recorded monthly	
	d) Start-up and shutdown periods	Recorded for each occurrence	
	e) CEMS calibration results	Recorded for each occurrence	
	f) CEMS cylinder gas audit results	Recorded for each occurrence	
	g) Steam meter inspection/maintenance	Recorded for each occurrence	
	h) Maintenance/repair activities	Recorded for each occurrence	
84.	Hourly averages of the following data for the Process Boilers shall be recorded and kept readily available for on-site inspection: a) Steam Production (lb/hr); b) Heat input (MMBtu/hr, derived from steam production); c) NO_X emission concentration (ppmvd @ 3% O_2); d) NO_X emission rate (lb/hr); e) CO emission concentration (ppmvd @ 3% O_2); f) CO emission rate (lb/hr); g) O_2 concentration (% volume, dry); h) NH_3 consumption (lb/hr).		3-5
85.	Process Heater operation shall be monitored and recorded as follows:		6-7
	a) Hours of operation	Recorded monthly	
	b) Heat input (MMBtu)	Recorded monthly	
	c) Maintenance and repair activities	Recorded for each occurrence	
86.	Process Flare operation shall be monitored and recorded as follows:		8
	a) Hours of operation	Recorded monthly	
	b) Process gas flow (volume)	Recorded monthly	
	c) Heat input (MMBtu, derived from gas flow)	Recorded monthly	
	d) Reason for each period of operation	Recorded for each occurrence	
	e) Flowmeter inspection/maintenance	Recorded for each occurrence	
	f) Maintenance and repair activities	Recorded for each occurrence	
	g) Design calculations per 40 CFR 63.11(b)	Recorded for each flare design	
87.	Syngas Converter operation shall be monitored and recorded as follows:		9-10
	a) Operating status	Recorded hourly	
	b) Vent stream flowrate to boiler/heater bypass	Recorded every 15 minutes	
	c) Quantity of crude methanol produced	Recorded monthly	
	d) Periods during which vent stream is diverted from boiler/heater or has no flow	Recorded for each occurrence	
	e) Results of bypass line seal inspections	Recorded for each occurrence	
	f) Periods during which bypass line is operated	Recorded for each occurrence	
	g) Maintenance and repair activities	Recorded for each occurrence	
	h) Location at which vent stream is introduced into boiler/heater	Recorded for each boiler/heater	
	i) Change in location at which vent stream is introduced into boiler/heater	Recorded for each occurrence	

No.	Monitoring and Recordkeeping Requirements		Equipment/ Activity
88.	Distillation Unit operation shall be monitored and recorded as follows:		11-12
	a) Operating status	Recorded hourly	
	b) Vent stream flowrate to boiler/heater	Recorded hourly	
	c) Material throughput	Recorded monthly	
	d) Periods during which vent stream is diverted from boiler/heater or has no flow	Recorded for each occurrence	
	e) Change in location at which vent stream is introduced into boiler/heater	Recorded for each occurrence	
	f) Maintenance and repair activities	Recorded for each occurrence	
89.	Dimensions of the storage tanks and analyses showing capacities shall be kept readily accessible at the facility.		13-26
90.	A copy of the methanol storage tank scrubber operating plan shall be kept readily accessible at the facility.		13-26
91.	Methanol storage tank operation shall be monitored and recorded as follows:		13-26
	a) Product throughput	Recorded monthly for each tank	
	b) Date of each visual roof/seal inspection	Recorded for each inspection	
	c) Results of visual roof/seal inspection	Recorded for each inspection	
	d) Date of repair for each identified defect	Recorded for each repair	
	e) Draining/degassing of storage tanks	Recorded for each occurrence	
	f) Equipment repair and maintenance activity	Recorded for each occurrence	
92.	Methanol storage tank scrubber operation shall be monitored and recorded as follows:		13-26
	a) Differential pressure in storage tank scrubber	Recorded weekly	
	b) Operating plan performance parameters	Recorded per plan specification	
	c) Date of each internal inspection	Recorded per occurrence	
	d) Defective components identified in each internal inspection	Recorded for each inspection	
	e) Date of component repair	Recorded for each component	
93.	Marine tank vessel transfer operations shall be monitored and recorded as follows:		27
	a) Date of each loading event	Recorded for each occurrence	
	b) Vessel name, registry and legal owner	Recorded for each vessel	
	c) Date of last vapor tightness certification	Recorded for each vessel	
	d) Quantity of methanol loaded	Recorded for each vessel	
	e) Duration of loading operations (hrs)	Recorded for each vessel	
	f) Visual inspection results	Recorded for each occurrence	
	g) Description of observed leaks	Recorded for each occurrence	
	h) Leak repair actions	Recorded for each occurrence	
94.	Marine vessel loading scrubber operation shall be monitored and recorded as follows:		27
	a) Differential pressure in storage tank scrubber	Recorded for each vessel	
	b) Date of each internal inspection	Recorded per occurrence	
	c) Defective components identified in each internal inspection	Recorded for each inspection	
	d) Date of component repair	Recorded for each component	
95.	The permittee shall maintain records as specified in 40 CFR 63.181 for all process units complying with the applicable requirements of 40 CFR 63 Subpart H.		28

