



Blue Cube Operations LLC\*  
604 Highway 332  
Lake Jackson, Texas 77566

February 16, 2024

**E-PERMIT SUBMISSION**

STEERS MC-226  
Texas Commission on Environmental Quality  
P.O. Box 13087  
Austin, TX 78711-3087

RE: Instrumentation Relocation Project  
Epoxy 2 Facility, B-6200  
Blue Cube Operations LLC\*  
CN604930784, RN108772245, Acct No. BL-A044-R  
PBR §106.261 & §106.262 Registration

Dear APIRT Team Leader:

Blue Cube Operations LLC\* (Blue Cube) is submitting the following Permit by Rule (PBR) §106.261 & §106.262 registration to authorize modifications to piping that will result in a potential increase of fugitive components at the Epoxy 2 Facility, B-6200, in Freeport, Texas.

The attachments to this submittal are:

- Form PI-7 CERT
- Process Flow Diagram and Process Description
- §106.4 Demonstration of Compliance
- Table 1 Emission Limits
- PBR Compliance Table
- PBR General Facilities Workbook
- Emission Calculations

Blue Cube has included in this PBR registration information that is confidential. The confidential information is labeled and included in a separate section. For future correspondence, please contact me at (979) 529-3209 or via email at [TAAdkins@Olin.com](mailto:TAAdkins@Olin.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Tod Adkins", written in a cursive style.

Tod Adkins  
Air Permit Manager  
Blue Cube Operations LLC\*

cc:

Director

Environmental Health Brazoria County Health Department  
111 E. Locust Bldg. A-29, Ste. 107  
Angleton, Texas 77515-4642

**Certification and Registration for Permits by Rule**  
**Form PI-7-CERT**  
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<b>I. Registrant Information</b>
A. Company or Other Legal Customer Name: <b>Blue Cube Operations LLC (a wholly owned subsidiary of Olin Corporation)</b>
Company Official Contact Information ( <input type="checkbox"/> Mr. <input type="checkbox"/> Mrs. <input checked="" type="checkbox"/> Ms. <input type="checkbox"/> Other _____)
Name: <b>Gretchen Abney</b>
Title: <b>Site Leveraged EH&amp;S Leader</b>
Mailing Address: <b>604 Highway 332</b>
City: <b>Lake Jackson</b>
State: <b>Texas</b>
ZIP Code: <b>77566</b>
Phone: <b>(979) 529 3250</b>
Fax: <b>N/A</b>
Email Address: <a href="mailto:GBAbney@Olin.com">GBAbney@Olin.com</a>
<b>All PBR registration responses will be sent via email.</b>
A. Technical Contact Information ( <input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Mrs. <input type="checkbox"/> Ms. <input type="checkbox"/> Other _____)
Name: <b>Tod Adkins</b>
Title: <b>Air Permit Manager</b>
Company Name: <b>Blue Cube Operations LLC</b>
Mailing Address: <b>604 Highway 332</b>
City: <b>Lake Jackson</b>
State: <b>Texas</b>
ZIP Code: <b>77566</b>
Phone: <b>(979) 529 3209</b>
Fax Number: <b>N/A</b>
Email Address: <a href="mailto:TAAdkins@Olin.com">TAAdkins@Olin.com</a>

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<b>II. Facility and Site Information</b>
A. Name and Type of Facility
Facility Name: <b>Epoxy 2 Facility, B-6200</b>
Facility Type: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary
For portable units, please provide the serial number of the equipment being authorized below.
Serial No(s):
B. Facility Location Information
Street Address: <b>2301 N. Brazosport Blvd</b>
If there is no street address, provide written driving directions to the site and provide the closest city or town, county, and ZIP code for the site (attach description if additional space is needed).
City: <b>Freeport</b>
County: <b>Brazoria</b>
ZIP Code: <b>77541-3257</b>
C. TCEQ Core Data Form
Is the Core Data Form (TCEQ Form Number 10400) attached? <span style="float: right;"><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</span>
If "NO," provide customer reference number (CN) and regulated entity number (RN) below.
Customer Reference Number (CN): <b>CN604930784</b>
Regulated Entity Number (RN): <b>RN108772245</b>
D. TCEQ Account Identification Number (if known): <b>BL-A044-R</b>
E. Type of Action
<input checked="" type="checkbox"/> Initial Application <input type="checkbox"/> Change to Registration
For Change to Registration provide the Registration Number:
F. PBR number(s) claimed under 30 TAC Chapter 106
(List all the individual rule number(s) that are being claimed.)
106.261
106.262
106.
106.

