

ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A-500-7103144074

Version: 1.0

Issue Date: March 30, 2022

Pursuant to section 20.3 of the Environmental Protection Act, Revised Statutes of Ontario (R.S.O.) 1990, c. E. 19 and subject to all other applicable Acts or regulations this Environmental Compliance Approval is issued to:

NOVA CHEMICALS CORPORATION

1000-7TH AVENUE S.W.
CALGARY ALBERTA
T2P5L5

For the following site:

785 Petrolia Line , Corunna, ST. CLAIR, ONTARIO, CANADA, N0N 1G0

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s) 7819-AR5R9P, issued on October 20, 2017.

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

A petrochemical manufacturing facility, operating at a production limit of up to 1.33 million tonnes of ethylene per year with co-products of propylene, benzene, crude butadiene, hydrogen, a C5 rich hydrocarbon stream, dicyclopentadiene, C6-C8 raffinate, C9-200 hydrocarbon and toluene/xylene mixture , consisting of the following major units and associated processes:

- crude and vacuum units;
- olefins units;
- aromatics unit;
- utilities unit;
- material flow unit;
- chemical reaction;
- hydrocarbon distillation;
- hydrocarbon cracking;
- steam generation;
- blending, storage, transfer, loading and unloading of raw materials, intermediates and product streams;
- water and wastewater treatment;
- landfarming;

- laboratory and maintenance operations; and
- purging, venting and pressure relief of process gases to the flare systems;

including the following sources of emissions:

Boilers

- One (1) gaseous fuel fired boiler identified as BF-8150A and one (1) gaseous and liquid fuel fired boiler identified as BF-8150B, each having a total maximum heat input of 460 million kilojoules per hour, exhausting into the air through a common stack, identified in the Emission Summary and Dispersion Report as STCK03, having volumetric flow rate of 151.8 cubic metres per second at the maximum fired duties, an exit diameter of 2.83 metres and extending 61.3 metres above grade;
- One (1) gaseous and liquid fuel fired boiler identified as BF-8150C, having a maximum heat input of 460 million kilojoules per hour, and one (1) gaseous fuel fired boiler identified as BF-8150D, having a maximum heat input of 456 million kilojoules per hour, together exhausting into the air through a common stack, identified in the Emission Summary and Dispersion Report as STCK04, having volumetric flow rate of 134.6 cubic metres per second at the maximum fired duties, and an exit diameter of 2.39 metres and extending 61.2 metres above grade;

Thermal Oxidizer

- One (1) natural gas-fired thermal oxidizer, having a maximum thermal input rating of 34 million kilojoules per hour, exhausting to the air at a volumetric flow rate of 125 cubic metres per second through a stack, having an exit diameter of 2.4 metres and extending 10.7 metres above grade, servicing the existing railcar loading facility;

Main Process Flare

- One (1) main flare stack identified as CB-8500, having the capacity to burn hydrocarbons up to 975,000 kilograms per hour, capable of a smokeless hydrocarbon burning rate of 100,000 kilograms per hour, a steam flow rate of 59,000 kilograms per hour, venting 106.7 metres above grade, and having an exit diameter of 1.52 metres;
- Steam assisted flare tip, venting 106.7 metres above grade, and having an exit diameter equivalent to 1.809 metres;

Cooling Towers

- One (1) 16-cell double flow, cross flow, induced draft cooling tower with a water flow capacity of 32,933 cubic metres per hour, exhausting into the atmosphere at a volumetric flow rate of 755 cubic metres per second through each cell opening, having an exit diameter of 9.8 metres and extending 26.2 metres above grade;
- One (1) 4-cell cross flow cooling tower, with a water flow capacity of 10,219.5 cubic metres per hour, exhausting into the atmosphere at a volumetric flow rate of 641.03 cubic metres per second through each cell opening, having an exit diameter of 8.8 metres and extending 16.9 metres above grade;

Tanker Trucks and Rail Cars

- Loading and unloading of petrochemicals by tanker trucks (8 bays) and rail cars;