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
96.	Ammonia storage tank operation shall be monitored and recorded as follows: a) Ammonia throughput — Recorded monthly b) Date of ammonia deliveries — Recorded for each delivery c) Certification of ammonia concentration — Recorded for each delivery d) Equipment repair/maintenance activity — Recorded for each occurrence	29-31
97.	Operation of the Cooling Tower shall be monitored and recorded as follows: a) Hours of operation — Recorded monthly b) Total dissolved solids (TDS) value — Recorded for each test c) Cooling water heat exchanger leaks — Recorded for each occurrence d) Equipment repair/maintenance activity — Recorded for each occurrence	32
98.	Diesel engine operation shall be monitored and recorded as follows: a) Hours of operation — Recorded monthly b) Purpose of operation — Recorded for each occurrence c) Equipment repair/maintenance activity — Recorded for each occurrence d) Fuel sulfur certification — Recorded for each fuel delivery	33-35

2.4 Emission Monitoring and Testing Requirements

No.	Emission Monitoring and Testing Requirements	Equipment/ Activity
99.	Consistent with the provisions of 40 CFR 60.8(e), all emission units required to conduct emission testing and/or monitoring shall be equipped with the following: a) Sampling ports adequate for test methods applicable to such facility; b) Safe sampling platform(s); c) Safe access to sampling platform(s); and d) Utilities for sampling and testing equipment.	1-35
100.	Each power generation unit shall be emission tested within 60 days of reaching maximum production rate, but no later than 180 days after initial startup. Subsequent emission testing shall be conducted annually, no later than the calendar month in which the initial emission testing was performed. All emission testing shall be conducted in accordance with Appendix A of this Permit.	1-2
101.	A CEMS shall be installed to measure emission concentrations of NO_X, CO, and O_2 from the exhaust stack of each power generation unit. The CEMS shall be maintained and certified in accordance with Appendix B of this Permit. The permittee shall develop a quality assurance plan for the CEMS in use at the facility.	1-2
102.	The sulfur content of fuel fired in each power generation unit shall be determined annually in accordance with Appendix C of this Permit. A current, valid purchase contract, tariff sheet, or transportation contract for the fuel specifying a maximum total sulfur content of 20 gr/100 scf or less may be used in lieu of direct fuel sampling.	1-2

No.	Emission Monitoring and Testing Requirements	Equipment/ Activity
103.	Each process boiler shall be emission tested within 60 days of reaching maximum production rate, but no later than 180 days after initial startup. Subsequent emission testing shall be conducted annually, no later than the calendar month in which the initial emission testing was performed. All emission testing shall be conducted in accordance with Appendix D of this Permit.	3-5
104.	A CEMS shall be installed to measure emission concentrations of NO_X, CO, and O_2 from the exhaust stack of each process boiler. The CEMS shall be maintained and certified in accordance with Appendix B of this Permit. The permittee shall develop a quality assurance plan for the CEMS in use at the facility.	3-5
105.	The permittee shall develop and submit a site-specific fuel sulfur content analysis plan to SWCAA for review and approval prior to commencing regular operation of the process boilers. The sulfur content of fuel fired in each process boiler shall be determined within 60 days of reaching maximum production rate, but no later than 180 days after initial startup. Subsequent fuel sulfur determinations shall be performed in accordance with the approved fuel sulfur analysis plan. Fuel analysis is not required for any fuel that with a current, valid purchase contract, tariff sheet, or transportation contract from the fuel supplier certifying the fuel meets the definition of natural gas as defined in 40 CFR 60.41b.	3-5
106.	Each process heater shall be emission monitored at least once during each process startup. Emission monitoring shall be performed in accordance with Appendix E of this Permit.	6-7
107.	The methanol storage tank scrubber shall be emission tested within 60 days of reaching maximum production rate, but no later than 180 days after initial startup. Subsequent emission testing shall be conducted annually, no later than the calendar month in which the initial emission testing was performed. All emission testing shall be conducted in accordance with Appendix F of this Permit.	13-26
108.	A CERMS shall be installed to measure emission of VOC from the exhaust stack of the storage tank scrubber. The CERMS shall be maintained and certified in accordance with Appendix G of this Permit. The permittee shall develop a quality assurance plan for the CERMS in use at the facility.	13-26
109.	The marine vessel loading scrubber shall be emission tested within 60 days of reaching maximum production rate, but no later than 180 days after initial startup. Subsequent emission testing shall be conducted annually, no later than the calendar month in which the initial emission testing was performed. All emission testing shall be conducted in accordance with Appendix F of this Permit.	27
110.	A CERMS shall be installed to measure emissions of VOC from the exhaust stack of the marine vessel loading scrubber. The CERMS shall be maintained and certified in accordance with Appendix G of this Permit. The permittee shall develop a quality assurance plan for the CERMS in use at the facility.	27