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<b>II. Facility and Site Information</b> <i>(continued)</i>	
G. Historical Standard Exemption or PBR	
Are you claiming a historical standard exemption or PBR? <span style="float: right;"><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</span>	
<i>If "YES," enter rule number(s) and associated effective date in the spaces provided below.</i>	
Rule Number:	Effective Date:
Rule Number:	Effective Date:
H. <b>Previous Standard Exemption or PBR Registration Number</b>	
Is this authorization for a change to an existing facility previously authorized under a standard exemption or PBR? <span style="float: right;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</span>	
If "YES," enter previous standard exemption number(s) and PBR registration number(s) and associated effective dates in the spaces provided below.	
Standard Exemption and PBR Registration Number: <b>TCEQ Registration #155547, PBR 106.261 and 106.262</b>	
Effective Date: <b>November 1, 2003, November 1, 2003</b>	
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #158982, PBR 106.262</b>	
Effective Date: <b>November 1, 2003</b>	
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #160380, PBR 106.261 and 106.262</b>	
Effective Date: <b>November 1, 2003, November 1, 2003</b>	
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #162999, PBR 106.262</b>	
Effective Date: <b>November 1, 2003</b>	
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #163049, PBR 106.261 and 106.262</b>	
Effective Date: <b>November 1, 2003, November 1, 2003</b>	
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #163356, PBR 106.261</b>	
Effective Date: <b>November 1, 2003</b>	
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #164666, PBR 106.261 and 106.262</b>	
Effective Date: <b>November 1, 2003, November 1, 2003</b>	
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #165205, PBR 106.261 and 106.262</b>	
Effective Date: <b>November 1, 2003, November 1, 2003</b>	

Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #166531, PBR 106.262</b>
Effective Date: <b>November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #166671 PBR 106.261 and 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #167228, PBR 106.262</b>
Effective Date: <b>November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #167664, PBR 106.261</b>
Effective Date: <b>November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #168396 PBR 106.261 and 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #168463 PBR 106.261 and 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #169443 PBR 106.261 and 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #170297 PBR 106.261 and 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #171291 PBR 106.261 and 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #171480 PBR 106.261 and 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #172966 PBR 106.261 and 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #173279 PBR 106.261 and 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #173596 PBR 106.261 and 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>

Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #173984 PBR 106.261 and 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #174117 PBR 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s): <b>TCEQ Registration #174294 PBR 106.261 and 106.262</b>
Effective Date: <b>November 1, 2003, November 1, 2003</b>
I. Other Facilities at this Site Authorized by Standard Exemption, PBR, or Standard Permit
Are there any other facilities at this site that are authorized by an Air Standard Exemption, PBR, or Standard Permit? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
If "YES," enter standard exemption number(s), PBR registration number(s), and Standard Permit registration number(s), and associated effective date in the spaces provided below. <b>There are many PBRs and Standard Permits registered at this site. A list can be provided if necessary for review of this project.</b>
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s):
Effective Date:
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s):
Effective Date:
J. Other Air Preconstruction Permits
Are there any other air preconstruction permits at this site? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
<b><i>If "YES," enter permit number(s) in the spaces provided below.</i></b>

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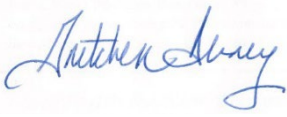
<b>There are many NSR Permits issued for this site. A list can be provided if necessary for review of this project.</b>	
K. Affected Air Preconstruction Permits	
Does the PBR being claimed directly affect any permitted facility? <span style="float: right;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</span>	
<b>II. Facility and Site Information</b> <i>(continued)</i>	
If "YES," enter the permit number(s) in the spaces provided below.	
<b>NSR #104092</b>	
L. Federal Operating Permit (FOP) Requirements (30 TAC Chapter 122 Applicability)	
1. Is this facility located at a site that is required to obtain an FOP pursuant to 30 TAC Chapter 122? <span style="float: right;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> To Be Determined</span>	
If the site currently has an existing FOP, enter the permit number: <b>Title V #O2207</b>	
Check the requirements of 30 TAC Chapter 122 that will be triggered if this certification is accepted. <b>(check all that apply)</b>	
<input type="checkbox"/> Initial Application for a FOP	<input type="checkbox"/> Significant Revision for an SOP
<input type="checkbox"/> Operational Flexibility/Off Permit Notification for an SOP	<input type="checkbox"/> Minor Revision for an SOP
<input type="checkbox"/> To be Determined	<input checked="" type="checkbox"/> None
2. Identify the type(s) of FOP issued and/or FOP application(s) submitted/pending for the site. <b>(check all that apply)</b>	
<input checked="" type="checkbox"/> SOP	<input type="checkbox"/> GOP <input type="checkbox"/> GOP application/revision (submitted or under APD review)
<input type="checkbox"/> N/A	<input type="checkbox"/> SOP application/revision (submitted or under APD review)
<b>III. Fee Information</b> <i>(See Section VII. for address to send fee or go to <a href="http://www.tceq.texas.gov/epay">www.tceq.texas.gov/epay</a> to pay online.)</i>	
A. <b>Fee Requirements</b>	
Is a fee required per Title 30 TAC § 106.50? <span style="float: right;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</span>	
If "NO," specify the exception. There are three exceptions to paying a PBR fee. <b>(check all that apply)</b>	
1. Registration is solely to establish a federally enforceable emission limit.	<input type="checkbox"/>
2. Registration is within six months of an initial PBR review, and it is addressing deficiencies, administrative changes, or other allowed changes.	<input type="checkbox"/>
3. Registration is for a remediation project (30 TAC § 106.533).	<input type="checkbox"/>
B. Fee Amount	
1. A \$100 fee is required if any of the answers in III.B.1 are "YES."	
This business has less than 100 employees.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
This business has less than \$6 million dollars in annual gross receipts.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
This registration is submitted by a governmental entity with a population of less than 10,000.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
This registration is submitted by a non-profit organization.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO



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<b>III. Fee Information</b> (See Section VII. for address to send fee or go to <a href="http://www.tceq.texas.gov/epay">www.tceq.texas.gov/epay</a> to pay online.) (continued)	
2. A \$450 fee is required for all other registrations	
A. Payment Information	
Check/money order/transaction or voucher number: <b>Paid via STEERS</b>	
Individual or company name on check: <b>N/A</b>	
Fee Amount: <b>\$450</b>	
Was the fee paid online? <span style="float: right;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</span>	
<b>IV. Technical Information Including State and Federal Regulatory Requirements</b> Check the appropriate box to indicate what is included in your submittal. <b>NOTE: Any technical or essential information needed to confirm that facilities are meeting the requirements of the PBR must be provided. Not providing key information could result in a deficiency of the project.</b>	
A. PBR requirements (Checklists are optional; however, your review will go faster if you provide applicable checklists.)	
Did you demonstrate that the general requirements in 30 TAC § 106.4 are met? <span style="float: right;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</span>	
Did you demonstrate that the individual requirements of the specific PBR are met? <span style="float: right;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</span>	
B Confidential Information Included (If confidential information is submitted with this registration, all confidential pages must be properly marked "CONFIDENTIAL.") <span style="float: right;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</span>	
C. Process Flow Diagram: <span style="float: right;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</span>	
D. Process Description: <span style="float: right;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</span>	
E. Maximum Emissions Data and Calculations: <span style="float: right;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</span>	
<i><b>Note:</b> If the facilities listed in this registration are subject to the Mass Emissions Cap &amp; Trade program under 30 TAC Chapter 101, Subchapter H, Division 3, the owner/operator of these facilities must possess NO<sub>x</sub> allowances equivalent to the actual NO<sub>x</sub> emissions from these facilities.</i>	
F. Is this certification being submitted to certify the emissions for the entire site? <span style="float: right;"><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</span>	
If "NO," include a summary of the specific facilities and emissions being certified.	
G. Table 1(a) (Form 10153) Emission Point Summary: <span style="float: right;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</span>	
H. Distances from Property Line and Nearest Off-Property Structure	
Distance from this facility's emission release point to the nearest property line:	<b>1,300</b> feet
Distance from this facility's emission release point to the nearest off-property structure:	<b>1,850</b> feet

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<b>IV. Technical Information Including State and Federal Regulatory Requirements</b> Check the appropriate box to indicate what is included in your submittal. <b>NOTE: Any technical or essential information needed to confirm that facilities are meeting the requirements of the PBR must be provided. Not providing key information could result in a deficiency of the project.</b>
I. Project Status
Has the company implemented the project or waiting on a response from TCEQ? <span style="float: right;"><input checked="" type="checkbox"/> Implemented <input type="checkbox"/> Waiting</span>
J. Projected Start of Construction and Projected Start of Operation Dates:
Projected Start of Construction (provide date): <b>03/01/2024</b>
Projected Start of Operation (provide date): <b>03/01/2024</b>
<b>V. Delinquent Fees</b>
This form <b>will not be processed</b> 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 website at: <a href="http://www.tceq.texas.gov/agency/financial/fees/delin/index.html">www.tceq.texas.gov/agency/financial/fees/delin/index.html</a> .
<b>VI. Signature For Registration and Certification</b>
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 this 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 (printed):
<b>Gretchen Abney, Site Leveraged EH&amp;S Leader</b>
Signature (original signature required)

Date: <b>February 16, 2024</b>

**Certification and Registration for Permits by Rule**  
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**VII. Submitting Copies of the Certification and Registration**

Copies must be sent as listed below.

**Processing delays may occur if copies are not sent as noted.**

Who	Where	What
Air Permits Initial Review Team (APIRT)	Regular, Certified, Priority Mail MC 161, P.O. Box 13087 Austin, Texas 78711-3087 Hand Delivery, Overnight Mail MC 161, 12100 Park 35 Circle, Building C, Third Floor Austin, Texas 78753	Originals Form PI-7-CERT, Core Data Form, and all attachments. Not required if using ePermits1.
Revenue Section, TCEQ	Regular, Certified, Priority Mail MC 214, P.O. Box 13088 Austin, Texas 78711-3088 Hand Delivery, Overnight Mail MC 214, 12100 Park 35 Circle, Building A, Third Floor Austin, Texas 78753	Original Money Order or Check, Copy of Form PI-7-CERT, and Core Data Form. Not required if fee was paid using ePay2.
Appropriate TCEQ Regional Office	To find your Regional Office address, go to the TCEQ website at <a href="http://www.tceq.texas.gov/agency/directory/region">www.tceq.texas.gov/agency/directory/region</a> , or call (512) 239-1250.	Copy of Form PI-7-CERT, Core Data Form, and all attachments. Not required if using ePermits1
Appropriate Local Air Pollution Control Program(s)	To Find your local or Regional Air Pollution Control Programs go to the TCEQ, APD website at <a href="http://www.tceq.texas.gov/permitting/air/local_programs.html">www.tceq.texas.gov/permitting/air/local_programs.html</a> , or call (512)-239-1250	Copy of Form PI-7-CERT, Core Data Form, and all attachments.

