TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 12, 2020

MS FRAN QUINLAN FALCON
TEXAS REGIONAL ENVIRONMENTAL LEADER
ROHM AND HAAS CHEMICALS LLC
332 S HWY E
LAKE JACKSON 77566

Re: Amended Notice of Application and Preliminary Decision
Permit Amendment Application
Permit Number: 27131
Rohm And Haas Chemicals LLC
Rohm And Haas Texas Deer Park Plant
Deer Park, Harris County
Regulated Entity Number: RN100223205
Customer Reference Number: CN602973604

Dear Ms. Quinlan Falcon:

The Texas Commission on Environmental Quality (TCEQ) has completed the technical review of your application and has prepared a preliminary decision and draft permit.

You are now required to publish notice of your proposed activity. To help you meet the regulatory requirements associated with this notice, we have included the following items:

- Notices for Newspaper Publication (Examples A and B)
- Public Notice Checklist
- Instructions for Public Notice
- Affidavit of Publication for Air Permitting (Form TCEQ-20533) and Alternative Language Affidavit of Publication for Air Permitting (Form TCEQ-20534)
- Web link to download Public Notice Verification Form (refer to Public Notice Instructions)
- Notification List
- Draft Permit

Please note that it is **very important** that you follow **all** directions in the enclosed instructions. If you do not, you may be required to republish the notice. A common mistake is the unauthorized changing of notice wording or font. If you have any questions, please contact us before you proceed with publication.

A "Public Notice Checklist" is enclosed which notes the time limitations for each step of the public notice process. **The processing of your application may be delayed if these time limitations are not met (i.e.; submitting proof of publication of the notice within 10 business days after publication, affidavits of publication within 30 calendar days after the date of publication, and public notice verification form within 10 business days after the end of the designated comment period).** This checklist should be used as a tool in conjunction with the enclosed, detailed instructions.

If you do not comply with **all** requirements described in the instructions, further processing of your application may be suspended or the agency may take other actions.

If you have any questions regarding publication requirements, please contact the Office of the Chief Clerk at (512) 239-3300. If you have any other questions, please contact Mr. Kailas Malwade at (512) 239-2048.

Sincerely,

Bridget C. Bohac
Chief Clerk
Office of the Chief Clerk
Texas Commission on Environmental Quality

Enclosure

cc: Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 - Houston
Air Permits Section Chief, New Source Review Section (6MM-AP), U.S. Environmental Protection Agency, Region 6, Dallas

Project Number: 291384

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

EXAMPLE A

AMENDED NOTICE OF APPLICATION AND PRELIMINARY DECISION FOR AN AIR QUALITY PERMIT

PERMIT NUMBER: 27131

APPLICATION AND PRELIMINARY DECISION. Rohm And Haas Chemicals LLC, 332 South Highway East, Lake Jackson, TX 77566, has applied to the Texas Commission on Environmental Quality (TCEQ) for an amendment to Air Quality Permit Number 27131, which would authorize modification to a Rohm And Haas Texas Deer Park Plant located at 1800 Tidal Road, Deer Park, Harris County, Texas 77536. This application was submitted to the TCEQ on October 1, 2018. The proposed facility will emit the following contaminants: hazardous air pollutants and organic compounds.

The executive director has completed the technical review of the application and prepared a draft permit which, if approved, would establish the conditions under which the facility must operate. The executive director has made a preliminary decision to issue the permit because it meets all rules and regulations. The permit application, executive director's preliminary decision, and draft permit will be available for viewing and copying at the TCEQ central office, the TCEQ Houston regional office, *at the Deer Park Public Library, 3009 Center Street, Deer Park Harris County, Texas and on the internet at* http://www.dow.com/TX-permits , beginning the first day of publication of this notice. The facility's compliance file, if any exists, is available for public review at the TCEQ Houston Regional Office, 5425 Polk Street Suite H, Houston, Texas.

PUBLIC COMMENT/PUBLIC MEETING. You may submit public comments or request a public meeting about this application. The purpose of a public meeting is to provide the opportunity to submit comment or to ask questions about the application. The TCEQ will hold a public meeting if the executive director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing. **You may submit additional written public comments within 30 days of the date of newspaper publication of this notice in the manner set forth in the AGENCY CONTACTS AND INFORMATION paragraph below.**

RESPONSE TO COMMENTS AND EXECUTIVE DIRECTOR ACTION. After the deadline for public comments, the executive director will consider the comments and prepare a response to all relevant and material or significant public comments. Because no timely hearing requests have been received, after preparing the response to comments, the executive director may then issue final approval of the application. **The response to comments, along with the executive director's decision on the application will be mailed to everyone who submitted public comments or is on a mailing list for this application, and will be posted electronically to the Commissioners' Integrated Database (CID).**

INFORMATION AVAILABLE ONLINE. When they become available, the executive director's response to comments and the final decision on this application will be accessible through the Commission's Web site at www.tceq.texas.gov/goto/cid. Once you have access to the CID using the above link, enter the permit number for this application which is provided at the top of this notice. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For exact location, refer to application. http://www.tceq.texas.gov/assets/public/hb610/index.html?lat=29.731386&lng=-95.103181&zoom=13&type=r.

MAILING LIST. You may ask to be placed on a mailing list to obtain additional information on this application by sending a request to the Office of the Chief Clerk at the address below.

AGENCY CONTACTS AND INFORMATION. Public comments and requests must be submitted either electronically at www14.tceq.texas.gov/epic/eComment/, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the Public Education Program toll free at 1-800-687-4040. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Rohm And Haas Chemicals LLC at the address stated above or by calling *Ms. Cheryl Steves, Environmental Manager, (979) 238-5832*.

Amended Notice Issuance Date: May 12, 2020

Draft Permit

Special Conditions

Permit Number 27131

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit.

Federal Applicability

2. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on National Emission Standards for Hazardous Air Pollutants (NESHAP) in Title 40 Code of Federal Regulations Part 63 (40 CFR Part 63):

   A. Subpart A, General Provisions and

   B. Subpart FFFF, Miscellaneous Organic Chemical Manufacturing

Emission Standards and Operational Specifications

3. This permit authorizes production of emulsion polymer products using only those chemicals listed on the attached table entitled "Approved Chemical List," which identifies the main raw materials used. The maximum feed rates of those chemicals to the feed tank are limited to the representations made in the "Table B - Maximum Hourly Flare Emissions" confidential table included in the Permit Renewal application dated September 7, 2004, except the maximum feed rate for vinyl toluene, formaldehyde, QM-1458, methylolacrylamide, and acetic acid is 29.7 cubic feet per minute per chemical. Records shall be kept at the plant site on at least a two-year rolling retention basis demonstrating compliance with this condition. These records shall be made immediately available to Texas Commission on Environmental Quality (TCEQ) personnel upon request or to any local air pollution control program having jurisdiction. A copy of the Approved Chemical List and the confidential Table B - Maximum Hourly Flare Emissions table shall be kept on-site with this permit. **(xx/20)**

4. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing volatile organic compounds (VOC) at a concentration of greater than one percent are not authorized by this permit unless authorized on the Maximum Allowable Emission Rates Table (MAERT). Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than one weight percent are not consistent with good practice for minimizing emissions.

5. Flares shall be designed and operated in accordance with the following requirements:

   A. The flare systems shall be designed such that the combined assist natural gas and waste stream to each flare meets the Title 40 Code of Federal Regulations § 60.18 (40 CFR § 60.18) specifications of minimum heating value and maximum tip velocity under normal, upset, and maintenance flow conditions.

   B. The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR § 60.18(f) may be requested by the appropriate TCEQ Regional Office to demonstrate compliance with these requirements.

C. The flare systems shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.

D. Each flare shall be operated with no visible emissions except for periods not to exceed a total of five minutes during any two consecutive hours.

E. Flare fuel gas shall be pipeline-quality, sweet natural gas only.

F. The holder of this permit shall install continuous flow monitors that provide a record of the MSS vent stream flow and assist natural gas to the flare. The vent stream flow monitor should be installed such that the total vent stream to the flare is measured. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow shall be recorded each hour. The monitors shall be calibrated on an annual basis to meet the following accuracy specifications: the flow monitor shall be ±5.0%, temperature monitor shall be ±2.0% at absolute temperature, and pressure monitor shall be ±5.0 mm Hg. The monitors shall operate as required by this section at least 95% of the time when the MSS vent streams are routed to the flare, averaged over a rolling 12-month period.

The heating value of the MSS vent stream may be estimated based on process knowledge during the period the affected process is depressurized to the flare header. After the initial depressurization, the heating value shall be assumed to be zero. The net heating value of the MSS gas combusted in the flare shall be calculated according to the equation given in 40 CFR § 60.18(f)(3) as amended through October 17, 2000 (65 FR 61744) using the measured MSS vent stream and assist natural gas flow rates and net heating values.

6. The permit holder shall perform an initial stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from Emission Point Number (EPN) LU-VS to demonstrate compliance with the MAERT. The following batches will undergo the stack sampling test: E 2333 and ST 410. Two batches will be tested for product E 2333. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and the EPA Reference Methods.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for Title 40 Code of Federal Regulation Part 60 (40 CFR Part 60) testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

A. The appropriate TCEQ Regional Office shall be notified not less than 45 days prior to sampling. The notice shall include:

i. Proposed date for pretest meeting.

ii. Date sampling will occur.

iii. Name of firm conducting sampling.

iv. Type of sampling equipment to be used.

v. Method or procedure to be used in sampling.

vi. Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.

vii. Procedure/parameters to be used to determine worst case emissions

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Regional Director must approve any deviation from specified sampling procedures.

B. Air contaminants emitted from LU-VS to be tested for include (but are not limited to) VOC's, ethanol and ammonia (when present in batch).

C. Sampling shall occur within 180 days of permit issuance and shall include all the batches listed in the first paragraph of Special Condition 6. Requests for additional time to perform sampling shall be submitted to the appropriate regional office. **(xx/20)**

D. The facility being sampled shall operate at maximum capacity during stack emission testing. These conditions/parameters and any other primary operating parameters that affect the emission rate shall be monitored and recorded during the stack test. Testing shall begin before the start of a batch and continue throughout the entire batch process to establish contaminant concentration and flow rates on a minute by minute basis (or as rapidly as practicable). Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods. **(xx/20)**

During subsequent operations, if the maximum capacity of the additive tanks vented to EPN LU-VS is greater than that recorded during the test period, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the region.

E. Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions entitled "Chapter 14, Contents of Sampling Reports" of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the appropriate TCEQ Regional Office.

One copy to each local air pollution control program.

F. Sampling ports and platform(s) shall be added to EPN LU-VS according to the specifications set forth in the attachment entitled "Chapter 2, Stack Sampling Facilities" of the TCEQ

Sampling Procedures Manual. Alternate sampling facility designs must be submitted for approval to the TCEQ Regional Director.

7. Records must be kept showing the total number of batches produced during the 12-month period to demonstrate compliance with the representation provided in the permit application submittal dated February 20, 2020 and emission limits established in the MAERT. **(xx/2020)**

Fugitive Monitoring Program

8. Piping, Valves, Connectors, Pumps, Agitators, and Compressors - 28VHP Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment:

   A. The requirements of paragraphs F and G shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

      The exempted components may be identified by one or more of the following methods:

      (1) piping and instrumentation diagram (P&ID);

      (2) a written or electronic database or electronic file;

      (3) color coding;

      (4) a form of weatherproof identification; or

      (5) designation of exempted process unit boundaries.

   B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.

   C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

   D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in subparagraph A above. If an unsafe to monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe to monitor times. A difficult to monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

(1) a cap, blind flange, plug, or second valve must be installed on the line or valve; or

(2) the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once by the end of the 72 hours period following the creation of the open-ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

F. Accessible valves shall be monitored by leak checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed weekly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph.

The gas analyzer shall conform to requirements listed in 40 CFR Part 60, Appendix A, Method 21. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Method 21, Section 8. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

Replacements for leaking components shall be re-monitored within 15 days of being placed back into VOC service.

G. Except as may be provided for in the special conditions of this permit, all pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump, compressor, and agitator seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days. Records of the first attempt to repair shall be maintained.

I. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC § 115.782(c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC § 115.782(c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 - 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of paragraphs F through G of this condition.

L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations. **(3/12)**

Planned Maintenance, Startup and Shutdown

9. This permit authorizes the emissions for the planned MSS activities summarized in the table below. This permit also authorizes emissions from the following temporary facilities used to support planned MSS activities at permanent site facilities: vacuum trucks, facilities used for painting, and controlled recovery systems. Emissions from temporary facilities are authorized provided the temporary facility (a) does not remain on the plant site for more than 12 consecutive months, (b) is used solely to support planned MSS activities at the permanent site facilities listed in this Attachment, and (c) does not operate as a replacement for an existing authorized facility.

Emissions from instrument MSS, and degreasers (EPNs LSMISCMSS and LUMSS_Dgrs) shall be considered to be equal to the potential to emit represented in the permit application. The estimated emissions from these activities must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate.

Routine maintenance activities (EPNs LSMISCMSS, LU3_MSSTK, LU_MSSPH, and LU_DEGAS) may be tracked through the work orders or equivalent. Emissions from these activities shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

Emissions from vacuum trucks and painting (EPNs LUMSS_VacT and LUMSS_Pnt) shall be determined as identified in Special Conditions 12 and 16.

All MSS emissions shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis.

Facilities	Emissions Activity	EPN
Fugitive components and piping	Depressurize, drain, and purge isolated fugitive component and piping for maintenance	LSMISCMSS
Tanks	Depressurize, drain, purge and refill tank for MSS	LU3_MSSTK
Pumps and heat exchangers	Depressurize, drain, and purge isolated pump or heat exchanger for maintenance	LU_MSSPH
All facilities/process units except tanks	Depressurize, drain, and purge isolated facility/process unit	LU_DEGAS

Facilities	Emissions Activity	EPN
All	Depressurize and purge to flare for MSS	LU-1
All	Surface Coating	LUMSS_Pnt
Degreaser	Degrease components associated with Lone Star Plant	LUMSS_Dgrs
Instruments	Vent and purge isolated instrument lines for MSS	LSMISCMSS

10. Except as allowed by paragraph F of this condition, process units and facilities, with the exception of instrument lines, shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements.

    A. The process equipment shall be depressurized to a control device or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC partial pressure less than 0.50 psi at the normal process temperature and 95°F may be opened to atmosphere and drained in accordance with paragraph C of this special condition. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

    B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation. If the VOC partial pressure is greater than 0.50 psi at either the normal process temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.

    C. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids must be drained into a closed vessel unless prevented by the physical configuration of the equipment. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained.

    D. Equipment degassing to atmosphere included in EPN LU_DEGAS shall not take place until the vessel has been degassed to control per paragraph E.(2) or (3) of this condition and the VOC concentration is verified to be less those concentrations specified in the Rohm and Haas letter dated November 11, 2011, using an instrument meeting the requirements of Special Condition No. 11.A while purging to control. These concentrations for vessels that may contain methyl methacrylate (MMA) are identified below:

Vessels	VOC concentration (ppmv)
30 product storage tanks	100
2 feed tanks	1000
2 preform tanks	500
reactor and drain tank	200

E. For facilities not included in EPN LU_DEGAS, if the VOC partial pressure is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

(1) The following option may be used in lieu of (2) below for facilities not included in EPN LU_DEGAS. The facilities being prepared for maintenance shall not be vented directly to atmosphere until the VOC concentration has been verified to be less than 10 percent of the lower explosive limit (LEL) per the site safety procedures.

(2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (process flow diagrams [PFDs] or piping and instrumentation diagrams [P&IDs] may be used to demonstrate compliance with the requirement). If the process equipment is purged with a gas, two system volumes of purge gas must have passed through the control device or controlled recovery system before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of Special Condition 11. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than the concentration specified in paragraph D of this condition if the facility is included in EPN LU_DEGAS, or10,000 ppmv or 10 percent of the LEL for other facilities. Documented site procedures used to de-inventory equipment to a control device for safety purposes (i.e., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above.

(3) Alternatively, the process equipment may be filled with water while venting to control. If it can be verified that the liquid filled the entire process equipment or vessel, no

sampling is necessary. If not, the VOC concentration shall be verified to be less than the concentration specified in paragraph D of this condition if the facility is included in EPN LU_DEGAS, or 10,000 ppmv or 10 percent of the LEL for other facilities while purging to control immediately after draining the liquid from the system. The locations and/or identifiers where the liquid enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (PFDs, P&IDs, or T&I Plans) may be used to demonstrate compliance with the requirement).

F. Gases and vapors with VOC partial pressure greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:

(1) It is not technically practicable to depressurize or degas, as applicable, into the process.

(2) There is not an available connection to a plant control system (flare).

(3) There is no more than 5.5 lb of air contaminant to be vented to atmosphere during shutdown or startup, as applicable.

All instances of venting directly to atmosphere per Special Condition 10.F must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or equivalent for planned MSS activities.

11. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. VOC concentration shall be measured using an instrument meeting all the requirements specified in 40 CFR Part 60, Appendix A, Method 21 with the following exceptions:

(1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor (RF) of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate RF shall be recorded. If the RF of the VOC (or mixture of VOCs) to be monitored is greater than 2.0, the VOC concentration shall be determined as follows:

VOC Concentration = Concentration as read from the instrument * RF

(2) Sampling shall be performed as directed by this permit in lieu of Method 21, Section 8.3. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least 5 minutes, recording VOC concentration each minute. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting. It is only necessary to record the highest concentration if the Method 21 data logger system is set to a 5-minute scan time.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

(1) The air contaminant release concentration as defined in (3) is less than 80 percent of the range of the tube and at least 20 percent of the maximum range of the tube.

(2) The tube is used in accordance with the manufacturer's guidelines.

(3) At least 2 samples taken at least 5 minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) < release concentration.

Where the release concentration is:

10,000*mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit (LEL) measured with a lower explosive limit detector.

(1) The detector shall be calibrated monthly with an appropriate certified gas standard at 25% of the LEL for the appropriate gas. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.

(2) A daily functionality test shall be performed on each detector using the same type of certified gas standard. The LEL monitor shall read no lower than 90% of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.

(3) A certified methane gas standard equivalent to 25% of the LEL for the appropriate gas may be used for calibration and functionality tests provided that the LEL response is within 95% of that for the appropriate gas.

(4) Definitions

a. An appropriate gas is one which when used calibration of the detector, ensures that the response factor (RF) of the VOC (or mixture of VOCs) to be monitored is less than 1.2.

b. The same type of certified gas standard is a standard consisting of the same gas as used for calibration, certified to be 25 percent of the LEL for that gas.

12. The following requirements apply to vacuum and air mover truck operations to support planned MSS at this site:

A. Vacuum pumps and blowers shall not be operated on trucks containing or vacuuming liquids with VOC partial pressure greater than 0.50 psi at 95°F.

B. Equip fill line intake with a “duckbill” or equivalent attachment if the hose end cannot be submerged in the liquid being collected.

C. A daily record containing the information identified below is required for each vacuum truck in operation at the facility each day.

(1) Prior to initial use, identify any liquid in the truck. Record the liquid level and document that the VOC partial pressure is less than 0.50 psi. After each liquid transfer, identify the liquid transferred and document that the VOC partial pressure is less than 0.50 psi.

(2) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a “duckbill” or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.

(3) The volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.

D. The permit holder shall determine the vacuum truck emissions each month using the daily vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12-month vacuum truck emissions shall also be determined on a monthly basis.

E. If the VOC partial pressure of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in Special Condition 12.A through 11.D do not apply.

13. MSS activities represented in the permit application may be authorized under permit by rule only if the procedures, emission controls, monitoring, and recordkeeping are the same as those required by this permit.

14. Control devices required by this permit for emissions from planned MSS activities are limited to the flare (EPN LU-1), controlled recovery systems directed to an operating process or to a collection system that is vented to the flare or a control device identified below, and those control devices identified below:

A. A temporary flare that meets the requirements of Special Condition 5.

15. If spray guns are used to apply paint, they shall be airless, high volume low pressure (HVLP), or have the same or higher transfer efficiency as airless or HVLP spray guns.

16. Emissions from all painting activities, at this facility must satisfy the criteria below. New compounds may also be added through the use of the procedure below.

A. Short-term (pounds per hour [lb/hr]) and annual (TPY) emissions shall be determined for each chemical in the paint as documented in the permit application. The calculated emission rate shall not exceed the maximum allowable emissions rate at any emission point.

B. The Effect Screening Level (ESL) for the material shall be obtained from the current TCEQ ESL list or by written request to the TCEQ Toxicology Section.

C. The total painting emissions of any compound must satisfy one of the following conditions:

(1) The total emission rate is less than 0.1 lb/hr and the ESL greater than or equal to 2 µg/m3; or

(2) The emission rate of the compound in pounds per hour is less than the ESL for the compound divided by 20.8 (ER < ESL/20.8).

D. The permit holder shall maintain records of the information below and the demonstrations in steps A though C above. The following documentation is required for each compound:

(1) Chemical name(s), composition, and chemical abstract registry number if available.

(2) Material Safety Data Sheet.

(3) Maximum concentration of the chemical in weight percent

(4) Paint usage and the associated emissions shall be recorded each month and the rolling 12-month total emissions updated.

17. No visible emissions shall leave the property due to painting.

18. With the exception of the MAERT emission limits, these permit conditions become on July 1, 2012. During this period, monitoring and recordkeeping shall satisfy the requirements of Special Condition 9. Emissions shall be estimated using good engineering practice and methods to provide reasonably accurate representations for emissions. The basis used for determining the quantity of air contaminants to be emitted shall be recorded.

Batch Vents

19. The permit holder shall not exceed the emission rates as represented in Table 1 of WDP Response Attachment 1 submitted on February 14, 2020, in order to ensure that the 100 pound per 24 hours restrictions as specified in 30 TAC 115.127 (a)(2)(A) will not be exceeded. The permit holder shall maintain records at the site for 5 years to demonstrate this condition is met. **(xx/20)**

20. The permit holder shall monitor and record the number of batches operating in a day will not cause an exceedance of the emission limit of 100 pounds over a 24 hour period as represented in the amendment permit application update submitted on January 21, 2020. **(xx/20)**

Consolidation of PBR via Reference

21. The following sources and/or activities are authorized under a Permit-By-Rule (PBR) by 30 TAC

Chapter 106. These lists are not intended to be all inclusive and can be altered without modification to this permit.

Authorization	Source or Activity
PBR No. 145135	Authorized 29 fixed roof finished product (paint) storage tanks and associated loading operations of tank cars
PBR No. 111198	Increased emissions from LU-1 due to increase throughput
PBR No. 93841	New VOC emissions from LU-1 Feed Tank and Reactor
PBR No. 87544	New VOC emissions for LU-1 due to new chemicals

Date: **TBD**

Emission Sources - Maximum Allowable Emission Rates

Permit Number 27131

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
LU-1	Flare (5)	VOC	4.16	0.52
		NO_x	1.76	1.36
		SO_2	0.01	0.01
		CO	3.95	11.60
		NH_3	1.88	0.01
LU-2	Fugitives (6)	VOC	2.71	11.86
		NH_3	0.01	0.01
LU-3	t-BHP Tank	VOC	0.08	0.003
LU-VS	Batch Vents	VOC	8.71	4.99
		NH_3	21.19	10.73
Maintenance, Startup, and Shutdown (MSS)				
LSMISCMSS	Fugitive Component and Piping MSS	VOC	5.50	0.13
		NH_3	0.07	0.01
LU3_MSSTK	Tank MSS	VOC	0.40	0.001
LU_MSSPH	Pump and Heat Exchanger MSS	VOC	2.60	0.04
LU_DEGAS	Equipment Degassing	VOC	1.93	0.07
		NH_3	0.16	0.01
LUMSS_Pnt	Lone Star Surface Coating	VOC	13.16	0.23
		PM	1.74	0.04
		PM_{10}	1.74	0.04
		$PM_{2.5}$	1.74	0.04
		Exempt Solvent	0.36	0.001
LUMSS_Dgrs	Lone Star Degreaser	VOC	0.07	0.01
LUMSS_VacT	Vacuum Trucks	VOC	0.24	0.002

Emission Sources - Maximum Allowable Emission Rates

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) Exempt Solvent - Those carbon compounds or mixtures of carbon compounds used as solvents which have been excluded from the definition of volatile organic compound.
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
NH_3 - ammonia
(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.
(5) Includes MSS emissions
(6) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Date: TBD

Application Submittal

P.O BOX 1000 DEER PARK TEXAS 77536 USA

POLYMERS AND RESINS BUSINESS
LONE STAR PLANT

ROHM AND HAAS

September 27, 2018

CERTIFIED MAIL 7016 3560 0000 9158 3107
Return Receipt Requested

Texas Commission on Environmental Quality (TCEQ)
Chemical New Source Review Permits Section, MC-163
P.O. Box 13087
Austin, TX 78711-3087

RE: Rohm and Haas Chemicals LLC*, CN602973604
Rohm and Haas Emulsion Polymer Products Manufacturing Facility, RN100223205
NSR Permit Amendment Application

Dear Sir/Madam,

Enclosed please find a permit amendment application for the Rohm and Haas LLC* Emulsion Polymer Products Manufacturing Facility in Deer Park, Texas authorized under NSR Permit 27131. The purpose of this amendment is to update the emission calculation representations of several batch processes at EPN LU-VS. Information is included in this submittal and appropriate pages are labeled as Confidential.

For future correspondence I can be contacted at (281) 228-8210 or via e-mail at srsustala@dow.com

Respectfully,

Brooke Hrach

Brooke Hrach
Responsible Care Leader
The Dow Chemical Company

Enclosures:

XC:	Air Section Manager	TCEQ Region 12 5425 Polk Ave., Ste. H. Houston, TX 77023-1486
	EPA Region 6	R6AirPermitsTX@epa.gov
	Brazoria County Environmental Health Department , Director	karenc@brazoria-county.com
e-mail	Brooke Hrach	The Dow Chemical Company
	Shelby Sustala	The Dow Chemical Company

** a wholly owned subsidiary of The Dow Chemical Company*

Rohm and Haas Chemicals LLC*, CN602973604

Rohm and Haas Emulsion Polymer Products Manufacturing Facility, RN100223205

NSR Permit Amendment Application

September 27, 2018

** a wholly owned subsidiary of The Dow Chemical Company*

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Section 1.0 Application Information

Topics included in this section are:

1.1 Form PI-1 General Application for Air Preconstruction Permit and Amendment

1.2 Table 30 and Fee Payment

1.3 Project Overview

1.4 Federal NSR/PSD Applicability

1.5 State Regulatory Requirements

1.6 Federal Regulatory Requirements

1.7 BACT Review

1.1 Form PI-1

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Important Note: The agency requires that a Core Data Form be submitted on all incoming applications unless a Regulated Entity and Customer Reference Number have been issued and no core data information has changed. For more information regarding the Core Data Form, call (512) 239-5175 or go to www.tceq.texas.gov/permitting/central_registry/guidance.html.