No.	Emission Monitoring and Testing Requirements	Equipment/ Activity
111.	Each piece of equipment in a process unit subject to the provisions of 40 CFR 63 Subpart H shall be monitored using applicable test methods and procedures found in 40 CFR 63.180.	28
112.	During each calendar quarter, a minimum of three samples shall be collected from the cooling water discharge of the cooling tower and analyzed for total dissolved solids (TDS).	32

2.5 Reporting Requirements

No.	Reporting Requirements	Equipment/ Activity
113.	An annual emissions inventory report shall be submitted in accordance with SWCAA 400-105(1). In addition to the emissions information required under SWCAA 400-105(1), each annual report shall include an estimate of annual emission quantities for each TAP compound listed in the Technical Support Document for this Permit.	Facilitywide
114.	Excess emissions shall be reported to SWCAA as follows: • As soon as possible, but no later than 12 hours after discovery for emissions that represent a potential threat to human health or safety; • As soon as possible, but no later than 48 hours after discovery for emissions which the permittee wishes to claim as unavoidable pursuant to SWCAA 400-107(1); and • No later than 30 days after the end of the month of discovery for all other excess emissions.	1-35
115.	A 12 month rolling total of facilitywide air pollutant emissions shall be reported to SWCAA quarterly, no later than 30 days after the end of the calendar quarter.	1-35
116.	Initial start-ups of SWCAA approved emission units shall be reported to SWCAA via letter within 10 days	1-35
117.	Any process change that could cause an increase in the facility's total annual benzene quantity shall be reported to SWCAA with 30 days of occurrence.	Facilitywide
118.	All Continuous Emission Monitoring Systems required by this permit shall meet the requirements of SWCAA 400-105(7).	1-5
119.	Emission test results shall be reported to SWCAA in writing within 45 days of test completion.	1-5, 13-27
120.	Emission monitoring results shall be reported to SWCAA in writing within 15 days of completion.	6-7

No.	Reporting Requirements	Equipment/ Activity
121.	For each power generation unit, the following records shall be reported to SWCAA quarterly no later than 30 days after the end of the calendar quarter: a) Monthly hours of operation; b) Hourly fuel consumption (MMBtu); c) Hourly ammonia consumption (lbs); d) Hourly CEMS data for: (i) NO_X exhaust concentration (ppmvd @ 15% O_2), (ii) NO_X emission rate (lbs), (iii) CO exhaust concentration (ppmvd @ 15% O_2), (iv) CO emission rate (lbs), and (vi) Oxygen content (% O_2); e) Identification of startup and shutdown periods for each unit; and f) Summary of air emissions.	1-2
122.	Combustion turbine/HRSG startup and shutdown events that exceed the time periods specified in Condition #3 shall be reported to SWCAA no later than 24 hours after each occurrence.	1-2
123.	For each Process Boiler, the following records shall be reported to SWCAA quarterly, no later than 30 days after the end of the calendar quarter: a) Start-up and shutdown periods; b) CEMS calibration and cylinder gas audit results; c) Fuel sulfur documentation; d) Monthly hours of operation; e) Hourly steam production (lbs); f) Hourly calculated heat input (MMBtu); g) Hourly ammonia consumption (lbs); h) Hourly CEMS data for: (i) NO_X exhaust concentration (ppmvd @ 15% O_2), (ii) NO_X emission rate (lbs), (iii) CO exhaust concentration (ppmvd @ 15% O_2), (iv) CO emission rate (lbs), and (v) Oxygen content (% O_2); and i) Air emissions during the reporting period.	3-5
124.	For each Process Heater, the following records shall be reported to SWCAA quarterly no later than 30 days after the end of the calendar quarter: a) Hours of operation; b) Fuel consumption; and c) Air emissions during the reporting period.	6-7
125.	Startup and shutdown of each process heater shall be reported to SWCAA no later than 48 hours after occurrence.	6-7