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1 ePermits located at [www3.tceq.texas.gov/steers/](http://www3.tceq.texas.gov/steers/)

2 ePay located at [www.tceq.texas.gov/epay](http://www.tceq.texas.gov/epay)

**Blue Cube Operations LLC**

**Permit by Rule**

**Instrumentation Relocation Project**

**Epoxy 2 Facility, B-6200**

**February 16, 2024**

# Project Description

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## Overview

Blue Cube Operations LLC (Blue Cube) Epoxy 2 LER facility has identified existing process instrumentation, that requires relocation in order to better serve the plant and effectiveness of the instrumentation.

This PBR application is to authorize the proposed piping changes for this relocation of the instrumentation. This instrumentation has to do with the process equipment, and is **not** related to the existing control devices. There will be no changes to the existing control devices.

There are no changes to operating conditions or production rates. There are no additions or modifications to control devices. The applicable requirements will be maintained, and no new requirements are triggered. There are no upstream/downstream impacts associated with this project.

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## Affected sources

The following FINs/EPNs are being affected by this project:

- B62E2FU1 / \*B62FU1 – Process Area Fugitives

\*The EPN B62FU1 is part of the Fugitive Emissions Source Group Cap for the annual tpy on the NSR MAERT.

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## Upstream and downstream impacts

There are no upstream or downstream impacts.

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## Emission Calculations

The emission calculations contain confidential information and can be found in the confidential section of this submittal. The equation and emission factors are taken from TCEQ's Technical Guidance Document for Chemical Sources "Fugitive Guidance" APD 6422, dated June 2018, and to match the permit representation.

Worst maximum case concentrations were used to estimate hourly and annual rates. And as mentioned above, the components potential emissions will be assumed in service all year at these highest concentrations.

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## MSS Emissions

There are no changes to MSS emissions as part of this application.

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## Air Pollutant Watch List

This project occurs within an Air Pollutant Watch List area (APL1201) but does not include any increases or decreases of any pollutant of concern for that area (arsenic, cobalt, nickel or vanadium).

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## Title V and Other Regulations

This plant is authorized under the Title V Permit O2207. The project is being reviewed to determine the proper revision authorization.

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## General Information

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**In this section**

The permit by rule requirements specified on Form PI-7 CERT are addressed in this section as follows:

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PI-7 CERT Section	Description	See Page
IV	Process Description (Non-Confidential)	4
IV	Process Flow Diagram	6
IV	Regulatory Requirements	7

## Process Description (Non-Confidential) (From 2022-01 Permit Amendment Application)

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### Introduction

The following represents the process description for the B-6200 Epoxy 2 Plant. Blue Cube considers any additional process information beyond that which is described in this section as confidential business information.

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### B-6200 Epoxy 2 Plant

The B-6200 Epoxy 2 plant manufactures Liquid Epoxy Resin (LER) and Bisphenol (BIS) as the primary products. The process consists of a series of reaction steps, and any excess raw material is recovered for reuse.

The BIS Process uses acetone and phenol as reactants to make Bisphenol in their reactors. From there the process stream is dried in order to remove water and acetone from the product stream. The removed stream then passes through acetone and phenol recovery process to recover the reactants. The product stream is further purified in the finishing step. The final product is sent to the LER process and to Converted Resins plant (B-5200).

Bisphenol enters the LER process and reacts with epichlorohydrin in the coupling reaction step. The product stream then enters the epoxidation step along with the product from the caustic carbonate step. From there the product stream is then purified in the wash system and resin purification step. From the resin purification step, one stream is sent to the epichlorohydrin recovery system for reuse and the product stream is either sent to the DER 383 product tanks or to the proprietary unit operation to create DER 331.

The LER process reaction steps are followed by subsequent wash steps to remove ionic chlorides formed as a by-product of the reaction. Subsequently, the washed material is sent through a series of finishing towers that remove solvent, water, and other impurities, before going to the product tanks. All equipment in epichlorohydrin service vent via a common header to an adsorber system to remove epichlorohydrin from the vent.

Trace amounts (ppm level) of HRVOC emissions have been detected in some LER vents streams as an impurity and have been quantified in the emission calculations.

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### Raw Materials

The primary raw materials are epichlorohydrin, phenol, bisphenol, acetone, and sodium hydroxide. Water, catalyst, and solvents are used in aiding in the production of LER and BIS. MIBK (Methyl Iso-Butyl Ketone) is received in totes and is used to separate phenol and water in the phenol recovery part of the process. These raw materials are received primarily by pipeline, railcar, and tank truck. The raw materials are stored in API storage tanks.

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### Distillation, Recovery and Waste

The distillation section separates the product, excess raw material, solvent, and impurities through a series of distillation columns. Excess raw material and solvents are distilled and sent to the recovery section in order to further process it for reuse. All impurities are collected in a storage tank and periodically sent to an incinerator. Waste loading activities can occur in several locations throughout the block, but primarily occur at EPN B62LR3. Wastewater generated is sent to the Dow Chemical Company wastewater treatment plant, WWTP.