Wastewater Treatment System

- A wastewater treatment system including the following equipment and processes: Oily and Chemical drains, Clarifier, Oily Dissolved Air Flotation, Chemical Dissolved Air Flotation, Aeration Basin A, Aeration Basin B, Digester, Oily Pond, Dissolved Nitrogen Flotation and API Separator;
- Wastewater Treatment Plant Vapour Recovery Unit (Source ID: WWVRU) consisting of a wet scrubber to remove hydrogen sulphide and activated carbon to remove hydrocarbons, with a maximum exhaust flow rate of 0.214 cubic metres per second through a stack, having an exit diameter of 0.102 metres, extending 7.3 metres above grade, serving the following equipment: a covered API separator to serve as the primary oil-water separator for the chemical sewer system, a dissolved nitrogen flotation system to serve as the primary oil- water separator for the oily sewer system, and a Frac tank to collect solids from the new API separator and the dissolved nitrogen flotation unit;

Other Equipment

- Tank FB-2207 vertical fixed roof tank with a working volume of 480.4 cubic meters equipped with one (1) 2-stage scrubbing system consisting of a liquid bed for neutralizing hydrogen sulphide and a packed bed of activated carbon exhausting to the air through a stack having an exit diameter of 0.076 meters and extending 10.9 meters above grade;
- equipment described in Tables 1 to 4 below:

Table 1: Tanks

ID	Equipment Description	Tank Type	Tank Capacity (cubic metre)	Vent Inside Diameter (centimetre)	Vent Height Above Grade (metre)
FB-9115	TANK 004	internal floating roof	7,173	30.48	17.07
FB-9114A	TANK 005	internal floating roof	3,459	60.96	14.63
FB-9114	TANK 006	vertical fixed roof	785	15.24	12.91
FB-8302	TANK 007	vertical fixed roof	785	20.32	9.75
FB-9119	TANK 008 (with two vents)	vertical fixed roof	54,248	30.48 (each)	17.07 (each)
FB-9120B	TANK 010 (with two vents)	vertical fixed roof	54,248	30.48 (each)	17.07 (each)
FB-9139	TANK 011	vertical fixed roof	54,248	45.72	17.07
FB-9116A	TANK 012 (with three vents)	vertical fixed roof	21,968	25.40 (each)	17.07 (each)
FB-9116B	TANK 013 (with three vents)	vertical fixed roof	21,968	25.40 (each)	17.07 (each)

FB-9118	TANK 014 (with four vents)	vertical fixed roof	28,693	25.40 (each)	17.07 (each)
FB-9137	TANK 015 (with two vents)	vertical fixed roof	28,693	25.40 (each)	17.07 (each)
FB-9138	TANK 016 (with three vents)	vertical fixed roof	44,833	25.40 (each)	17.07 (each)
FB-9120A	TANK 018	external floating roof	39,194	not applicable	not applicable
FT-1	No. 2 Fuel Oil Tank	horizontal bullets	4.5	0.05	1.67
FT-2	No. 2 Fuel Oil Tank	horizontal bullets	4.5	0.05	1.67
FT-3	No. 2 Fuel Oil Tank	horizontal bullets	4.5	0.05	1.67

Table 1 continued

ID	Equipment Description	Tank Type	Tank Capacity (cubic metre)	Vent Inside Diameter (centimetre)	Vent Height Above Grade (metre)
FB-9120B	TANK 019	external floating roof	39,194	not applicable	not applicable
FB-8603	TANK 020	internal floating roof	4,683	30.48	19.81
FB-9106	TANK 023	external floating roof	18,830	not applicable	not applicable
FB-9157	TANK 029	internal floating roof	1,537	15.24	17.07
FB-9135A	TANK 030	internal floating roof	2,203	20.32	14.63
FB-9135B	TANK 031	vertical fixed roof	2,213	20.32	14.63
FB-9134A	TANK 032	internal floating roof	1,537	60.96	15.01
FB-9108	TANK 033	internal floating roof	7,782	25.40	14.63
FB-9107	TANK 035	internal floating roof	7,782	25.40	14.63
FB-9112	TANK 037	internal floating roof	11,208	30.48	14.63
FB-9158A	TANK 038	internal floating roof	1,537	25.40	14.63
FB-9158B	TANK 039	internal floating roof	1,537	25.40	14.63
FB-9110	TANK 041	internal floating roof	7,782	25.40	14.63