I. Applicant Information		
A. Company or Other Legal Name: **Rohm and Haas Chemicals LLC (a wholly owned subsidiary of The Dow Chemical Company)**		
Texas Secretary of State Charter/Registration Number (if applicable):		
B. Company Official Contact Information: (☐ Mr. ☒ Mrs. ☐ Ms. ☐ Other:) _____		
Name: **Brooke Hrach**		
Title: **Responsible Care Leader**		
Mailing Address: **P.O. Box 1000**		
City: **Deer Park**	State: **TX**	ZIP Code: **77536**
Telephone No.: (**281) 228-2238**	Fax No.: **(281) 228-3540**	
E-mail Address: **fhubehs@dow.com**		
All permit correspondence will be sent via electronic copies unless hard copies are specifically requested through regular mail. The company official must initial here if hard copy correspondence is requested. _____		
C. Technical Contact Name Information: (☐ Mr. ☐ Mrs. ☒ Ms. ☐ Other:) _____		
Name: **Shelby R. Sustala**		
Title: **Air Permit Writer**		
Company Name: **Rohm and Haas Chemicals LLC (a wholly owned subsidiary of The Dow Chemical Company)**		
Mailing Address: **P.O. Box 1000**		
City: **Deer Park**	State: **TX**	ZIP Code: **77536**
Telephone No.: **(281) 228-8210**	Fax No.: **(281) 228-3540**	
E-mail Address: **srsustala@dow.com**		
D. Site Name: **Rohm and Haas Chemicals LLC**		
E. Area Name/Type of Facility: **Emulsion Polymer Products Manufacturing Facility**	☒ Permanent ☐ Portable	
For portable units, please provide the serial number of the equipment being authorized below.		
Serial No:	Serial No:	
F. Principal Company Product or Business: **Chemical Manufacturing**		
Principal Standard Industrial Classification Code (SIC): **2869**		
Principal North American Industry Classification System (NAICS): **32511**		
G. Projected Start of Construction Date: **N/A**		
Projected Start of Operation Date: **N/A**		

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I. Applicant Information (continued)		
H. Facility and Site Location Information (If no street address, provide clear driving directions to the site in writing.):		
Street Address: **1900 Tidal Rd.**		
City/Town: **Deer Park**	County: **Harris**	ZIP Code: **77536**
Latitude (nearest second): **29.731386**	Longitude (nearest second): **-95.103181**	
I. Account Identification Number (leave blank if new site or facility): **HG-0632-T**		
J. Core Data Form		
Is the Core Data Form (Form 10400) attached? If No, provide customer reference number and regulated entity number (complete K and L).		☐ YES ☒ NO
K. Customer Reference Number (CN): **CN602973604**		
L. Regulated Entity Number (RN): **RN100223205**		
II. General Information		
A. Is confidential information submitted with this application? If Yes, mark each confidential page confidential in large red letters at the bottom of each page.		☒ YES ☐ NO
B. Is this application in response to an investigation, notice of violation, or enforcement action? If Yes, attach a copy of any correspondence from the agency and provide the RN in section I.L. above.		☐ YES ☒ NO
C. Number of New Jobs: **0**		
D. Provide the name of the State Senator and State Representative and district numbers for this facility site:		
State Senator: **Sylvia Garcia**		District No.: **6**
State Representative: **Mary Ann Perez**		District No.: **144**

III. Type of Permit Action Requested

A. Mark the appropriate box indicating what type of action is requested.

☐ Initial ☒ Amendment ☐ Revision (30 TAC § 116.116(e)

☐ Change of Location ☐ Relocation

B. Permit Number (if existing): **27131**

C. Permit Type: Mark the appropriate box indicating what type of permit is requested.
(check all that apply, skip for change of location)

☐ Construction ☐ Flexible ☐ Multiple Plant ☐ Nonattainment ☐ Plant-Wide Applicability Limit

☐ Prevention of Significant Deterioration (PSD) ☐ Hazardous Air Pollutant Major Source

☐ PSD for greenhouse gases (GHGs) ☒ Other: **NSR Amendment**

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III. Type of Permit Action Requested *(continued)*			
D. Is a permit renewal application being submitted in conjunction with this amendment in accordance with 30 TAC § 116.315(c).			☐ YES ☒ NO
E. Is this application for a change of location of previously permitted facilities?			☐ YES ☒ NO
If Yes, complete all parts of III.E.			
Current Location of Facility (If no street address, provide clear driving directions to the site in writing.):			
Street Address:			
City:	County:	ZIP Code:	
Proposed Location of Facility (If no street address, provide clear driving directions to the site in writing.):			
Street Address:			
City:	County:	ZIP Code:	
Will the proposed facility, site, and plot plan meet all current technical requirements of the permit special conditions? If "NO," attach detailed information.			☐ YES ☐ NO
Is the site where the facility is moving considered a major source of criteria pollutants or HAPs?			☐ YES ☐ NO
F. Consolidation into this Permit: List any standard permits, exemptions or permits by rule to be consolidated into this permit including those for planned maintenance, startup, and shutdown.			
List:			
G. Are you permitting planned maintenance, startup, and shutdown emissions?			☐ YES ☒ NO
If Yes, attach information on any changes to emissions under this application as specified in VII and VIII.			
H. Federal Operating Permit Requirements (30 TAC Chapter 122 Applicability)			
Is this facility located at a site required to obtain a federal operating permit?			☒ YES ☐ NO ☐ To be determined
If Yes, list all associated permit number(s), attach pages as needed).			
Associated Permit No (s.): **O2237**			
Identify the requirements of 30 TAC Chapter 122 that will be triggered if this application is approved.			
☐ FOP Significant Revision	☐ FOP Minor	☐ Application for an FOP Revision	
☐ Operational Flexibility/Off-Permit Notification		☐ Streamlined Revision for GOP	
☒ To be Determined		☐ None	

III. Type of Permit Action Requested *(continued)*	
H. Federal Operating Permit Requirements (30 TAC Chapter 122 Applicability) *(continued)*	
Identify the type(s) of FOP(s) issued and/or FOP application(s) submitted/pending for the site. ***(check all that apply)***	
☐ GOP Issued ☐ GOP application/revision application submitted or under APD review	
☒ SOP Issued ☐ SOP application/revision application submitted or under APD review	
IV. Public Notice Applicability	
A. Is this a new permit application or a change of location application?	☐ YES ☒ NO
B. Is this application for a concrete batch plant? If Yes, complete all parts of V.D.	☐ YES ☒ NO
C. Is this an application for a major modification of a PSD, nonattainment, FCAA § 112(g) permit, or exceedance of a PAL permit?	☐ YES ☒ NO
D. If this is an application for emissions of GHGs, select one of the following:	
☐ separate public notice (requires a separate application) ☐ consolidated public notice	
E. Is this application for a PSD or major modification of a PSD located within 100 kilometers or less of an affected state or Class I Area?	☐ YES ☒ NO
If Yes, list the affected state(s) and/or Class I Area(s).	
List:	
F. Is this a state permit amendment application? If Yes, complete all parts of IV.F.	
Is there any change in character of emissions in this application?	☒ YES ☐ NO
Is there a new air contaminant in this application?	☒ YES ☐ NO
Do the facilities handle, load, unload, dry, manufacture, or process grain, seed, legumes, or vegetables fibers (agricultural facilities)?	☐ YES ☒ NO
List the total annual emission increases associated with the application ***(List all that apply and attach additional sheets as needed):***	
Volatile Organic Compounds (VOC): **6.56 tpy**	
Sulfur Dioxide (SO_2): **0.00 tpy**	
Carbon Monoxide (CO): **0.00 tpy**	
Nitrogen Oxides (NO_x): **0.00 tpy**	
Particulate Matter (PM): **0.00 tpy**	
PM 10 microns or less (PM_{10}): **0.00 tpy**	
PM 2.5 microns or less ($PM_{2.5}$): **0.00 tpy**	
Lead (Pb): **0.00 tpy**	
Hazardous Air Pollutants (HAPs): **Acrylonitrile: 0.002 tpy, Acrylic Acid: 1.58 tpy, Maleic Anhydride 0.08 tpy, Methyl methacrylate 0.07 tpy, Styrene 0.06 tpy, Vinyl Acetate 0.06 tpy**	
Other speciated air contaminants not listed above: **Ammonia: 2.95 tpy, Isopropyl alcohol 1.33 tpy, Acetic Acid 7.10 tpy, Ethanol 2.94 tpy. For full list of speciated compounds, see Appendix A Speciated Rates table.**	

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V. Public Notice Information *(complete if applicable)*			
A. Responsible Person: (☐ Mr. ☒ Mrs. ☐ Ms. ☐ Other:) _____			
Name: **Brooke Hrach**			
Title: **Responsible Care Leader**			
Company Name: **Rohm and Haas Chemicals LLC (a wholly owned subsidiary of The Dow Chemical Company)**			
Mailing Address: **P.O. Box 1000**			
City: **Deer Park**	State: **Texas**	ZIP Code: **77536**	
Telephone No.: **(281) 228-2238**	Fax No.: **(281) 228-3540**		
E-mail Address: **fhubehs@dow.com**			
B. Technical Contact: (☐ Mr. ☐ Mrs. ☒ Ms. ☐ Other:) _____			
Name: **Shelby R. Sustala**			
Title: **Air Permit Writer**			
Mailing Address: **P.O. Box 1000**			
City: **Deer Park**	State: **Texas**	ZIP Code: **77536**	
Telephone No.: **(281) 228-8210**	Fax No.: **(281) 228-3540**		
E-mail Address: **srsustala@dow.com**			
C. Name of the Public Place: **Deer Park Public Library**			
Physical Address *(No P.O. Boxes)*: **3009 Center Street**			
City: **Deer Park**	County: **Harris**	ZIP Code: **77536**	
The public place has granted authorization to place the application for public viewing and copying.			☒ YES ☐ NO
The public place has internet access available for the public.			☒ YES ☐ NO
D. Concrete Batch Plants, PSD, and Nonattainment Permits			
County Judge Information (For Concrete Batch Plants and PSD and/or Nonattainment Permits) for this facility site.			
The Honorable:			
Mailing Address:			
City:	State:	ZIP Code:	

V.	**Public Notice Information *(complete if applicable)***		
D.	Concrete Batch Plants, PSD, and Nonattainment Permits *(continued)*		
Is the facility located in a municipality or an extraterritorial jurisdiction of a municipality? ***(For Concrete Batch Plants)***			☐ YES ☐ NO
Presiding Officers Name(s):			
Title:			
Mailing Address:			
City:	State:	ZIP Code:	
Provide the name, mailing address of the chief executive for the location where the facility is or will be located.			
Chief Executive:			
Mailing Address:			
City:	State:	ZIP Code:	
Provide the name, mailing address of the Indian Governing Body for the location where the facility is or will be located.			
Indian Governing Body:			
Mailing Address:			
City:	State:	ZIP Code:	
Identify the Federal Land Manager(s) for the location where the facility is or will be located.			
Federal Land Manager(s):			
E.	Bilingual Notice		
Is a bilingual program required by the Texas Education Code in the School District?			☒ YES ☐ NO
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?			☒ YES ☐ NO
If Yes, list which languages are required by the bilingual program?		**Spanish**	
VI.	**Small Business Classification *(Required)***		
A.	Does this company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts?		☐ YES ☒ NO
B.	Is the site a major stationary source for federal air quality permitting?		☒ YES ☐ NO
C.	Are the site emissions of any regulated air pollutant greater than or equal to 50 tpy?		☒ YES ☐ NO
D.	Are the site emissions of all regulated air pollutants combined less than 75 tpy?		☒ YES ☐ NO

VII. Technical Information		
A. The following information must be submitted with your Form PI-1 ***(this is just a checklist to make sure you have included everything)***		
☒ Current Area Map ☒ Plot Plan ☒ Existing Authorizations ☒ Process Flow Diagram ☒ Process Description ☒ Maximum Emissions Data and Calculations ☒ Air Permit Application Tables ☒ Table 1(a) (Form 10153) entitled, Emission Point Summary ☒ Table 2 (Form 10155) entitled, Material Balance ☐ Other equipment, process or control device tables **(N/A)**		
B. Are any schools located within 3,000 feet of this facility?		☐ YES ☒ NO
C. Maximum Operating Schedule:		
Hour(s): **24**	Day(s): **365**	
Week(s): **52**	Year(s): **Ongoing**	
Seasonal Operation? If Yes, please describe in the space provide below.		☐ YES ☒ NO
Hour(s):	Day(s):	
Week(s):	Year(s):	
D. Have the planned MSS emissions been previously submitted as part of an emissions inventory?		☐ YES ☒ NO
Provide a list of each planned MSS facility or related activity and indicate which years the MSS activities have been included in the emissions inventories. Attach pages as needed.		
MSS Facility(s) or Activity	**Year(s)**	
E. Does this application involve any air contaminants for which a disaster review is required?		☐ YES ☒ NO
If Yes, list which air contaminants require a disaster review.		

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VII.	**Technical Information *(continued)***	
F.	Does this application include a pollutant of concern on the Air Pollutant Watch List (APWL)?	☐ YES ☒ NO
G.	Are emissions of GHGs associated with this project subject to PSD?	☐ YES ☒ NO
If "yes," provide a list of all associated applications for this project:		
VIII.	**State Regulatory Requirements** **Applicants must demonstrate compliance with all applicable state regulations to obtain a permit or amendment.** *The application must contain detailed attachments addressing applicability or non-applicability; identify state regulations; show how requirements are met; and include compliance demonstrations.*	
A.	Will the emissions from the proposed facility protect public health and welfare, and comply with all rules and regulations of the TCEQ?	☒ YES ☐ NO
B.	Will emissions of significant air contaminants from the facility be measured?	☒ YES ☐ NO
C.	Is the Best Available Control Technology (BACT) demonstration attached?	☒ YES ☐ NO
D.	Will the proposed facilities achieve the performance represented in the permit application as demonstrated through recordkeeping, monitoring, stack testing, or other applicable methods?	☒ YES ☐ NO
IX.	**Federal Regulatory Requirements** **Applicants must demonstrate compliance with all applicable federal regulations to obtain a permit or amendment.** *The application must contain detailed attachments addressing applicability or non-applicability; identify federal regulation subparts; show how requirements are met; and include compliance demonstrations.*	
A.	Does Title 40 Code of Federal Regulations Part 60, (40 CFR Part 60) New Source Performance Standard (NSPS) apply to a facility in this application?	☐ YES ☒ NO
B.	Does 40 CFR Part 61, National Emissions Standard for Hazardous Air Pollutants (NESHAP) apply to a facility in this application?	☐ YES ☒ NO
C.	Does 40 CFR Part 63, Maximum Achievable Control Technology (MACT) standard apply to a facility in this application?	☒ YES ☐ NO
D.	Do nonattainment permitting requirements apply to this application?	☐ YES ☒ NO
E.	Do prevention of significant deterioration permitting requirements apply to this application?	☐ YES ☒ NO
F.	Do Hazardous Air Pollutant Major Source [FCAA § 112(g)] requirements apply to this application?	☐ YES ☒ NO
G.	Is a Plant-wide Applicability Limit permit being requested?	☐ YES ☒ NO
X.	**Professional Engineer (P.E.) Seal**	
Is the estimated capital cost of the project greater than $2 million dollars?		☐ YES ☒ NO
If Yes, submit the application under the seal of a Texas licensed P.E.		

XI. Permit Fee Information	
Check, Money Order, Transaction Number, ePay Voucher Number:	
Fee Amount: **$900**	
Paid online?	☒ YES ☐ NO
Company name on check:	
Is a Table 30 (Form 10196) entitled, Estimated Capital Cost and Fee Verification, attached?	☒ YES ☐ NO ☐ N/A

XII. Delinquent Fees and Penalties

This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ is paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: www.tceq.texas.gov/agency/fees/delin.

XIII. Signature

The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382, the Texas Clean Air Act (TCAA) the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.

Name: **Brooke Hrach**

Signature: Brooke Hrach

Original Signature Required

Date: **September 27, 2018**

1.2 Table 30 and Fee Payment

Texas Commission on Environmental Quality
Table 30
Estimated Capital Cost and Fee Verification

Include estimated cost of the equipment and services that would normally be capitalized according to standard and generally accepted corporate financing and accounting procedures. Tables, checklists, and guidance documents pertaining to air quality permits are available from the Texas Commission on Environmental Quality, Air Permits Division Web site at **www.tceq.texas.gov/nav/permits/air_permits.html**.

I.	**Direct Costs [30 TAC § 116.141(c)(1)]**	**Estimated Capital Cost**
A.	A process and control equipment not previously owned by the applicant and not currently authorized under this chapter.	$ 0
B.	Auxiliary equipment, including exhaust hoods, ducting, fans, pumps, piping, conveyors, stacks, storage tanks, waste disposal facilities, and air pollution control equipment specifically needed to meet permit and regulation requirements.	$ 0
C.	Freight charges	$ 0
D.	Site preparation, including demolition, construction of fences, outdoor lighting, road, and parking areas.	$ 0
E.	Installation, including foundations, erection of supporting structures, enclosures or weather protection, insulation and painting, utilities and connections, process integration, and process control equipment.	$ 0
F.	Auxiliary buildings, including materials storage, employee facilities, and changes to existing structures.	$ 0
G.	Ambient air monitoring network.	$ 0
II.	**Indirect Costs [30 TAC § 116.141(c)(2)]**	**Estimated Capital Cost**
A.	Final engineering design and supervision, and administrative overhead.	$ 0
B.	Construction expense, including construction liaison, securing local building permits, insurance, temporary construction facilities, and construction clean-up.	$ 0
C.	Contractor's fee and overhead.	$ 0
	Total Estimated Capital Cost	**$ 0**

Texas Commission on Environmental Quality
Table 30
Estimated Capital Cost and Fee Verification

I certify that the total estimated capital cost of the project as defined in 30 TAC § 116.141 is equal to or less than the above figure. I further state that I have read and understand Texas Water Code § 7.179, which defines Criminal Offenses for certain violations, including intentionally or knowingly making, or causing to be made, false material statements or representations.

Company Name: **Rohm and Haas Chemicals LLC (a wholly owned subsidiary of The Dow Chemical Company)**

Company Representative Name *(please print)*: **Brooke Hrach**

Title: **Responsible Care Leader**

Company Representative Signature:

Estimated Capital Cost		Permit Application Fee	GHG*/PSD/Nonattainment Application Fee
Less than	$300,000	$900 (minimum fee)	$3,000 (minimum fee)
$300,000 to	$25,000,000	0.30% of capital cost	
$300,000 to	$7,500,000		1.0% of capital cost
Greater than	$25,000,000	$75,000 (maximum fee)	
Greater than	$7,500,000		$75,000 (maximum fee)

*A single PSD fee (calculated on the capital cost of the project per 30 TAC § 116.163) will be required for all of the associated permitting actions for a GHG PSD project. Other NSR permit fees related to the project that have already been remitted to the TCEQ can be subtracted when determining the appropriate fee to submit with the GHG PSD application; please identify these other fees in the GHG PSD permit application.

Permit Application Fee (from table above) = **$900**

Date: **September 27, 2018**

Print this voucher for your records. If you are sending the TCEQ hardcopy documents related to this payment, include a copy of this voucher.

Transaction Information

Voucher Number:	387251
Trace Number:	582EA000316483
Date:	09/26/2018 05:23 PM
Payment Method:	CC - Authorization 0000024174
Amount:	$900.00
Fee Type:	Air Permit Amendment Fee
ePay Actor:	Shelby Sustala
Actor Email:	srsustala@dow.com
IP:	204.136.203.149

Payment Contact Information

Name:	Shelby Sustala
Company:	Dow Chemical Company
Address:	2915 Sandcove Ct, League City, TX 77573
Phone:	281-682-3127

Site Information

RN:	RN100223205
Site Name:	ROHM AND HAAS CHEMICALS LLC
Site Location:	1800 TIDAL ROAD

Customer Information

CN:	CN602973604
Customer Name:	ROHM AND HAAS CHEMICALS LLC

Other Information

Program Area ID:	27131

Close

1.3 Project Overview

Project Scope

Rohm and Haas Texas Chemicals LLC is submitting this permit application to the Texas Commission on Environmental Quality (TCEQ) for the amendment of New Source Review (NSR) air quality permit number 27131. This permit provides authorization for the Emulsion Polymer Products Manufacturing Facility at the Rohm and Haas facility in Deer Park, Harris County, Texas.

This amendment is being submitted to address the following topics:

- Update the emission calculation representations of several batch processes at EPN LU-VS.

Please refer to the project description in the confidential section of this application for further details of each item above.

Project Impact on Associated Facilities

There will be no upstream or downstream impacts resulting from this project.

Impact on central wastewater and solid waste facilities

There will be no upstream or downstream impacts resulting from this project.

Title V Permit

The Rohm and Haas Emulsion Polymer Products Manufacturing Facility is authorized under O2237.

Routine Maintenance, Startup, and Shutdown (MSS) Emissions

The permit application does not include planned maintenance, startup, and shutdown (MSS) activities for the facility.

Summary of Changes Presented in the Permit Amendment

A summary of the changes presented in this permit amendment is detailed below. Emission calculations for each emission source and point that has been revised or added can be found in Section 3.0.

Table 1.3.2 Summary of Changes

Source	EPN	Description
Batch Vents	LU-VS	Update in the calculation representation of several batch processes.

1.4 Federal NSR/PSD Applicability

1.4.1 New Source Review

The Rohm and Haas Emulsion Polymer Products Manufacturing Facility is located in Harris County. The United States Environmental Protection Agency (US EPA) declared Harris County as non-attainment for ozone; therefore, Non-Attainment New Source Review (NNSR) regulates annual emission rate increases in nitrogen oxides (NOx) and Volatile Organic Compounds (VOC) from major sources (either existing or classified as major due to the proposed project).

The Emulsion Polymer Products Manufacturing Facility is classified as an existing major source for both NOx and VOC emissions. NNSR review applies to any project that includes a NOx or VOC increase greater than 25 tpy. The proposed project has the potential to emit less than 40 tpy of VOC, therefore, a contemporaneous netting review of these pollutants is not required. No NOx increases are associated with this project. The NNSR applicability analysis and proposed annual emission increases can be found on page 38.

1.4.2 PSD Applicability

The Rohm and Haas Emulsion Polymer Products Manufacturing Facility is located in Harris County. The US EPA declared Harris County as attainment for Carbon Monoxide (CO), Particulate Matter less than 10-microns in aerodynamic diameter (PM_{10}), Particulate Matter less than 2.5-microns in aerodynamic diameter ($PM_{2.5}$), and Sulfur Dioxide (SO_2); therefore, Prevention of Significant Deterioration (PSD) regulates annual emission rate increases of CO, $PM_{10,}$ $PM_{2.5}$ and SO_2 from major sources (either existing or classified as major due to the proposed project). In addition, the Texas Commission on Environmental Quality (TCEQ) requires PSD review for significant net emission rate increases of Nitrogen Oxides (NOx).

The Emulsion Polymer Products Manufacturing Facility is classified as an existing major source for CO, NOx, $PM_{10,}$ $PM_{2.5}$ and SO_2. There are no associated increases in any of these pollutants as a result of this project. The PSD applicability analysis can be found on page 38.

1.4.3 MERA/Health Impacts Applicability

The Rohm and Haas Emulsion Polymer Products Manufacturing Facility permit amendment includes emission rate increases of several compounds. Additional information for the Modeling and Effects Review Applicability (MERA) for the emissions will be provided upon request.

1.5 State Regulatory Requirements

1.5.1 NSRPD Disaster Review

This application does not involve any air contaminants for which a disaster review is required.

1.5.2 (APWL)

Harris County is not on the APWL for any compounds.

1.5.3 Compliance with 30 TAC §116

§116.111(a)(2)(A) *The emissions from the proposed facility will comply with all rules and regulations of the commission and with the intent of the Texas Clean Air Act (TCAA), including protection of the health and property of the public. For issuance of a permit for construction or modification of any facility within 3,000 feet of an elementary, junior high/middle, or senior high school, the commission shall consider any possible adverse short-term or long-term side effects that an air contaminant or nuisance odor from the facility may have on the individuals attending the school(s).*

- No schools are located within 3,000 feet of this facility. The closest school is approximately 12,000 feet from this facility.
- The closest off-property industrial receptor is 1,200 feet to the east of the Polymer Products Manufacturing Facility.
- The closest residence is in Deer Park and is 12,000 feet away from the Polymer Products Manufacturing Facility.
- The nearest property line is approximately 400 feet to the west of Polymer Products Manufacturing Facility.
- This permit application was not submitted to address on NOV.

§116.111(a)(2)(B) Measurement of emissions. *The proposed facility will have provisions for measuring the emission of significant air contaminants as determined by the Executive director.*

Rohm and Haas Chemicals LLC will conduct actual measurement of emissions if required by the Special Provisions of this permit.

§116.111(a)(2)(C) Best Available Control Technology (BACT) *The proposed facility will utilize BACT, with consideration given to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facility on a proposed facility.*

Please refer to Section 1.7 BACT Review on page 26.

1.5.3 Compliance with 30 TAC §116, cont.

§116.111(a)(2)(G) Performance demonstration *The proposed facility will achieve the performance specified in the permit application. The applicant may be required to submit additional engineering data after a permit has been issued in order to demonstrate further that the proposed facility will achieve the performance specified in the permit application. In addition, dispersion modeling, monitoring, or stack testing may be required.*

The facility will perform as represented in this permit application. Rohm and Haas Chemicals LLC will monitor for demonstration of compliance if required by the Special Provisions of this permit.

§116.111(a)(2)(J) Air dispersion modeling *Computerized air dispersion modeling may be required by the executive director to determine the air quality impacts from the facility or source modification.*

Air dispersion modeling has been done for this project and a protocol is included with this application. A modeling report will be submitted soon after this application. Rohm and Haas Chemicals LLC will provide additional air dispersion modeling results upon request by TCEQ.

§116.111(a)(2)(K) Hazardous Air Pollutants review *Affected sources (as defined in §116.15(1) of this title (relating to Section 112(g) Definitions)) for hazardous air pollutants shall comply with all applicable requirements under Subchapter E of this chapter (relating to Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources (FCAA, §112(g), 40 CFR Part 63)).*

The proposed project will comply with applicable requirements under Subchapter C.

§116.111(a)(2)(L) Mass Cap and Trade Allowances *If subject to Chapter 101, Subchapter H, Division 3, of this title (relating to Mass Emissions Cap and Trade Program), the proposed facility, group of facilities, or account must obtain allowances to operate.*

No allowances will be necessary for this project.

1.5.4 State Air Rule Applicability Summary

The table below summarizes common state air regulations and applicability to the Emulsion Polymer Products Manufacturing Facility.

Table 1.5.4 State Air Rule Applicability

30 TAC	Apply?	Comments
§101 General Rules	Y	The Polymer Products Manufacturing Facility will be operated in accordance with all applicable General Rules. This amendment will not modify them.
§111 Visible Emissions and Particulate Matter	Y	Rohm and Haas Chemical LLC will continue complying with TCEQ regulations regarding visible emissions and allowable emissions limits. This amendment does not modify it.
§112 Sulfur Compounds	Y	Rohm and Haas Chemical LLC will continue complying with all applicable requirements to control sulfur compounds in the Polymer Products Manufacturing Facility. This amendment does neither increase nor modify sulfur emissions.
§113 HAPs	Y	Rohm and Haas Chemical LLC will continue to comply with the applicable NESHAPs. This permit amendment does not modify it.
§115 VOCs	Y	This amendment application will continue complying with VOC Storage requirements. Storage Tanks continue having the applicable control requirements specified under Section 115.112 and VOC emissions from vent gas streams are controlled using a flare.
§117 Nitrogen Compounds	N	This permit application does not propose to modify existing or install new sources of NO_x at the Rohm & Haas Chemical LLC facility in Deer Park.
§122 Federal Operating Permits	Y	The Polymer Products Manufacturing Facility is authorized under SOP O-2237. This application does not change this SOP.

1.6 Federal Regulatory Requirements

1.6.1 New Source Performance Standards (NSPS)

The following table summarizes the applicability of New Source Performance Standards (NSPS) to this unit:

Table 1.6.1 NSPS Applicability

§60 Subpart	NSPS Scope	Applies?
A	General Provisions	N

1.6.2 National Emission Standards for Hazardous Air Pollutants (NESHAPS)

The following table summarizes the applicability status of National Emission Standards for Hazardous Air Pollutants (NESHAPs) to this unit:

Table 1.6.2 NESHAP Applicability

§61 Subpart	NESHAP Scope	Applies?
A	General Provisions	N

1.6.3 Maximum Achievable Control Technology (MACT)

The following table summarizes the applicability status of Maximum Achievable Control Technology (MACT) Standards for this production unit**:**

Table 1.6.3 MACT Applicability

§63 Subpart	MACT Scope	Applies?
A	General Provisions	Y
FFFF	Miscellaneous Organic Chemical Manufacturing	Y

1.7 BACT Review

A Tier I, Tier II, and Tier III Analysis is being submitted along with this application in Section 3.0 Confidential Information. The Tier I, Tier II, and Tier III Analysis shows that the cost of implementing control is not economically feasible to install BACT to control VOC from the batch process vents.

Section 2.0 Technical Information

Topics included in this section are:

2.1 Process Description

2.2 Process Flow Diagram

2.3 Area Map

2.4 Plot Plan(s)

2.5 FIN, EPN Cross-Reference Table (Routine)

2.6 Routine Maintenance, Startup and Shutdown (MSS) Activities

2.7 Emissions Tables

2.1 Process Description (non-confidential)

The Polymer Products Manufacturing Facility produces polymeric emulsions that are used in numerous product applications. These emulsions consist of microscopic solids suspended in water. Over twenty different products are manufactured at the plant using various mixtures of reactants. These products are used to manufacture water-based paints, traffic paint, adhesives, caulk, and other household and industrial products.

The polymeric emulsions are produced in one process unit. All of the products are manufactured in batch operations. The major raw materials used are acrylate monomers. Several major raw materials used at the facility are received by pipeline from R&H Texas and/or rail cars and are stored in dedicated tanks.

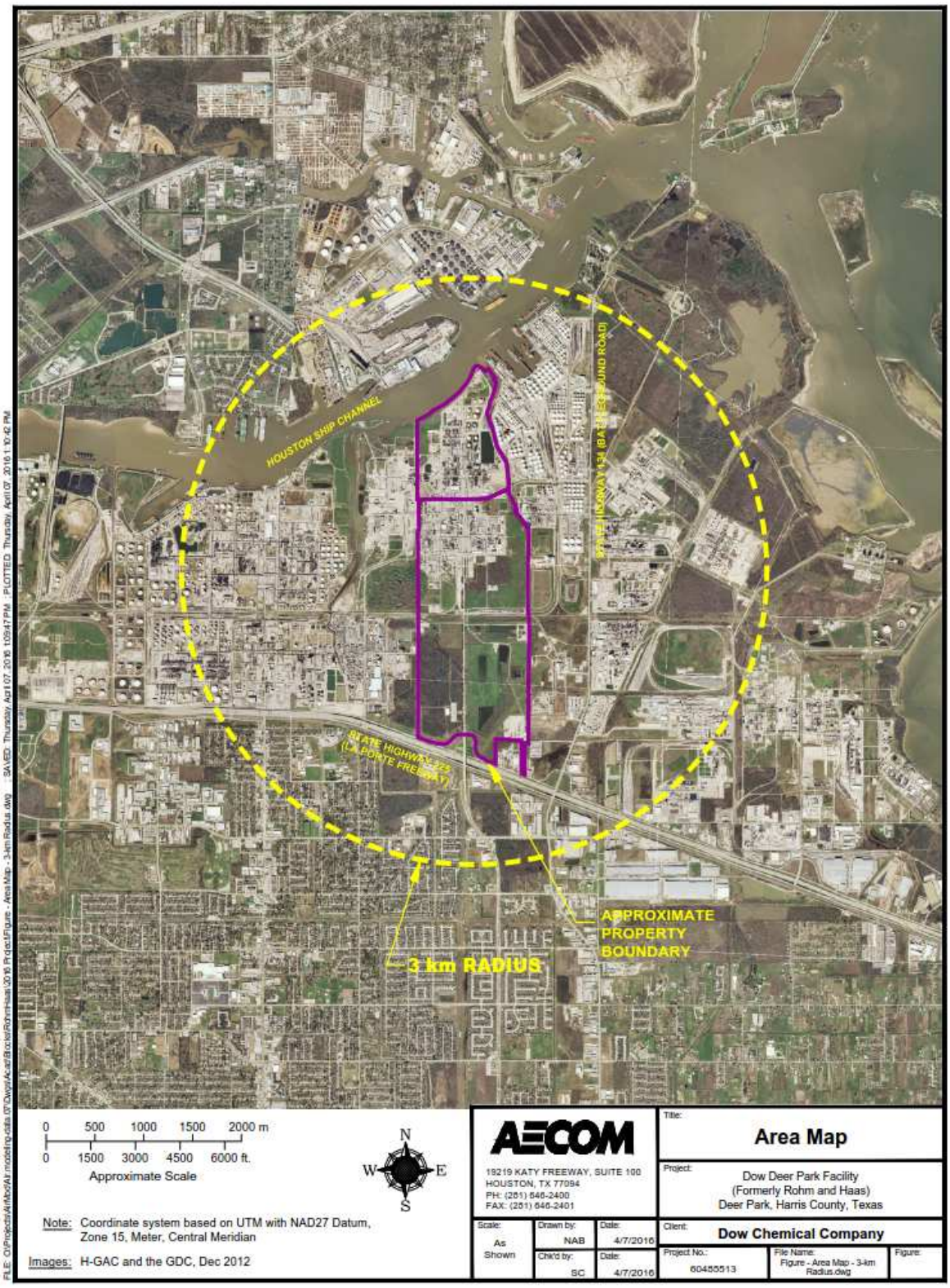
A confidential version of the process description can be seen in Section 3.0 Confidential Information.

2.2 Process Flow Diagram

Rohm and Haas Chemicals LLC considers the process flow diagram to be confidential information. It is located in Section 3.0 Confidential Information.

2.3 Area Map

The area map is provided on the subsequent page.


HOUSTON SHIP CHANNEL
STATE HIGHWAY 134 (BATTLEGROUND ROAD)
STATE HIGHWAY 225 (LA PORTE FREEWAY)
APPROXIMATE PROPERTY BOUNDARY
3 km RADIUS
0 500 1000 1500 2000 m
0 1500 3000 4500 6000 ft.
Approximate Scale
N
W
E
S
Note: Coordinate system based on UTM with NAD27 Datum, Zone 15, Meter, Central Meridian
Images: H-GAC and the GDC, Dec 2012
AECOM
19219 KATY FREEWAY, SUITE 100
HOUSTON, TX 77094
PH: (281) 646-2400
FAX: (281) 646-2401
Title: Area Map
Project: Dow Deer Park Facility (Formerly Rohm and Haas) Deer Park, Harris County, Texas
Client: Dow Chemical Company
Scale: As Shown
Drawn by: NAB
Date: 4/7/2016
Chk'd by: SC
Date: 4/7/2016
Project No.: 60455513
File Name: Figure - Area Map - 3-km Radius.dwg
Figure:
FILE: O:\Projects\AirMod\Air modeling-data.07\Qwyd\Ac-ad\Blocks\RohmHaas\2016 Projects\Figure - Area Map - 3-km Radius.dwg SAVED: Thursday, April 07, 2016 1:09:47 PM PLOTTED: Thursday, April 07, 2016 1:10:42 PM

2.4 Plot Plan(s)

The Plot Plan is confidential and is located in Section 3.0 Confidential Information.