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**Process Description (Non-Confidential)** (From 2022-01 Permit AMD Application),  
*Continued*

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**Product Storage  
and Distribution  
Section**

Products are stored in API storage tanks. The products are shipped to customers via railcars, tank trucks, or bags/bulk bags of various sizes. Tank truck loading activities primarily occur around the product loading areas. All bisphenol transfer and loading systems control particulate matter (PM) via bag house and/or PM scrubber systems.

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**Control Devices**

For VOC control, process vents are routed through water scrubbers T-157 (EPN B62SV157) or SC-203 (EPN B62SV203), or a carbon adsorption system (EPN B62CB1). The Epoxy 2 Pressure Swing Adsorber (PSA, EPN B62CB1) consists of two carbon beds in alternating service.

Solids are loaded at the B-6200 facilities. All transfer and loading systems control PM emissions via baghouse filter systems (EPNs B62SB2A/2B/3A/3B/3C/3D, B62SB700, and B62BF6). The other PM emissions control involves water scrubbers SC-201/202 (EPN B62SV201) in which the finishing plant vents are directed to the scrubbers in order to knock down the PM entrained in the vents. This water is collected and sent to the WWTP.

Please refer to the process flow diagrams for more information of how each control device is connected to the process.

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**Permitted MSS  
Activities**

According to TCEQ guidance, MSS activities are categorized according to four categories: Attachment A, Attachment B, Attachment C, and exempt MSS activities. Blue Cube determined the MSS activities for the B-6200 Epoxy 2 Plant and categorized them appropriately according to the criteria established by TCEQ MSS guidance.

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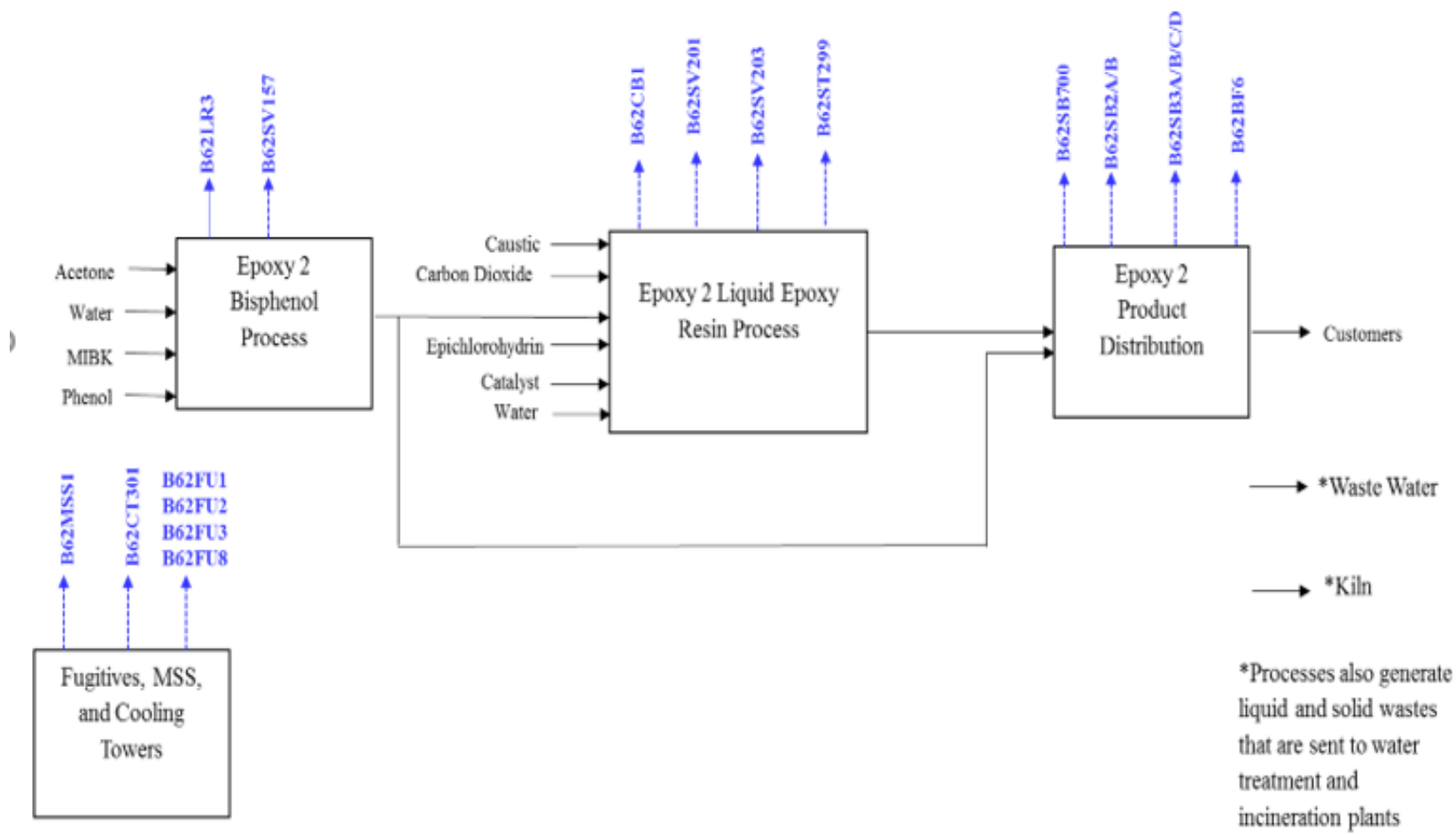
**Other**

Wastewater and bulk/solid wastes are treated at other facilities under a separate air permit.