FB-9121A	TANK 043	external floating roof	11,208	not applicable	not applicable
FB-9121B	TANK 044	internal floating roof	11,208	30.48	17.98
FB-9121B	TANK 044 (with two vents)	internal floating roof	11,208	25.40 (each)	17.98 (each)
FB-9121C	TANK 045	external floating roof	11,208	N/A	N/A
FB-9113A	TANK 046	vertical fixed roof	1,281	15.24	12.19
FB-9113B	TANK 047	vertical fixed roof	1,281	15.24	12.91
FB-9103	TANK 059	vertical fixed roof	5	5.08	2.13
FB-9101A	TANK 100	external floating roof	54,248	not applicable	not applicable
FB-9101B	TANK 101	external floating roof	54,248	not applicable	not applicable
FB-9128A	TANK 102	external floating roof	36,314	not applicable	not applicable
FB-9128B	TANK 103	external floating roof	36,314	not applicable	not applicable
FB-2203	TANK FB-2203	vertical fixed roof	68	10.16	7.32
FB-2401	TANK FB-2401	vertical fixed roof	68	5.08	3.18
FB-9708	Lab Chemical Tank	vertical fixed roof	0.5	10.16	2.4

Table 2: Fired Equipment

Stack ID	Equipment ID & Description	Max. Fired Duty (gigajoule per hour)	Exhaust Flow Rate at Max. Duty (cubic metre per second)	Stack Exit Diameter (metre)	Stack Height Above Grade (metre)
	BA-2114 A - Superheater	127			
STCK05	BA-2114 B - Superheater	127	54	2.24	91.7
	BA-2114 C - Superheater	88.92			
STCK06	BA-2101 - Olefin Heater	207	81	2.24	69.2

STCK07A	BA-2103 - Olefin Heater	269	40	1.83	50.3
STCK07B	BA-2104 - Olefin Heater	269	40	1.83	50.3
	BA-2105 - Olefin Heater	206			
STCK08			80	2.44	68.6
	BA-2106 - Olefin Heater	207			
STCK09	BA-2107 - Olefin Heater	207	80	2.44	68.6
STCK10A	BA-2109 - Olefin Heater	270	40	1.83	50.3
STCK10B	BA-2110 - Olefin Heater	270	40	1.83	50.3
	BA-2111 - Olefin Heater	207			
STCK11			70	2.44	68.6
	BA-2112 - Olefin Heater	207			
STCK12	BA-2113 - Olefin Heater	270	41	1.83	70.1
STCK13	BA-2115 - Olefin Heater	270	41	1.98	68.6
STCK17	BA-2116 - Olefin Heater	416.5	56.11	1.98	61.05
STCK18	BA-2117 - Olefin Heater	416.5	56.11	1.98	61.05
STCK15	BA-3101 - DPG Heater	12	4	0.71	30.5
TAB1	Turnaround Admin Temp Boiler	7.1	1.22	0.41	6.1
TAB2	Turnaround Material Flow Temp Boiler	12.4	2.86	0.61	4.09
TAB3	Turnaround Olefins Cold Side Temp Boiler	17.7	3.98	0.66	4.09

Table 3: Backup Emergency Generators and Firewater Pumps

Stack ID	Equipment Description	Size Rating (kilowatt)	Fuel Type
GE-8401D	Emergency Generator and Standby Generator	500	Diesel
GE-9701	Integrated Diesel Tank Set to provide power for the IT Data Center during emergency situations	275	Diesel
GA-9141B	Firewater Pump	243	Diesel
GA-9142B	Firewater Pump	243	Diesel

Table 4: Other Sources

Stack ID	Equipment Description
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FB-1002	Fresh Caustic Tank
FB-2130	DMDS Bulk Storage Tank
FB-2131	Chemical Injection Tank
AD-2201	Amine & Caustic Sump
FB-2201	Caustic Day Tank
FB-2206X	Sodium Carbonate Injection Drum
FB-2208	Strong Caustic Storage Tank
FB-2210X	Lube Oil Tank GB-2201
FB-2211	Lube Oil Tank GB-2202/2301
FB-2212	Anti foulant Dispersant Tank
FB-2402	Sodium Borohydride Tank
FB-2403A	Semi-bulk Tanks
FB-2404AX	Lube Oil Storage Tank
FB-2404X	Lube Oil Tank GA-2406
FB-2404SX	Lube Oil Tank GA-2406S
FB-2405	Propanol Semi-bulk Tank
FB-2406	Semi-bulk Tanks
FB-2501X	Lube Oil Tank GB-2501/2601
FB-3001	Caustic Storage Tank
FB-3301	Amine Storage Tank
FB-3302	Atomizing Water H/U Tank
FB-3303	Antioxidant Storage Tank