No.	Reporting Requirements	Equipment/ Activity
126.	For the Process Flare, the following records shall be reported to SWCAA quarterly no later than 30 days after the end of the calendar quarter: a) Hours of operation; b) Monthly gas flow (volume); c) Monthly calculated heat input (MMBtu); d) Reason for each period of operation; and e) Air emissions during the reporting period.	8
127.	Active operation of the process flare shall be reported to SWCAA no later than 24 hours after occurrence.	8
128.	For each syngas converter, the following records shall be reported to SWCAA quarterly no later than 30 days after the end of the calendar quarter: a) Hours of operation; b) Quantity of methanol loaded to vessels; c) Periods during which vent stream is diverted from boiler/heater or has no flow; d) Periods during which the bypass line is operated; and e) Air emissions during the reporting period.	9-10
129.	If a boiler or process heater is used to control vent stream emissions from a syngas converter, a description of the location at which the vent stream is introduced into the boiler or process heater shall be submitted to SWCAA prior to commencing regular operation. Each change in the location shall be reported to SWCAA prior to modification.	9-10
130.	For each distillation unit, the following records shall be reported to SWCAA quarterly no later than 30 days after the end of the calendar quarter: a) Hours of operation; b) Quantity of material throughput; c) Periods during which vent stream is diverted from boiler/heater or has no flow; and d) Air emissions during the reporting period.	11-12
131.	If a boiler or process heater is used to control vent stream emissions from a distillation unit, a description of the location at which the vent stream is introduced into the boiler or process heater shall be submitted to SWCAA prior to commencing regular operation. Each change in the location shall be reported to SWCAA prior to modification.	11-12
132.	A description of control equipment for each methanol storage tank shall be submitted to SWCAA prior to commencing regular operation.	13-26
133.	SWCAA shall be notified in writing at least 30 days prior to the filling or re-filling of any methanol storage tank as required by 40 CFR 60.113b(a)(5).	13-26
134.	For each methanol storage tank, the following records shall be reported to SWCAA quarterly no later than 30 days after the end of the calendar quarter: a) Product throughput; b) Number of storage tank degassing events; c) Date of each visual roof/seal inspection; d) Date of each scrubber internal component inspection; e) Equipment repair and maintenance activity; and f) Air emissions during the reporting period.	13-26

No.	Reporting Requirements	Equipment/ Activity
135.	The landing of internal floating roofs in the methanol storage tanks shall be reported to SWCAA within 24-hours of occurrence.	15-26
136.	For marine vessel loading operations, the following records shall be reported to SWCAA quarterly no later than 30 days after the end of the calendar quarter: a) Number of vessels loaded; b) Quantity of methanol loaded to vessels; c) Duration of loading operations (hrs); d) Date of each scrubber internal component inspection; e) Equipment repair and maintenance activity; and f) Air emissions during the reporting period.	27
137.	For process units subject to 40 CFR 63 Subpart H, a Notification of Compliance Status shall be submitted to SWCAA pursuant to 40 CFR 63.182(a)(2).	28
138.	For process units subject to 40 CFR 63 Subpart H, periodic reports containing the information specified in 40 CFR 63.182(d) shall be submitted to SWCAA quarterly no later than 30 days after the end of the calendar quarter.	28
139.	For the ammonia storage tanks, the following records shall be reported to SWCAA quarterly no later than 30 days after the end of the calendar quarter: a) Product throughput; b) Equipment repair and maintenance activity; and c) Air emissions during the reporting period.	29-31
140.	For the cooling tower, the following records shall be reported to SWCAA quarterly no later than 30 days after the end of the calendar quarter: a) Hours of operation; b) TDS test results; and c) Air emissions during the reporting period.	32
141.	For each diesel engine, the following records shall be reported to SWCAA quarterly no later than 30 days after the end of the calendar quarter: a) Hours of operation; b) Purpose of operation for each operating period; and c) Air emissions during the reporting period.	33-35

3. General Provisions

No.	General Provisions
A.	For the purpose of ensuring compliance with this Permit, duly authorized representatives of the Southwest Clean Air Agency shall be permitted access to the permittee's premises and the facilities being constructed, owned, operated and/or maintained by the permittee for the purpose of inspecting said facilities. These inspections are required to determine the status of compliance with this Permit and applicable regulations and to perform or require such tests as may be deemed necessary.
B.	The provisions, terms and conditions of this Permit shall be deemed to bind the permittee, its officers, directors, agents, servants, employees, successors and assigns, and all persons, firms, and corporations acting under or for the permittee.

No.	General Provisions
C.	The requirements of this Permit shall survive any transfer of ownership of the source or any portion thereof.
D.	This Permit shall be posted conspicuously at or be readily available near the source.
E.	This Permit shall be invalid if construction/installation has not commenced within eighteen months from date of issuance.
F.	This Permit does not supersede requirements of other Agencies with jurisdiction and further, this Permit does not relieve the permittee of any requirements of any other governmental Agency. In addition to this Permit, the permittee may be required to obtain permits or approvals from other agencies with jurisdiction.
G.	Compliance with the terms of this Permit does not relieve the permittee from the responsibility of compliance with SWCAA General Regulations for Air Pollution Sources, previously issued Regulatory Orders, RCW 70.94, Title 173 WAC or any other applicable emission control requirements, nor from the resulting liabilities and/or legal remedies for failure to comply.
H.	If any provision of this Permit is held to be invalid, all unaffected provisions of the Permit shall remain in effect and be enforceable.
I.	No change in this Permit shall be made or be effective except as may be specifically set forth by written order of the Southwest Clean Air Agency upon written application by the permittee for the relief sought.
J.	The Southwest Clean Air Agency may, in accordance with RCW 70.94 impose such conditions as are reasonably necessary to assure the maintenance of compliance with the terms of this Permit, the Washington Clean Air Act, and the applicable rules and regulations adopted under the Washington Clean Air Act.