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## Process Flow Diagram– B62



# Regulatory Requirements

## In this section

Following is a list of topics in this section:

Description	See Page
§106.4 General Requirements for Permitting by Rule	8

**Texas Commission on Environmental Quality**  
**Permit by Rule Applicability Checklist**  
**Title 30 Texas Administrative Code § 106.4**

The following checklist was developed by the Texas Commission on Environmental Quality (TCEQ), Air Permits Division, to assist applicants in determining whether or not a facility meets all of the applicable requirements. Before claiming a specific Permit by Rule (PBR), a facility must first meet all of the requirements of Title 30 Texas Administrative Code § 106.4 (30 TAC § 106.4), "Requirements for Permitting by Rule." Only then can the applicant proceed with addressing requirements of the specific Permit by Rule being claimed.

The use of this checklist is not mandatory; however, it is the responsibility of each applicant to show how a facility being claimed under a PBR meets the general requirements of 30 TAC § 106.4 and also the specific requirements of the PBR being claimed. If all PBR requirements cannot be met, a facility will not be allowed to operate under the PBR and an application for a construction permit may be required under 30 TAC § 116.110(a).

Registration of a facility under a PBR can be performed by completing Form PI-7 (Registration for Permits by Rule) or Form PI-7-CERT (Certification and Registration for Permits by Rule). The appropriate checklist should accompany the registration form. Check the most appropriate answer and include any additional information in the spaces provided. If additional space is needed, please include an extra page and reference the question number. The PBR forms, tables, checklists, and guidance documents are available from the TCEQ, Air Permits Division website at: [www.tceq.texas.gov/permitting/air/nav/air\\_pbr.html](http://www.tceq.texas.gov/permitting/air/nav/air_pbr.html).

1. 30 TAC § 106.4(a)(1) and (4): Emission Limits	Answer
List emissions in tpy for <b>each</b> facility (add additional pages or table if needed): <b>See Table 1(a)</b>	
Are the SO <sub>2</sub> , PM <sub>10</sub> , VOC, or other air contaminant emissions claimed for <b>each</b> facility in this PBR submittal less than 25 tpy?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Are the NO <sub>x</sub> and CO emissions claimed for each facility in this PBR submittal less than 250 tpy?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
<i>If the answer to both is "Yes," continue to the question below. If the answer to either question is "No," a <b>PBR cannot be claimed</b>.</i>	
Has any facility at the property had public notice and opportunity for comment under 30 TAC Section 116 for a regular permit or permit renewal? (This does not include public notice for voluntary emission reduction permits, grandfathered existing facility permits, or federal operating permits.)	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
<i>If "Yes," skip to Section 2. If "No," continue to the questions below.</i>	
If the site has had no public notice, please answer the following:	
Are the SO <sub>2</sub> , PM <sub>10</sub> , VOC, or other emissions claimed for <b>all</b> facilities in this PBR submittal less than 25 tpy?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Are the NO <sub>x</sub> and CO emissions claimed for all facilities in this PBR submittal less than 250 tpy?	<input type="checkbox"/> YES <input type="checkbox"/> NO
<i>If the answer to both questions is "Yes," continue to Section 2.</i>	
<i>If the answer to either question is "No," a <b>PBR cannot be claimed</b>. A permit will be required under Chapter 116.</i>	

**Texas Commission on Environmental Quality**  
**Permit by Rule Applicability Checklist**  
**Title 30 Texas Administrative Code § 106.4**