2.5 FIN – EPN Cross Reference Table

The following table documents the Facility Identification Number (FIN) to Emission Point Number (EPN) relationship for the source addressed in this permit application.

Table 2.5 FIN-EPN Cross Reference

EPN	FIN	DESCRIPTION
LU-VS	LU-VS	Batch Vents

2.6 Routine Maintenance, Startup, and Shutdown (MSS) Activities

The permit application does not include planned maintenance, startup, and shutdown (MSS) activities for the facility.

2.7 Emissions Tables

The following is a list of emission tables submitted in this section:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY					
Permit Number:	**27131**	Date:	**September 27, 2018**		
RN Number:	**RN104789474**				
Table 1(a) Emissions Point Summary					
1. Emission Point			**2. Component or Air Contaminant Name**	**3. Air Contaminant Emission Rate**	
EPN[1]	**FIN[2]**	**Name**		**Maximum Hourly (lb/hr)**	**Annual (tpy)**
LU-VS	LU-VS	Batch Vents	VOC	6.40	7.26
			Ammonia	7.15	3.31

Footnote:

[1] EPN = Emission Point Summary

[2] FIN = Facility Identification Number

Table 1(a) Emission Point Summary

Date:	**9/27/2018**	**Permit No.:**	**27131**	**Regulated Entity No.:**	RN104789474
Area Name:	**Emulsion Polymer Products Manufacturing Facility**			**Customer Reference No.:**	CN602973604

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

AIR CONTAMINANT DATA			**EMISSION POINT DISCHARGE PARAMETERS**										
1. Emission Point			**4. UTM Coordinates of Emission Point**			**Source**							
						5. Building	**6. Height Above**	**7. Stack Exit Data**			**8. Fugitives**		
EPN (A)	**FIN (B)**	**Name (C)**	**Zone**	**East (Meters)**	**North (Meters)**	**Height (Ft.)**	**Ground (Ft.)**	**Diameter (Ft.) (A)**	**Velocity (FPS) (B)**	**Temperature (°F) (C)**	**Length (Ft.) (A)**	**Width (Ft.) (B)**	**Axis Degrees (C)**
LU-VS	LU-VS	Batch Vents	15	296441.39	3290575.7		99	2.5	35.5	Amb.			

EPN = Emission Point Number
FIN = Facility Identification Number

Federal New Source Review Applicability Analysis
Emulsion Polymer Products Manufacturing Facility

	CO	NO_x	PM	PM_{10}	$PM_{2.5}$	SO_2	VOC
Total of Emission Changes	-	-	-	-	-	-	6.56
PSD Significance Levels	100	40	25	15	10	40	
PSD Significant Increase?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	
Site Contemporaneous Net	-	-	-	-	-	-	
PSD Significant Net Increase?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	
NNSR Significance Levels		40					40
NNSR Project Netting Required?		**NO**					**NO**
Site Contemporaneous Net		-					6.56
NNSR Significant Net Increase?		**NO**					**NO**

Post-Project Maximum Allowable Annual Emissions, TPY

Emission Units affected by project			CO	NO_x	PM	PM_{10}	$PM_{2.5}$	SO_2	VOC
EPN	FIN	Equipment Description							
LU-VS	LU-VS	Batch Vents							7.26
Total			-	-	-	-	-	-	**7.26**

Pre-Project Actual Annual Emissions, TPY (24 month average)

SUBSTITUTE THE PRECHANGE ALLOWABLE IF IT IS SMALLER THAN THE ACTUAL

Emission Units affected by project			CO	NO_x	PM	PM_{10}	$PM_{2.5}$	SO_2	VOC
EPN	FIN	Equipment Description							
LU-VS	LU-VS	Batch Vents							0.70
Total			-	-	-	-	-	-	**0.70**

Changes in Emissions, TPY

(Post-Project Allowable,TPY) - (Pre-Project Actual, TPY)

Emission Units affected by project			CO	NO_x	PM	PM_{10}	$PM_{2.5}$	SO_2	VOC
EPN	FIN	Equipment Description							
LU-VS	LU-VS	Batch Vents	-	-	-	-	-	-	6.56
Total			-	-	-	-	-	-	**6.56**

Rohm and Haas Chemicals LLC
Emulsion Polymer Products Manufacturing Facility
Speciated Emission Rates

Compound	VOC?	Speciated	
		lb/hr	tpy
Ethanol:ethyl alcohol	Yes	6.3594	3.0829
Isopropyl alcohol	Yes	0.2395	1.4369
2-Acrylamido-2-methyl propanesulfonic acid	Yes	0.0002	0.0012
2 Methyl 4 isothiazolin 3 one 52%	Yes	0.0011	0.0067
2-Acrylamido-2-methyl propanesulfonic acid	Yes	0.0002	0.0012
2-Methyl-4-isothiazolin-3-one	Yes	0.0055	0.0331
5-Chloro-2-methyl-4-isothiazolin-3-one	Yes	0.0132	0.0794
Acrylonitrile	Yes	0.0004	0.0023
Alcohols, C12-14-secondary	No	0.0001	0.0007
Alcohols, C12-14-secondary, ethoxylated	Yes	1.19E-07	7.17E-07
Alkyl ether sulfate C12-14 with EO, sodium salt	No	0.0005	0.0030
Alkyl ether sulfate C12-14, sodium salt	No	0.0001	0.0004
Aminoethylaminopropylmethyldimethoxysilane	Yes	0.0294	0.1763
Ammonium Persulfate	No	0.0011	0.0067
Benzisothiaxolin 3 one	Yes	0.0001	0.0008
Bruggolite FF-6	No	0.0001	0.0004
Butyl Acrylate	Yes	0.0019	0.0116
Copper Nitrate	No	0.0002	0.0011
Dipropylene glyco (Mixed isomers)	Yes	0.0011	0.0064
Ethanol, 2-amino-,compd. With a sulfo w (nonylphenoxy)poly(oxy1,2-ethanediyl)	Yes	0.0108	0.0650
Ferrous Sulfate	No	3.68E-05	0.0002
Geropon SSOIP / Lankropol	Yes	0.0004	0.0027
Heteroalkyl alcohol	Yes	0.0803	0.4817
Heteroalkyl methacrylate	Yes	0.4302	2.5815
Hydroquinone Monomethyl Ether	No	1.31E-05	0.0001
Isoascorbic acid	No	0.0001	0.0007
Itaconic Acid	No	0.0045	0.0273
Magnesium Chloride	No	0.0002	0.0014
Magnesium nitrate	No	0.0024	0.0146
Modified alkyl derivative of cyclic amine	Yes	0.0169	0.1013
Petroleum hydrocarbon	No	1.10E-05	0.0001
Poly(oxy-1,2-ethanediyl),.alpha.-tridecyl-.omega.-hydroxy-,phosphate,ammonium salt	Yes	0.0013	0.0080
Poly(oxy-1,2-ethanediyl),a-sulfo-w-(nonylphenoxy)-branched ammonium salt	No	0.0007	0.0044
Polyethylene glycol	Yes	0.0001	0.0005
Polyethylene glycole octylphenyl ether	Yes	0.0007	0.0040
Siloxanes and silicones, di-Me, reaction products with silica	No	1.11E-07	6.67E-07
Sodium Acetate	No	0.0001	0.0005
Sodium Bicarbonate	No	0.0011	0.0067
Sodium Carbonate	No	0.0004	0.0023
Sodium dodecylbenzene sulfonate	No	0.0001	0.0009
Sodium Formaldehyde Sulfoxylate	No	0.0002	0.0013
Sodium Hydrosulfite	No	0.0001	0.0004
Sodium Persulfate	No	0.0008	0.0046
Styrene	Yes	0.0097	0.0579
T-butyl alcohol	Yes	0.0080	0.0479
T-butyl hydroperoxide	Yes	0.6104	3.6622
Telomer B Phospate diethanolamine salt	No	1.59E-05	0.0001
Vinyl Acetate	Yes	0.0097	0.0579
Acetic Acid	No	1.2778	7.6666
Acrylic Acid	Yes	0.2849	1.7094
Ammonia	No	7.1457	3.3141
Hydrogen Peroxide	No	0.0659	0.3953
Maleic Anhydride	Yes	0.0148	0.0890
Methyl methacrylate	Yes	0.0122	0.0733
Sodium Hydroxide	No	0.0013	0.0077
Sodium Metabisulfite	No	0.0003	0.0015

Rohm and Haas Chemicals LLC
Emulsion Polymer Products Manufacturing Facility
Batch Emission Totals

VOC Ratio Factor = 2.06

Batch	VOC in lbs/hr	VOC in lb/hr with Factor	VOC lb/batch	Ammonia lb/hr	Ammonia lb/batch
LSO FUG	0.024	0.024	0.141	-	-
Batch Name - P 3960	0.133	0.273	1.640	-	-
Batch Name - P 3103NP	0.124	0.256	1.533	-	-
Batch Name - P 2160	0.122	0.252	1.513	-	-
Batch Name - R 9165	0.049	0.101	0.603	-	-
Batch Name - R 9900	0.299	0.615	3.689	-	-
Batch Name - OP 96	0.027	0.056	0.336	-	-
Batch Name - Ultra EF	0.035	0.073	0.438	-	-
Batch Name - Ultra	0.027	0.056	0.339	0.200	1.198
Batch Name - 2019 RX	0.049	0.101	0.608	-	-
Batch Name - ST 410	0.034	0.070	0.422	7.146	13.257
Batch Name - SG-30	0.170	0.351	2.106	-	-
Batch Name - AC 347	0.285	0.587	3.519	-	-
Batch Name - FT-2706	0.037	0.076	0.454	-	-
Batch Name - FT 3427	0.035	0.072	0.429	0.113	0.679
Batch Name - EI 2000	0.064	0.132	0.791	-	-
Batch Name - EC 1791	0.063	0.129	0.774	-	-
Batch Name - EC 1791 QS	0.062	0.128	0.766	-	-
Batch Name - E 2333	6.380	6.380	12.352	2.213	3.969
Batch Name - E 2265	6.377	6.377	12.349	2.213	3.969
Batch Name - EXP-5408	0.102	0.209	1.256	0.755	4.527
Batch Name - C-340	0.076	0.157	0.942	-	-
Batch Name - R 10	0.132	0.272	1.632	-	-
Batch Name - R86	0.113	0.232	1.390	-	-
Batch Name - SG-10AF	0.258	0.531	3.185	-	-
Batch Name - R585	0.435	0.895	5.368	-	-
Max worst case hourly emissions (lbs/hr)	6.40	6.40	12.49	7.15	13.26
*Totao number of batches per year (Worst Case)	2000				

VOC Emission Summary:

Batches E-2333 and E-2265 (Worst Case)		
Worst case hourly VOC emissions (lb/hr)	6.40	…worst case hourly emissions plus LSO FUG emissions
Worst case VOC emissions (lb/batch)	12.49	…worst case batch emissions plus LSO FUG emissions
*Number of batches per year	500	
Annual VOC Emisisons (tpy)	3.12	

All other Batches		
Worst case hourly VOC emissions (lb/hr)	0.46	…worst case hourly emissions plus LSO FUG emissions
Worst case hourly VOC emissions with VOC Factor (lb/hr)	0.92	…worst case batch emissions plus LSO FUG emissions
Worst case VOC emissions (lb/batch)	5.51	
*Number of batches per year	1500	
Annual VOC Emisisons (tpy)	4.13	

Total Annual VOC Emissions (tpy)	7.26

Ammonia Emission Summary:

All Batches		
Worst case hourly Ammonia emissions (lb/hr)	7.15	…based on Batch ST 410
Worst case Ammonia emissions (lb/batch)	13.26	…based on Batch ST 410
*Number of batches per year	500	
Annual VOC Emisisons (tpy)	3.31	

*Please note that worst case batch scenario is a representation of worst case emissions based on highest emitting batches. This is not representitive of the total number of batches that can be produced of other batches to stay below the allowable emission limit.

Rohm and Haas Chemicals LLC, CN602973604

Rohm and Haas Emulsion Polymer Products Manufacturing Facility, RN100223205

NSR Permit Amendment Application

September 27, 2018

CONFIDENTIAL INFORMATION

The remainder of this application contains business confidential information.

Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the Texas Commission on Environmental Quality, Public Information Coordinator, MC-197, P.O. Box 13087, Austin, Texas 78711-3087.

Post-submittal Application Updates

June 7, 2019

CERTIFIED MAIL 7017 1070 0000 3003 7941 **RETURN RECEIPT REQUESTED**

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ATTN: Mr. Bruce McFarland
Air Permits Division, MC-163
P.O. Box 13087
Austin, TX 78711-3087

Rohm and Haas Chemicals LLC
Rohm and Haas Texas Deer Park Plant; RN100223205, CN602973604
NSR 27131 NOD Response Project Number: 291384

Dear Mr. McFarland,

Purpose

Rohm and Haas Chemicals LLC (Rohm and Haas), a wholly owned subsidiary of the Dow Chemical Company, is submitting the enclosed information and updates in response to the notice of deficiency date May 8, 2019 regarding project 291384.

The following changes to the emission calculations are being included as part of this NOD response:

- Addition of batches P 308, P9100AF, and P2160IPA
- Updates to Table 1a maximum allowable rates
- Updates to Batch Emission Totals representations

Attachments

- Attachment 1: NOD Response and Additional Comments
  - Attachment A: Plot Plan (Confidential)
  - Attachment B: Speciated Emission Rates
  - Attachment C: Batch Emission Totals
  - Attachment D: Updated Emission Calculations (Confidential)
  - Attachment E: Basis of Stack Test Data and Aspen Model Results
  - Attachment F: Updated Table 1a
  - Attachment G: TCEQ Federal Review Applicability Table

Future Contact

For future correspondence please contact:

Shelby Sustala (281) 228-8210
e-mail srsustala@dow.com

Sincerely,

Shelby Sustala
Air Permit Writer
The Dow Chemical Company

CC

Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 – Houston

Attachment 1: NOD Response and Comments

Item 1	The Form PI-1 application instructions require a plot plan submittal that clearly shows a north arrow, an accurate scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two bench mark locations (preferably Universal Transverse Mercator (UTM) coordinates). A readable, single, printed plot plan that shows the required information is needed to complete the application review. Since the TCEQ must be able to measure distances between equipment units and to property lines, the plot plan should be submitted: a. on paper that is larger than 8.5" x 11.0"; and/or b. electronically so it can be enlarged on a computer screen (if the plot plan is confidential, it can be submitted via an e-mail that is marked "confidential" in the subject line or body of the message).
Rohm and Haas Comments	Please find the plot plan attached in Attachment A of this document.

Item 2	The Form PI-1 application instructions require that the permit reviewer must be able to duplicate all emission calculations to verify and confirm emissions data and rates represented in the application. Supporting calculations and the technical bases for the emission rates are required. The supporting calculations (i.e., example calculations) must also include all emission rate calculations and any assumptions made in determining the emission rates. The emission calculation tables presented in the confidential portion of the application provide only hourly emission rates, but do not give enough data to recreate the hourly emission rates for each batch. Additionally, no annual emission rates are shown for each batch. Please provide enough chemical data and example calculations so the hourly and annual emission rates can be checked for the E-2333, E-2265, and ST-410 batches. Also, please provide annual emission rates for all the batches shown in the application.
Rohm and Haas Comments	Please see the example calculations in Attachment D, providing how the hourly emission rates were derived. The hourly VOC emission rates for batches E 2333, E 2265, and ST 410 were determined using a combination of (1) displacement calculations, (2) speciated VOC emissions from the Aspen Model, and (3) speciated VOC emissions from stack test data. Ammonia emission rates for each of the three batches are based off of stack test data. Attachment E describes the basis of the stack test data and ASPEN model results. <u>Annual Emission Rates:</u> The annual emission rate is based on a combination of various products and their worst-case emissions per batch. This will not limit all products to the same number of batches annually. The plant will be obligated to manage the emissions, regardless of the annual batches produced by product, such that the allowable rate established will not be exceeded. As such, individual batch annual emission rates were not calculated, but the worst-case annual emission rates associated with plant operation can be found in Attachment C with associated sample calculations.

Item 3a	Page 40 in the non-confidential portion of the application contains a batch emission totals table and the following information is needed. The table uses a VOC Ratio Factor of 2.06 to calculate short-term (lb/hr) emissions. Please provide additional information regarding this ratio factor (e.g., it's purpose, how it was derived, etc.).
Rohm and Haas Comments	The VOC Ratio Factor is based on the ratio of stack test data to the calculated displacement emission rates associated with the maximum speciated emissions (e.g., ethanol) in Batch E 2333. Since stack test data was not conducted for all batches, the ratio factor was applied to VOC emissions from any streams and other batches that stack testing was not performed, in order to conservatively estimate the emissions associated with the batches. Attachment C "Batch Emission Totals" contains sample calculations explaining how the ratio factor was derived, and how it was applied to the other batches.
Item 3b	The VOC Ratio Factor was not applied to batches for product names E-2333, E-2265 and LSO FUG. Please provide an explanation as to why the factor wasn't applied to these batches when calculating values for the "VOC in lb/hr with Factor" column
Rohm and Haas Comments	Since both E 2333 and E 2265 contain Triton XN-45S, the stack testing results from batch E 2333 were conservatively used to estimate emissions for E 2265. LSO FUG (re-labeled as Agitator Seal) is based on fugitive emissions associated with an agitator seal on a drain tank at the facility. During maintenance operations, the emissions associated with this component are emitted through the vent (EPN LU-VS). Furthermore, emissions that occur during leakage associated with the agitator are also captured via EPN LU-VS. As such, a VOC Ratio Factor was not applied to the emissions associated with Agitator Seal.
Item 3c	Additional information (a table and example calculations) is needed to show how values in the "VOC lb/batch" and "Ammonia lb/batch" columns were determined.
Rohm and Haas Comments	Attachment C "Batch Emission Totals" contains sample calculations displaying how the "VOC lb/batch" and "Ammonia lb/batch" were determined. The pounds per batch for each batch were conservatively determined based on a batch run-time of 6 hours. For batches where stack test data was used, the lb/batch was derived directly from the stack test results.

Item 4 Rohm and Haas Comments	Page 41 in the non-confidential portion of the application contains VOC and ammonia emission summary tables each have a note stating, "…worst case hourly emissions plus LSO FUG emissions." Please provide an explanation of the LSO FUG emissions since a discussion of this source cannot be found in any other portion of the application except on Page 40 with the batch emission totals. Also, please provide an explanation for adding fugitive emissions into point source emissions (EPN LU-VS) instead of the emissions currently listed the permit and relating to fugitives (EPN LU-2). Agitator Seal (previously labeled as LSO Fug) emission's estimate is based on SOCMI Ethylene < 11% with no reduction for an agitator seal on a drain tank at the facility. During maintenance operations, the emissions associated with this component is emitted through the vent (EPN LU-VS). Furthermore, emissions that occur during leakage associated with the agitator are also captured via EPN LU-VS.
Item 5 Rohm and Haas Comments	Page 55 in the confidential portion of the application contains fugitive emission calculations for the LS-LS process. Please provide an explanation of the LS-LS emissions since a discussion of this source cannot be found in any other portion of the application. Again, please provide an explanation for adding fugitive emissions into point source emissions instead of the fugitive emissions currently listed the permit. Similar to a normal fugitive stream, LS-LS is a stream profile that represents the constituents that are in contact with the fugitive component.
Item 6 Rohm and Haas Comments	Please provide evaluations of the contaminants listed in the permit application for which state air quality standards or National Ambient Air Quality Standards (NAAQS) exist. The evaluation must be completed in accordance with the TCEQ's Air Quality Modeling Guidelines (document number APDG 6232) located at: www.tceq.texas.gov/assets/public/permitting/air/Modeling/guidance/airquality-mod-guidelines6232.pdf For the contaminants listed in the permit application where no state or national ambient air quality standards exist, please provide evaluations in accordance with the TCEQ's Modeling and Effects Review Applicability (MERA) process (document number APDG 5874). During the MERA process, the scope of air dispersion modeling and effects review will be determined. The MERA document is located at: www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/mera.pdf A modeling analysis was conducted and is being submitted in supplement to this NOD response.
Item 7 Rohm and Haas Comments	Permit by Rule Registration 145135 that was issued to the Deer Park Plant can be incorporated into Permit 27131 during the current amendment to the permit. Please let the TCEQ know if the Rohm and Haas would like to pursue incorporating the registration into the permit at this time. Rohm and Haas would like to incorporate Permit by Rule Registration 145135 by reference into Permit No. 27131 at this time.

Additional Comments

The following changes to the emission calculations are being included as part of this NOD response:

- Addition of batches P 308, P9100AF, and P2160IPA
- Updates to Table 1a maximum allowable rates
    - Please note that Attachment C "Batch Emission Totals" provides the basis of the maximum allowable emission rates for VOC and Ammonia
- Updates to Batch Emission Totals representations as provided in Attachment C

Attachment B
Speciated Emission Rates

Rohm and Haas Chemicals LLC
Permit No. 27131
Attachment B: Speciated Emission Rates

Compound	VOC?	Speciated	
		lb/hr	tpy
Ethanol:ethyl alcohol	Yes	6.3594	3.0829
Isopropyl alcohol	Yes	0.2395	1.4369
2-Acrylamido-2-methyl propanesulfonic acid	Yes	0.0003	0.0015
2 Methyl 4 isothiazolin 3 one 52%	Yes	0.0012	0.0071
2-Methyl-4-isothiazolin-3-one	Yes	0.0056	0.0337
5-Chloro-2-methyl-4-isothiazolin-3-one	Yes	0.0134	0.0803
Acrylonitrile	Yes	0.0004	0.0023
Alcohols, C12-14-secondary	No	0.0002	0.0010
Alcohols, C12-14-secondary, ethoxylated	Yes	1.27E-07	7.62E-07
Alkyl ether sulfate C12-14 with EO, sodium salt	No	0.0005	0.0030
Alkyl ether sulfate C12-14, sodium salt	No	0.0001	0.0004
Aminoethylaminopropylmethyldimethoxysilane	Yes	0.0294	0.1763
Ammonium Persulfate	No	0.0075	0.0448
Benzisothiaxolin 3 one	Yes	0.0001	0.0008
Bruggolite FF-6	No	0.0001	0.0004
Butyl Acrylate	Yes	0.0019	0.0116
Copper Nitrate	No	0.0002	0.0012
Dipropylene glyco (Mixed isomers)	Yes	0.0011	0.0064
Ethanol, 2-amino-,compd. With a sulfo w (nonylphenoxy)poly(oxy1,2-ethanediyl)	Yes	0.0108	0.0650
Formaldehyde	Yes	0.1184	0.7103
Ferrous Sulfate	No	0.0001	0.0004
Geropon SSOIP / Lankropol	Yes	0.0004	0.0027
Heteroalkyl alcohol	Yes	0.0803	0.4817
Heteroalkyl methacrylate	Yes	0.4302	2.5815
Hydroquinone Monomethyl Ether	No	0.0001	0.0009
Isoascorbic acid	No	0.0002	0.0010
Itaconic Acid	No	0.0045	0.0273
Methanol	Yes	0.2085	0.2866
Magnesium Chloride	No	0.0002	0.0015
Magnesium nitrate	No	0.0025	0.0147
Modified alkyl derivative of cyclic amine	Yes	0.0169	0.1013
Petroleum hydrocarbon	No	1.10E-05	0.0001
Poly(oxy-1,2-ethanediyl),.alpha.-tridecyl-.omega.-hydroxy-,phosphate,ammonium salt	Yes	0.0013	0.0080
Poly(oxy-1,2-ethanediyl),a-sulfo-w-(nonylphenoxy)-branched ammonium salt	No	0.0007	0.0044
Polyethylene glycol	Yes	0.0001	0.0006
Polyethylene glycole octylphenyl ether	Yes	0.0007	0.0040
Siloxanes and silicones, di-Me, reaction products with silica	No	1.11E-07	6.67E-07
Sodium Acetate	No	0.0001	0.0005
Sodium Bicarbonate	No	0.0001	0.0005
Sodium Carbonate	No	0.0004	0.0023
Sodium Chloride	No	3.30E-06	1.98E-05
Sodium dodecylbenzene sulfonate	No	0.0001	0.0009
Sodium Formaldehyde Sulfoxylate	No	0.0002	0.0013
Sodium Hydrosulfite	No	0.0001	0.0004
Sodium Nitrate	No	1.15E-05	0.0001
Sodium Persulfate	No	0.0008	0.0046
Styrene	Yes	0.0097	0.0579
T-butyl alcohol	Yes	0.0086	0.0517
T-butyl hydroperoxide	Yes	0.6459	3.8754
Telomer B Phospate diethanolamine salt	No	1.59E-05	0.0001
Vinyl Acetate	Yes	0.0097	0.0579
Acetic Acid	No	1.2778	7.6666
Acrylic Acid	Yes	0.2849	1.7094
Ammonia	No	9.3587	6.7094
Hydrogen Peroxide	No	0.0937	0.5624
Maleic Anhydride	Yes	0.0148	0.0890
Methyl methacrylate	Yes	0.0122	0.0733
Sodium Hydroxide	No	0.0016	0.0094
Sodium Metabisulfite	No	0.0003	0.0020

Attachment F
Updated Table 1a

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Table 1(a) Emission Point Summary

Date:	6/12/2019	Permit No.:	27131	Regulated Entity No.:	RN100223205
Area Name:	Emulsion Polymer Products Manufacturing Facility			Customer Reference No.:	CN602973604

AIR CONTAMINANT DATA					
1. Emission Point			2. Component or Air Contaminant Name	3. Air Contaminant Emission Rate	
(A) EPN	(B) FIN	(C) NAME		(A) POUND PER HOUR	(B) TPY
LU-VS	LU-VS	Batch Vents	VOC	7.60	7.48
			Ammonia	9.36	6.71

Footnote:

[1] EPN = Emission Point Summary

[2] FIN = Facility Identification Number

Table 1(a) Emission Point Summary

Date:	6/12/2019	Permit No.:	27131	Regulated Entity No.:	RN100223205
Area Name:	Emulsion Polymer Products Manufacturing Facility			Customer Reference No.:	CN602973604

AIR CONTAMINANT DATA			EMISSION POINT DISCHARGE PARAMETERS											
1. Emission Point			4. UTM Coordinates of Emission Point			Source								
						5. Building	6. Height Above	7. Stack Exit Data			8. Fugitives			
EPN (A)	FIN (B)	Name (C)	Zone	East (Meters)	North (Meters)	Height (Ft.)	Ground (Ft.)	Diameter (Ft.) (A)	Velocity (FPS) (B)	Temperature (°F) (C)	Length (Ft.) (A)	Width (Ft.) (B)	Axis Degrees (C)
LU-VS	LU-VS	Batch Vents	15	296455.43	3290370.27		99	2.5	35.5	Amb.			

EPN = Emission Point Number
FIN = Facility Identification Number

Attachment G
TCEQ Federal Review Applicability Table

Federal New Source Review Applicability Analysis

	CO	NO_x	PM	PM_{10}	$PM_{2.5}$	SO_2	VOC
Total of Emission Changes	-	-	-	-	-	-	7.48
PSD Significance Levels	100	40	25	15	10	40	
PSD Significant Increase?	NO	NO	NO	NO	NO	NO	
Site Contemporaneous Net	-	-	-	-	-	-	
PSD Significant Net Increase?	NO	NO	NO	NO	NO	NO	
NNSR Significance Levels		40					40
NNSR Project Netting Required?		NO					NO
Site Contemporaneous Net		-					6.78
NNSR Significant Net Increase?		NO					NO

Post-Project Maximum Allowable Annual Emissions, TPY

Emission Units affected by project			CO	NO_x	PM	PM_{10}	$PM_{2.5}$	SO_2	VOC
EPN	FIN	Equipment Description							
LU-VS	LU-VS	Batch Vents							7.48
Total			-	-	-	-	-	-	7.48

Pre-Project Actual Annual Emissions, TPY (24 month average)

SUBSTITUTE THE PRECHANGE ALLOWABLE IF IT IS SMALLER THAN THE ACTUAL

Emission Units affected by project			CO	NO_x	PM	PM_{10}	$PM_{2.5}$	SO_2	VOC
EPN	FIN	Equipment Description							
LU-VS	LU-VS	Batch Vents							0.70
Total			-	-	-	-	-	-	0.70

Changes in Emissions, TPY

(Post-Project Allowable,TPY) - (Pre-Project Actual, TPY)

Emission Units affected by project			CO	NO_x	PM	PM_{10}	$PM_{2.5}$	SO_2	VOC
EPN	FIN	Equipment Description							
LU-VS	LU-VS	Batch Vents	-	-	-	-	-	-	6.78
Total			-	-	-	-	-	-	6.78

The remainder of this application contains business confidential information.

Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the Texas Commission on Environmental Quality, Public Information Coordinator, MC-197, P.O. Box 13087, Austin, Texas 78711-3087.

July 8, 2019

CERTIFIED MAIL 7019 0140 0000 3234 4589 **RETURN RECEIPT REQUESTED**

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ATTN: Mr. Bruce McFarland
Air Permits Division, MC-163
P.O. Box 13087
Austin, TX 78711-3087

Rohm and Haas Chemicals LLC
Rohm and Haas Texas Deer Park Plant; RN100223205, CN602973604
BACT Analysis Project Number: 291384

Dear Mr. McFarland,

Purpose

Rohm and Haas Chemicals LLC (Rohm and Haas), a wholly owned subsidiary of the Dow Chemical Company, is submitting the enclosed response to the BACT Tier I and II feasibility request. A BACT Tier III demonstration was originally included in the amendment application associated with Project No. 291384. The following update has been prepared in response to the request dated June 7, 2019. The BACT review contains completed Tier I and II analyses according to the TCEQ guidance document "Air Pollution Control: How to Conduct a Pollution Control Evaluation, APDG 6110" (January 2011).