Table 4 continued

Stack ID	Equipment Description
FB-4005	Antioxidant (AO22) Bulk Storage
FB-4014X	Antifoam Storage Drum
FA-8401	Emergency Generator Diesel Fuel Tank
FB-9141XA	Firewater Pump Diesel Fuel Tank
FB-9142XA	Firewater Pump Diesel Fuel Tank

FB-9902	Sodium Hypochlorite Tank
CB-9401	Cavern flare system consisting of one (1) north and one (1) south ground flare
Vent-24 (formerly EF-3A/3B)	Physical/environmental laboratory fume hood exhaust system
EF-1A/1B	Technical laboratory fume hood exhaust vent
EF-2A/2B	GC laboratory fume hood exhaust vent
IB-9705-FH	Fume hood exhaust vent
IB-80298B/C	Bi o unit fume hood exhaust vent
IB-8027	Water treatment lab fume hood exhaust vent
IA-3001	Fume hood exhaust vent
CSE008	Central welding shop-Bay No.1 exhaust system
CSE009	Central welding shop-Bay No.2 exhaust system
CSE010	Central welding shop-Bay No.3 exhaust system
CSE011	Central welding shop-Bay No.4 exhaust system
CSE012	Central welding shop-Bay No.5 exhaust system
CSE013	Central welding shop-Bay No.6 exhaust system
CSE014	Central welding shop-Bay No.7 exhaust system
CSE015	Central welding shop-Bay No.8 exhaust system
IA-9110	Olefins heater shop exhaust vent systems
IA-9114	Construction fab shop exhaust system
PA-9707	Spray paint booth for application of solvent based paints
PA-9708	Parts washer
IA-9704	Degreaser bath, a part washer used for maintenance activities

all in accordance with the application for amendment of Environmental Compliance Approval (Air & Noise) No. 3301-9SYU28, dated June 29, 2017 and signed by Richard Ilves, the letter from the Company to the Ministry dated October 17, 2014, the letter from Stantec Consulting Ltd. to the Ministry dated October 28, 2014 and the letter from Stantec Consulting Ltd. to the Ministry dated January 30, 2015, the application for amendment of Environmental Compliance Approval No. 7819-AR5R9P dated November 30, 2018 and signed by Richard Ilves, the application for amendment of Environmental Compliance Approval No. 7819-AR5R9P, dated May 27, 2019 and signed by Richard Ilves, the application for amendment of Environmental Compliance Approval No. 7819-AR5R9P, dated August 27, 2019 and signed by Richard Ilves, the application dated October 30, 2020 and certified by Richard Ilves, for amendment of Environmental Compliance Approval (Air) No. 7819-AR5R9P and Notices 1 to 4, the Emission Summary and Dispersion Modeling Report (Turnaround Boiler & Scrubbing System Project), dated October 2020 and prepared by NOVA Chemicals Corporation, the application dated December 15, 2020 and certified by Richard Ilves, for amendment of Environmental Compliance Approval (Air) No. 7819-AR5R9P and Notices 1 to 4, the Emission Summary and Dispersion Modeling Report (Corunna Cracker Phase 3 Expansion - Final Design), dated December 2021 and prepared by NOVA

Chemicals Corporation, the application dated June 21, 2021 and certified by Richard Ilves, for amendment of Environmental Compliance Approval (Air) No. 7819-AR5R9P and Notices 1 to 4, the Emission Summary and Dispersion Modeling Report (Wastewater Treatment Plant Upgrade Project), dated June 2021 and prepared by NOVA Chemicals Corporation, the letter prepared by HGC Engineering, dated October 21, 2020 and signed by Corey Kinart, P.Eng., the Acoustic Assessment Report prepared by HGC Engineering, dated December 10, 2020 and signed by Corey Kinart, P.Eng., the letter prepared by HGC Engineering, dated May 6, 2021 and signed by Corey Kinart, P.Eng., the additional information provided in the email from Corey Kinart, P.Eng. of HGC Engineering, dated February 2, 2022, and all supporting information associated with the applications.