<b>2. 30 TAC § 106.4(a)(2): Nonattainment Check</b>	<b>Answer</b>
Are the facilities to be claimed under this PBR located in a designated ozone nonattainment county?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
<i>If "Yes," please indicate which county by checking the appropriate box to the right.</i>	
(Moderate) - Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller counties:	<input checked="" type="checkbox"/> HGB
(Moderate) - Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise counties:	<input type="checkbox"/> DFW
<i>If "Yes," to any of the above, continue to the next question. If "No," continue to Section 3.</i>	
1. Does this project trigger a nonattainment review?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
2. Is the project's potential to emit (PTE) for emissions of VOC or NO <sub>x</sub> increasing by 100 tpy or more?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
<i>PTE is the maximum capacity of a stationary source to emit any air pollutant under its worst-case physical and operational design unless limited by a permit, rules, or made federally enforceable by a certification.</i>	
Is the site an existing major nonattainment site and are the emissions of VOC or NO <sub>x</sub> increasing by 40 tpy or more?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
<i>If needed, attach contemporaneous netting calculations per nonattainment guidance.</i>	
Additional information can be found at: <a href="http://www.tceq.texas.gov/permitting/air/forms/newsourcereview/tables/nsr_table8.html">www.tceq.texas.gov/permitting/air/forms/newsourcereview/tables/nsr_table8.html</a> and <a href="http://www.tceq.texas.gov/permitting/air/nav/air_docs_newsourcereview.html">www.tceq.texas.gov/permitting/air/nav/air_docs_newsourcereview.html</a>	
<i>If "Yes," to any of the above, the project is a major source or a major modification and a <b>PBR may not be used</b>. A Nonattainment Permit review must be completed to authorize this project. If "No," continue to Section 3.</i>	
<b>3. 30 TAC § 106.4(a)(3): Prevention of Significant Deterioration (PSD) check</b>	
Does this project trigger a review under PSD rules? <b>No</b>	
To determine the answer, review the information below:	
Are emissions of any regulated criteria pollutant increasing by 100 tpy of any criteria pollutant at a named source?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Are emissions of any criteria pollutant increasing by 250 tpy of any criteria pollutant at an unnamed source?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Are emissions increasing above significance levels at an existing major site?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
PSD information can be found at: <a href="http://www.tceq.texas.gov/assets/public/permitting/air/Forms/NewSourceReview/Tables/10173tbl.pdf">www.tceq.texas.gov/assets/public/permitting/air/Forms/NewSourceReview/Tables/10173tbl.pdf</a> and <a href="http://www.tceq.texas.gov/permitting/air/nav/air_docs_newsourcereview.html">www.tceq.texas.gov/permitting/air/nav/air_docs_newsourcereview.html</a>	
<i>If "Yes," to any of the above, a <b>PBR may not be used</b>. A PSD Permit review must be completed to authorize the project.</i>	
<i>If "No," continue to Section 4.</i>	

**Texas Commission on Environmental Quality**  
**Permit by Rule Applicability Checklist**  
**Title 30 Texas Administrative Code § 106.4**

<b>4. 30 TAC § 106.4(a)(6): Federal Requirements</b>	<b>Answer</b>
Will all facilities under this PBR meet applicable requirements of Title 40 Code of Federal Regulations (40 CFR) Part 60, New Source Performance Standards (NSPS)?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
If "Yes," which Subparts are applicable? <i>(answer below.)</i>	
N/A	
Will all facilities under this PBR meet applicable requirements of 40 CFR Part 63, Hazardous Air Pollutants Maximum Achievable Control Technology (MACT) standards?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
If "Yes," which Subparts are applicable? <i>(answer below.)</i>	
N/A	
Will all facilities under this PBR meet applicable requirements of 40 CFR Part 61, National Emissions Standards for Hazardous Air Pollutants (NESHAPs)?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA
If "Yes," which Subparts are applicable? <i>(answer below.)</i>	
N/A	
<i>If "Yes" to any of the above, please attach a discussion of how the facilities will meet any applicable standards.</i>	
<b>5. 30 TAC § 106.4(a)(7): PBR prohibition check</b>	
Are there any air permits at the site containing conditions which prohibit or restrict the use of PBRs?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
<i>If "Yes," PBRs may not be used or their use must meet the restrictions of the permit. A new permit or permit amendment may be required.</i>	
List permit number(s):	
<b>6. 30 TAC § 106.4(a)(8): NO<sub>x</sub> Cap and Trade</b>	
Is the facility located in Harris, Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, or Waller County?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
<i>If "Yes," answer the question below.</i>	
<i>If "No," continue to Section 7.</i>	
Will the proposed facility or group of facilities obtain required allowances for NO <sub>x</sub> if they are subject to 30 TAC Chapter 101, Subchapter H, Division 3 (relating to the Mass Emissions Cap and Trade Program)?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA

**Texas Commission on Environmental Quality**  
**Permit by Rule Applicability Checklist**  
**Title 30 Texas Administrative Code § 106.4**

<b>7. Highly Reactive Volatile Organic Compounds (HRVOC) check</b>		
Is the facility located in Harris County?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
<i>If "Yes," answer the next question. If "No," skip to the box below.</i>		
Will the project be constructed after June 1, 2006?	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>If "Yes," answer the next question.</i>		
<i>If "No," skip to the box below.</i>		
Will one or more of the following HRVOC be emitted as a part of this project?	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>If "Yes," complete the information below:</i>		
<b>Information</b>	<b>lb/hr</b>	<b>tpy</b>
▶ 1,3-butadiene		
▶ all isomers of butene (e.g., isobutene [2-methylpropene or isobutylene])		
▶ alpha-butylene (ethylethylene)		
▶ beta-butylene (dimethylethylene, including both cis- and trans-isomers)		
▶ ethylene		
▶ propylene		
Is the facility located in Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, or Waller County?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
<i>If "Yes," answer the next question. If "No," the checklist is complete.</i>		
Will the project be constructed after June 1, 2006?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
<i>If "Yes," answer the next question. If "No," the checklist is complete.</i>		
Will one or more of the following HRVOC be emitted as a part of this project?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
<i>If "Yes," complete the information below:</i>		
<b>Information</b>	<b>lb/hr</b>	<b>tpy</b>
▶ ethylene		
▶ propylene		

TCEQ - 10149 (APDG 4999v12, revised 10/20) 106.4 Checklist for Permits by Rule General Requirements  
This form for use by facilities subject to air quality permit requirements and may be revised periodically.