The following items are being included as part of the BACT analysis:

- BACT Tier I discussion
- BACT Tier II discussion

Attachments

- Attachment A: BACT Tier I Discussion
- Attachment B: BACT Tier II Discussion

Future Contact

For future correspondence please contact:

Shelby Sustala (281) 228-8210
e-mail srsustala@dow.com

Sincerely,

Shelby Sustala
Air Permit Writer

CC

Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 – Houston

Attachment A: BACT Tier I Discussion

Item	Rohm and Haas Comment
1	A Best Available Control Technology (Tier I) analysis was conducted for EPN LU-VS, an uncontrolled vent from several process tanks associated with chemical batch processes, emitting VOC and Ammonia to the atmosphere. This vent contains the combined emissions of 8 process additive tanks, each less than or equal to 2,500 gallons in size. The tank that handles ethanol and ammonia is fitted with a submerged fill lines. The other small tanks contain very low levels of VOC compounds. All the tanks are located inside, and are not subject to solar radiation. There are no add-on controls on these tanks. The Texas Commission on Environmental Quality's (TCEQ's) BACT guidelines for Chemical Sources (March, 2019), includes separate Tier I BACT for storage tanks and for process vents. For Process Vents, Tier I BACT is specified for VOC as follows: • Non-halogenated VOCs: flare, any oxidizer, adsorber, absorber/scrubber, etc. Specify technique. Must meet that control device's approved efficiency which vary, dependent on the control device, but are all 98% or better control or outlet concentration of 20 ppm or lower. (Note: Tier I BACT also separately addresses halogenated VOC, but that is not applicable in this instance). However, TCEQ Tier I BACT for VOC storage tanks less than 25,000 gallons in size does not require add-on controls. The 8 process additive tanks are at least 10 times smaller (2,500 gallons or less) than the BACT volume threshold. If LU-VS was evaluated as an emission point from multiple storage tanks, Tier I BACT would only require submerged fill (which is used on the tank with appreciable VOC content), and use of white or aluminum color on surfaces exposed to the sun (not applicable for these indoor tanks located in a building). The current EPN LU-VS at the Rohm and Haas Deer Park Lone Star Facility is compliant with the storage tank Tier I BACT level, which doesn't require any add-on controls. However, it would not comply with Tier I BACT for chemical plant process vents. The emissions from these tanks are primarily from the vapor space displacement and evaporation of volatile components of the tank contents. Accordingly, the emissions profile is more characteristics of tankage than it is of a chemical process vent (e.g.: emissions are not the result of chemical reactions). If viewed as required to meet the storage tank Tier I BACT, this BACT analysis can be completed at the Tier I step because the existing vent complies with the specified Tier I control level. Also, no new, additional pollution control measures have been developed in recent years that would change this finding. However, if TCEQ requires that this vent be evaluated as a chemical process vent, it must be recognized that the characteristics of the EPN LU-VS vent are somewhat unique, and not likely analogous to the sources considered by TCEQ in preparing the process vent Tier I guidance. This vent serves several additive tanks that supply a batch chemical process. Vent flows are intermittent, compositions variable, most storage/mixed solutions aqueous, and VOC concentrations in the vapors relatively small. Regarding VOC concentrations, testing shows that VOC content in this

	vent is commonly only low concentrations with peaks for a limited time at no more than a few hundred ppm VOC. Additionally, the vent stream is mostly air (oxygen and nitrogen) with average O_2 levels above 20%. The high O_2 content and low VOC content represents extra costs for any add-on controls of the VOCs. For example, the high O_2 levels make this stream difficult to safely control in a flare because of the potential to create an explosive mixture as it mixes with other flared gases in the flare header. Also, the low VOC content and high O_2 mean that significant supplemental fuel is needed in any thermal control device to provide sufficient heat to allow effective control/combustion. This high supplemental fuel demand increases the cost for control and will create significant additional combustion emissions such as NOx. Because of these compelling technical differences, if this vent is evaluated as a chemical process vent, the BACT analysis must be carried beyond the Tier I analysis and a Tier II BACT analysis for VOC emissions conducted.

Attachment B: BACT Tier II Discussion

<table>
<tr><th>Item</th><th>Rohm and Haas Comment</th></tr>
<tr><td>2</td><td>
As the proposed emission reduction performance level of the EPN LU-VS does not meet those proposed under BACT Tier I for chemical process vents, and because there are a number of compelling technical differences that distinguish this process from other chemical processes, a Tier II BACT analysis has been performed. The emission reduction performance level of EPN LU-VS (uncontrolled emissions to atmosphere) was compared to acceptable BACT in recent permit reviews for other process/industry types with similar emission streams (VOC).

The following resources were reviewed in order to develop the BACT Tier II Analysis:

• Recently issued/approved permits within the state of Texas by searching within the TCEQ's Emission Inventory Database and the TCEQ's Local Records Online
• Control technologies contained with the EPA's RACT/BACT/LAER Clearinghouse (RBLC) database

A review of the above data sources shows a wide range of BACT determinations spanning from no controls for some sources to some sources requiring 98%+ control by thermal destruction or other add-on controls. Below are some Texas examples of both process vents and storage tanks that were accepted with no add-on controls for BACT.
<table>
<tr><th>Permit No.</th><th>Company</th><th>Site</th><th>Emission Point</th><th>Control Technology</th></tr>
<tr><td>133027</td><td>Air Products LLC</td><td>Baytown 3</td><td>MDEA Unit CO_2 Vent (EPN 5)</td><td>Uncontrolled to Atmosphere</td></tr>
<tr><td>1329</td><td>Eastman Chemical Texas Operations</td><td>Longview, Texas</td><td>Analyzer Vents (EPN 037GA1)</td><td>Uncontrolled to Atmosphere</td></tr>
<tr><td>1768</td><td>Equistar Chemical, LP</td><td>Channelview Complex</td><td>Analyzer Vent (EPN 38E3904)</td><td>Uncontrolled to Atmosphere</td></tr>
<tr><td>49076</td><td>Performance Materials NA, Inc.</td><td>Sabine River, Orange, Texas</td><td>Process Vents</td><td>Uncontrolled to Atmosphere: Exempt from Vent Gas Rule under §115.127(a)(2)(A) as combined weight of VOC is less than 100 lbs in any 24-hour period</td></tr>
<tr><td>19997</td><td></td><td></td><td>Process Vents (EPN</td><td>Uncontrolled to</td></tr>
</table>
</td></tr>
</table>

				99V8508 and 99V8600)	Atmosphere: Exempt from Vent Gas Rule under §115.127(b)(2)(A) as combined weight of VOC is less than 100 lbs in any 24-hour period
	6419	Eastman Chemical Company	Longview, Texas	Storage Tanks (EPNs 020T116, 038T607A, 038T607B, 039T606A, and 093T2)	Submerged fill, and uninsulated exterior surfaces exposed to the sun are either white or unpainted aluminum in color. Uncontrolled to atmosphere
	21832	Eastman Chemical Company	Longview, Texas	Storage Tanks (EPNs 011ST1, 011ST2, 011ST51 011T22, 011T23, 011T24, 048T56, 048T59, 048T84, 048T205, 048T206, 049T200, 049T201, 093T10, 093T11, 098T13)	Uncontrolled to atmosphere
	102982	Exxon Mobil Corporation	Baytown Olefins Plant	Chemical Storage Totes (EPN XXTOTES)	Exterior Surfaces exposed to sun are painted white, aluminum or an equivalent color, and records of tote throughput will be maintained and updated monthly
	9176	Performance Materials NA, Inc.	Sabine River	PL-4C and PL-4K	Uncontrolled to atmosphere

	Several of the above processes, like EPN LU-VS, are also exempt from §115.122 which would otherwise require VOC controls of at least 90% on VOC sources in Texas non-attainment areas. EPN LU-VS qualifies as exempt from this TCEQ control requirement per §115.127(a)(2)(A) because it contains less than 100 pounds in any continuous 24-hour period. Rohm and Haas will monitor the number products and batches produced in any 24-hour period in order to ensure that the threshold stated in §115.127(a)(2)(A) shall not be exceeded. As evidenced by the review of recent BACT determinations, there is a range of BACT levels approved, depending on the nature of the vent stream. Similarly, TCEQ rule §115.122 recognizes that the quantity and concentration of VOC is relevant in determining whether controls are appropriate. A finding of "no-controls required" would be consistent with the several most similar recent BACT determinations. Accordingly, a Tier II BACT review concludes that no further controls are required by BACT.

July 1, 2019

CERTIFIED MAIL **7017 1070 0000 3003 7941** **RETURN RECEIPT REQUESTED**

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ATTN: Mr. Bruce McFarland
Air Permits Division, MC-163
P.O. Box 13087
Austin, TX 78711-3087

Rohm and Haas Chemicals LLC
Rohm and Haas Texas Deer Park Plant; RN100223205, CN602973604
NSR 27131 NOD Response Project Number: 291384

Dear Mr. McFarland,

Purpose

Rohm and Haas Chemicals LLC (Rohm and Haas), a wholly owned subsidiary of the Dow Chemical Company, is submitting the enclosed response to the Working Draft Permit emailed June 17, 2019 regarding project 291384.

The following changes to the emission calculations are being included as part of this response:

- Updates to VOC representations within the Emission Calculations associated with batches OP 96, Ultra, and Ultra EF
- Updates to Table 1a maximum allowable rates
- Updates to Batch Emission Totals representations

Attachments

- Attachment A: Response to WDP
- Attachment B: Updated Table 1a
- Attachment C: Updated Batch Emission Totals (Confidential)
- Attachment D: Speciated Emission Rates and Emission Calculations associated with batches OP 96, Ultra

Future Contact

For future correspondence please contact:

Shelby Sustala (281) 228-8210
e-mail srsustala@dow.com

Sincerely,

Shelby Sustala
Air Permit Writer
The Dow Chemical Company

CC

Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 – Houston

Attachment A: WDP Response

Item	Rohm and Haas Comment
1	Please update the MAERT for LU-VS according to the Table 1a that is included in Attachment B. Upon review of the calculations and MAERT, an error was discovered on the Batch Emissions Totals Table. Some of the compounds were not identified as VOC on the individual calculation page for OP 96, Ultra, and Ultra EF; therefore, they were not included in the total. This has been corrected and the updated emissions rates are included in the Table 1a that is included in Attachment B. This error only impacted the summary page. It did not impact the raw emission calculations; therefore, the modeling was not impacted. An updated version of the Batch Emissions Totals is included in Attachment C and the updated emission calculation for Batches OP 96, Ultra, and Ultra EF are included in Attachment D of this submittal.
2	Special Condition 7 The batch totals reported in Attachment C, "Batch Emission Totals", were used to derive emission rates and were not intended to be a limit of batches. A compliance determination can be made by calculating the rolling 12-month emission rate which is determined by multiplying the emission rate for each batch by the number of times each batch is produced. Therefore, Rohm and Haas proposes the following language for Special Condition 7: **The emissions in a 12-month period, rolling average shall be calculated based on the total representations made in the Permit Amendment "Attachment C – Batch Emission Totals" confidential information dated June 12, 2019. Records must be kept showing the total number of batches produced, the number of times each batch is produced during the 12-month period, and the emission rate for each batch.**

Attachment B: Updated Table 1a

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Table 1(a) Emission Point Summary

Date:	6/28/2019	Permit No.:	27131	Regulated Entity No.:	RN100223205
Area Name:	Emulsion Polymer Products Manufacturing Facility			Customer Reference No.:	CN602973604

AIR CONTAMINANT DATA					
1. Emission Point			2. Component or Air Contaminant Name	3. Air Contaminant Emission Rate	
(A) EPN	(B) FIN	(C) NAME		(A) POUND PER HOUR	(B) TPY
LU-VS	LU-VS	Batch Vents	VOC	8.04	9.45
			Ammonia	9.36	6.71

Footnote:

[1] EPN = Emission Point Summary

[2] FIN = Facility Identification Number

October 09, 2019

CERTIFIED MAIL 7016 3560 0000 9161 1442 **RETURN RECEIPT REQUESTED**

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ATTN: Mr. Bruce McFarland
Air Permits Division, MC-163
P.O. Box 13087
Austin, TX 78711-3087

Rohm and Haas Chemicals LLC
Rohm and Haas Texas Deer Park Plant; RN100223205, CN602973604
NSR 27131 Updates Project Number: 291384

Dear Mr. McFarland,

Purpose

Rohm and Haas Chemicals LLC (Rohm and Haas), a wholly owned subsidiary of the Dow Chemical Company, is submitting the enclosed information and updates for TCEQ Project 291384. Updated modeling results will also be submitted concurrently.

The following changes are being included as part of this response:

- Updates to Table 1(a)
- Updates to TCEQ Federal Applicability
- Updates to Batch Emission Totals
- Updated Emission Calculations (Batches E2333, E2265, and ST410)

Attachments

- Attachment 1: Summary of Updates
  - Attachment A: Updated Table 1(a)
  - Attachment B: Updated Federal Applicability
  - Attachment C: Batch Emission Totals
  - Attachment D: Speciated Emission Rates
  - Attachment E: Updated Emission Calculations (Confidential)

10/8/2019
NSR 27131 Updates
Project No. 291384

Future Contact For future correspondence please contact:

Shelby Sustala (281) 228-8210
e-mail srsustala@dow.com

Sincerely,

Jacques Bordelon
Environmental Delivery Leader
The Dow Chemical Company

CC
Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 – Houston

Attachment 1: Summary of Updates

<table>
<tr><th>Item</th><th>Rohm and Haas Comment</th></tr>
<tr><td>1</td><td>The purpose this submittal is to update the Table 1(a) page 1 limits for EPN LU-VS (See Attachment A for final Table 1(a) Page 1). The proposed emission limits are provided in the table below. An updated Federal Applicability Table is also being provided as part of this submittal.
<table>
<tr><th>Summary</th><th>Hourly Emission Rate (lb/hr)</th><th>Annual Emission Rate (tpy)</th></tr>
<tr><td>Total VOC</td><td>8.71</td><td>4.99</td></tr>
<tr><td>Ammonia</td><td>21.19</td><td>10.73</td></tr>
</table>
The emission limits have been updated based on additional testing of batches E2333 (the highest VOC emitting batch) and ST410 (the highest ammonia emitting batch).

The VOC emission rates are determined via a combination of (1) displacement calculations, (2) speciated VOC emissions from the Aspen Model, and (3) speciated VOC emissions from stack test data. Ammonia emission rates are based off of stack test data.[1]

The VOC Ratio Factor (2.06) is based on the ratio of stack test data to the calculated displacement emission rates associated with the maximum speciated emission (e.g., ethanol).[1] Since testing was not conducted for all batches, the ratio factor was originally applied to VOC emissions for all other batches. At this time, the factor for all other batches is being reduced to a contingency factor of 1.50. The 1.50 contingency factor is also conservatively being applied to the ammonia stack test results.

The hourly emission rate is based off of the three worst-case batches building simultaneously in one hour.

In addition to updating the contingency factor, Rohm and Haas has updated the count for the batches. The updated annual batches was based on forecasted future demand for products and resulted in a reduction in annual emissions. As noted earlier, the number of annual batches is used to estimate annual emissions, the MAERT limit will be used to demonstrate compliance.</td></tr>
</table>

Continued on next Page

[1] The NOD response submitted to the TCEQ on May 2019 outlines the basis of the calculation methodology and the basis of the VOC Ratio Factor associated with the emission limits.

Attachment 1: Summary of Updates Cont.

<table>
<tr><th>Item</th><th>Rohm and Haas Comment</th></tr>
<tr><td>1</td><td>
The VOC rates are determined using the following batches:
<table>
<tr><th>Batch Name</th><th>No. of Batches Per Year</th><th>Basis of VOC Emission Rates</th><th>Contingency Factor</th></tr>
<tr><td>E2333/E2265 (These batches do not operate concurrently)</td><td>200</td><td>Stack test, displacement calculations, and Aspen Model</td><td>2.06</td></tr>
<tr><td>OP96</td><td>300</td><td>Displacement calculations and Aspen Model</td><td>1.50</td></tr>
<tr><td>R585</td><td>1400</td><td>Displacement calculations and Aspen Model</td><td>1.50</td></tr>
</table>
The ammonia rates are determined using the following batches:
<table>
<tr><th>Batch Name</th><th>No. of Batches Per Year</th><th>Basis of Emission Rates</th><th>Contingency Factor</th></tr>
<tr><td>ST410</td><td>500</td><td>Stack Test</td><td>1.50</td></tr>
<tr><td>E2333/E2265 (These batches do not operate concurrently)</td><td rowspan="2">1400</td><td>Stack Test</td><td>1.50</td></tr>
<tr><td>Any of remaining batches</td><td>Stack Test</td><td>1.50</td></tr>
</table>
The batches in the application are intended to provide a basis for hourly and annual emissions. This is not necessarily a representation of specific batch production.

For further information and sample calculations on how individual rates were calculated, please refer to Attachment E: Updated Emission Calculations (Confidential). For information and sample calculations on how the maximum achievable emission rates were determined, please refer to Attachment C: Batch Emission Totals.
</td></tr>
</table>

Attachment A
Updated Table 1(a)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Table 1(a) Emission Point Summary

Date:	10/9/2019	Permit No.:	27131	Regulated Entity No.:	RN100223205
Area Name:	Emulsion Polymer Products Manufacturing Facility			Customer Reference No.:	CN602973604

AIR CONTAMINANT DATA					
1. Emission Point			2. Component or Air Contaminant Name	3. Air Contaminant Emission Rate	
(A) EPN	(B) FIN	(C) NAME		(A) POUND PER HOUR	(B) TPY
LU-VS	LU-VS	Batch Vents	VOC	8.71	4.99
			Ammonia	21.19	10.73

Footnote:

[1] EPN = Emission Point Summary

[2] FIN = Facility Identification Number

Attachment B
Updated TCEQ Federal Applicability Table

Federal New Source Review Applicability Analysis

	VOC
Total of Emission Changes	4.99
PSD Significance Levels	40
PSD Significant Increase?	**NO**
Site Contemporaneous Net	4.99
PSD Significant Net Increase?	**NO**
NNSR Significance Levels	5
NNSR Project Netting Required?	**NO**
Site Contemporaneous Net	
NNSR Significant Net Increase?	

Post-Project Maximum Allowable Annual Emissions, TPY

Emission Units affected by project			VOC
EPN	FIN	Equipment Description	
LU-VS	LU-VS	Batch Vents	4.99
Total			**4.99**

Pre-Project Actual Annual Emissions, TPY (24 month average)

SUBSTITUTE THE PRECHANGE ALLOWABLE IF IT IS SMALLER THAN THE ACTUAL

Emission Units affected by project			VOC
EPN	FIN	Equipment Description	
LU-VS	LU-VS	Batch Vents	-
Total			**-**

Changes in Emissions, TPY

(Post-Project Allowable,TPY) - (Pre-Project Actual, TPY)

Emission Units affected by project			VOC
EPN	FIN	Equipment Description	
LU-VS	LU-VS	Batch Vents	4.99
Total			**4.99**

Attachment C
Batch Emission Totals

The remainder of this application contains business confidential information.

Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the Texas Commission on Environmental Quality, Public Information Coordinator, MC-197, P.O. Box 13087, Austin, Texas 78711-3087.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 14, 2019

MS. BROOKE HRACH
RESPONSIBLE CARE LEADER
ROHM AND HAAS TEXAS INCORPORATED
PO BOX 1000
DEER PARK TX 77536-1000

Re: Permit Amendment
Permit Number: 27131
Rohm And Haas Texas Deer Park Plant
Deer Park, Harris County
Regulated Entity Number: RN100223205
Customer Reference Number: CN602973604

Dear Ms. Hrach:

Upon evaluation of the above-referenced amendment, we have determined that your application is deficient and Rohm And Haas Chemicals LLC must provide additional information to ensure that the requirements for obtaining a permit amendment are met. Please furnish the following information before October 21, 2019:

1) The updated Table 1(a) submitted on June 17, 2019 noted that the maximum long-term emission of VOC is 7.48 tpy. Harris county is currently designated as a serious non-attainment area, which corresponds to a netting threshold of 5 tpy for VOC and NOx. To calculate the project change, baseline actual emissions for VOC are needed. If the actual project increase is over 5 tpy, then netting will be required. Please provide the TCEQ Tables 1F and 2F, and Table 3F if required.

After receipt of all the additional information, we will continue the review of your application. If the information furnished in response to this notice results in the need for further clarification or additional information, we will notify you. Please note that the applicant Rohm And Haas Chemicals LLC is required to furnish all information to demonstrate that the facility or source will comply with all applicable federal and state rules and statutes.

Failure to submit all of the requested information within 15 days of the date of this notification may result in a voidance of your application. Following a voidance, the permit fee will be retained for 180 days. If you still wish to pursue the project following the voidance, you will need to submit an entirely new application. The new application will be subject to the state and federal rules and regulations in place at the time of submittal. If public notice was required in the original application, you may be required to republish the notice. You do not need to submit additional fees with the new application if the project scope has not increased and the original fee was correct.

Re: Permit Number: 27131

In addition, please ensure that a copy of the submitted information is also sent to the applicable Texas Commission on Environmental Quality (TCEQ) regional office and any local air pollution control program(s) with jurisdiction. Please note that the cover letter for your submission should indicate that a copy has been sent to the regional office [and local air pollution control program(s), if applicable]. Lists of the TCEQ regional offices and local air pollution control programs are available at:

https://www.tceq.texas.gov/agency/directory/region/reglist.html
and
www.tceq.texas.gov/permitting/air/local_programs.html, respectively.

If a new application is not submitted within 180 days from the date of the voidance, you will forfeit the original permit fee.

Thank you for your cooperation in this matter. If you have any questions, please contact me at (512) 239-2048, or write to the TCEQ, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Kailas Malwade
Air Permits Division
Texas Commission on Environmental Quality

Enclosure

cc: Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 - Houston

Project Number: 291384

October 24, 2019

CERTIFIED MAIL 7017 1070 0000 3004 0392 **RETURN RECEIPT REQUESTED**

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ATTN: Mr. Kailas Malwade
Air Permits Division, MC-163
P.O. Box 13087
Austin, TX 78711-3087

Rohm and Haas Chemicals LLC
Rohm and Haas Texas Deer Park Plant; RN100223205, CN602973604
NSR 27131 Updates Project Number: 291384

Dear Mr. Malwade,

Purpose

Rohm and Haas Chemicals LLC (Rohm and Haas), a wholly owned subsidiary of the Dow Chemical Company, is submitting the enclosed information in response to an email dated October 14, 2019 in which an update to the baseline emissions was requested. Rohm and Haas has requested clarification on the request and TCEQ has suggested that the baseline should reflect the actual emissions that have occurred over the last two years.

In the original submittal, dated October 9, 2019, in which Rohm and Haas updated the project, the Federal Applicability was updated using a baseline of zero (0) tons per year from the vent. This was done because this was a correction to project 220568 in which the vent (EPN LU-VS) was authorized for 0.7 TPY of VOC.

Attachments

- Attachment 1: Updated Federal Applicability

Future Contact

For future correspondence please contact:

Shelby Sustala
e-mail (281) 228-8210
srsustala@dow.com

Sincerely,

Jacques Bordelon
Environmental Delivery Leader
The Dow Chemical Company

CC
Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 – Houston

Attachment 1: Federal Applicability

	VOC
Total of Emission Changes	4.29
PSD Significance Levels	40
PSD Significant Increase?	NO
Site Contemporaneous Net	4.29
PSD Significant Net Increase?	NO
NNSR Significance Levels	5
NNSR Project Netting Required?	NO
Site Contemporaneous Net	
NNSR Significant Net Increase?	

Post-Project Maximum Allowable Annual Emissions, TPY

Emission Units affected by project			VOC
EPN	FIN	Equipment Description	
LU-VS	LU-VS	Batch Vents	4.99
	Total		4.99

Pre-Project Actual Annual Emissions, TPY (24 month average)

SUBSTITUTE THE PRECHANGE ALLOWABLE IF IT IS SMALLER THAN THE ACTUAL

Emission Units affected by project			VOC
EPN	FIN	Equipment Description	
LU-VS	LU-VS	Batch Vents	0.70
	Total		0.70

Changes in Emissions, TPY

(Post-Project Allowable,TPY) - (Pre-Project Actual, TPY)

Emission Units affected by project			VOC
EPN	FIN	Equipment Description	
LU-VS	LU-VS	Batch Vents	4.29
	Total		4.29

January 24, 2020

CERTIFIED MAIL: 7017 1070 0000 3004 1597 **RETURN RECEIPT REQUESTED**

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ATTN: Mr. Kailas Malwade
Air Permits Division, MC-163
P.O. Box 13087
Austin, TX 78711-3087

Rohm and Haas Chemicals LLC
Rohm and Haas Emulsion Products Manufacturing Facility; RN100223205, CN602973604
NSR 27131 Response to Questions, TCEQ Project Number 291384

Dear Mr. Malwade,

Rohm and Haas Chemicals LLC (Rohm and Haas), a wholly owned subsidiary of the Dow Chemical Company, is submitting the information below in response to your follow up question regarding compliance with 30 TAC 115.127 (a)(2)(A).

Below, please find an excerpt from the management system procedure Rohm and Haas has in place to address the 100 lb/day restriction. In addition, the plant uses a batch scheduling tool that is programmable to not allow certain product to product transitions. This programming is used for E2333, E2265 and ST410 as noted in the operating restrictions below.

Operating Restrictions

Hourly and Daily limits are based on number and type of batches built.

VOC	• Only one batch containing high concentrations of Ethanol (E2333 and E2265) can be built at one time • No more than 8 batches can be built in a 24 hour operating day ○ If production demand dictates a need to increase the number of batches beyond 8 in a 24 hour day, the batches must be evaluated against the 100 pound of air emissions from the spot vent in a 24 hour period of time to ensure compliance. • An operating day is defined as Midnight to Midnight
NH3	• Only one batch of ST 410 can be built at one time • Other batches **besides** ST 410 can be built simultaneously as a batch of ST 410.

Please contact me if you need additional information at srsustala@dow.com or 281-228-8210.

Sincerely,

Shelby Sustala
Air Permit Writer
The Dow Chemical Company

cc Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 – Houston

February 20, 2020

CERTIFIED MAIL: 7017 1070 0000 3004 2020 **RETURN RECEIPT REQUESTED**

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ATTN: Mr. Kailas Malwade
Air Permits Division, MC-163
P.O. Box 13087
Austin, TX 78711-3087

Rohm and Haas Chemicals LLC
Rohm and Haas Emulsion Products Manufacturing Facility; RN100223205, CN602973604
NSR 27131 Response to Questions Project Number: 291384

Dear Mr. Malwade,

Purpose	Rohm and Haas Chemicals LLC (Rohm and Haas), a wholly owned subsidiary of the Dow Chemical Company, is submitting the attached response to your questions regarding Rohm and Haas's strategy for compliance with the MAERT. Please note, this information contains confidential materials. Please handle accordingly. A password will be provided via voice mail.
Attachments	• Attachment 1: Response to Question • Attachment 2: Updated Table "Batch Emissions Totals" (CONFIDENTIAL)
Future Contact	For future correspondence please contact: Shelby Sustala (281) 228-8210 e-mail srsustala@dow.com

Sincerely,

Shelby Sustala
Air Permit Writer
The Dow Chemical Company

cc Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 – Houston

Attachment 1: Response to Question

TCEQ Question:

Could you please provide the clarification to the TCEQ mentioning that exceedance of 1900 batches will not exceed the MAERT limits along with a list of low, medium, and high emitting batches and a list of batches beyond 1900 batches?

Rohm and Haas Response:

Rohm and Haas tracks the 12- month rolling emissions by tracking the number of batches of each product produced. As provided in the Attachment 2, the emission rate has been determined for each batch. The annual emission rate will be determined by multiplying the number of batches completed by the respective batch emission rate. This emission rate will also include the agitator seal fugitives.

A Worst Case Example was provided in the Batch Emission Totals. Below, please find submitted scenario and multiple operating scenarios in which the maximum batch rates can exceed 1900 and still remain within MAERT Limits. Product mix is dependent upon market demands; therefore, it is difficult to predict production demand.

Worst Case Scenario from Batch Emission Totals

Batch Description	Batch Example	Number of Batches per 12 – months	Lb/batch	Lb/yr	Ton/year
Worst Case	E2265	300	10.35	3,106	1.55
2nd Worst Case	OP-96	200	5.97	1,194	0.60
3rd Worst Cast	R585	1400	4.05	5,673	2.84
Total		**1900**		**9,973**	**4.99**

Notes

1. *Example Calculation*
   *Annual VOC Emissions (tpy) = Worst-case batch emissions (including agitator seal) (lb/batch) * No. of batches per year * (1 ton/2000 lb)*
   10.21 lb/batch (E 2265) + 0.14 lb/batch (Agitator Seal) = 10.35 lb/batch
   *Annual VOC Emissions (tpy) = 10.35 lb/batch * 300 batches per year * 1 ton/2000 lb =1.55 TPY*
2. *Agitator Seal Emissions are included in the Batch Totals*

Alternate Scenario using Worst Case Batches

Batch Description	Batch Example	Number of Batches per 12 – months	Lb/batch	Lb/yr	Ton/year
Worst Case	E2265	150	10.35	1,552.87	0.78
2nd Worst Case	OP-96	200	5.97	1,194.44	0.60
3rd Worst Cast	R585	1600	4.05	6,483.72	3.24
Total		**1950**		**9,231.04**	**4.62**

Alternate Scenario using combination of "Low Emitting" Batches with Worst Case Batch

Batch Description	Batch Example	Number of Batches per 12 – months	Lb/batch	Lb/yr	Ton/year
Worst Case	E2265	400	10.35	4,140.99	2.07
Low Emitting #1	R9165	500	0.44	220.00	0.11
Low Emitting #2	P3103NP	1800	1.12	2,016.00	1.01
Total		**2700**		**6,376.99**	**3.19**

Attachment 2: Batch Emission Totals

The remainder of this application contains business confidential information.

Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the Texas Commission on Environmental Quality, Public Information Coordinator, MC-197, P.O. Box 13087, Austin, Texas 78711-3087.

Air Quality Impacts Analysis

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019
Permit #: 27131

Company Name: Rohm and Haas Chemicals

I. Project Information

A. Project Overview: In the box below, give a brief Project Overview. To type or insert text in box, double click in the box below. *Please limit your response to 2000 characters.*

Rohm and Haas Texas, Incorporated, a Wholly Owned Subsidiary of The Dow Chemical Company - Deer Park, Texas (Rohm & Haas) submitted a permit amendment application to the Texas Commission on Environmental Quality (TCEQ) for the amendment of New Source Review (NSR) air quality permit number 27131. The permit provides authorization for the Emulsion Polymer Products Manufacturing Facility. The Texas Commission on Environmental Quality (TCEQ) requested an air quality impacts analysis as part of their permit review. Project-level impacts were predicted and compared against the threshold(s) associated with a Minor NSR NAAQS analysis (PM10 and PM2.5), and State Health Effects Review. The modeled concentrations for the project were found to be less than the applicable project-level thresholds (e.g.SIL for criteria pollutants, and 10% of ESL for health effects pollutants) for all project pollutants except for ammonia. Sitewide modeling (MERA Step 7) was conducted for ammonia, and modeled concentrations were found to be below applicable sitewide thresholds. Therefore, the project is considered to be deminimis and the modeling analysis is complete.

II. Air Dispersion Modeling Preliminary Information

Instructions: Fill in the information below based on your modeling setup. The selections chosen in this sheet will carry throughout the sheet and workbook. Based on selections below, only portions of the sheet and workbook will be available. Therefore, it is vital the sheet and workbook are filled out in order, do NOT skip around.