DEFINITIONS

For the purpose of this environmental compliance approval, the following definitions apply:

1. "Acoustic Assessment Report" means the report, prepared in accordance with Publication NPC-233 submitted in support of the application, that documents all sources of noise emissions and Noise Control Measures present at the Facility. "Acoustic Assessment Report" also means the Acoustic Assessment Report prepared by HGC Engineering, dated December 10, 2020 and signed by Corey Kinart, P.Eng.;
2. "Adverse Effect" means the adverse effect defined in the EPA;
3. "Approval" means this Environmental Compliance Approval, including the application and supporting documentation listed above;
4. "Business Day" means any day other than a Saturday, a Sunday or a day on which the Sarnia District Office is closed for business;
5. "Company" means NOVA Chemicals Corporation, that is responsible for the construction or operation of the Facility and includes any successors and assigns;
6. "Director" means any Ministry employee appointed by the Minister pursuant to Section 5 of the Act;
7. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located;
8. "EPA" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended;
9. "Equipment" means the equipment described in the Company's application, this Approval and in the supporting documentation submitted with the application, to the extent approved by this Approval;
10. "Ethylene Action Plan" means the ethylene action plan dated January 7, 2015 and prepared by the Company;
11. "Excess Flaring Event" means any period of no less than six consecutive minutes during which the Main Process Flare is flaring hydrocarbons at a rate of more than 45,000 kilograms per hour;
12. "Facility" means the entire operation located on the property where the Equipment is located;
13. "Guideline A-9" means Ministry Guideline A-9, entitled "NOx Emissions from Boilers and Heaters", dated March 2001;
14. "Manual" means a document or a set of documents that provide written instructions to staff of the Company;
15. "Ministry" means the ministry of the government of Ontario responsible for the EPA and includes all officials, employees or other persons acting on its behalf;
16. "Noise Control Measures" means measures to reduce the noise emissions from the Facility and/or Equipment including, but not limited to, silencers, acoustic louvres, enclosures, absorptive treatment, plenums and barriers. It also means the noise control measures outlined in the Acoustic Assessment Report;
17. "Professional Engineer" means a Professional Engineer defined under the Professional Engineers Act, R.S.O. 1990, as amended;
18. "Provincial Officer" means any Ministry employee appointed by the Minister pursuant to Section 5 of the Act;
19. "Publication NPC-233" means the Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary

Sources of Sound", October, 1995, as amended;

20. "Publication NPC-300" means the Ministry Publication NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning, Publication NPC-300", August, 2013, as amended;
21. "Sarnia District Office" means the Sarnia district office of the Ministry;
22. "Sensitive Receptor" means any location where routine or normal activities occurring at reasonably expected times would experience Adverse Effect(s) from contaminants discharges from the Facility, including one or a combination of:
 - a. private residences or public facilities where people sleep (eg: single and multi-unit dwellings, nursing homes, hospitals, trailer parks, camping grounds, etc.),
 - b. institutional facilities (eg: schools, churches, community centres, day care centres, recreational centres, etc.),
 - c. outdoor public recreational areas (eg: trailer parks, play grounds, picnic areas, etc.), and
 - d. other outdoor public areas where there are continuous human activities (eg: commercial plazas and office buildings);
23. "Thermal Oxidizer" means the thermal oxidizer described in the Company's application, this Approval and in the supporting documentation submitted with the application, to the extent approved by this Approval.