## APPENDICES

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**In this section**

Following is a list of topics in this section:

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Description	Page
Appendix A: PBR Compliance Table Federal Applicability Analysis	A-1
Appendix B: Table 1(a) - Page 1	B-1
Appendix C: Emission Calculations (CONFIDENTIAL)	C-1

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## **Appendix A**



## PBR Compliance Table

**Table 2 PBR Compliance**

EPN	Air Contaminant	Project Increase		TLV or L Value	PBR Limit		Limit Citation	In Compliance
		lb/hr	T/yr	mg/m3	lb/hr	T/yr		
B62FU1	Epichlorohydrin	0.005	0.021					
	<b>Total Epichlorohydrin</b>	<b>0.005</b>	<b>0.021</b>	1.9	<b>0.11</b>	<b>0.49</b>	106.262(a)(2)	<b>YES</b>
B62FU1	DCOPP	0.00003	0.0001					
	<b>Total DCOPP</b>	<b>0.00003</b>	<b>0.00013</b>	None	<b>1.00</b>	<b>4.38</b>	106.261(a)(3)	<b>YES</b>
	<b>Grand Total VOC</b>		<b>0.021</b>			<b>40</b>	106.4(a)(2)	<b>YES</b>
Note: Project does not change hourly emissions,								
B-6200			1,850	ft. from the nearest off-site receptor.				
	Therefore in 106.262, the		17					

## Federal Applicability Analysis

<b>Project Summary of Emission Changes</b>								
<b>Epoxy 2 Plant, B-6200</b>								
<b>LER Instrumentation Relocation</b>								
		CO	NO <sub>x</sub>	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	VOC
<b>Total of Net Increases</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>
<b>PSD Significance Levels</b>		<b>100</b>	<b>40</b>	<b>25</b>	<b>15</b>	<b>10</b>	<b>40</b>	
<b>Site Netting Supplied?</b>		<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	
<b>Site Contemporaneous Net</b>		<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	
<b>PSD Applicable?</b>		<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	
<b>NNSR Project Netting Required?</b>			<b>NO</b>					<b>NO</b>
<b>NNSR Net Project Increase</b>			<b>0.00</b>					<b>0.02</b>
<b>NNSR Site Contemporaneous Net</b>								
<b>NNSR Applicable?</b>			<b>NO</b>					<b>NO</b>
<b>Post-Project Maximum Allowable Annual Emissions, T/yr</b>								
Emission Units affected by		CO	NO <sub>x</sub>	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	VOC
FIN	EPN							
B62E2FU1	B62FU1							12.80
<b>Pre-Project Actual Annual Emissions, T/yr (24 month average)</b>								
SUBSTITUTE THE PRECHANGE ALLOWABLE IF IT IS SMALLER THAN THE ACTUAL								
Emission Units affected by		CO	NO <sub>x</sub>	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	VOC
FIN	EPN							
B62E2FU1	B62FU1							12.78
<b>Changes in Emissions, T/yr</b>								
<b>(Post-Project Allowable, T/yr) - (Pre-Project Actual, T/yr)</b>								
Emission Units affected by		CO	NO <sub>x</sub>	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	VOC
FIN	EPN							
B62E2FU1	B62FU1							0.02

## Appendix B

### Table 1(a)-Page 1

**Texas Commission on Environmental Quality**  
**Table 1(a) Emission Point Summary**  
**Air Contaminant Data (Page 1)**

<b>Date:</b>	<b>February 16, 2024</b>
<b>Permit No.:</b>	<b>104092</b>
<b>Regulated Entity No.:</b>	<b>108772245</b>
<b>Area Name:</b>	<b>Epoxy 2, B-6200</b>
<b>Customer Reference No.:</b>	<b>604930784</b>

Review of application and issuance of permits will be expedited by supplying all necessary information requested on the Table

<b>EPN</b>	<b>FIN</b>	<b>Name</b>	<b>Component or Air Contaminant Name</b>	<b>Air Contaminant Emission Rate lb/hr</b>	<b>Air Contaminant Emission Rate TPY</b>
*B62FU1	B62E2FU1	Process Fugitives	VOC	0.01	0.02

Note: Emissions rates listed on the Table 1(a) Page 1 represent project increases only and are not the new allowable emissions rate.

\*The EPN B62FU1 is part of an Fugitive Emissions Source Group Cap for the annual tpy on the NSR MAERT.

EPN = Emission Point

FIN = Facility Identification Number

TCEQ - 10153 (APDG 5178v7, revised 06/19) Table 1(a)

This form is for use by sources subject to air quality permit requirements and may be revised periodically.

**Blue Cube Operations LLC**  
**Permit by Rule**  
**Instrumentation Relocation Project**  
**Epoxy 2 Facility, B-6200**  
**February 16, 2024**

**CONFIDENTIAL INFORMATION**

## **Appendix C**

### **Emission Calculations**

**CONFIDENTIAL**