Air Discharge Permit 16-3204 - Appendix A
Emission Testing Requirements
Power Generation Units

1. Introduction:

The purpose of this testing is to quantify emissions from operation of the power generation units, and to demonstrate compliance with the requirements of this permit and 40 CFR 60 Subpart KKKK "Standards of Performance for Stationary Combustion Turbines".

2. Testing Requirements:

a. A comprehensive test plan for the initial emission test shall be submitted to SWCAA for review and approval at least 30 days prior to testing. A comprehensive test plan for subsequent emission tests shall be submitted to SWCAA for review and approval at least 10 business days prior to testing. SWCAA personnel shall be informed at least 5 business days prior to testing so that a representative may be present during testing.

b. Emission testing shall be conducted at the exhaust stack of each power generation unit within 60 days of reaching maximum production rate, but no later than 180 days after initial startup. Subsequent emission testing shall be conducted as described in the schedule below, no later than the end of the month in which the initial testing was performed.

c. Individual constituents shall be tested pursuant to the schedule below. Testing for each constituent shall consist of a minimum of three sampling runs of the specified duration. Compliance shall be demonstrated by averaging the results of the individual sampling runs. Relative Accuracy Test Audit (RATA) sampling runs for NO_X and CO may be used to comply with the annual source testing requirements (i.e. 3 21-minute RATA runs = 1 source test run).

Constituent	Test Method or Equivalent[1]	Schedule	Minimum Test Duration
Stack gas velocity	EPA Methods 1 and 2	Annual	N/A
O_2 and CO_2	EPA Method 3 or 3A	Annual	N/A
Moisture	EPA Method 4	Annual	1 hour
Filterable PM	EPA Method 5	Annual / 5 years[3]	3 hours (90 dscf)
Nitrogen oxides	EPA Method 7E	Annual	1 hour
Opacity	EPA Method 9	Annual	6 minutes
Carbon monoxide	EPA Method 10	Annual	1 hour
Volatile organic compounds	EPA Method 18 or 25A[2]	Annual / 5 years[3]	1 hour
Condensable PM	EPA Method 202	Annual / 5 years[3]	3 hours (90 dscf)
Ammonia	BAAQMD Method ST1B	Annual	1 hour

[1] The use of an alternate/ equivalent test methods must be approved by SWCAA in writing.

[2] VOC emission rates shall be reported as propane. The use of a "methane cutter" or the subtraction of methane and ethane concentrations as measured by EPA Method 18 is acceptable in determining VOC concentration.

[3] PM and VOC emission testing shall initially be conducted on an annual basis. If three consecutive tests indicate compliance, testing frequency may be reduced to once every five years from that point forward. Testing frequency shall revert to annual if any test result indicates noncompliance.

3. Source Operation:

a. All testing shall be conducted at base load with duct burners firing unless otherwise approved by SWCAA.

b. Production related parameters and equipment operating conditions shall be recorded during emissions testing to correlate operating conditions with emissions. All recorded production parameters shall be documented in the test results report. Recorded parameters shall, at a minimum, include:
   1) Combustion turbine/duct burner heat input rate (MMBtu/hr),
   2) Gross power output (MW) [40 CFR 60.4420];
   3) Ammonia injection rate (gal/hr),
   4) Process startups and shutdowns, and
   5) Plant adjustments.

4. Reporting Requirements:

a. A final emission test report shall be prepared and submitted to SWCAA within 45 calendar days of test completion and, at a minimum, shall contain the following information:
   (1) Description of the source including manufacturer, model number and design capacity of the equipment, and the location of the sample ports or test locations,
   (2) Time and date of the test and identification and qualifications of the personnel involved,
   (3) Summary of results, reported in units of ppmv, gr/dscf, lb/hr, and lb/MMBtu,
   (4) Summary of control system or equipment operating conditions,
   (5) Summary of production related parameters,
   (6) A description of the test methods or procedures used including all field data, quality assurance/quality control procedures and documentation,
   (7) A description of the analytical procedures used including all laboratory data, quality assurance/quality control procedures and documentation,
   (8) Copies of field data and example calculations,
   (9) Chain of custody information,
   (10) Calibration documentation,
   (11) Discussion of any abnormalities associated with the results, and
   (12) A statement signed by the senior management official of the testing firm certifying the validity of the source test report.

b. All test results for constituent emission concentration shall be corrected to 15% oxygen.

Air Discharge Permit 16-3204 - Appendix B
Continuous Monitoring Requirements
Power Generation Units / Process Boilers

1. Introduction:

The purpose of installing and maintaining a CEMS for NO_X, O_2, and CO is to demonstrate compliance with the requirements of this Permit, and comply with the monitoring requirements of 40 CFR 60 Subpart KKKK "Standards of Performance for Stationary Combustion Turbines".