For larger text boxes, double click to type or insert text.

A. Type of Model Used: *Select "X" in all that apply*

	AERSCREEN	X	AERMOD

Enter in all applicable Model Version(s).

B. Building Downwash

Yes	Is downwash applicable? *(Select "Yes" or "No")*
04274	Enter BPIP version (AERMOD and ISCPrime only).

C. Type of Analyses: (Select "X" in all that apply)
*PSD projects should submit a protocol and not utilize this form.

X	Minor NSR NAAQS		State Property Line

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019

Permit #: 27131

Company Name: Rohm and Haas Chemicals

X	Health Effects

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019

Permit #: 27131

Company Name: Rohm and Haas Chemicals

D. Constituents Evaluating: (Select "X" in all that apply)

NAAQS: List all pollutants that require an modeling review. *(Select "X" in all that apply)*

	SO_2	X	PM_{10}
	CO	X	$PM_{2.5}$
	Pb		NO_2

Health Effects: Fill in the Speciated Emissions sheet with all applicable pollutants, CAS numbers, and ESLs.

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019

Permit #: 27131

Company Name: Rohm and Haas Chemicals

E. Dispersion Options: *If "Urban" has been selected and this project is using AERMOD or AERSCREEN, include the population used. Select "X" in the box to select an option.*

X	Urban	522020	Population Used

Provide any additional justification on the dispersion option selected above:

Based on the AUER land use analysis (79.52% urban), population density greater than the threshold of 750, and urban heat island effects in industrial area, the urban dispersion coefficient was used. The regional population (522,020) within 10 miles and EPA's default roughness length (1) were used in urban option.

F. Determination of Surface Roughness: *If AERSCREEN or AERMOD is used, fill out the section below.*

Select basis for surface roughness:	AERSURFACE

Select "X" in one of the three surface roughness categories:

	Low	X	Medium
			High

If you are using AERSURFACE, please complete the following section:

13016	AERSURFACE Version Number
296614	Center UTM Easting (meters)
3290778	Center UTM Northing (meters)
1	Study Radius (km)
No	Airport? (Select Yes or No)
No	Continuous Snow Cover (Select Yes or No)
Average	Surface Moisture (Select Wet, Dry, or Average)
No	Arid Region? (Select Yes or No)
default	Month/Season Assignment

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G. Meteorological Data:			
If AERMOD and/or ISC/ISCPrime are selected, please complete the following section:			
12918		Surface Station	
3937		Upper Air Station	
14.3	Meters (m)	Profile Base Elevation (AERMOD only)	
18081		AERMET Version Number	
Yes	Was TCEQ pre-processed data used?	1 Year	Years used
Please enter the year(s) selected for this meteorological data:			
2012	1 Year		
Provide any other justification for Meteorological Data, as applicable.			

H. Receptor Grid:

For AERMOD or ISC/ISCPrime, fill in the following information on your modeled receptor grid. Note: Receptor grid resolution (tight, fine, medium, coarse) are based on recommended receptor grid spacing per the AQMG, if something outside of this is used, fully describe it below.

25	Meters (m)	Tight Receptor Spacing
300	Meters (m)	Tight Receptor Distance
100	Meters (m)	Fine Receptor Spacing
1000	Meters (m)	Fine Receptor Distance
500	Meters (m)	Medium Receptor Spacing
5000	Meters (m)	Medium Receptor Distance
1000	Meters (m)	Coarse Receptor Spacing
10000	Meters (m)	Coarse Receptor Distance

Describe any other receptor grid designs (over water, GLC_{ni}, SPLD etc.):

The property line is fenced to prevent public access; therefore, the property boundary serves as the receptor grid boundary. As a public road, receptors were placed on Tidal Road; however, no other interior public roads or public access points exist. Some areas within the boundary are owned by Rohmax. Therefore, ambient receptors were placed on Rohmax.

I. Terrain:

X	Elevated
18081	AERMAP Version.

For additional justification on terrain selection, fill in the box below:

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Facility:

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)	Tier 4 Height (m)	Tier 5 Height (m)	Tier 6 Height (m)	Tier 7 Height (m)	Tier 8 Height (m)	Tier 9 Height (m)	Tier 10 Height (m)
Building	MB1		1	15.24	15.24									
Building	MB2		1	15.24	15.24									
Building	MB6		1	3.6576	3.6576									
Building	MB8		1	15.24	15.24									
Building	MB9		1	3.6576	3.6576									
Building	MB10		1	3.6576	3.6576									
Building	MB13		1	6.096	6.096									
Building	MB14		1	3.6576	3.6576									
Building	MB15		1	15.24	15.24									
Building	MB16		1	7.3152	7.3152									
Building	MB17		1	3.6576	3.6576									
Building	MB18		1	3.6576	3.6576									
Building	MB20		1	3.6576	3.6576									
Building	MB21		1	7.3152	7.3152									
Building	MB22		1	10.9728	10.9728									
Building	MB23		1	3.6576	3.6576									
Building	MB24		1	3.6576	3.6576									
Building	MB25		1	7.3152	7.3152									
Building	MB26		1	7.3152	7.3152									
Building	MB27		1	3.6576	3.6576									
Building	MB28		1	7.3152	7.3152									
Building	MB29		1	3.6576	3.6576									
Building	MB30		1	3.6576	3.6576									
Building	MB31		1	3.6576	3.6576									
Building	MB32		1	3.6576	3.6576									
Building	MB33		1	3.6576	3.6576									
Building	MB34		1	9.7536	9.7536									
Building	MB35		1	4.2672	4.2672									
Building	MB36		1	3.6576	3.6576									
Building	MB37		1	3.6576	3.6576									
Building	MB38		1	3.6576	3.6576									
Building	MB39		1	3.6576	3.6576									
Building	MB40		1	3.6576	3.6576									
Building	MB41		1	3.6576	3.6576									
Building	MB42		1	5.4864	5.4864									
Building	MB43		1	15.24	15.24									
Building	MB44		1	3.6576	3.6576									
Building	MB45		1	6.096	6.096									
Building	MB46		1	6.096	6.096									
Building	MB50		1	5.4864	5.4864									

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Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)	Tier 4 Height (m)	Tier 5 Height (m)	Tier 6 Height (m)	Tier 7 Height (m)	Tier 8 Height (m)	Tier 9 Height (m)	Tier 10 Height (m)
Building	MB52		1	3.6576	3.6576									
Building	MB54		1	3.6576	3.6576									
Building	MB57		1	18.288	18.288									
Building	MB58		1	3.6576	3.6576									
Building	MB59		1	3.6576	3.6576									
Building	MB60		1	3.6576	3.6576									
Building	MB61		1	3.6576	3.6576									
Building	MB62		1	3.6576	3.6576									
Building	MB63		1	3.6576	3.6576									
Building	MB64		1	3.6576	3.6576									
Building	MB65		1	3.6576	3.6576									
Building	MB66		1	15.24	15.24									
Building	MB67		1	3.6576	3.6576									
Building	MB68		1	3.6576	3.6576									
Building	MB69		1	3.6576	3.6576									
Building	MB70		1	3.6576	3.6576									
Building	MB71		1	3.6576	3.6576									
Building	MB72		1	3.6576	3.6576									
Building	MB73		1	7.3152	7.3152									
Building	MB74		1	3.6576	3.6576									
Building	MB75		1	6.096	6.096									
Building	MB76		1	6.096	6.096									
Building	MB77		1	3.6576	3.6576									
Building	MB78		1	9.144	9.144									
Building	MB81		1	6.096	6.096									
Building	MB82		1	12.192	12.192									
Building	MB83		1	3.6576	3.6576									
Building	MB84		1	3.6576	3.6576									
Building	MB85		1	3.6576	3.6576									
Building	MB86		1	15.24	15.24									
Building	MB87		1	15.24	15.24									
Building	MB88		1	3.6576	3.6576									
Building	MB89		1	3.6576	3.6576									
Building	MB90		1	7.3152	7.3152									
Building	MB91		1	3.6576	3.6576									
Building	MB92		1	3.6576	3.6576									
Building	MB93		1	9.7536	9.7536									
Building	MB94		1	3.6576	3.6576									
Building	MB95		1	3.6576	3.6576									
Building	MB98		1	3.6576	3.6576									
Building	MB99		1	3.6576	3.6576									
Building	MB100		1	3.6576	3.6576									
Building	MB101		1	4.8768	4.8768									
Building	MB102		1	4.8768	4.8768									
Building	MB103		1	4.8768	4.8768									

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Company Name: Rohm and Haas Chemicals

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)	Tier 4 Height (m)	Tier 5 Height (m)	Tier 6 Height (m)	Tier 7 Height (m)	Tier 8 Height (m)	Tier 9 Height (m)	Tier 10 Height (m)
Building	MB104		1	3.6576	3.6576									
Building	MB105		1	3.6576	3.6576									
Building	MB107		1	3.6576	3.6576									
Building	MB108		1	4.8768	4.8768									
Building	MB110		1	3.6576	3.6576									
Building	MB113		1	3.6576	3.6576									
Building	MB114		1	15.24	15.24									
Building	MB115		1	3.6576	3.6576									
Building	MB116		1	6.096	6.096									
Building	MB117		1	3.6576	3.6576									
Building	MB120		1	24	24									
Building	CT1		1	12.192	12.192									
Building	BD1		1	5.4864	5.4864									
Building	BD2		1	4.8768	4.8768									
Building	BD3		1	5.4864	5.4864									
Building	BD4		1	5.4864	5.4864									
Building	MB11		1	3.6576	3.6576									
Building	BD5		1	4.2672	4.2672									
Building	BD6		1	5.4864	5.4864									
Building	BD7		1	4.8768	4.8768									
Building	BD8		1	4.8768	4.8768									
Building	BD9		1	4.8768	4.8768									
Building	BD10		1	5.4864	5.4864									
Building	BD11		1	4.8768	4.8768									
Building	BD12		1	5.4864	5.4864									
Building	BD13		1	4.8768	4.8768									
Building	MB66B		1	9.7536	9.7536									
Building	BD14		1	4.8768	4.8768									
Building	MB58A		1	5.4864	5.4864									
Building	N4A		1	8.2296	8.2296									
Building	BH23A		1	3.048	3.048									
Tank	96671	22.0812	1	3.7161	3.7161									
Tank	96657	21.87	1	3.7161	3.7161									
Tank	96650	20.96	1	3.7161	3.7161									
Tank	96683	20.0611	1	3.7161	3.7161									
Tank	96616	21.87	1	3.7161	3.7161									
Tank	96632	23.1648	1	2.88	2.88									
Tank	96600	20.9797	1	3.7161	3.7161									
Tank	96665	30.0838	1	3.2516	3.2516									
Tank	96631	32.8	1	2.88	2.88									
Tank	96668	30.9934	1	3.2516	3.2516									
Tank	TK1	9.048	1	3.7161	3.7161									
Tank	TK2	9.048	1	3.7161	3.7161									
Tank	TK3	9.048	1	3.7161	3.7161									
Tank	TK4	9.3	1	3.7161	3.7161									
Tank	TK5	9.3	1	3.7161	3.7161									
Tank	TK6	9.3	1	3.7161	3.7161									
Tank	TK7	9.3	1	3.7161	3.7161									
Tank	TK8	9.3	1	3.7161	3.7161									
Tank	TK9	6.9153	1	2.2297	2.2297									
Tank	TK10	6.9153	1	2.2297	2.2297									
Tank	TK11	9.57	1	2.2297	2.2297									
Tank	TK12	9.57	1	2.2297	2.2297									
Tank	TK13	12.57	1	3.5303	3.5303									
Tank	TK14	5.52	1	3.7161	3.7161									
Tank	TK15	5.58	1	3.7161	3.7161									
Tank	TK16	5.5	1	3.7161	3.7161									
Tank	TK17	5.56	1	3.7161	3.7161									
Tank	TK18	4.13	1	2.9729	2.9729									
Tank	TK19	4.09	1	2.9729	2.9729									
Tank	TK20	4.13	1	2.9729	2.9729									
Tank	TK21	4.06	1	2.9729	2.9729									
Tank	TK22	20.04	1	2.7871	2.7871									
Tank	TK23	19.96	1	2.7871	2.7871									
Tank	TK24	24.57	1	2.7871	2.7871									
Tank	TK25	11.31	1	2.7871	2.7871									
Tank	TK28	7.69	1	9.144	9.144									
Tank	TK29	7.81	1	9.144	9.144									
Tank	TK31	5.53	1	2.2297	2.2297									
Tank	TK32	12.31	1	1.1148	1.1148									
Tank	TK33	12.51	1	1.1148	1.1148									
Tank	TK34	21.22	1	1.1148	1.1148									
Tank	TK35	26.95	1	1.1148	1.1148									
Tank	TK39	4.94	1	2.2297	2.2297									
Tank	TK40	4.88	1	2.2297	2.2297									
Tank	TK41	4.88	1	2.2297	2.2297									
Tank	TK42	4.93	1	2.2297	2.2297									
Tank	TK43	10.9728	1	2.7871	2.7871									
Tank	TK44	10.9728	1	2.7871	2.7871									
Tank	TK45	10.9728	1	2.7871	2.7871									
Tank	TK46	14.6304	1	2.7871	2.7871									
Tank	TK47	12.07	1	2.2297	2.2297									
Tank	TK48	20.25	1	3.7161	3.7161									
Tank	TK49	14.95	1	3.7161	3.7161									
Tank	TK50	14.44	1	2.9729	2.9729									
Tank	TK51	4.38	1	19.812	19.812									
Tank	TK52	4.4	1	15.24	15.24									
Tank	TK53	4.4	1	15.24	15.24									
Tank	TK54	4.38	1	15.24	15.24									
Tank	TK55	4.4	1	15.24	15.24									
Tank	TK56	4.25	1	15.24	15.24									

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Company Name: Rohm and Haas Chemicals

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)	Tier 4 Height (m)	Tier 5 Height (m)	Tier 6 Height (m)	Tier 7 Height (m)	Tier 8 Height (m)	Tier 9 Height (m)	Tier 10 Height (m)
Tank	TK57	4.31	1	15.24	15.24									
Tank	TK58	4.31	1	15.24	15.24									
Tank	TK59	4.18	1	15.24	15.24									
Tank	TK60	4.34	1	15.24	15.24									
Tank	TK61	4.31	1	15.24	15.24									
Tank	TK62	4.31	1	15.24	15.24									
Tank	TK63	4.38	1	15.24	15.24									
Tank	TK64	4.28	1	15.24	15.24									
Tank	TK65	4.4	1	15.24	15.24									
Tank	TK66	4.4	1	15.24	15.24									
Tank	TK67	4.34	1	15.24	15.24									
Tank	TK68	4.31	1	15.24	15.24									
Tank	TK69	4.4	1	15.24	15.24									
Tank	TK70	4.42	1	15.24	15.24									
Tank	TK71	4.4	1	15.24	15.24									
Tank	TK72	4.38	1	15.24	15.24									
Tank	TK73	4.33	1	15.24	15.24									
Tank	TK74	4.38	1	15.24	15.24									
Tank	TK75	4.4	1	15.24	15.24									
Tank	TK76	12.44	1	2.7871	2.7871									
Tank	TK77	4.25	1	1.8581	1.8581									
Tank	TK78	4.38	1	4.572	4.572									
Tank	TK79	4.4	1	4.572	4.572									
Tank	TK80	4.4	1	6.096	6.096									
Tank	TK81	4.4	1	3.9624	3.9624									
Tank	TK82	4.31	1	1.8581	1.8581									
Tank	TK83	4.27	1	2.6013	2.6013									
Tank	TK84	4.22	1	2.6013	2.6013									
Tank	TK85	4.51	1	2.6013	2.6013									
Tank	TK86	4.28	1	2.6013	2.6013									
Tank	TK87	4.25	1	1.8581	1.8581									
Tank	TK88	4.33	1	1.8581	1.8581									
Tank	TK89	4.19	1	2.2297	2.2297									
Tank	TK90	4.38	1	1.8581	1.8581									
Tank	TK91	4.37	1	1.8581	1.8581									
Tank	TK92	4.19	1	2.2297	2.2297									
Tank	TK93	4.37	1	1.8581	1.8581									
Tank	TK94	4.25	1	2.6013	2.6013									
Tank	TK95	4.22	1	2.6013	2.6013									
Tank	TK96	7.94	1	1.6723	1.6723									
Tank	TK97	7.69	1	1.6723	1.6723									
Tank	TK98	8.05	1	2.2297	2.2297									
Tank	TK99	7.67	1	2.2297	2.2297									
Tank	TK100	4.8768	1	2.2297	2.2297									
Tank	TK101	7.76	1	2.2297	2.2297									
Tank	TK102	4.13	1	1.6723	1.6723									
Tank	TK103	3.6576	1	1.3006	1.3006									
Tank	TK104	3.6576	1	1.3006	1.3006									
Tank	TK105	3.6576	1	1.3006	1.3006									
Tank	TK106	3.6576	1	1.3006	1.3006									
Tank	TK107	3.6576	1	1.3006	1.3006									
Tank	TK108	3.6576	1	1.3006	1.3006									
Tank	TK109	3.6576	1	1.3006	1.3006									
Tank	TK110	3.6576	1	1.3006	1.3006									
Tank	TK111	3.048	1	2.6013	2.6013									
Tank	TK112	3.048	1	2.6013	2.6013									
Tank	TK113	3.048	1	1.1148	1.1148									
Tank	TK114	3.048	1	2.2297	2.2297									
Tank	TK115	5.4864	1	1.6723	1.6723									
Tank	TK116	5.4864	1	1.6723	1.6723									
Tank	TK117	4.31	1	2.7871	2.7871									
Tank	TK118	4.34	1	2.7871	2.7871									
Tank	TK119	3.048	1	1.4864	1.4864									
Tank	TK120	3.048	1	1.1148	1.1148									
Tank	TK121	3.048	1	1.4864	1.4864									
Tank	TK122	3.048	1	1.4864	1.4864									
Tank	TK123	7.3152	1	1.6723	1.6723									
Tank	TK124	7.3152	1	1.6723	1.6723									
Tank	TK125	7.75	1	2.4155	2.4155									
Tank	TK126	7.81	1	2.4155	2.4155									
Tank	TK127	7.62	1	1.6723	1.6723									
Tank	TK128	7.81	1	2.4155	2.4155									
Tank	TK129	4.8768	1	1.4864	1.4864									
Tank	TK130	4.8768	1	1.4864	1.4864									
Tank	TK131	7.3152	1	1.8581	1.8581									
Tank	TK132	4.8768	1	1.4864	1.4864									
Tank	TK133	4.2672	1	1.4864	1.4864									
Tank	TK134	5.9	1	1.4864	1.4864									
Tank	TK136	7.3152	1	2.4155	2.4155									
Tank	TK137	7.3152	1	2.4155	2.4155									
Tank	TK138	9.144	1	2.7871	2.7871									
Tank	TK139	4.31	1	2.4155	2.4155									
Tank	TK140	4.34	1	1.8581	1.8581									
Tank	TK141	4.34	1	2.4155	2.4155									
Tank	TK142	4.38	1	2.7871	2.7871									
Tank	TK143	3.6576	1	1.6723	1.6723									
Tank	TK144	3.6576	1	1.6723	1.6723									
Tank	TK145	3.6576	1	1.6723	1.6723									
Tank	TK146	32.83	1	2.2297	2.2297									
Tank	TK147	21.64	1	2.2297	2.2297									
Tank	TK148	20.44	1	3.7161	3.7161									

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Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)	Tier 4 Height (m)	Tier 5 Height (m)	Tier 6 Height (m)	Tier 7 Height (m)	Tier 8 Height (m)	Tier 9 Height (m)	Tier 10 Height (m)
Tank	TK149	19.38	1	3.7161	3.7161									
Tank	TK150	19.43	1	3.7161	3.7161									
Tank	TK151	20.44	1	3.7161	3.7161									
Tank	TK152	9.62	1	1.8581	1.8581									
Tank	TK153	9.5	1	1.8581	1.8581									
Tank	TK154	9.56	1	1.8581	1.8581									
Tank	TK155	10.5	1	2.2297	2.2297									
Tank	TK156	9.68	1	3.3445	3.3445									
Tank	TK157	5.02	1	3.3445	3.3445									
Tank	TK158	4.84	1	3.3445	3.3445									
Tank	TK159	4.98	1	3.3445	3.3445									

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Tank	TK160	5	1	3.3445	3.3445									
Tank	TK161	4.92	1	3.3445	3.3445									
Tank	TK162	9.83	1	3.3445	3.3445									
Tank	TK163	4.87	1	1.4864	1.4864									
Tank	TK164	4.88	1	1.4864	1.4864									
Tank	TK165	6.39	1	1.4864	1.4864									
Tank	TK166	6.27	1	1.4864	1.4864									
Tank	TK167	6.27	1	1.4864	1.4864									
Tank	TK168	6.37	1	2.9729	2.9729									
Tank	TK169	6.37	1	2.9729	2.9729									
Tank	TK170	6.21	1	2.9729	2.9729									
Tank	TK171	6.27	1	1.4864	1.4864									
Tank	TK172	6.21	1	1.4864	1.4864									
Tank	TK173	6.21	1	1.4864	1.4864									
Tank	TK174	11.19	1	1.1148	1.1148									
Tank	TK175	24.06	1	5.5742	5.5742									
Tank	TK176	29.56	1	7.4322	7.4322									
Tank	TK177	8.5344	1	2.4155	2.4155									
Tank	TK178	8.5344	1	2.4155	2.4155									
Tank	TK181	12.192	1	9.144	9.144									
Tank	TK182	23.75	1	9.144	9.144									
Tank	TK183	20.83	1	12.192	12.192									
Tank	TK184	13.95	1	9.144	9.144									
Tank	TK194	5.27	1	2.2297	2.2297									
Tank	TK195	4.31	1	1.4864	1.4864									
Tank	TK196	4.19	1	1.4864	1.4864									
Tank	TK197	4.58	1	9.144	9.144									
Tank	TK198	5.7322	1	6.7056	6.7056									
Tank	TK199	4.91	1	6.7056	6.7056									
Tank	TK200	5.8922	1	6.7056	6.7056									
Tank	TK201	3.2739	1	6.7056	6.7056									
Tank	TK202	3.2912	1	6.7056	6.7056									
Tank	TK203	3.6209	1	6.096	6.096									
Tank	TK204	3.46	1	4.572	4.572									
Tank	TK205	3.5436	1	4.572	4.572									
Tank	TK206	2.4113	1	6.7056	6.7056									
Tank	TK207	2.9743	1	6.7056	6.7056									
Tank	TK209	3.85	1	1.8581	1.8581									
Tank	TK210	3.95	1	1.8581	1.8581									
Tank	TK211	3.95	1	1.8581	1.8581									
Tank	TK212	4.861	1	2.2297	2.2297									
Tank	TK213	3.9513	1	1.8581	1.8581									
Tank	TK214	3.9513	1	1.8581	1.8581									
Tank	TK215	3.9513	1	1.8581	1.8581									
Tank	TK216	3.9513	1	1.8581	1.8581									

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Permit #: 27131

General Information

Company Name: Rohm and Haas Chemicals

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)	Tier 4 Height (m)	Tier 5 Height (m)	Tier 6 Height (m)	Tier 7 Height (m)	Tier 8 Height (m)	Tier 9 Height (m)	Tier 10 Height (m)
Tank	TK217	2.73	1	1.8581	1.8581									
Tank	TK218	7.2	1	2.2297	2.2297									
Tank	TK219	6.9907	1	2.2297	2.2297									
Tank	TK220	3.2008	1	2.2297	2.2297									
Tank	TK221	3.2008	1	2.2297	2.2297									
Tank	TK222	2.8409	1	2.2297	2.2297									
Tank	TK223	8.8011	1	2.2297	2.2297									
Tank	TK224	9.144	1	2.0439	2.0439									
Tank	TK225	7.6613	1	1.8581	1.8581									
Tank	TK226	7.6613	1	1.8581	1.8581									
Tank	TK227	7.6613	1	1.8581	1.8581									
Tank	TK228	7.6613	1	1.8581	1.8581									
Tank	TK229	7.6613	1	1.8581	1.8581									
Tank	TK230	7.6613	1	1.8581	1.8581									
Tank	TK231	10.6509	1	2.2297	2.2297									
Tank	TK232	11.5824	1	3.5303	3.5303									
Tank	TK233	5.56	1	3.7161	3.7161									
Tank	TK234	5.56	1	3.7161	3.7161									
Tank	TK235	4.8768	1	3.7161	3.7161									
Tank	TK236	11.5824	1	3.5303	3.5303									
Tank	TK237	5.56	1	3.7161	3.7161									
Tank	TK238	5.56	1	3.7161	3.7161									
Tank	TK239	4.8768	1	3.7161	3.7161									
Tank	TK240	30.48	1	3.7161	3.7161									
Tank	TK241	30.48	1	3.7161	3.7161									
Tank	TK242	30.48	1	3.7161	3.7161									
Tank	TK243	4.9	1	9.144	9.144									

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Electronic Modeling Evaluation Workbook (EMEW)

General Information

Company Name: Rohm and Haas Chemicals

Facility:

EPN	Model ID	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Height [m]	Exit Temperature [K]	Exit Velocity [m/s]	Heat Release (MMBtu/hr)	Molecular Weight	Gross Heat Release or q (cal/s)	Net Heat Release or q_n (cal/s)	Effective Diameter or D (meters)	Description
B-3-1	B_3_1	Routine	296324.00	3291295.00	5.39	22.86	1273.00	20.00	36.01	28.20	2520537.578	1878096.166	1.37	Flare
LU-1	LU_1	Routine	296421.53	3290353.80	6.64	18.29	1273.00	20.00	2.86	49.07	199876.2301	132670.4075	0.364	Flare
N-6	N_6	Routine	296816.37	3290194.53	7.53	38.10	1273.00	20.00	27.03	20.69	1892428.673	1479294.551	1.22	N-3/7 Feed and Exit Gas Flare
N-17	N_17	Routine	296426.74	3290178.09	6.99	38.10	1273.00	20.00	86.53	18.28	6057250.322	4814074.591	2.19	N-5/6 Flare
SW-1	SW_1	Routine	296482.00	3290253.00	6.91	24.38	1273.00	20.00	2.44	25.83	171118.3933	129370.7251	0.360	Flare
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
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							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	

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General Information

Date: 6/28/2019

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Company Name: Rohm and Haas Chemicals

Facility:

EPN	Model ID	Modeling Scenario	Source Description	Point Source Type	Point Source Justification	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Height [m]	Exit Temperature [K]	Exit Velocity [m/s]	Diameter [m]
LU-VS	LU_VS	Routine	Batch Vent	POINT	Vertical Stack	296455.00	3290370.00	6.66	30.18	0.000	4.328	0.762
N-4	N_4	Routine	N-7/8 Absorber Feed Water Tank	POINT	Tank	296759.36	3290164.68	7.64	3.05	0.000	0.001	0.001
SW-16	SW_16	Routine	Tank 12126 (Aqua Salt)	POINT	Tank	296477.46	3290273.72	6.85	6.40	0.000	0.001	0.001
BH-2-3	BH_2_3	Routine	Boiler No. 3 400 MMBtu/hr	POINT	Vertical Stack	296901.01	3290239.26	6.77	15.24	433.150	8.534	2.134
BH-2-4	BH_2_4	Routine	Boiler No. 4 623.6 MMBtu/hr	POINT	Vertical Stack	296944.00	3290260.00	6.22	30.48	433.150	8.534	2.134
B3-MSSLD	MSSLOAD	MSS	Light Ends Loading	POINT	Loading	296537.50	3291251.80	5.92	4.88	0.000	0.001	0.001
N-7	N_7	Routine	N-5/6 Safety Vent Stack	POINT	Vertical Stack	296476.00	3290181.00	7.05	45.72	294.261	4.145	1.524
N-8	N_8	Routine	N-3/4 Safety Vent Stack	POINT	Vertical Stack	296759.37	3290229.62	7.82	45.42	294.261	4.023	1.524
N-9	N_9	Routine	N-7/8 SVG Fan	POINT	Vertical Stack	296794.66	3290163.60	7.55	33.53	298.150	3.658	0.396
BGMA-MSSTK	MSSTK4	MSS	B3,B4,GMAA Fixed Roof Tanks MSS Activities - Worst Tank is B-3-18 for Ammonia	POINT	Tank	296548.35	3291258.29	5.91	5.07	0.000	0.001	0.001
35630	35630	Routine	Primene Salt Tank	POINT	Tank	296558.00	3291371.00	5.85	6.10	0.000	0.001	0.001
B-3-11	B_3_11	Routine	Tank 34335	POINT	Tank	296558.70	3291232.20	5.96	6.10	0.000	0.001	0.001
B-3-12	B_3_12	Routine	Tank 34343	POINT	Tank	296549.20	3291233.20	5.95	6.10	0.000	0.001	0.001
B-3-18	B_3_18	Routine	Tank 34402	POINT	Tank	296548.35	3291258.29	5.91	5.79	0.000	0.001	0.001
B-3-19	B_3_19	Routine	Tank 34426	POINT	Tank	296555.82	3291265.99	5.90	4.27	0.000	0.001	0.001
B-3-61	B_3_61	Routine	B3 Slurry Pot	POINT	Tank	296558.00	3291223.00	5.98	1.52	0.000	0.001	0.001
B-3-36	B_3_36	Routine	Tank 22080	POINT	Tank	296533.00	3291074.00	6.13	1.83	0.000	0.001	0.001
B-4-5	B_4_5	Routine	Tank 33336	POINT	Tank	296523.00	3291074.00	6.10	3.05	0.000	0.001	0.001

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Date: 6/28/2019

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Company Name: Rohm and Haas Chemicals

Facility:

EPN	Model ID	Modeling Scenario	Area Source Type	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Modeled Release Height [m]	Length X [m]	Length Y [m]	Rotation Angle [deg]	Radius [m]	Initial Vertical Sigma (m)	Area Source Initial Sigma Justification	Area Source Size Justification	Area Source Release Height Justification	Source Description
FN	FN	Routine	AREAPOLY	296364.22	3290285.17	6.68	9.14							Fugitives release over an area	Average release height	Fugitives

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Electronic Modeling Evaluation Workbook (EMEW)

General Information

Company Name: Rohm and Haas Chemicals

Facility:

EPN	Model ID	Footprint of Source Length (m)	Footprint of Source Width (m)	Length of Side (making it a square) SQRT(L * W)	Type of Volume Source (sigma y) *Pick from drop-down*	**Sigma Y** (m)	Vertical Span Min Release (m)	Vertical Span Max Release (m)	Vertical Dimension (m)	Type of Volume Source (sigma z) *Pick from drop-down*	Release Height (middle point of vertical span) (m)	Building Name (if on/adjacent to a building) *Pick from drop-down*	Adjacent Building Height, if applicable (m)	**Sigma Z** (m)
B-3-47 & B-3-48	B_3_47	36.58	48.16	41.97	Single Volume Source	9.76	0.00	9.14	9.14	Surface-Based Source	4.57			4.25
B-4-9	B_4_9	32.00	30.48	31.23	Single Volume Source	7.26	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
BGMA-DEGAS	MSSDEGAS	104.25	104.25	104.25	Single Volume Source	24.24	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
B3MISCMSS	MISSMISC	104.25	104.25	104.25	Single Volume Source	24.24	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
LU-2	LU_2P	106.42	106.42	106.42	Single Volume Source	24.75	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
LSMISCMSS	LSMISMSS	127.86	127.86	127.86	Single Volume Source	29.73	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
LU_DEGAS	LU_DEGAS	127.86	127.86	127.86	Single Volume Source	29.73	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
N_MSSPH	N_MSSPH	149.80	149.80	149.80	Single Volume Source	34.84	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
N_DEGAS	N_DEGAS	149.80	149.80	149.80	Single Volume Source	34.84	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
NMISCMSS	NMISCMSS	149.80	149.80	149.80	Single Volume Source	34.84	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
BLR/FUG	BLR_FUG	33.64	33.64	33.64	Single Volume Source	7.82	0.00	15.24	15.24	Surface-Based Source	7.62			7.09
SW-27	SW_27	77.05	77.05	77.05	Single Volume Source	17.92	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
SW_MSSPH	SW_MSSPH	77.05	77.05	77.05	Single Volume Source	17.92	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
SW_MISCMSS	SWMISMSS	77.05	77.05	77.05	Single Volume Source	17.92	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete

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General Information

Date: 6/28/2019

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Company Name: Rohm and Haas Chemicals

Facility:

EPN	Model ID	Modeled Release Height [m]	Modeled Length X [m]	Lateral Dimension SigmaY [m]	Vertical Dimension SigmaZ [m]	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Source Description	Volume Source Size Justification
B-3-47 & B-3-48	B_3_47	4.57	41.97	9.76	4.25	Routine	296508.23	3291216.27	5.98	B-3 Rack Fugitives	Fugitives dispersing in 3 dimensions
B-4-9	B_4_9	3.05	31.23	7.26	2.84	Routine	296517.00	3291075.00	6.08	B-4 Rack Fugitives	Fugitives dispersing in 3 dimensions
BGMA-DEGAS	MSSDEGAS	3.05	104.25	24.24	2.84	MSS	296218.00	3290331.00	6.63	Equipment Degassing	Multiple equipment and operations dispersing in 3 dimensions
B3MISCMSS	MISSMISC	3.05	104.25	24.24	2.84	MSS	296218.00	3290331.00	6.63	Miscellaneous MSS	Multiple equipment and operations dispersing in 3 dimensions
LU-2	LU_2P	3.05	106.42	24.75	2.84	Routine	296482.00	3290405.00	6.67	Fugitives	Fugitives dispersing in 3 dimensions
LSMISCMSS	LSMISMSS	3.05	127.86	29.73	2.84	MSS	296473.46	3290419.55	6.65	Fugitive Component and Piping MSS	Fugitives dispersing in 3 dimensions
LU_DEGAS	LU_DEGAS	3.05	127.86	29.73	2.84	MSS	296473.46	3290419.55	6.65	Equipment Degassing	Multiple equipment and operations dispersing in 3 dimensions
N_MSSPH	N_MSSPH	3.05	149.80	34.84	2.84	MSS	296475.00	3290209.00	6.99	Pump and Heat Exchanger MSS	Multiple equipment and operations dispersing in 3 dimensions
N_DEGAS	N_DEGAS	3.05	149.80	34.84	2.84	MSS	296475.00	3290209.00	6.99	Equipment Degassing	Multiple equipment and operations dispersing in 3 dimensions
NMISCMSS	NMISCMSS	3.05	149.80	34.84	2.84	MSS	296475.00	3290209.00	6.99	Miscellaneous MSS Activities	Multiple equipment and operations dispersing in 3 dimensions
BLR/FUG	BLR_FUG	7.62	33.64	7.82	7.09	Routine	296914.00	3290253.00	6.55	Boiler Fugitives	Fugitives dispersing in 3 dimensions
SW-27	SW_27	3.05	77.05	17.92	2.84	Routine	296544.00	3290247.00	7.10	Fugitives	Fugitives dispersing in 3 dimensions
SW_MSSPH	SW_MSSPH	3.05	77.05	17.92	2.84	MSS	296544.00	3290247.00	7.10	Pump and Heat Exchanger MSS	Multiple equipment and operations dispersing in 3 dimensions
SW_MISCMSS	SWMISMSS	3.05	77.05	17.92	2.84	MSS	296544.00	3290247.00	7.10	Fugitive Component, Pipe Clearing, and Instrument Maintenance	Multiple equipment and operations dispersing in 3 dimensions

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Date: 6/28/2019

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Company Name: Rohm and Haas Chemicals

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?	Scalar/Factor in Use
LU-VS	LU_VS	Routine	Generic	1-hr			No	1.00	Generic Modeling at 1 lb/hr	No	
LU-VS	LU_VS	Routine	Generic	24-hr			No	1.00	Generic Modeling at 1 lb/hr	No	
LU-VS	LU_VS	Routine	Generic	Annual			No	1.00	Generic Modeling at 1 lb/hr	No	
B-3-1	B_3_1	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
LU-1	LU_1	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
N-6	N_6	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
N-17	N_17	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
SW-1	SW_1	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
N-4	N_4	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
LU-VS	LU_VS	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
SW-16	SW_16	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
BH-2-3	BH_2_3	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
BH-2-4	BH_2_4	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
B3-MSSLD	MSSLOAD	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
N-7	N_7	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
N-8	N_8	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
N-9	N_9	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
BGMA-MSSTK	MSSTK4	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
35630	35630	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
B-3-11	B_3_11	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
B-3-12	B_3_12	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
B-3-18	B_3_18	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
B-3-19	B_3_19	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
B-3-61	B_3_61	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
B-3-36	B_3_36	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
B-4-5	B_4_5	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: _6/28/2019_______

Permit #: _____27131___

Company Name: Rohm and Haas Chemicals

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?	Scalar/Factor in Use
FN	FN	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019

Permit #: 27131

Company Name: Rohm and Haas Chemicals

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?	Scalar/Factor in Use
B-3-47 & B-3-48	B_3_47	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
B-4-9	B_4_9	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
BGMA-DEGAS	MSSDEGAS	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
B3MISCMSS	MISSMISC	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
LU-2	LU_2P	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
LSMISCMSS	LSMISMSS	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
LU_DEGAS	LU_DEGAS	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
N_MSSPH	N_MSSPH	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
NMISCMSS	NMISCMSS	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
BLR/FUG	BLR_FUG	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
SW-27	SW_27	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
SW_MSSPH	SW_MSSPH	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
SW_MISCMSS	SWMISMSS	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	
N_DEGAS	N_DEGAS	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No		Potential to Emit	No	

Texas Commission on Environmental Quality

Date: 6/28/2019

Permit #: 27131

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Company Name: Rohm and Haas Chemicals

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging time	Standard Type	Review Context	Intermittent	Source Type	Modeled Emission Rate [lb/hr]
LU-VS	LU_VS	Routine	Generic	1-hr			No	Point	1.00
LU-VS	LU_VS	Routine	Generic	24-hr			No	Point	1.00
LU-VS	LU_VS	Routine	Generic	Annual			No	Point	1.00
B-3-1	B_3_1	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Flare	--
LU-1	LU_1	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Flare	--
N-6	N_6	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Flare	--
N-17	N_17	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Flare	--
SW-1	SW_1	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Flare	--
N-4	N_4	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
LU-VS	LU_VS	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
SW-16	SW_16	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
BH-2-3	BH_2_3	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
BH-2-4	BH_2_4	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
B3-MSSLD	MSSLOAD	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
N-7	N_7	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
N-8	N_8	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
N-9	N_9	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
BGMA-MSSTK	MSSTK4	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
35630	35630	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
B-3-11	B_3_11	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
B-3-12	B_3_12	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
B-3-18	B_3_18	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
B-3-19	B_3_19	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
B-3-61	B_3_61	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
B-3-36	B_3_36	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
B-4-5	B_4_5	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Point	--
FN	FN	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Area	--
B-3-47 & B-3-48	B_3_47	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
B-4-9	B_4_9	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
BGMA-DEGAS	MSSDEGAS	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
B3MISCMSS	MISSMISC	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
LU-2	LU_2P	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
LSMISCMSS	LSMISMSS	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
LU_DEGAS	LU_DEGAS	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
N_MSSPH	N_MSSPH	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
NMISCMSS	NMISCMSS	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
BLR/FUG	BLR_FUG	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
SW-27	SW_27	Routine	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
SW_MSSPH	SW_MSSPH	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
SW_MISCMSS	SWMISMSS	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--
N_DEGAS	N_DEGAS	MSS	Health Effects Pollutant	1-hr	Health Effects	Site Wide	No	Volume	--

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019

Permit #: 27131

Company Name: Rohm and Haas Chemicals

Modeling Scenario	Scenario Description:
MSS	Maintenance, Start-up and Shut-down
Routine	Routine Emissions occurring continuously throughout the year

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019

Permit #: 27131

Company Name: Rohm and Haas Chemicals

Facility:

Modeled Emission Rates for Precursors (MERPs) Demonstration Tool for Calculating Secondary $PM_{2.5}$ Impacts

Precursor	Project Increases (tpy)	Source Selection	Selection of Variables		MERP Value		Total Secondary Value ($\mu g/m^3$)	
			Emission Rate (tpy)	Height (m)	24-hr	Annual	24-hr $PM_{2.5}$	Annual $PM_{2.5}$
Nitrogen Oxide (NO_x)							0.00000	0.00000
Sulfur Dioxide (SO_2)								

MERPs Demonstration Justification	**Applican**
A. Provide justification for selection of worst-case MERP and/or site-specific source here. *Please limit your response to 2000 characters.*	**All internal comments n**
B. If a site-specific source is selected, provide justification for the selected emission rate variable(s) here. *Please limit your response to 2000 characters.*	
C. If a site specific MERP value is selected, provide justification for the selected height variable(s) here. *Please limit your response to 2000 characters.*	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019

Permit #: 27131

Company Name: Rohm and Haas Chemicals

Table 3. Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr		7.8*
SO_2	3-hr		25
SO_2	24-hr		5
SO_2	Annual		1
PM_{10}	24-hr	0.00703	5
NO_2	1-hr		7.5**
NO_2	Annual		1
CO	1-hr		2000
CO	8-hr		500

Additional information for the De Minimis values listed above can be found at:

* www.tceq.texas.gov/assets/public/permitting/air/memos/appwso2.pdf

** www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019

Permit #: 27131

Company Name: Rohm and Haas Chemicals

Table 4. $PM_{2.5}$ Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax ($\mu g/m^3$)	Secondary $PM_{2.5}$ Contribution ($\mu g/m^3$)	Total Conc. = Secondary $PM_{2.5}$ + GLCmax ($\mu g/m^3$)	De Minimis ($\mu g/m^3$)
$PM_{2.5}$	24-hr	0.00703	0	0.00703	1.2*
$PM_{2.5}$	Annual	0.00251	0	0.00251	0.2*

Additional information for the De Minimis values listed above can be found at:

* www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019

Permit #: 27131

Company Name: Rohm and Haas Chemicals

Table 5. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (µg/m^3)	Background (µg/m^3)	Total Conc. = [Background + GLCmax] (µg/m^3)	Standard (µg/m^3)
SO_2	1-hr		0	0	196
SO_2	3-hr		0	0	1300
SO_2	24-hr		0	0	365
SO_2	Annual		0	0	80
PM_{10}	24-hr		0	0	150
Pb	3-mo		0	0	0.15
NO_2	1-hr		0	0	188
NO_2	Annual		0	0	100
CO	1-hr		0	0	40000
CO	8-hr		0	0	10000

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019

Permit #: 27131

Company Name: Rohm and Haas Chemicals

Table 6. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax ($\mu g/m^3$)	Secondary $PM_{2.5}$ Contribution ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Conc. = [Background + Secondary + GLCmax] ($\mu g/m^3$)	Standard ($\mu g/m^3$)
$PM_{2.5}$	24-hr		0	0	0	35
$PM_{2.5}$	Annual		0	0	0	12

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: _6/28/2019_______

Permit #: _____27131___

Company Name: Rohm and Haas Chemicals

Facility:

EPN	Model ID	Modeling Scenario	Averaging Time	GLCmax ($\mu g/m^3$ per lb/hr)	GLCmax ($\mu g/m^3$ per tpy)
LU-VS	LU_VS	Routine	1-hr	10.95	
LU-VS	LU_VS	Routine	24-hr	1.94	
LU-VS	LU_VS	Routine	Annual	0.506	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019

Permit #: 27131

Company Name: Rohm and Haas Chemicals

Facility:

Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 5: Hours of Exceedance				Step 6	Step 7: Site Wide		Step 7: Hours of Exceedance			
Chemical Species	CAS Number	Averaging Time	ESL [µg/m³]	10% ESL Step 3 Modeled GLCmax [µg/m³]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m³]	10% ESL Step 4 Production Project Only GLCmax [µg/m³]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m³]	25% ESL Step 4 MSS Project Only GLCmax [µg/m³]	Full ESL Step 5 GLCmax [µg/m³]	*1X ESL GLCmax* Step 5 MSS Hours of Exceedance	*2X ESL GLCmax* Step 5 MSS Hours of Exceedance	*4X ESL GLCmax* Step 5 MSS Hours of Exceedance	*10X ESL GLCmax* Step 5 MSS Hours of Exceedance	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m³]	Site Wide GLCni [µg/m³]	*1X ESL GLCni* Hours of Exceedance	*2X ESL GLCmax* Hours of Exceedance	*4X ESL GLCmax* Hours of Exceedance	*10X ESL GLCmax* Hours of Exceedance
formaldehyde	50-00-0	1-hr	15	1.30																
formaldehyde	50-00-0	Annual	3.3	0.08																
ethanol	64-17-5	1-hr	18800	69.66																
ethanol	64-17-5	Annual	1880	0.36																
acrylonitrile	107-13-1	1-hr	330	0.00																
acrylonitrile	107-13-1	Annual	2.1	0.00																
heteroalkyl methacrylate	N/A	1-hr	Provide Documentation	4.71																
heteroalkyl methacrylate	N/A	Annual	Provide Documentation	0.30																
fumed silica, di-me siloxanes and silicones, reaction products with silica	67762-90-7	1-hr	27	0.00																
fumed silica, di-me siloxanes and silicones, reaction products with silica	67762-90-7	Annual	2	0.00																
tert-butyl hydroperoxide	75-91-2	1-hr	100	7.08																
tert-butyl hydroperoxide	75-91-2	Annual	10	0.45																
acetic acid	64-19-7	1-hr	250	14.00																
acetic acid	64-19-7	Annual	25	1.89																
acrylic acid	79-10-7	1-hr	60	3.12																
acrylic acid	79-10-7	Annual	6	0.20																
ammonia	7664-41-7	1-hr	180	102.52											269.73	26.75	0	0	0	0
ammonia	7664-41-7	Annual	92	0.77																
hydrogen peroxide	7722-84-1	1-hr	14	1.03																
hydrogen peroxide	7722-84-1	Annual	1.4	0.06																

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General Information

Date: 6/28/2019

Permit #: 27131

Company Name: Rohm and Haas Chemicals

Facility:

Model File Base Name	Pollutant	Averaging Time	File Extensions	Additional File Description
RH_LoneStar_27131_Urban_2012_UNIT	Generic	1-hr	*.DTA, .BND, .LST, .GRF, .SUM	Generic Unit Impact - Project Level
RH_LoneStar_27131_Urban_2012_UNIT	Generic	24-hr	*.DTA, .BND, .LST, .GRF, .SUM	Generic Unit Impact - Project Level
RH_LoneStar_27131_Urban_2012_UNIT	Generic	Annual	*.DTA, .BND, .LST, .GRF, .SUM	Generic Unit Impact - Project Level
RH_LoneStar_27131_Urban_PRIME	Generic	All	*.PIP, .SO, .SUM, .TAB	Building Downwash - Project Level
RH_LoneStar_27131_urban_sitewide_2012_NH3_S	Ammonia	1-hr	*.DTA, *.BND, .LST, .GRF, .SUM, .ARY, .MAX	Site-wide Health Effects modeling
RH_LoneStar_27131_urban_sitewide_NI_2012_NH3_S	Ammonia	1-hr	*.DTA, .BND, .LST, .GRF, .SUM	Site-wide Health Effects modeling
RH_LoneStar_27131_urban_sitewide_PRIME	Generic	All	*.PIP, .SO, .SUM, .TAB	Building Downwash - Sitewide
Harris_HOULCH12M	All	All	*.pfl, *.sfc	surface and upper air met files
DowDP1km	All	All	.log, .out	AERSURFACE Files

Rohm and Haas Texas, Incorporated
Deerpark, Texas
Permit No. 27131 Modeling
Supplemental Information

Appendix A:

- Plot Plan (Project-level)
- Plot Plan (Sitewide)
- Area Map
- AUER Land-Use Analysis
- Population Density

Appendix B:

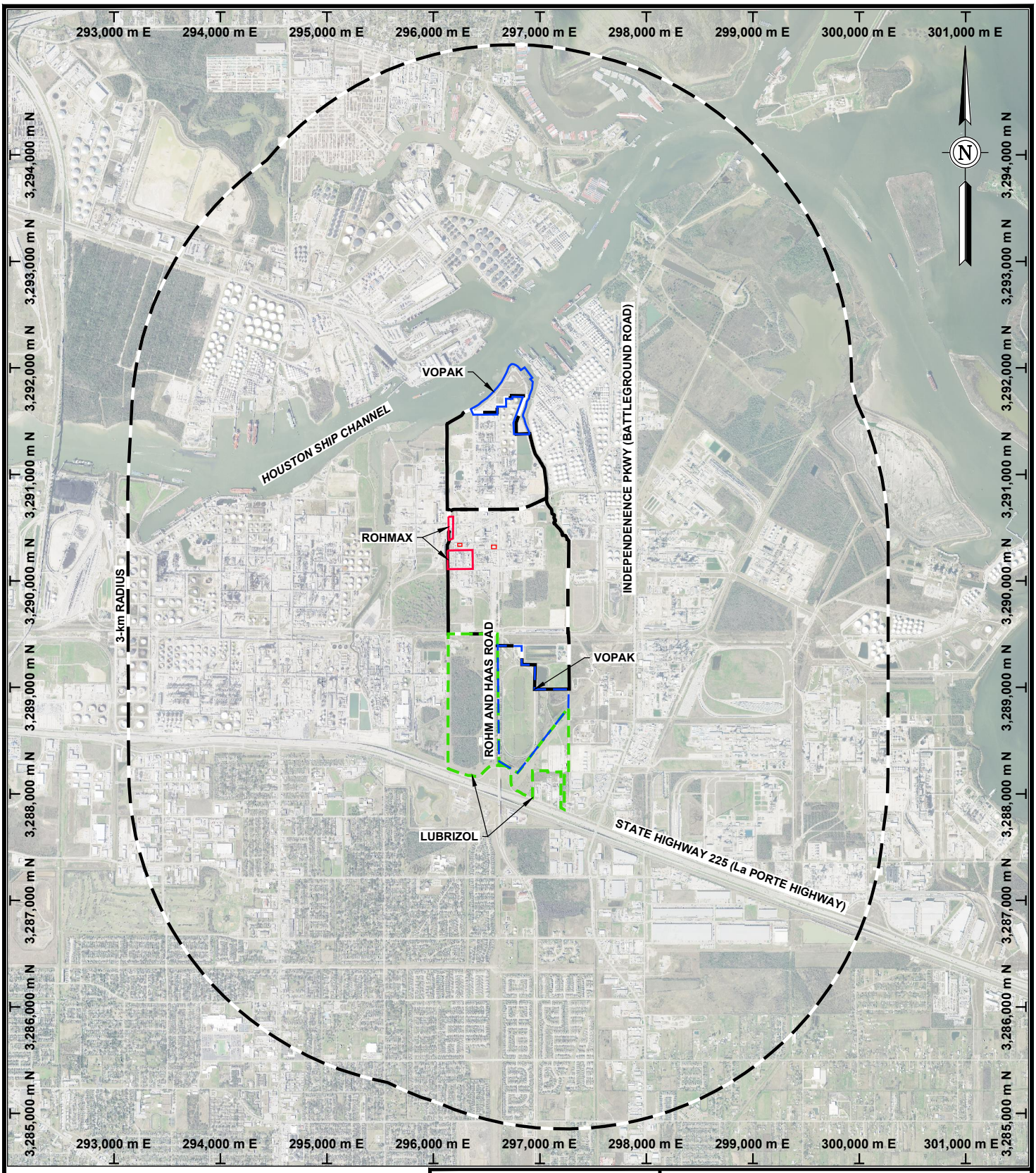
- Appendix B-1. MERA Analysis
- Appendix B-2. Modeled Emission Rates - Project Level
- Appendix B-3. Modeled Stack Parameters – Project Level
- Appendix B-4. Screening Analysis
- Appendix B-5. Modeled Emission Rates - Sitewide
- Appendix B-6. Modeled Stack Parameters - Sitewide
- Appendix B-7. Model Results – Sitewide

Appendix C:

- Appendix C-1: Heteoalkyl Methacrylate ESL Justification
- Appendix C-2: Area Poly Source FN Parameters

Appendix A:

- Plot Plan (Project-level)
- Plot Plan (Sitewide)
- Area Map
- AUER Land-Use Analysis
- Population Density



500 0 500 1000 1500 m

SCALE IN METERS
(1 cm = 500 m)

1500 0 1500 3000 4500 ft

SCALE IN FEET

NOTES:

1. 1000-METER GRID BASED ON UTM WITH NAD27 DATUM, ZONE 15; METERS.
2. AERIAL BACKGROUND PROVIDED BY TNRIS DATED JANUARY 2015.

AECOM
19219 KATY FREEWAY, SUITE 100
HOUSTON, TX 77094
PH: (281) 646-2400
FAX: (281) 646-2401

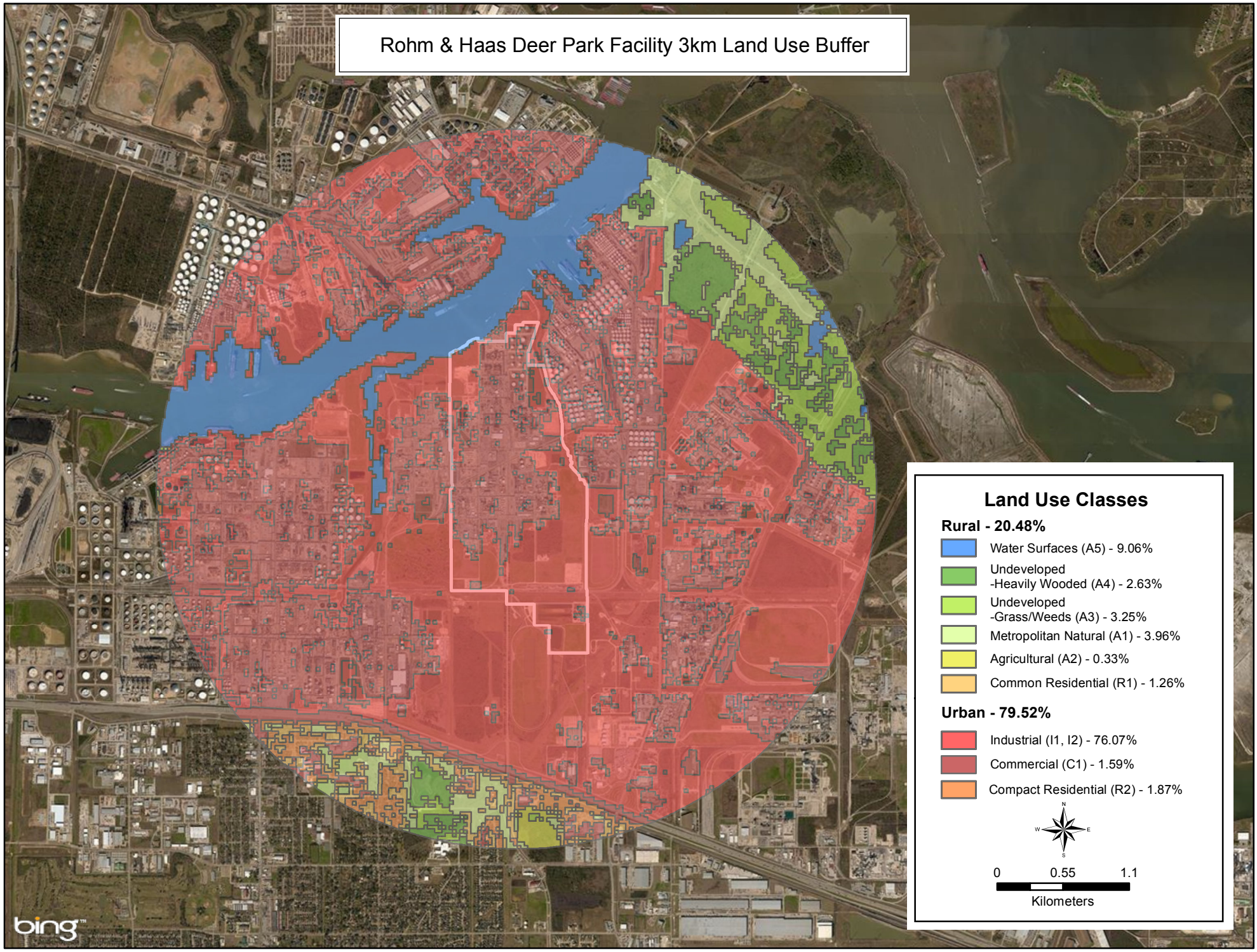
Title: **AREA MAP**

Project: DOW DEER PARK FACILITY
(FORMERLY ROHM AND HAAS)
DEER PARK, HARRIS COUNTY, TEXAS

Client: **DOW CHEMICAL COMPANY**

Scale:	Drawn by:	Date:
AS NOTED	NAB	3-8-2019
	Chk'd by: SC	Date: 3-8-2019

Project No.:	File Name:	Figure No.:
60586928	Area Map - RH - UTM27-15_08March2019.dwg	


Rohm & Haas Deer Park Facility 3km Land Use Buffer
Land Use Classes
Rural - 20.48%
Water Surfaces (A5) - 9.06%
Undeveloped -Heavily Wooded (A4) - 2.63%
Undeveloped -Grass/Weeds (A3) - 3.25%
Metropolitan Natural (A1) - 3.96%
Agricultural (A2) - 0.33%
Common Residential (R1) - 1.26%
Urban - 79.52%
Industrial (I1, I2) - 76.07%
Commercial (C1) - 1.59%
Compact Residential (R2) - 1.87%
N
W
E
S
0
0.55
1.1
Kilometers
bing

Circular Area Profiling System (CAPS)

Version 10C Using Data from Summary File 1, 2010 Census

Ground Zero Coordinates: Latitude= 29.736298 , Longitude=95.104942
RohmHaasDeerPark

Access the aggregated data as a csv file here: caps10c226703.csv

---

10-mile radius of specified point (RohmHaasDeerPark)

Subject	Number	Percent
1. Total Population Trends, Etc.		
Universe: Total Population		
Total Population	**522,020**	
Total Population 2000	**479,907**	
Change in Population 2000-2010	**42,113**	**8.8**
Males	**260,094**	**49.8**
Females	**261,926**	**50.2**
Population Density	**1956**	
Land Area Sq. Miles	**267**	
2. Age		
Universe: Population		
Under 5 Years	**45,374**	**8.7**
Age 5 to 9 Years	**44,586**	**8.5**
10 to 14 Years	**44,246**	**8.5**
15 to 17 Years	**26,599**	**5.1**
18 to 19 Years	**16,947**	**3.2**
20 to 24 Years	**38,571**	**7.4**
25 to 34 Years	**75,225**	**14.4**
35 to 44 Years	**70,373**	**13.5**
45 to 54 Years	**68,217**	**13.1**
55 to 59 Years	**28,062**	**5.4**
Age60 to 64 Years	**21,182**	**4.1**
65 to 74 Years	**24,296**	**4.7**
75 to 84 Years	**13,591**	**2.6**
85 Years and Over	**4,751**	**0.9**
Median Age	31.5	

Subject	Number	Percent
Age 0 to 17	160,805	30.8
18 to 24 Years	55,518	10.6
25 to 44 Years	145,598	27.9
45 to 64 Years	117,461	22.5
62 Years and Over	54,505	10.4
65 Years and Over	42,638	8.2
3. Race		
Universe: Population		
One Race	**506,135**	**97.0**
White	347,295	66.5
Black or African American	51,749	9.9
American Indian and Alaska Native	4,382	0.8
Asian	10,544	2.0
Native Hawaiian and Other Pacific Islander	252	0.0
Some Other Race	91,913	17.6
Multi Race - Persons reporting more than one race	15,885	3.0
4. Hispanic or Latino and Race		
Universe: Hispanic or Latino Population		
Hispanic or Latino (of any race)	**294,457**	**56.4**
Mexican	NA	
Puerto Rican	NA	
Cuban	NA	
Other Hispanic or Latino	NA	
Not Hispanic or Latino	**227,563**	**43.6**
White Alone Not Hispanic	161,711	31.0
5. Relationship of Persons in Households		
Universe: Persons in Households		
Total Persons in Households	**519,531**	**99.5**
Householder	166,386	31.9
Spouse	87,774	16.8
Child	187,503	35.9
Own Child Under 18 Years	135,629	26.0
Other Relatives	53,344	10.2
Non Relatives	24,524	4.7

Subject	Number	Percent
Non-rel Under 18	2,132	0.4
Non-rel Over 65	710	0.1
Unmarried Partner	NA	
6. Households by Type		
Universe: Households		
Total Households	**166,386**	
Family Households (Families)	126,482	76.0
With Own Children Under 18 Years	67,816	40.8
Married Couple Family	87,774	52.8
With Own Children Under 18 Years	46,479	27.9
Female householder, No Husband Present	26,908	16.2
With Own Children Under 18 Years	15,495	9.3
Non Family Households	39,904	24.0
Unmarried Partner Households	NA	
Same-Sex Unmarried Partner HHs	NA	
Householder Living Alone	32,458	19.5
Householder 65 Years and Over	26,397	15.9
Households With Individuals Under 18 Years	77,979	46.9
7. Group Quarters		
Universe: Population Living in Group Quarters		
Population in Group Quarters	**2,489**	**0.5**
Institutionalized Population	2,024	0.4
Pop In Correctional Institutions	576	0.1
Pop in Nursing Homes	1,448	0.3
Pop in Other Institutions	0	0.0
NonInstitutionalized GQ Pop	465	0.1
College Dormitories (Includes college quarters off	0	0.0
Military Quarters	0	0.0
Other NonInstitutional GQ Pop	465	0.1
8. Housing Occupancy and Tenure		
Universe: Housing Units		
Total Housing Units	**185,001**	
Occupied Housing Units	166,386	89.9
Owner Occupied	104,317	62.7

Subject	Number	Percent
Renter Occupied	62,069	37.3
Vacant Housing Units	18,615	10.1
Vacant for Rent	11,024	6.0
Vacant for Sale	1,865	1.0
Vacant for Seasonal,Recreation or Occasional Use	552	0.3
Homeowner Vacancy Rate	1.76	
Rental Vacancy Rate	15.08	
Pop in Owner-occupied Units	336,011	64.4
Pop in Rented Units	183,520	35.2
Average Size of Owner-occupied Units	3.22	
Average Size of Renter-Occupied Units	2.96	

Note: Varibles showing "NA" are not available at the bgs level. Specify tracts as the units to be aggregated to get values for these items.