TERMS AND CONDITIONS

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

A. OPERATION AND MAINTENANCE

1. The Company shall ensure that the Equipment is properly commissioned, operated and maintained at all times. The Company shall:
 - a. prepare, not later than three (3) months after the Equipment is commissioned, and update as necessary, a Manual outlining the operating procedures and a maintenance program for the Equipment, including:
 - i. routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment suppliers;
 - ii. emergency procedures, including spill clean-up procedures;
 - iii. procedures for any record keeping activities relating to operation and maintenance of the Equipment;
 - iv. all appropriate measures to minimize noise and odorous emissions from all potential sources; and
 - v. the frequency of inspection and replacement of the filter material in the Equipment;
 - b. implement the recommendations of the Manual.
2. The Company shall ensure that the Thermal Oxidizer is operated to comply with the following performance requirements:
 - a. The exhaust gases are not introduced into the Thermal Oxidizer until the temperature in the combustion chamber of the Thermal Oxidizer has reached a minimum of 871 degrees Celsius.
 - b. The temperature in the combustion chamber of the Thermal Oxidizer is maintained at a minimum of 871

- degrees Celsius at all times, when the Thermal Oxidizer is in operation.
- c. The residence time of the combustion gases in the combustion chamber of the Thermal Oxidizer shall not be less than 0.75 seconds at a temperature of 871 degrees Celsius minimum.
 - d. No chlorinated and/or fluorinated compounds, including polyvinyl chloride and Teflon, are introduced into the Thermal Oxidizer.
 - e. The concentration of total hydrocarbons in the exhaust gases, having a carbon content expressed as equivalent methane, shall not exceed 100 parts per million by dry volume.
3. The Company shall continuously monitor and record the temperature in the Thermal Oxidizer, when the Thermal Oxidizer is in operation. The continuous temperature monitoring and recording device shall comply with the requirements outlined in the attached Schedule "B".
 4. In the event that the cooling tower emissions are significant enough to cause traffic visibility/road condition problem on the adjacent public roads and/or an Adverse Effect at a Sensitive Receptor, the Company shall take actions to alleviate the problem on the public roads and/or the Adverse Effect at the Sensitive Receptor.
 5. The Company shall notify the District Manager at least ten (10) business days prior to commissioning of the turnaround boilers TAB1, TAB2 and TAB3.
 6. The Company may continue to operate the existing API and CPI Separators until commissioning of the wastewater treatment plant upgrade project.

B. RECORD RETENTION

1. The Company shall retain, for a minimum of two (2) years from the date of their creation, all records and information related to or resulting from the recording activities required by this Approval, and make these records available for review by staff of the Ministry upon request. The Company shall retain:
 - a. all records on the maintenance, repair and inspection of the Equipment;
 - b. all records on the continuous monitoring and recording system for the Thermal Oxidizer;
 - c. all records of any environmental complaints, including:
 - i. a description, time and date of each incident to which the complaint relates;
 - ii. wind direction at the time of the incident to which the complaint relates; and
 - iii. a description of the measures taken to address the cause of the incident to which the complaint relates and to prevent a similar occurrence in the future.

C. NOTIFICATION OF COMPLAINTS

1. The Company shall notify a Provincial Officer of the Sarnia District Office or the District Manager, verbally, of each environmental complaint about the Facility's operations within two (2) Business Days of the complaint. The notification shall include:
 - a. a description of the nature of the complaint; and
 - b. the time and date of the incident to which the complaint relates.

D. NOTIFICATION OF FLARING

1. The Company shall notify a Provincial Officer of the Sarnia District Office or the Spills Action Centre or the District Manager, at least twenty-four (24) hours prior to any planned shutdown or start-up that will result in increased flaring of the Main Process Flare at the Facility.
2. The Company shall notify a Provincial Officer of the Sarnia District Office or the Spills Action Centre or the District

Manager of any Excess Flaring Event within one (1) hour of that event. Within ten (10) Business Days of that Excess Flaring Event, or within the longer time frame otherwise agreed to by a Provincial Officer of the Sarnia District Office or the District Manager, the Company shall provide a written report to a Provincial Officer of the Sarnia District Office or the District Manager, for that Excess Flaring Event. The written report shall contain the following, unless otherwise agreed to by a Provincial Officer of Sarnia District Office or the District Manager:

- a. date, initial time of the Excess Flaring Event and duration of that event;
- b. root cause analysis of the Excess Flaring Event;
- c. total (quantity in kilograms of) hydrocarbons flared as a result of the Excess Flaring Event;
- d. actions taken to minimize the environmental impact of the flaring associated with the Excess Flaring Event to the extent reasonable; and
- e. contaminant emissions resulting from the Excess Flaring Event and the results of dispersion calculations in accordance with O. Reg. 419/05, indicating the maximum ground level concentrations for the contaminants flared.