2. Requirements:

a. NO_X and O_2. Continuous monitoring systems for the concentration and emission rate of NO_X and the concentration of O_2 from the exhaust stack of each power generation unit and process boiler shall be installed and maintained in accordance with the requirements and specifications found in the following regulations:

- 40 CFR 60 Appendix B, Performance Specification 2.
- 40 CFR 60 Appendix F.

The following exceptions apply to the requirements of the above referenced regulations:

- The quarterly audit specified in 40 CFR 60 Appendix F need not be conducted in any quarter in which the associated combustion turbine operated less than 168 hours.

b. CO. Continuous monitoring systems for the concentration and emission rate of CO from the exhaust stacks of the power generation units and process boilers shall be installed and maintained in accordance with the requirements and specifications found in the following regulations:

- 40 CFR 60 Appendix B, Performance Specification 4A.
- 40 CFR 60 Appendix F.

The following exceptions apply to the requirements of the above referenced regulations:

- The quarterly audit specified in 40 CFR 60, Appendix F need not be conducted in any quarter in which the associated combustion turbine operated less than 168 hours.
- The criteria for excessive audit inaccuracy in 40 CFR 60 Appendix B, Performance Specification 4a, Section 13.2 is replaced by an RA of no greater than 20% of the average RM value or an absolute average difference between the RM and CEMS of 0.3 ppmv plus the 2.5 percent confidence coefficient.
- The criteria for excessive audit inaccuracy for cylinder gas audits in 40 CFR 60 Appendix F, Section 5.2.3(2) is replaced by a maximum audit inaccuracy of 1.0 ppm.

c. RATA Reports. Relative accuracy test audit (RATA) reports shall be submitted to SWCAA within 45 days of test completion and shall include all of the information required in Section 4 of Appendix A and/or Section 4 of Appendix D, as applicable.

Air Discharge Permit 16-3204 - Appendix C
Fuel Sulfur Monitoring Requirements
Power Generation Units

1. Introduction:

The purpose of this monitoring requirement is to quantify the fuel gas sulfur content of fuel gas fired in the power generation units. This data will be used to calculate SO_2 emissions from the power generation units, and demonstrate compliance with the requirements of this Permit and 40 CFR 60 Subpart KKKK "Standards of Performance for Stationary Combustion Turbines".

2. Testing Requirements:

a. Initial gas sampling shall be conducted within 60 days of reaching maximum production rate, but no later than 180 days after initial startup. Subsequent emission testing shall be conducted semi-annually, no later than 6 months after the previous monitoring.

b. A minimum of 1 gas sample shall be collected from each affected fuel gas stream. Each sample shall be analyzed using one of the test methods identified below. Alternate methods may be used if approved in writing by SWCAA prior to sampling.

Constituent	Reference Test Method
Fuel sample collection	ASTM D5287
Fuel sample analysis	ASTM D1072, ASTM D3246, ASTM D4084 ASTM D4468, ASTM D4810, ASTM D6228 ASTM D6667

3. Reporting Requirements:

a. A final sampling report shall be prepared and submitted to SWCAA within 45 calendar days of sampling completion. At a minimum, the report shall contain the following information:

(1) Description of the source including manufacturer, model number and design capacity of the equipment, and the location of the sample ports or test locations,
(2) Time and date of the test and identification and qualifications of the personnel involved,
(3) Summary of results, reported in units and averaging periods consistent with the application emissions standard or unit,
(4) A description of the test methods or procedures used including all field data, quality assurance/quality control procedures and documentation,
(5) A description of the analytical procedures used including all laboratory data, quality assurance/quality control procedures and documentation,
(6) Copies of field data and example calculations,
(7) Chain of custody information,
(8) Calibration documentation,
(9) Discussion of any abnormalities associated with the results, and
(10) A statement signed by the senior management official of the testing firm certifying the validity of the source test report.

Air Discharge Permit 16-3204 - Appendix D
Emission Testing Requirements
Process Boilers

1. Introduction:

The purpose of this testing is to quantify emissions from each process boiler, and demonstrate compliance with the requirements of this Permit and 40 CFR 60 Subpart Db "Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units".

2. Testing Requirements:

a. A comprehensive test plan for the initial emission test shall be submitted to SWCAA for review and approval at least 30 days prior to testing. A comprehensive test plan for subsequent emission tests shall be submitted to SWCAA for review and approval at least 10 business days prior to testing. SWCAA personnel shall be informed at least 5 business days prior to testing so that a representative may be present during testing.

b. Emission testing shall be conducted at each boiler exhaust stack within 60 days of reaching maximum production rate, but no later than 180 days after initial startup. Subsequent emission testing shall be conducted as described in the schedule below, no later than the end of the month in which the initial testing was performed.

c. Individual constituents shall be tested pursuant to the schedule below. Testing for each constituent shall consist of a minimum of three sampling runs of the specified duration. Compliance shall be demonstrated by averaging the results of the individual sampling runs. Relative Accuracy Test Audit (RATA) sampling runs for NO_X and CO may be used to comply with the annual source testing requirements (i.e. 3 21-minute RATA runs = 1 source test run).