Summary of True Areas of Circles vs. That of Areas Selected to Estimate Them

(This Report Indicates How Well We Were Able to Approximate the Circular Area)

radius	Estimated	True Area	Ratio of Estimate to True Area
10	301.48	314.16	0.960

Auxiliary Report: Counties Contributing to Circular Areas, By Concentric Ring Areas
Coordinates: (29.736298 , 95.104942)

Outer radius of Ring (or circle)=10

County Cd	Total Pop
Harris TX	522,020
	522,020

Data Used In Aggregating Circular Areas - Selected Variables

radius	County	GeoCode	AreaName	TotPop
10	Harris TX	48201-2323.01-3	Block Group 3	1,562
		48201-2323.02-1	Block Group 1	2,605
		48201-2323.02-3	Block Group 3	776
		48201-2324.01-1	Block Group 1	3,983
		48201-2324.01-2	Block Group 2	1,328
		48201-2324.01-3	Block Group 3	1,278
		48201-2324.01-4	Block Group 4	826
		48201-2324.02-1	Block Group 1	1,805
		48201-2324.02-2	Block Group 2	1,909
		48201-2324.03-1	Block Group 1	1,845
		48201-2324.03-2	Block Group 2	2,320
		48201-2325.00-1	Block Group 1	3,135
		48201-2326.00-1	Block Group 1	1,330
		48201-2326.00-2	Block Group 2	1,670
		48201-2327.01-1	Block Group 1	2,727
		48201-2327.01-2	Block Group 2	480
		48201-2327.01-3	Block Group 3	4,028
		48201-2327.02-1	Block Group 1	2,535
		48201-2327.02-2	Block Group 2	225
		48201-2327.02-3	Block Group 3	2,457
		48201-2328.00-1	Block Group 1	2,675
		48201-2328.00-2	Block Group 2	2,526
		48201-2329.00-1	Block Group 1	1,778
		48201-2329.00-2	Block Group 2	3,588

radius	County	GeoCode	AreaName	TotPop
		48201-2329.00-3	Block Group 3	1,888
		48201-2330.01-1	Block Group 1	1,279
		48201-2330.01-2	Block Group 2	1,854
		48201-2330.02-1	Block Group 1	1,864
		48201-2330.02-2	Block Group 2	2,068
		48201-2330.03-1	Block Group 1	1,398
		48201-2330.03-2	Block Group 2	837
		48201-2331.01-1	Block Group 1	1,332
		48201-2331.01-2	Block Group 2	2,045
		48201-2331.01-3	Block Group 3	730
		48201-2331.02-1	Block Group 1	1,413
		48201-2331.02-2	Block Group 2	2,148
		48201-2331.02-3	Block Group 3	3,115
		48201-2331.03-1	Block Group 1	2,637
		48201-2331.03-2	Block Group 2	2,527
		48201-2332.00-1	Block Group 1	1,493
		48201-2332.00-2	Block Group 2	1,675
		48201-2332.00-3	Block Group 3	1,509
		48201-2332.00-4	Block Group 4	1,555
		48201-2333.00-1	Block Group 1	1,047
		48201-2333.00-2	Block Group 2	2,151
		48201-2333.00-3	Block Group 3	1,620
		48201-2334.00-1	Block Group 1	1,283
		48201-2334.00-2	Block Group 2	1,474
		48201-2335.00-1	Block Group 1	2,041
		48201-2335.00-2	Block Group 2	1,845
		48201-2335.00-3	Block Group 3	2,257
		48201-2335.00-4	Block Group 4	1,653
		48201-2336.00-1	Block Group 1	1,059
		48201-2336.00-2	Block Group 2	1,068
		48201-2337.01-1	Block Group 1	2,571
		48201-2337.01-2	Block Group 2	2,674
		48201-2337.02-1	Block Group 1	1,289

radius	County	GeoCode	AreaName	TotPop
		48201-2337.02-2	Block Group 2	673
		48201-2337.02-3	Block Group 3	1,038
		48201-2337.03-1	Block Group 1	1,522
		48201-2337.03-2	Block Group 2	1,134
		48201-2522.00-1	Block Group 1	1,691
		48201-2522.00-2	Block Group 2	6,253
		48201-2523.01-1	Block Group 1	4,246
		48201-2523.01-2	Block Group 2	1,522
		48201-2523.01-3	Block Group 3	3,094
		48201-2523.02-1	Block Group 1	6,845
		48201-2523.02-2	Block Group 2	842
		48201-2523.02-3	Block Group 3	3,756
		48201-2524.00-1	Block Group 1	2,182
		48201-2524.00-2	Block Group 2	1,382
		48201-2524.00-3	Block Group 3	858
		48201-2524.00-4	Block Group 4	2,554
		48201-2525.00-1	Block Group 1	1,322
		48201-2525.00-2	Block Group 2	547
		48201-2525.00-3	Block Group 3	978
		48201-2525.00-4	Block Group 4	1,478
		48201-2526.00-1	Block Group 1	2,232
		48201-2526.00-2	Block Group 2	1,649
		48201-2526.00-3	Block Group 3	2,148
		48201-2526.00-4	Block Group 4	1,523
		48201-2528.00-1	Block Group 1	2,362
		48201-2528.00-3	Block Group 3	1,472
		48201-2529.00-1	Block Group 1	1,811
		48201-2529.00-2	Block Group 2	919
		48201-2529.00-3	Block Group 3	1,197
		48201-2529.00-4	Block Group 4	1,715
		48201-2529.00-5	Block Group 5	2,126
		48201-2530.00-1	Block Group 1	724
		48201-2530.00-2	Block Group 2	827

radius	County	GeoCode	AreaName	TotPop
		48201-2530.00-3	Block Group 3	2,337
		48201-2531.00-2	Block Group 2	3,749
		48201-2532.00-1	Block Group 1	1,904
		48201-2532.00-2	Block Group 2	2,595
		48201-2533.00-1	Block Group 1	1,785
		48201-2533.00-2	Block Group 2	1,643
		48201-2534.00-1	Block Group 1	724
		48201-2535.00-1	Block Group 1	2,531
		48201-2535.00-2	Block Group 2	2,232
		48201-2535.00-3	Block Group 3	2,607
		48201-2535.00-4	Block Group 4	1,012
		48201-2536.00-1	Block Group 1	984
		48201-2536.00-2	Block Group 2	830
		48201-2536.00-3	Block Group 3	1,324
		48201-2536.00-4	Block Group 4	1,864
		48201-2537.00-1	Block Group 1	1,051
		48201-2537.00-2	Block Group 2	1,531
		48201-2537.00-3	Block Group 3	1,500
		48201-2537.00-4	Block Group 4	1,145
		48201-2538.00-1	Block Group 1	1,724
		48201-2538.00-2	Block Group 2	2,015
		48201-2538.00-4	Block Group 4	1,716
		48201-2539.00-1	Block Group 1	1,842
		48201-2539.00-3	Block Group 3	1,192
		48201-2540.00-1	Block Group 1	1,650
		48201-2540.00-2	Block Group 2	1,944
		48201-2541.00-1	Block Group 1	1,505
		48201-2541.00-2	Block Group 2	901
		48201-2541.00-3	Block Group 3	1,249
		48201-2541.00-4	Block Group 4	1,486
		48201-2542.00-1	Block Group 1	866
		48201-2542.00-2	Block Group 2	1,281
		48201-2542.00-3	Block Group 3	905

radius	County	GeoCode	AreaName	TotPop
		48201-2543.00-1	Block Group 1	1,064
		48201-2543.00-2	Block Group 2	1,264
		48201-2543.00-3	Block Group 3	1,555
		48201-2543.00-4	Block Group 4	1,034
		48201-2544.00-1	Block Group 1	1,154
		48201-2544.00-2	Block Group 2	714
		48201-2544.00-3	Block Group 3	804
		48201-2544.00-4	Block Group 4	581
		48201-2545.00-1	Block Group 1	1,028
		48201-2545.00-2	Block Group 2	1,328
		48201-2546.00-1	Block Group 1	1,192
		48201-2546.00-2	Block Group 2	1,457
		48201-2546.00-3	Block Group 3	1,418
		48201-2547.00-1	Block Group 1	2,029
		48201-3202.00-1	Block Group 1	2,205
		48201-3202.00-2	Block Group 2	931
		48201-3205.00-1	Block Group 1	2,413
		48201-3205.00-2	Block Group 2	2,205
		48201-3206.02-2	Block Group 2	1,496
		48201-3207.00-1	Block Group 1	2,723
		48201-3208.00-1	Block Group 1	1,358
		48201-3208.00-2	Block Group 2	1,766
		48201-3208.00-3	Block Group 3	2,243
		48201-3209.00-3	Block Group 3	1,933
		48201-3209.00-4	Block Group 4	1,882
		48201-3210.00-1	Block Group 1	1,304
		48201-3210.00-2	Block Group 2	977
		48201-3211.00-2	Block Group 2	2,934
		48201-3211.00-3	Block Group 3	978
		48201-3212.00-1	Block Group 1	2,809
		48201-3212.00-2	Block Group 2	1,475
		48201-3213.00-1	Block Group 1	2,122
		48201-3213.00-2	Block Group 2	1,746

radius	County	GeoCode	AreaName	TotPop
		48201-3213.00-3	Block Group 3	1,678
		48201-3214.01-1	Block Group 1	3,135
		48201-3214.01-2	Block Group 2	1,248
		48201-3214.02-1	Block Group 1	1,005
		48201-3214.02-2	Block Group 2	1,170
		48201-3214.02-3	Block Group 3	2,073
		48201-3215.00-1	Block Group 1	2,985
		48201-3216.00-1	Block Group 1	1,528
		48201-3216.00-2	Block Group 2	807
		48201-3216.00-3	Block Group 3	1,374
		48201-3216.00-4	Block Group 4	2,125
		48201-3216.00-5	Block Group 5	951
		48201-3217.00-1	Block Group 1	1,452
		48201-3217.00-2	Block Group 2	1,597
		48201-3218.00-1	Block Group 1	1,943
		48201-3218.00-2	Block Group 2	2,165
		48201-3219.00-1	Block Group 1	1,059
		48201-3219.00-2	Block Group 2	1,562
		48201-3219.00-3	Block Group 3	2,081
		48201-3219.00-4	Block Group 4	1,153
		48201-3220.00-1	Block Group 1	1,322
		48201-3220.00-2	Block Group 2	746
		48201-3220.00-3	Block Group 3	2,190
		48201-3221.00-1	Block Group 1	1,466
		48201-3221.00-2	Block Group 2	782
		48201-3221.00-3	Block Group 3	1,853
		48201-3222.00-1	Block Group 1	1,688
		48201-3226.00-1	Block Group 1	1,646
		48201-3226.00-2	Block Group 2	2,189
		48201-3226.00-3	Block Group 3	1,494
		48201-3227.00-1	Block Group 1	2,624
		48201-3227.00-2	Block Group 2	1,672
		48201-3227.00-3	Block Group 3	1,255

radius	County	GeoCode	AreaName	TotPop
		48201-3227.00-4	Block Group 4	1,849
		48201-3228.00-1	Block Group 1	1,619
		48201-3228.00-2	Block Group 2	1,290
		48201-3228.00-3	Block Group 3	1,521
		48201-3228.00-4	Block Group 4	1,984
		48201-3229.00-1	Block Group 1	1,997
		48201-3229.00-2	Block Group 2	843
		48201-3229.00-3	Block Group 3	1,346
		48201-3230.00-1	Block Group 1	3,326
		48201-3230.00-2	Block Group 2	1,003
		48201-3230.00-3	Block Group 3	1,989
		48201-3231.00-1	Block Group 1	1,256
		48201-3231.00-2	Block Group 2	2,077
		48201-3232.00-1	Block Group 1	1,699
		48201-3232.00-2	Block Group 2	1,558
		48201-3232.00-3	Block Group 3	911
		48201-3232.00-4	Block Group 4	1,444
		48201-3233.00-1	Block Group 1	2,441
		48201-3233.00-2	Block Group 2	1,069
		48201-3234.00-1	Block Group 1	2,917
		48201-3234.00-2	Block Group 2	2,023
		48201-3234.00-3	Block Group 3	1,598
		48201-3234.00-4	Block Group 4	893
		48201-3235.00-1	Block Group 1	2,447
		48201-3235.00-2	Block Group 2	1,788
		48201-3235.00-3	Block Group 3	1,142
		48201-3236.00-1	Block Group 1	2,259
		48201-3236.00-2	Block Group 2	1,306
		48201-3236.00-3	Block Group 3	3,188
		48201-3236.00-4	Block Group 4	1,625
		48201-3237.01-1	Block Group 1	1,113
		48201-3237.01-2	Block Group 2	988
		48201-3237.01-3	Block Group 3	2,057

radius	County	GeoCode	AreaName	TotPop
		48201-3237.02-1	Block Group 1	2,181
		48201-3237.02-2	Block Group 2	1,038
		48201-3238.01-1	Block Group 1	2,206
		48201-3238.01-2	Block Group 2	1,690
		48201-3238.02-1	Block Group 1	3,031
		48201-3238.02-2	Block Group 2	1,813
		48201-3239.00-1	Block Group 1	2,038
		48201-3239.00-2	Block Group 2	1,837
		48201-3240.00-1	Block Group 1	1,832
		48201-3240.00-2	Block Group 2	3,729
		48201-3241.00-1	Block Group 1	1,172
		48201-3241.00-2	Block Group 2	1,031
		48201-3241.00-3	Block Group 3	717
		48201-3241.00-4	Block Group 4	1,349
		48201-3241.00-5	Block Group 5	1,271
		48201-3242.00-1	Block Group 1	1,647
		48201-3402.01-1	Block Group 1	397
		48201-3402.02-1	Block Group 1	2,263
		48201-3402.02-2	Block Group 2	2,314
		48201-3402.03-1	Block Group 1	1,723
		48201-3403.01-1	Block Group 1	1,688
		48201-3403.01-2	Block Group 2	2,590
		48201-3403.02-2	Block Group 2	1,930
		48201-3403.02-3	Block Group 3	2,012
		48201-3417.00-1	Block Group 1	711
		48201-3417.00-2	Block Group 2	1,332
		48201-3417.00-3	Block Group 3	412
		48201-3418.00-1	Block Group 1	1,178
		48201-3418.00-2	Block Group 2	665
		48201-3420.01-1	Block Group 1	2,513
		48201-3420.01-2	Block Group 2	2,312
		48201-3420.01-3	Block Group 3	2,018
		48201-3420.02-1	Block Group 1	3,413

radius	County	GeoCode	AreaName	TotPop
		48201-3421.00-1	Block Group 1	2,044
		48201-3421.00-2	Block Group 2	2,340
		48201-3422.00-1	Block Group 1	1,828
		48201-3422.00-2	Block Group 2	751
		48201-3422.00-3	Block Group 3	1,638
		48201-3423.00-1	Block Group 1	2,076
		48201-3423.00-2	Block Group 2	975
		48201-3423.00-3	Block Group 3	3,391
		48201-3424.00-1	Block Group 1	733
		48201-3424.00-2	Block Group 2	2,371
		48201-3425.00-1	Block Group 1	2,807
		48201-3425.00-2	Block Group 2	2,151
		48201-3425.00-3	Block Group 3	1,302
		48201-3427.00-1	Block Group 1	1,294
		48201-3427.00-2	Block Group 2	2,268
		48201-3427.00-3	Block Group 3	1,492
		48201-3428.00-1	Block Group 1	6,776
		48201-3428.00-2	Block Group 2	2,078
		48201-3429.00-1	Block Group 1	986
		48201-3429.00-2	Block Group 2	2,177
		48201-3429.00-3	Block Group 3	2,274
		48201-3430.00-1	Block Group 1	2,479
		48201-3430.00-2	Block Group 2	2,731
		48201-3430.00-3	Block Group 3	2,213
		48201-3431.00-1	Block Group 1	2,073
		48201-3431.00-2	Block Group 2	916
		48201-3431.00-3	Block Group 3	1,640
		48201-3432.00-1	Block Group 1	2,736
		48201-3432.00-2	Block Group 2	2,208
		48201-3433.01-1	Block Group 1	1,827
		48201-3433.01-2	Block Group 2	1,316
		48201-3433.01-3	Block Group 3	1,309
		48201-3433.02-1	Block Group 1	2,804

radius	County	GeoCode	AreaName	TotPop
		48201-3433.02-2	Block Group 2	1,959
		48201-3436.00-1	Block Group 1	1,395
		48201-3436.00-2	Block Group 2	1,092
		48201-3436.00-3	Block Group 3	830
		48201-3437.00-1	Block Group 1	978
		48201-3437.00-2	Block Group 2	845
		48201-3437.00-3	Block Group 3	1,122
10	**Harris TX**			**522,020**
10				**522,020**
				522,020

Access the caps10c application at **http://mcdc.missouri.edu/websas/caps10c.html**

Missouri Census Data Center

Appendix B:

- Appendix B-1. MERA Analysis
- Appendix B-2. Modeled Emission Rates - Project Level
- Appendix B-3. Modeled Stack Parameters – Project Level
- Appendix B-4. Screening Analysis
- Appendix B-5. Modeled Emission Rates - Sitewide
- Appendix B-6. Modeled Stack Parameters - Sitewide
- Appendix B-7. Model Results – Sitewide

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-1 MERA Analysis

CAS#	50-00-0	64-17-5	67-63-0	2682-20-4	2682-20-4	26172-55-4	107-13-1	126950-60-5	84133-50-6	3069-29-2
Air Contaminant	**Formaldehyde**	**Ethanol:ethyl alcohol**	**Isopropyl alcohol**	**2 Methyl 4 isothiazolin 3 one 52%**	**2-Methyl-4-isothiazolin-3-one**	**5-Chloro-2-methyl-4-isothiazolin-3-one**	**Acrylonitrile**	**Alcohols, C12-14-secondary**	**Alcohols, C12-14-secondary, ethoxylated**	**Aminoethylaminopropylmethyldimethoxysilane**
Short-Term (ST) ESL (ug/m3)	15	18800	4920	170	170	100	330	600	600	2200
Long Term (LT) ESL (ug/m3)	3.3	1880	492	17	17	10	2.1	60	60	220
Is LT-ESL >= 10% of ST-ESL? If "No", Include Long Term Emissions in analysis.	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES
Net Hourly Change	0.1184	6.3594	0.2395	0.0012	0.0056	0.0134	0.0004	0.0002	1.27E-07	0.0294
Total of Hourly Increases	0.1184	6.3594	0.2395	0.0012	0.0056	0.0134	0.0004	0.0002	1.27E-07	0.0294
Total of Hourly Decreases	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Net Annual Change	0.7103	3.0829	1.4369	0.0071	0.0337	0.0803	0.0023	0.0010	7.62E-07	0.1763
Total of Annual Increases	0.7103	3.0829	1.4369	0.0071	0.0337	0.0803	0.0023	0.0010	7.62E-07	0.1763
Total of Annual Decreases	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Annual Dec : Inc Ratio	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TCEQ Modeling and Effects Applicability

Flow Chart	MERA Flowchart Requirement	Formaldehyde	Ethanol:ethyl alcohol	Isopropyl alcohol	2 Methyl 4 isothiazolin 3 one 52%	2-Methyl-4-isothiazolin-3-one	5-Chloro-2-methyl-4-isothiazolin-3-one	Acrylonitrile	Alcohols, C12-14-secondary	Alcohols, C12-14-secondary, ethoxylated	Aminoethylaminopropylmethyldimethoxysilane
Step 1	Is the net change in emissions less than or equal to zero?	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue
Step 2	Is the long-term ESL >= 10% of the short-term ESL? AND…	Continue	Continue	Continue	Continue	Continue	Continue	NO => STEP 3	Continue	Continue	Continue
	Routine increases <= 0.04 lb/hr OR MSS Emissions Increase <=0.1, and the ESL is >=2 ESL < 500	Continue	Continue	Continue	Modeling Not Required	Modeling Not Required	Modeling Not Required		Continue	Continue	Continue
	Routine increases <= 0.1 lb/hr OR MSS increases <=0.1, and the ESL is >=500 ESL < 3500	Continue	Continue	Continue					Modeling Not Required	Modeling Not Required	Modeling Not Required
	Routine increases <= 0.4 lb/hr OR MSS Emissions Increase <=0.4, and the ESL is >=3500	Continue	Continue	Modeling Not Required							
Step 3	Is the GLCmax <= 10% of ESL?	Model	Model					Model			

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Permit No. 27131
B-1 MERA Analysis

CAS#	7727-54-0	2634-33-5		141-32-2	3251-23-8	25265-71-8				
Air Contaminant	**Ammonium Persulfate**	**Benzisothiaxolin 3 one**	**Bruggolite FF-6**	**Butyl Acrylate**	**Copper Nitrate**	**Dipropylene glyco (Mixed isomers)**	**Ethanol, 2-amino-,compd. With a sulfo w (nonylphenoxy)poly(oxy1,2-ethanediyl)**	**Geropon SSOIP / Lankropol**	**Heteroalkyl alcohol**	**Heteroalkyl methacrylate**
Short-Term (ST) ESL (ug/m3)	10	350	2	110	10	1200	2	2	2000	125
Long Term (LT) ESL (ug/m3)	1	35	0.2	11	1	120	0.2	0.2	200	13
Is LT-ESL >= 10% of ST-ESL? If "No", Include Long Term Emissions in analysis.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Net Hourly Change	0.0075	0.0001	0.0001	0.0019	0.0002	0.0011	0.0108	0.0004	0.0803	0.4302
Total of Hourly Increases	0.0075	0.0001	0.0001	0.0019	0.0002	0.0011	0.0108	0.0004	0.0803	0.4302
Total of Hourly Decreases	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Net Annual Change	0.0448	0.0008	0.0004	0.0116	0.0012	0.0064	0.0650	0.0027	0.4817	2.5815
Total of Annual Increases	0.0448	0.0008	0.0004	0.0116	0.0012	0.0064	0.0650	0.0027	0.4817	2.5815
Total of Annual Decreases	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Annual Dec : Inc Ratio	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TCEQ Modeling and Effects Applicability

Flow Chart	MERA Flowchart Requirement	Ammonium Persulfate	Benzisothiaxolin 3 one	Bruggolite FF-6	Butyl Acrylate	Copper Nitrate	Dipropylene glyco (Mixed isomers)	Ethanol, 2-amino-,compd. With a sulfo w (nonylphenoxy)poly(oxy1,2-ethanediyl)	Geropon SSOIP / Lankropol	Heteroalkyl alcohol	Heteroalkyl methacrylate
Step 1	Is the net change in emissions less than or equal to zero?	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue
Step 2	Is the long-term ESL >= 10% of the short-term ESL? AND…	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue
	Routine increases <= 0.04 lb/hr OR MSS Emissions Increase <=0.1, and the ESL is >=2 ESL < 500	Modeling Not Required	Modeling Not Required	Modeling Not Required	Modeling Not Required	Modeling Not Required	Continue	Modeling Not Required	Modeling Not Required	Continue	Continue
	Routine increases <= 0.1 lb/hr OR MSS increases <=0.1, and the ESL is >=500 ESL < 3500						Modeling Not Required			Modeling Not Required	Continue
	Routine increases <= 0.4 lb/hr OR MSS Emissions Increase <=0.4, and the ESL is >=3500										Continue
Step 3	Is the GLCmax <= 10% of ESL?										Model

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B-1 MERA Analysis

CAS#	97-65-4	7786-30-3	10377-60-3	67-56-1			9036-19-5	67762-90-7
Air Contaminant	**Itaconic Acid**	**Magnesium Chloride**	**Magnesium nitrate**	**Methanol**	**Modified alkyl derivative of cyclic amine**	**Poly(oxy-1,2-ethanediyl),a-sulfo-w-(nonylphenoxy)-branched ammonium salt**	**Polyethylene glycole octylphenyl ether**	**Siloxanes and silicones, di-Me, reaction products with silica**
Short-Term (ST) ESL (ug/m3)	2	40	40	3900	2	2	600	27
Long Term (LT) ESL (ug/m3)	0.2	4	4	2100	0.2	0.2	60	2
Is LT-ESL >= 10% of ST-ESL? If "No", Include Long Term Emissions in analysis.	YES	YES	YES	YES	YES	YES	YES	NO
Net Hourly Change	0.0045	0.0002	0.0025	0.2085	0.0169	0.0007	0.0007	1.11E-07
Total of Hourly Increases	0.0045	0.0002	0.0025	0.2085	0.0169	0.0007	0.0007	1.11E-07
Total of Hourly Decreases	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Net Annual Change	0.0273	0.0015	0.0147	0.2866	0.1013	0.0044	0.0040	6.67E-07
Total of Annual Increases	0.0273	0.0015	0.0147	0.2866	0.1013	0.0044	0.0040	6.67E-07
Total of Annual Decreases	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Annual Dec : Inc Ratio	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TCEQ Modeling and Effects Applicability

Flow Chart	MERA Flowchart Requirement	Itaconic Acid	Magnesium Chloride	Magnesium nitrate	Methanol	Modified alkyl derivative of cyclic amine	Poly(oxy-1,2-ethanediyl),a-sulfo-w-(nonylphenoxy)-branched ammonium salt	Polyethylene glycole octylphenyl ether	Siloxanes and silicones, di-Me, reaction products with silica
Step 1	Is the net change in emissions less than or equal to zero?	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue
Step 2	Is the long-term ESL >= 10% of the short-term ESL? AND…	Continue	Continue	Continue	Continue	Continue	Continue	Continue	NO => STEP 3
	Routine increases <= 0.04 lb/hr OR MSS Emissions Increase <=0.1, and the ESL is >=2 ESL < 500	Modeling Not Required	Modeling Not Required	Modeling Not Required	Continue	Modeling Not Required	Modeling Not Required	Continue	
	Routine increases <= 0.1 lb/hr OR MSS increases <=0.1, and the ESL is >=500 ESL < 3500				Continue			Modeling Not Required	
	Routine increases <= 0.4 lb/hr OR MSS Emissions Increase <=0.4, and the ESL is >=3500				Modeling Not Required				
Step 3	Is the GLCmax <= 10% of ESL?								Model

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B-1 MERA Analysis

CAS#	25155-30-0	149-44-0	7775-27-1	100-42-5	75-65-0	75-91-2	65530-63-4	108-05-4	64-19-7	79-10-7
Air Contaminant	**Sodium dodecylbenzene sulfonate**	**Sodium Formaldehyde Sulfoxylate**	**Sodium Persulfate**	**Styrene**	**T-butyl alcohol**	**T-butyl hydroperoxide**	**Telomer B Phospate diethanolamine salt**	**Vinyl Acetate**	**Acetic Acid**	**Acrylic Acid**
Short-Term (ST) ESL (ug/m3)	30	2	10	110	620	100	2	420	250	60
Long Term (LT) ESL (ug/m3)	3	0.2	1	140	62	10	0.2	300	25	6
Is LT-ESL >= 10% of ST-ESL? If "No", Include Long Term Emissions in analysis.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Net Hourly Change	0.0001	0.0002	0.0008	0.0097	0.0086	0.6459	1.59E-05	0.0097	1.2778	0.2849
Total of Hourly Increases	0.0001	0.0002	0.0008	0.0097	0.0086	0.6459	1.59E-05	0.0097	1.2778	0.2849
Total of Hourly Decreases	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Net Annual Change	0.0009	0.0013	0.0046	0.0579	0.0517	3.8754	0.0001	0.0579	7.6666	1.7094
Total of Annual Increases	0.0009	0.0013	0.0046	0.0579	0.0517	3.8754	0.0001	0.0579	7.6666	1.7094
Total of Annual Decreases	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Annual Dec : Inc Ratio	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TCEQ Modeling and Effects Applicability

Flow Chart	MERA Flowchart Requirement	Sodium dodecylbenzene sulfonate	Sodium Formaldehyde Sulfoxylate	Sodium Persulfate	Styrene	T-butyl alcohol	T-butyl hydroperoxide	Telomer B Phospate diethanolamine salt	Vinyl Acetate	Acetic Acid	Acrylic Acid
Step 1	Is the net change in emissions less than or equal to zero?	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue
Step 2	Is the long-term ESL >= 10% of the short-term ESL? AND…	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue	Continue
	Routine increases <= 0.04 lb/hr OR MSS Emissions Increase <=0.1, and the ESL is >=2 ESL < 500	Modeling Not Required	Modeling Not Required	Modeling Not Required	Modeling Not Required	Continue	Continue	Modeling Not Required	Modeling Not Required	Continue	Continue
	Routine increases <= 0.1 lb/hr OR MSS increases <=0.1, and the ESL is >=500 ESL < 3500					Modeling Not Required	Continue			Continue	Continue
	Routine increases <= 0.4 lb/hr OR MSS Emissions Increase <=0.4, and the ESL is >=3500						Continue			Continue	Continue
Step 3	Is the GLCmax <= 10% of ESL?						Model			Model	Model

Rohm and Haas Texas Incorporated
LoneStar Facility
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B-1 MERA Analysis

CAS#	7664-41-7	7722-84-1	108-31-6	80-62-6	1310-73-2
Air Contaminant	**Ammonia**	**Hydrogen Peroxide**	**Maleic Anhydride**	**Methyl methacrylate**	**Sodium Hydroxide**
Short-Term (ST) ESL (ug/m3)	180	14	10	860	20
Long Term (LT) ESL (ug/m3)	92	1.4	1	210	2
Is LT-ESL >= 10% of ST-ESL? If "No", Include Long Term Emissions in analysis.	YES	YES	YES	YES	YES
Net Hourly Change	9.3587	0.0937	0.0148	0.0122	0.0016
Total of Hourly Increases	9.3587	0.0937	0.0148	0.0122	0.0016
Total of Hourly Decreases	0.0000	0.0000	0.0000	0.0000	0.0000
Net Annual Change	6.7094	0.5624	0.0890	0.0733	0.0094
Total of Annual Increases	6.7094	0.5624	0.0890	0.0733	0.0094
Total of Annual Decreases	0.0000	0.0000	0.0000	0.0000	0.0000
Annual Dec : Inc Ratio	0.0000	0.0000	0.0000	0.0000	0.0000

TCEQ Modeling and Effects Applicability

Flow Chart	MERA Flowchart Requirement	Ammonia	Hydrogen Peroxide	Maleic Anhydride	Methyl methacrylate	Sodium Hydroxide
Step 1	Is the net change in emissions less than or equal to zero?	Continue	Continue	Continue	Continue	Continue
Step 2	Is the long-term ESL >= 10% of the short-term ESL? AND…	Continue	Continue	Continue	Continue	Continue
	Routine increases <= 0.04 lb/hr OR MSS Emissions Increase <=0.1, and the ESL is >=2 ESL < 500	Continue	Continue	Modeling Not Required	Continue	Modeling Not Required
	Routine increases <= 0.1 lb/hr OR MSS increases <=0.1, and the ESL is >=500 ESL < 3500	Continue	Continue		Modeling Not Required	
	Routine increases <= 0.4 lb/hr OR MSS Emissions Increase <=0.4, and the ESL is >=3500	Continue	Continue			
Step 3	Is the GLCmax <= 10% of ESL?	Model	Model			

Rohm and Haas Texas Incorporated
LoneStar Facility
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B-2 Modeled Emission Increases - Project Level

Point Sources

Routine/MSS	EPN	Model ID	Source Description	Particulates (PM_{10}) lb/hr	Particulates ($PM_{2.5}$) lb/hr	Particulates ($PM_{2.5}$) tpy	Formaldehyde lb/hr	Formaldehyde tpy
Routine	LU-VS	LU_VS	Batch Vent	0.004	0.004	0.022	0.118	0.710

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LoneStar Facility
Permit No. 27131
B-2 Modeled Emission Increases - Project Level

Point Sources

Routine/MSS	EPN	Model ID	Source Description	Ethanol:ethyl alcohol lb/hr	Ethanol:ethyl alcohol tpy	Acrylonitrile lb/hr	Acrylonitrile tpy	Heteroalkyl methacrylate lb/hr	Heteroalkyl methacrylate tpy
Routine	LU-VS	LU_VS	Batch Vent	6.359	3.083	3.86E-04	0.002	0.430	2.581

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-2 Modeled Emission Increases - Project Level

Point Sources

Routine/MSS	EPN	Model ID	Source Description	Siloxanes and silicones, di-Me, reaction products with silica lb/hr	Siloxanes and silicones, di-Me, reaction products with silica tpy	T-butyl hydroperoxide lb/hr	T-butyl hydroperoxide tpy	Acetic Acid lb/hr	Acetic Acid tpy	Acrylic Acid lb/hr	Acrylic Acid tpy
Routine	LU-VS	LU_VS	Batch Vent	1.11E-07	6.67E-07	0.646	3.875	1.278	7.667	0.285	1.709

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-2 Modeled Emission Increases - Project Level

Point Sources

Routine/MSS	EPN	Model ID	Source Description	Ammonia lb/hr	Ammonia tpy	Hydrogen Peroxide lb/hr	Hydrogen Peroxide tpy
Routine	LU-VS	LU_VS	Batch Vent	9.359	6.709	0.094	0.562

Rohm and Haas Texas Incorporated
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B-3 Modeled Stack Parameters - Project Level

POINT (Routine)

EPN	FIN	Model ID	Description	UTM-X[1] (m)	UTM-Y[1] (m)	Stack Height (ft)	Temp (F)	Velocity (fps)	Diameter (ft)
LU-VS	LU-VS	LU_VS	Batch Vent	296455.4	3290370.27	99	ambient	14.20	2.5

[1] UTM Coordinates are provided in NAD27.