E. ETHYLENE ACTION PLAN

1. The Company shall implement the Ethylene Action Plan in accordance with its terms.
2. The Company may update the Ethylene Action Plan from time to time with the written approval from the District Manager. The Company shall implement the updated Ethylene Action Plan following the written approval by the District Manager in accordance with its terms.

F. NOISE

1. The Company shall:
 - a. implement, prior to the commencement of operations of the proposed future Equipment listed in Section 3.2.3 of the Acoustic Assessment Report, the Noise Control Measures as detailed in Section 6.2.2 of the Acoustic Assessment Report;
 - b. ensure, at all times, that the noise emissions from the Facility comply with the limits set out in Ministry Publication NPC-300; and
 - c. ensure that all Noise Control Measures at the Facility are properly maintained and continue to provide the acoustical performance outlined in the Acoustic Assessment Report.

REASONS

The reasons for the imposition of these terms and conditions are as follows:

1. Condition No. A1 is included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the EPA, the Regulations and this Approval.
2. Conditions No. A2 and A3 are included to gather accurate information so that the environmental impact and subsequent compliance with this Approval can be verified.
3. Condition No. A4 is included to provide the minimum performance requirements considered necessary to prevent an Adverse Effect resulting from the operation of the Facility.
4. Condition No. B is included to require the Company to keep records and to provide information to staff of the Ministry so that compliance with the EPA, the Regulations and this Approval can be verified.
5. Conditions No. C1, D1 and D2 are included to require the Company to notify staff of the Ministry so as to assist the Ministry with the review of the Facility's compliance.

6. Conditions No. E1 and E2 are included to ensure the implementation of the Ethylene Action Plan.
7. Condition No. F is included to provide minimum performance requirements considered necessary to prevent an Adverse Effect resulting from the operation of the Facility.
8. Condition No. A5 is included to require the Company to notify the Ministry when the turnaround boilers have been commissioned.
9. Condition No. A6 is included to allow the Company to continue to operate the API and CPI Separators until the wastewater treatment plant update project has been commissioned.

APPEAL PROVISIONS

In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me and the Ontario Land Tribunal, within 15 days after the service of this notice, require a hearing by the Tribunal. You must also provide notice to, the Minister of the Environment, Conservation and Parks in accordance with Section 47 of the *Environmental Bill of Rights, 1993* who will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

- I. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- II. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the *Environmental Protection Act*, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

- I. The name of the appellant;
- II. The address of the appellant;
- III. The environmental compliance approval number;
- IV. The date of the environmental compliance approval;
- V. The name of the Director, and;
- VI. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar* Ontario Land Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5 OLT.Registrar@ontario.ca	and	The Minister of the Environment, Conservation and Parks 777 Bay Street, 5th Floor Toronto, Ontario M7A 2J3	and	The Director appointed for the purposes of Part II.1 of the <i>Environmental Protection Act</i> Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5
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*** Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.gov.on.ca**

This instrument is subject to Section 38 of the *Environmental Bill of Rights, 1993*, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at ero.ontario.ca, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

Dated at Toronto this 30th day of March, 2022



Denton Miller

Director

appointed for the purposes of Part II.1 of the Environmental Protection Act

c: Matt Kachler, NOVA Chemicals Corporation

Richard Ilves

Corey Kinart, HGC Engineering

The following schedule is a part of this environmental compliance approval:

SCHEDULE 1

Continuous Temperature Monitoring and Recording System Requirements

PARAMETER:
Temperature

LOCATION:
The sample point for the continuous temperature monitoring and recording system shall be at a location where the measurements are representative of the actual operating temperature of the gases leaving the combustion chamber of the Thermal Oxidizer.

PERFORMANCE:
The continuous temperature monitoring and recording system shall meet the following minimum performance specifications for the following parameters.

PARAMETERS	SPECIFICATION
Type	shielded "K" type thermocouple, or equivalent
Accuracy	± 1.5 percent of the minimum gas temperature

RECORDER:
The recorder must be capable of registering continuously the measurement of the monitoring system without a significant loss of accuracy and with a time resolution of 1 minutes or better.

RELIABILITY:
The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.