Constituent	Test Method or Equivalent[1]	Schedule	Minimum Test Duration
Stack gas velocity	EPA Methods 1 and 2	Annual	N/A
O_2 and CO_2	EPA Method 3 or 3A	Annual	N/A
Moisture	EPA Method 4	Annual	1 hour
Filterable PM	EPA Method 5	Annual / 5 years[3]	3 hours (90 dscf)
Nitrogen oxides	EPA Method 7E	Annual	1 hour
Opacity	EPA Method 9	Annual	6 minutes
Carbon monoxide	EPA Method 10	Annual	1 hour
Volatile organic compounds	EPA Method 18 or 25A[2]	Annual / 5 years[3]	1 hour
Condensable PM	EPA Method 202	Annual / 5 years[3]	3 hours (90 dscf)
Ammonia	BAAQMD Method ST1B	Annual	1 hour

[1] The use of an alternate/ equivalent test methods must be approved by SWCAA in writing.

[2] VOC emission rates shall be reported as propane. The use of a "methane cutter" or the subtraction of methane and ethane concentrations as measured by EPA Method 18 is acceptable in determining VOC concentration.

[3] PM and VOC emission testing shall initially be conducted on an annual basis. If three consecutive tests indicate compliance, testing frequency may be reduced to once every five years from that point forward. Testing frequency shall revert to annual if any test result indicates noncompliance.

3. Source Operation:

a. Source operations during the emissions test must be representative of maximum intended operating conditions.

b. Production related parameters and equipment operating conditions shall be recorded during emissions testing to correlate operating conditions with emissions. All recorded production parameters shall be documented in the test results report. Recorded parameters shall, at a minimum, include:
(1) Boiler fuel consumption rate (MMBtu/hr),
(2) Process startups and shutdowns, and
(3) Plant adjustments.

4. Reporting Requirements:

a. A final emission test report (both hardcopy and electronic) shall be prepared and submitted to SWCAA within 45 calendar days of test completion. Test reports shall, at a minimum, contain the following information:
(1) Description of the source including manufacturer, model number and design capacity of the equipment, and the location of the sample ports or test locations,
(2) Time and date of the test and identification and qualifications of the personnel involved,
(3) Summary of results, reported in units of ppmv, lb/hr, and lb/MMBtu,
(4) Summary of control system or equipment operating conditions,
(5) Summary of production related parameters,
(6) A description of the test methods or procedures used including all field data, quality assurance/quality control procedures and documentation,
(7) A description of the analytical procedures used including all laboratory data, quality assurance/quality control procedures and documentation,
(8) Copies of field data and example calculations,
(9) Chain of custody information,
(10) Calibration documentation,
(11) Discussion of any abnormalities associated with the results, and
(12) A statement signed by the senior management official of the testing firm certifying the validity of the source test report.

b. All test results for constituent emission concentration shall be corrected to 3% oxygen.

Air Discharge Permit 16-3204 - Appendix E
Emission Monitoring Requirements
Process Heaters

1. Introduction:

The purpose of periodically monitoring process heater performance is to minimize emissions and provide a reasonable assurance that the process heater are operating properly.

2. Monitoring Procedure:

a. Monitoring of process heater exhaust gases to determine emission concentrations of the following constituents shall be conducted once during each process startup.

Constituents to be Measured
Carbon Monoxide (CO)
Nitrogen Oxides (NO_X)
Oxygen (O_2)

b. Periodic monitoring may be conducted with an electrochemical cell combustion analyzer, analyzers used for reference method testing, or other analyzers pre-approved by SWCAA.

c. Source operation during monitoring must be representative of maximum potential operating conditions.

d. Records kept during process heater monitoring shall at a minimum include the following:
   (1) Process heater heat input rate (MMBtu/hr),
   (2) Process startups and shutdowns, and
   (3) Plant adjustments.

e. Alternative testing methodologies must be pre-approved by SWCAA.

3. Minimum Quality Assurance/Quality Control Measures:

a. The analyzer(s) response to span gas of a known concentration shall be determined before and after testing. No more than 12 hours may elapse between span gas response checks. The results of the analyzer response shall not be valid if the pre and post response check results vary by more than 10% of the known span gas value.

b. The CO and NO_X span gas concentrations shall be no less than 50% and no more than 200% of the emission concentration corresponding to the permitted emission limit. Ambient air may be used to zero the CO and NO_X cells/analyzer(s) and span the oxygen cell/analyzer.

c. Sampling shall consist of at least 1 test consisting of at least 5 minutes of data collection. Data shall not be collected until after analyzer readings have stabilized (less than 5% per minute change in emission concentration). Emission concentrations shall be recorded at least once every 30 seconds during the data collection phase for a minimum of 10 readings. All test data collected following the ramp-up phase(s) shall be reported to SWCAA in the designated format.