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-4 Screening Analysis

Impacts Evaluation Summary - LoneStar
Attached is preliminary screening analysis for emission standards.

Emission Source Parameters
The following lists stack parameters for the facility:
Point Sources

EPN	Model ID	Name	Zone	UTM-X[1] (Meters)	UTM-Y[1] (Meters)	Height (ft)	Temp. (F)	Vel. (fps)	Dia. (ft)
LU-VS	LU_VS	Batch Vent	15	296,455.43	3,290,370.27	99	ambient	14.20	2.50

Footnotes
[1] UTM Coordinates are provided in NAD27.

Individual Model Results
The following model results represent dilution factors determined for each source:

EPN	Model ID	Name	Type	1-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	24-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Annual AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)
LU-VS	LU_VS	Batch Vent	POINT	10.954	1.939	0.506

Footnotes
1. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-4 Screening Analysis

Impacts Evaluation Summary - LoneStar
Attached is preliminary screening analysis for emission standards.

Screen Model per Compound

Screening Analysis for PM_{10} Emissions

EPN	Model ID	Name	Modeled Rate [1] (lb/hr)	24-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted 24-hr Maximum [3] (ug/m^3)
LU-VS	LU_VS	Batch Vent	0.004	1.939	0.007
				GLC_{max} (ug/m^3)[5] =	0.007
				SIL ($\mu g/m^3$) =	5
				Is GLC_{max} < SIL?	YES

Footnotes
1. Emissions increased rate.
2. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.
3. 1-Hr Conc. = Modeled Rate (lb/hr) x AERMOD Generic Unit Model
4. 24-Hr Conc. = 0.6 x 1-hr Conc. (AERSCREEN factor).
5. Maximum, ground-level concentration predicted by screening model.

Screening Analysis for $PM_{2.5}$ Emissions

EPN	Model ID	Name	Modeled Rate [1] (lb/hr)	24-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted 24-hr Maximum [3] (ug/m^3)	Annual Increased Emission Rate [1] (tpy)	Annual AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted Annual Maximum [4] (ug/m^3)
LU-VS	LU_VS	Batch Vent	0.004	1.939	0.007	0.022	0.506	0.003
				GLC_{max} (ug/m^3)[5] =	0.007			0.003
				SIL ($\mu g/m^3$) =	1.2			0.2
				Is GLC_{max} < SIL?	YES			YES

Footnotes
1. Emissions increased rate.
2. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.
3. 1-Hr Conc. = Modeled Rate (lb/hr) x AERMOD Generic Unit Model
4. 24-Hr Conc. = 0.6 x 1-hr Conc. (AERSCREEN factor).
5. Maximum, ground-level concentration predicted by screening model.

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-4 Screening Analysis

Impacts Evaluation Summary - LoneStar
Attached is preliminary screening analysis for emission standards.
Screening Analysis for Formaldehyde Emissions

EPN	Model ID	Name	Modeled Rate [1] (lb/hr)	1-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted 1-hr Maximum [5] (ug/m^3)	Annual Increased Emission Rate [1] (tpy)	Annual AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted Annual Maximum [5] (ug/m^3)
LU-VS	LU_VS	Batch Vent	0.118	10.954	1.297	0.710	0.506	0.082
				GLC_{max} (ug/m^3)[5] =	1.30		**GLC_{max} (ug/m^3)[5]=**	0.08
				Short Term ESL (ug/m^3) =	15		**Long Term ESL (ug/m^3) =**	3
				Is GLC_{max} < 10% of ESL?	YES		**Is GLC_{max} < 10% of ESL?**	YES

Footnotes
1. Emissions increased rate.
2. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.
3. 1-Hr Conc. = Modeled Rate (lb/hr) x AERMOD Generic Unit Model
4. Annual Conc. = Modeled Rate (lb/hr) / (8760 hour/year) x (2000 lb/ton) x Annual AERMOD Generic Unit Model
5. Maximum, ground-level concentration predicted by screening model.

Screening Analysis for Ethanol:ethyl alcohol Emissions

EPN	Model ID	Name	Modeled Rate [1] (lb/hr)	1-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted 1-hr Maximum [5] (ug/m^3)	Annual Increased Emission Rate [1] (tpy)	Annual AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted Annual Maximum [5] (ug/m^3)
LU-VS	LU_VS	Batch Vent	6.359	10.954	69.663	3.083	0.506	0.356
				GLC_{max} (ug/m^3)[5] =	69.663		**GLC_{max} (ug/m^3)[5]=**	0.356
				Short Term ESL (ug/m^3) =	18,800		**Long Term ESL (ug/m^3) =**	1,880
				Is GLC_{max} < 10% of ESL?	YES		**Is GLC_{max} < 10% of ESL?**	YES

Footnotes
1. Emissions increased rate.
2. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.
3. 1-Hr Conc. = Modeled Rate (lb/hr) x AERMOD Generic Unit Model
4. Annual Conc. = Modeled Rate (lb/hr) / (8760 hour/year) x (2000 lb/ton) x Annual AERMOD Generic Unit Model
5. Maximum, ground-level concentration predicted by screening model.

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-4 Screening Analysis

Impacts Evaluation Summary - LoneStar
Attached is preliminary screening analysis for emission standards.
Screening Analysis for Acrylonitrile Emissions

EPN	Model ID	Name	Modeled Rate [1] (lb/hr)	1-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted 1-hr Maximum [5] (ug/m^3)	Annual Increased Emission Rate [1] (tpy)	Annual AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted Annual Maximum [5] (ug/m^3)
LU-VS	LU_VS	Batch Vent	3.86E-04	10.954	0.004	0.002	0.506	2.68E-04
				GLC_{max} (ug/m^3)[5] =	4.23E-03		**GLC_{max} (ug/m^3)[5]=**	2.68E-04
				Short Term ESL (ug/m^3) =	330		**Long Term ESL (ug/m^3) =**	2.1
				Is GLC_{max} < 10% of ESL?	YES		**Is GLC_{max} < 10% of ESL?**	YES

Footnotes
1. Emissions increased rate.
2. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.
3. 1-Hr Conc. = Modeled Rate (lb/hr) x AERMOD Generic Unit Model
4. Annual Conc. = Modeled Rate (lb/hr) / (8760 hour/year) x (2000 lb/ton) x Annual AERMOD Generic Unit Model
5. Maximum, ground-level concentration predicted by screening model.

Screening Analysis for Heteroalkyl methacrylate Emissions

EPN	Model ID	Name	Modeled Rate [1] (lb/hr)	1-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted 1-hr Maximum [5] (ug/m^3)	Annual Increased Emission Rate [1] (tpy)	Annual AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted Annual Maximum [5] (ug/m^3)
LU-VS	LU_VS	Batch Vent	0.430	10.954	4.713	2.581	0.506	0.298
				GLC_{max} (ug/m^3)[5] =	4.713		**GLC_{max} (ug/m^3)[5]=**	0.298
				Short Term ESL (ug/m^3) =	125		**Long Term ESL (ug/m^3) =**	13
				Is GLC_{max} < 10% of ESL?	YES		**Is GLC_{max} < 10% of ESL?**	YES

Footnotes
1. Emissions increased rate.
2. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.
3. 1-Hr Conc. = Modeled Rate (lb/hr) x AERMOD Generic Unit Model
4. Annual Conc. = Modeled Rate (lb/hr) / (8760 hour/year) x (2000 lb/ton) x Annual AERMOD Generic Unit Model
5. Maximum, ground-level concentration predicted by screening model.

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-4 Screening Analysis

Impacts Evaluation Summary - LoneStar

Attached is preliminary screening analysis for emission standards.

Screening Analysis for Siloxanes and silicones, di-Me, reaction products with silica Emissions

EPN	Model ID	Name	Modeled Rate [1] (lb/hr)	1-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted 1-hr Maximum [5] (ug/m^3)	Annual Increased Emission Rate [1] (tpy)	Annual AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted Annual Maximum [5] (ug/m^3)
LU-VS	LU_VS	Batch Vent	1.11E-07	10.954	1.22E-06	6.67E-07	0.506	7.70E-08
				GLC_{max} (ug/m^3)[5] =	1.22E-06		GLC_{max} (ug/m^3)[5]=	7.70E-08
				Short Term ESL (ug/m^3) =	27		Long Term ESL (ug/m^3) =	2
				Is GLC_{max} < 10% of ESL?	YES		Is GLC_{max} < 10% of ESL?	YES

Footnotes

1. Emissions increased rate.
2. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.
3. 1-Hr Conc. = Modeled Rate (lb/hr) x AERMOD Generic Unit Model
4. Annual Conc. = Modeled Rate (lb/hr) / (8760 hour/year) x (2000 lb/ton) x Annual AERMOD Generic Unit Model
5. Maximum, ground-level concentration predicted by screening model.

Screening Analysis for T-butyl hydroperoxide Emissions

EPN	Model ID	Name	Modeled Rate [1] (lb/hr)	1-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted 1-hr Maximum [5] (ug/m^3)	Annual Increased Emission Rate [1] (tpy)	Annual AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted Annual Maximum [5] (ug/m^3)
LU-VS	LU_VS	Batch Vent	0.646	10.954	7.075	3.875	0.506	0.448
				GLC_{max} (ug/m^3)[5] =	7.075		GLC_{max} (ug/m^3)[5]=	0.448
				Short Term ESL (ug/m^3) =	100		Long Term ESL (ug/m^3) =	10
				Is GLC_{max} < 10% of ESL?	YES		Is GLC_{max} < 10% of ESL?	YES

Footnotes

1. Emissions increased rate.
2. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.
3. 1-Hr Conc. = Modeled Rate (lb/hr) x AERMOD Generic Unit Model
4. Annual Conc. = Modeled Rate (lb/hr) / (8760 hour/year) x (2000 lb/ton) x Annual AERMOD Generic Unit Model
5. Maximum, ground-level concentration predicted by screening model.

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-4 Screening Analysis

Impacts Evaluation Summary - LoneStar

Attached is preliminary screening analysis for emission standards.

Screening Analysis for Acetic Acid Emissions

EPN	Model ID	Name	Modeled Rate [1] (lb/hr)	1-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted 1-hr Maximum [5] (ug/m^3)	Annual Increased Emission Rate [1] (tpy)	Annual AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted Annual Maximum [5] (ug/m^3)
LU-VS	LU_VS	Batch Vent	1.278	10.954	13.997	7.667	0.506	0.886
				GLC_{max} (ug/m^3)[5] =	13.997		GLC_{max} (ug/m^3)[5]=	0.886
				Short Term ESL (ug/m^3) =	250		Long Term ESL (ug/m^3) =	25
				Is GLC_{max} < 10% of ESL?	YES		Is GLC_{max} < 10% of ESL?	YES

Footnotes

1. Emissions increased rate.
2. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.
3. 1-Hr Conc. = Modeled Rate (lb/hr) x AERMOD Generic Unit Model
4. Annual Conc. = Modeled Rate (lb/hr) / (8760 hour/year) x (2000 lb/ton) x Annual AERMOD Generic Unit Model
5. Maximum, ground-level concentration predicted by screening model.

Screening Analysis for Acrylic Acid Emissions

EPN	Model ID	Name	Modeled Rate [1] (lb/hr)	1-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted 1-hr Maximum [5] (ug/m^3)	Annual Increased Emission Rate [1] (tpy)	Annual AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted Annual Maximum [5] (ug/m^3)
LU-VS	LU_VS	Batch Vent	0.285	10.954	3.121	1.709	0.506	0.197
				GLC_{max} (ug/m^3)[5] =	3.121		GLC_{max} (ug/m^3)[5]=	0.197
				Short Term ESL (ug/m^3) =	60		Long Term ESL (ug/m^3) =	6
				Is GLC_{max} < 10% of ESL?	YES		Is GLC_{max} < 10% of ESL?	YES

Footnotes

1. Emissions increased rate.
2. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.
3. 1-Hr Conc. = Modeled Rate (lb/hr) x AERMOD Generic Unit Model
4. Annual Conc. = Modeled Rate (lb/hr) / (8760 hour/year) x (2000 lb/ton) x Annual AERMOD Generic Unit Model
5. Maximum, ground-level concentration predicted by screening model.

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-4 Screening Analysis

Impacts Evaluation Summary - LoneStar

Attached is preliminary screening analysis for emission standards.

Screening Analysis for Ammonia Emissions

EPN	Model ID	Name	Modeled Rate [1] (lb/hr)	1-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted 1-hr Maximum [5] (ug/m^3)	Annual Increased Emission Rate [1] (tpy)	Annual AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted Annual Maximum [5] (ug/m^3)
LU-VS	LU_VS	Batch Vent	9.359	10.954	102.517	6.709	0.506	0.775
				GLC_{max} (ug/m^3)[5] =	102.517		**GLC_{max} (ug/m^3)[5]=**	0.775
				Short Term ESL (ug/m^3) =	180		**Long Term ESL (ug/m^3) =**	92
				Is GLC_{max} < 10% of ESL?	NO		**Is GLC_{max} < 10% of ESL?**	YES

Footnotes

1. Emissions increased rate.
2. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.
3. 1-Hr Conc. = Modeled Rate (lb/hr) x AERMOD Generic Unit Model
4. Annual Conc. = Modeled Rate (lb/hr) / (8760 hour/year) x (2000 lb/ton) x Annual AERMOD Generic Unit Model
5. Maximum, ground-level concentration predicted by screening model.

Screening Analysis for Hydrogen Peroxide Emissions

EPN	Model ID	Name	Modeled Rate [1] (lb/hr)	1-Hour AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted 1-hr Maximum [5] (ug/m^3)	Annual Increased Emission Rate [1] (tpy)	Annual AERMOD Generic Unit Model @ 1 lb/hr [1] (ug/m^3)	Predicted Annual Maximum [5] (ug/m^3)
LU-VS	LU_VS	Batch Vent	0.094	10.954	1.027	0.562	0.506	0.065
				GLC_{max} (ug/m^3)[5] =	1.027		**GLC_{max} (ug/m^3)[5]=**	0.065
				Short Term ESL (ug/m^3) =	14		**Long Term ESL (ug/m^3) =**	1.4
				Is GLC_{max} < 10% of ESL?	YES		**Is GLC_{max} < 10% of ESL?**	YES

Footnotes

1. Emissions increased rate.
2. Generic Unit model results. Model uses 1 pound per hour (lb/hr) emission rate and AERMOD Model and Default Met Data.
3. 1-Hr Conc. = Modeled Rate (lb/hr) x AERMOD Generic Unit Model
4. Annual Conc. = Modeled Rate (lb/hr) / (8760 hour/year) x (2000 lb/ton) x Annual AERMOD Generic Unit Model
5. Maximum, ground-level concentration predicted by screening model.

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-5 Modeled Emission Rates - Sitewide

Permit No.	EPN	Model ID	Description	Short-term MAERT ER (lb/hr) for Ammonia
27131	LU-VS	LU_VS	Batch Vent	9.36
1257A	B-3-1	B_3_1	Flare	0.01
1257A	B-3-11	B_3_11	Tank 34335	2.44
1257A	B-3-12	B_3_12	Tank 34343	0.82
1257A	B-3-18	B_3_18	Tank 34402	0.01
1257A	B-3-19	B_3_19	Tank 34426	0.01
1257A	B-3-36	B_3_36	Tank 22080	0.01
1257A	B-3-47 & B-3-48	B_3_47	B-3 Rack Fugitives	0.01
1257A	B-3-61	B_3_61	B3 Slurry Pot	0.19
1257A	B-4-5	B_4_5	Tank 33336	0.01
1257A	B-4-9	B_4_9	B-4 Rack Fugitives	0.01
1257A	BGMA-MSSTK	MSSTK4	Fixed Roof Tank MSS	0.06
1257A	BGMA-DEGAS	MSSDEGAS	Equipment Degassing	0.24
1257A	B3-MSSLD	MSSLOAD	Light Ends Loading	0.28
1257A	B3MISCMSS	MISSMISC	Miscellaneous MSS	0.01
27131	LU-1	LU_1	Flare	1.88
27131	LU-2	LU_2P	Fugitives	0.01
27131	LSMISCMSS	LSMISMSS	Fugitive Component and Piping MSS	0.07
27131	LU_DEGAS	LU_DEGAS	Equipment Degassing	0.16
723	N-4	N_4	N-7/8 Absorber Feed Water Tank	2.54
723	N-6	N_6	N-3/7 Feed and Exit Gas Flare	31.88
723	N-7	N_7	N-5/6 Safety Vent Stack	1.46
723	N-8	N_8	N-3/4 Safety Vent Stack	1.46
723	N-9	N_9	N-7/8 SVG Fan	0.02
723	N-17	N_17	N-5/6 Flare	171.72
723	FN	FN	Fugitives	0.32
723	N_MSSPH	N_MSSPH	Pump and Heat Exchanger MSS	0.21
723	N_DEGAS	N_DEGAS	Equipment Degassing	1.5
723	NMISCMSS	NMISCMSS	Miscellaneous MSS Activities	0.06
2165	BH-2-3	BH_2_3	Boiler No. 3 400 MMBtu/hr	0.28
2165	BH-2-4	BH_2_4	Boiler No. 4 623.6 MMBtu/hr	3.61
2165	BLR/FUG	BLR_FUG	Boiler Fugitives	0.01
17392	SW-1	SW_1	Flare	0.06
17392	SW-16	SW_16	Tank 12126 (Aqua Salt)	1.36
17392	SW-27	SW_27	Fugitives	0.01
17392	SW_MSSPH	SW_MSSPH	Pump and Heat Exchanger MSS	0.69
17392	SW_MISCMSS	SWMISMSS	Fugitive Component, Pipe Clearing, and Instrument Maintenance	0.09
751	35630	35630	Primene Salt Tank	0.19

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-6 Modeled Stack Parameters - Sitewide

Point Sources

EPN	Model ID	Description	UTM-X (m)[1]	UTM-Y (m)[1]	Stack Height (ft)	Temp (F)	Velocity (fps)	Diameter (ft)
LU-VS	LU_VS	Batch Vent	296455.43	3290370.27	99	ambient	14.20	2.5
B-3-1	B_3_1	Flare	296324.00	3291295.00	75	1832	65.60	4.50
LU-1	LU_1	Flare	296482.40	3290424.40	60	1832	65.62	10.15
N-6	N_6	N-3/7 Feed and Exit Gas Flare	296816.37	3290194.53	125	1832	65.62	3.99
N-17	N_17	N-5/6 Flare	296426.74	3290178.09	125	1832	65.62	7.20
SW-1	SW_1	Flare	296482.00	3290253.00	80	1832	65.62	1.18
N-4	N_4	N-7/8 Absorber Feed Water Tank	296759.36	3290164.68	10	ambient	0.0033	0.0033
SW-16	SW_16	Tank 12126 (Aqua Salt)	296477.46	3290273.72	21	ambient	0.0033	0.0033
BH-2-3	BH_2_3	Boiler No. 3 400 MMBtu/hr	296901.01	3290239.26	50.00	320.00	28.00	7.00
BH-2-4	BH_2_4	Boiler No. 4 623.6 MMBtu/hr	296944.00	3290260.00	100.00	320.00	28.00	7.00
B3-MSSLD	MSSLOAD	Light Ends Loading	296537.50	3291251.80	16	ambient	0.0033	0.0033
N-7	N_7	N-5/6 Safety Vent Stack	296476.00	3290181.00	150.00	70.00	13.60	5.00
N-8	N_8	N-3/4 Safety Vent Stack	296759.37	3290229.62	149.00	70.00	13.20	5.00
N-9	N_9	N-7/8 SVG Fan	296794.66	3290163.60	110.00	77.00	12.00	1.30
BGMA-MSSTK	MSSTK4	B3,B4,GMAA Fixed Roof Tanks MSS Activities - Worst Tank is B-3-18 for Ammonia	296548.35	3291258.29	16.63	ambient	0.0033	0.0033
35630	35630	Primene Salt Tank	296558.00	3291371.00	20	ambient	0.0033	0.0033
B-3-11	B_3_11	Tank 34335	296558.70	3291232.20	20	ambient	0.0033	0.0033
B-3-12	B_3_12	Tank 34343	296549.20	3291233.20	20	ambient	0.0033	0.0033
B-3-18	B_3_18	Tank 34402	296548.35	3291258.29	19	ambient	0.0033	0.0033
B-3-19	B_3_19	Tank 34426	296555.82	3291265.99	14	ambient	0.0033	0.0033
B-3-61	B_3_61	B3 Slurry Pot	296558.00	3291223.00	5	ambient	0.0033	0.0033
B-3-36	B_3_36	Tank 22080	296533.00	3291074.00	6	ambient	0.0033	0.0033
B-4-5	B_4_5	Tank 33336	296523.00	3291074.00	10	ambient	0.0033	0.0033

[1] UTM Coordinates are provided in NAD27.

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-6 Modeled Stack Parameters - Sitewide
Volume Sources

EPN	Model ID	Description	UTM-X (m)[1]	UTM-Y (m)[1]	Release Height (ft)	Initial Horizontal Dimension (ft)	Initial Vertical Dimension (ft)	Equivalent Horizontal Length (ft)
B-3-47 & B-3-48	B_3_47	B-3 Rack Fugitives	296508.23	3291216.27	15	32.02	13.95	137.70
B-4-9	B_4_9	B-4 Rack Fugitives	296517.00	3291075.00	10	23.83	9.30	102.47
BGMA-DEGAS	MSSDEGAS	Equipment Degassing	296218.00	3290331.00	10	79.54	9.30	342.03
B3MISCMSS	MISSMISC	Miscellaneous MSS	296218.00	3290331.00	10	79.54	9.30	342.03
LU-2	LU_2P	Fugitives	296482.00	3290405.00	10	81.20	9.30	349.14
LSMISCMSS	LSMISMSS	Fugitive Component and Piping MSS	296473.46	3290419.55	10	97.56	9.30	419.49
LU_DEGAS	LU_DEGAS	Equipment Degassing	296473.46	3290419.55	10	97.56	9.30	419.49
N_MSSPH	N_MSSPH	Pump and Heat Exchanger MSS	296475.00	3290209.00	10	114.29	9.30	491.46
N_DEGAS	N_DEGAS	Equipment Degassing	296475.00	3290209.00	10	114.29	9.30	491.46
NMISCMSS	NMISCMSS	Miscellaneous MSS Activities	296475.00	3290209.00	10	114.29	9.30	491.46
BLR/FUG	BLR_FUG	Boiler Fugitives	296914.00	3290253.00	25	25.67	23.26	110.38
SW-27	SW_27	Fugitives	296544.00	3290247.00	10	58.79	9.30	252.78
SW_MSSPH	SW_MSSPH	Pump and Heat Exchanger MSS	296544.00	3290247.00	10	58.79	9.30	252.78
SW_MISCMSS	SWMISMSS	Fugitive Component, Pipe Clearing, and Instrument Maintenance	296544.00	3290247.00	10	58.79	9.30	252.78

[1] UTM Coordinates are provided in NAD27.

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-6 Modeled Stack Parameters - Sitewide
AreaPoly Sources

EPN	Model ID	Source Description	No. of Vertices	UTM-X[1] (m)	UTM-Y[1] (m)	Release Height (ft)
FN	FN	Fugitives	22	296364.22	3290285.17	30
				296507.63	3290285.18	
				296507.33	3290166.35	
				296542.02	3290166.35	
				296542.02	3290231.4	
				296600.13	3290231.4	
				296600.13	3290138.59	
				296656.51	3290138.59	
				296656.45	3290284.23	
				296815.23	3290284.31	
				296815.23	3290150.74	
				296723.06	3290150.54	
				296723.06	3290167.07	
				296666.91	3290167.22	
				296666.84	3290129.75	
				296543.54	3290129.75	
				296543.75	3290155.94	
				296502.12	3290155.94	
				296502.12	3290146.4	
				296441.49	3290146.28	
				296441.49	3290193.05	
				296364.02	3290193.05	

[1] UTM Coordinates are provided in NAD27.

Rohm and Haas Texas Incorporated
LoneStar Facility
Permit No. 27131
B-7 Model Results - Sitewide

Sitewide (PTE) - All Receptors

	1-hour									
Pollutant	**Model ID**	**Averaging Period**	**ST ESL (ug/m^3)**	**GLCmax (ug/m^3)**	**Percent of ESL**	**Is GLCmax less than 2xESL?**	**Frequency of Exceedance >1xESL (no limit)**	**Frequency of Exceedance >2xESL (≤24)**	**Frequency of Exceedance >4xESL (≤10)**	**Frequency of Exceedance >10xESL (≤0)**
Ammonia	NH3_S	1-hour	180	269.72	149.84%	Yes	9	0	0	0

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Sitewide (PTE) - Non-Industrial Receptors

	1-hour						
Pollutant	**Averaging Period**	**ST ESL (ug/m^3)**	**GLCni(ug/m^3)**	**Percent of ESL**	**Is GLCmax less than ESL?**	**Frequency of Exceedance >1xESL (≤24)**	**Frequency of Exceedance >2xESL (≤0)**
Ammonia	1-hour	180	26.13	14.52%	Yes	0	0

Appendix C:

- Appendix C-1: Heteoalkyl Methacrylate ESL Justification
- Appendix C-2: Area Poly Source FN Parameters

- Appendix C-1: Heteoalkyl Methacrylate ESL Justification

TCEQ Interim ESL Request Form

Date of Request: 9/24/2018
Name of Requestor: Tyler Freeman
Project Name:

Instructions: This form is designed to streamline the ESL request process. Please fill out to the best of your ability. It is critical that we have data to guide the ESL derivation. Some general tips include:

1) If an MSDS is available online, it is acceptable to use the URL instead of sending the form to the Toxicology Division.
2) If a chemical happens to be proprietary, you may indicate that. However, do describe the general class from which that chemical originates (e.g., amine, acrylate, mercaptan, etc.)
3) It helps us to know the phase of the chemical, which should be indicated in MSDS documentation. However, if there are processes that will change the way the chemical is emitted, you may wish to note that.
4) If you have any questions or comments, please contact the Toxicology Division Staff.

Chemical Name	CAS #	Synonyms	Name of Product	On ESL list? (Y/N)	MSDS Provided? (Y/N)	MSDS Link (Optional)	Physical State (solid/liquid/gas)	Solubility in Water (20 °C)	Vapor Pressure (20 °C)
heteroalkyl methacrylate	N/A			N	N		liquid		

			For TCEQ Use Only			
Will the chemical be heated during processing?	Requestor Notes	Will an ESL of ≥ 2 µg/m3 suffice (for Step 4 of the Modeling and Effects Review Applicability guidance document)? (Y/N)	Short-Term ESL (ug/m3)	Long-Term ESL (ug/m3)	Toxicity Information	Derivation Approach
Y		N	125	13		isopropyl methacrylate

- Appendix C-2: Area Poly Source FN Parameters

  As provided in Appendix B-6 of the supplemental information PDF, the modeled parameters associated with EPN FN are as follows:

EPN	Model ID	Source Description	No. of Vertices	UTM-X[1] (m)	UTM-Y[1] (m)	Release Height (ft)
FN	FN	Fugitives	22	296364.22	3290285.17	30
				296507.63	3290285.18	
				296507.33	3290166.35	
				296542.02	3290166.35	
				296542.02	3290231.4	
				296600.13	3290231.4	
				296600.13	3290138.59	
				296656.51	3290138.59	
				296656.45	3290284.23	
				296815.23	3290284.31	
				296815.23	3290150.74	
				296723.06	3290150.54	
				296723.06	3290167.07	
				296666.91	3290167.22	
				296666.84	3290129.75	
				296543.54	3290129.75	
				296543.75	3290155.94	
				296502.12	3290155.94	
				296502.12	3290146.4	
				296441.49	3290146.28	
				296441.49	3290193.05	
				296364.02	3290193.05	