4. Reporting:

a. All monitoring results shall be recorded at the facility and reported to SWCAA in writing in a format designated by the Agency. Results shall be reported within 15 calendar days of monitoring completion. At a minimum, the following information shall be included in the report:
   (1) Time and date of the performance monitoring;
   (2) Identification of the personnel involved;
   (3) Identification of the affected unit;
   (4) A summary of results (NO_X, CO, O_2, etc), reported in units consistent with the applicable emission standard or limit;
   (5) A summary of equipment operating conditions (e.g., firing rate, fuel flow, stack temperature, etc);
   (6) A description of the evaluation methods or procedures used including all field data, quality assurance/quality control procedures and documentation; and
   (7) Analyzer response check documentation.

b. Individual monitoring results shall be reported as read. Final average monitoring results shall be reported corrected to 3% O_2 and adjusted to reflect analyzer response to the zero and span gases (bias/drift adjustment).

Air Discharge Permit 16-3204 - Appendix F
Emission Testing Requirements
Methanol Wet Scrubbers

1. Introduction:

The purpose of testing is to quantify emissions from each methanol scrubber, confirm the methanol control efficiencies, and demonstrate compliance with the requirements of this permit.

2. Monitoring Procedure:

a. A comprehensive test plan for the initial emission test shall be submitted to SWCAA for review and approval at least 30 days prior to testing. A comprehensive test plan for subsequent emission tests shall be submitted to SWCAA for review and approval at least 10 business days prior to testing. SWCAA shall be notified of the test date at least 5 business days prior to testing.

b. Emission testing shall be conducted within 60 days of reaching maximum production rate, but no later than 180 days after initial startup. Subsequent emission testing shall be conducted annually, no later than the end of the month in which the initial testing was performed.

c. A minimum of 3 test runs shall be performed at the inlet and outlet of each methanol scrubber for each constituent listed below. Compliance shall be demonstrated by averaging the results of the individual sampling runs. The sampling methods identified below shall be used unless alternate methods and/or schedule are approved in writing by SWCAA in advance of the emission testing.

Constituent	Test Method or Equivalent	Minimum Test Duration
Stack gas velocity	EPA Methods 1 and 2	N/A
O_2 and CO_2	EPA Methods 3 or 3A	N/A
Moisture	EPA Method 4	60 minutes
Volatile organic compounds	EPA Method 25A*	60 minutes

* Test instrument must be spanned with a methanol calibration gas.

3. Source Operation:

a. **Source operations.** Source operations during the emissions test must be representative of maximum intended operating conditions.

b. **Record of production parameters.** Production related parameters and equipment operating conditions shall be recorded during emissions testing to correlate operating conditions with emissions. Recorded parameters shall, at a minimum, include the following:
   1) Methanol production rate (methanol storage tank scrubber),
   2) Methanol loading rate (marine vessel loading scrubber),
   3) Scrubbing liquor circulation rate,
   4) Scrubbing liquor blowdown rate,
   5) Scrubber differential pressure, and
   6) Process startups and shutdowns.

4. Reporting Requirements:

a. Test results shall be reported in units of ppmv, lb/hr and % VOC control efficiency.

b. A final emission test report (both hardcopy and electronic) shall be prepared and submitted to SWCAA within 45 calendar days of test completion and, at a minimum, shall contain the following information:
   (1) Description of the source including manufacturer, model number and design capacity of the equipment, and the location of the sample ports or test locations,
   (2) Time and date of the test and identification and qualifications of the personnel involved,
   (3) Summary of results, reported in units and averaging periods consistent with the application emissions standard or unit,
   (4) Summary of control system or equipment operating conditions,
   (5) Summary of production related parameters,
   (6) A description of the test methods or procedures used including all field data, quality assurance/quality control procedures and documentation,
   (7) A description of the analytical procedures used including all laboratory data, quality assurance/quality control procedures and documentation,
   (8) Copies of field data and example calculations,
   (9) Chain of custody information,
   (10) Calibration documentation,
   (11) Discussion of any abnormalities associated with the results, and
   (12) A statement signed by the senior management official of the testing firm certifying the validity of the source test report.

Air Discharge Permit 16-3204 - Appendix G
Continuous Monitoring Requirements
Methanol Wet Scrubbers

1. **Introduction:**
   The purpose of installing and maintaining a CERMS for VOC is to demonstrate compliance with the requirements of this Permit.

2. **Requirements:**

   a. VOC. Continuous monitoring systems for the concentration and emission rate of VOC from the exhaust stack of each methanol wet scrubber shall be installed and maintained in accordance with the requirements and specifications found in the following regulations:
      - 40 CFR 60 Appendix B, Performance Specification 6.
      - 40 CFR 60 Appendix F.

   b. RATA Reports. Relative accuracy test audit (RATA) reports shall be submitted to SWCAA within 45 days of test completion and shall include all of the information required in Section 4 of Appendix F.