Ryan Glaze

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Wednesday, October 8, 2025 8:28 AM
To: Ryan Glaze
Subject: RE: [EXTERNAL] RE: STEERS Update Ready - FOP O1552/Project 36233 National Aeronautics and Space Administration/Lyndon B. Johnson Space Center

Thank you, Ryan

From: Ryan Glaze <James.Glaze@tceq.texas.gov>
Sent: Wednesday, October 8, 2025 8:10 AM
To: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Cc: KOLKMEIER, MARK A. (JSC-JP111)[STRAUGHAN ENVIRONMENTAL] <mark.a.kolkmeier@nasa.gov>; Fowler, Richard B. (JSC-JE111) <richard.b.fowler@nasa.gov>
Subject: RE: [EXTERNAL] RE: STEERS Update Ready - FOP O1552/Project 36233 National Aeronautics and Space Administration/Lyndon B. Johnson Space Center

Good morning John,

I have received the updated Form OP-PBRSUP and after reviewing the new form I have no issues or concerns. With that in mind, I have attached the updated Working Draft Permit (WDP). Please note, that Special Term and Condition No. 11 has been updated to reference the new Form OP-PBRSUP (September 29, 2025).

Additionally, I have received Form OP-CRO2, and Mary Beth Schwartz has been updated in the TCEQ system as the Responsible Official (RO) for NASA-JSC site.

If no other changes need to be made, I will continue with the next step in my review process. I'll let you know if I have any other updates before TCEQ sends this project out.

Please let me know if you have any questions.

Thanks!

Ryan Glaze
Operating Permits Section
Air Permits Division
Texas Commission on Environmental Quality
P.O. Box 13087 MC 163
Austin, TX, 78711
(512) 239-6212

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

---

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Wednesday, October 1, 2025 12:23 PM

To: Ryan Glaze <James.Glaze@tceq.texas.gov>
Cc: KOLKMEIER, MARK A. (JSC-JP111)[STRAUGHAN ENVIRONMENTAL] <mark.a.kolkmeier@nasa.gov>; Fowler, Richard B. (JSC-JE111) <richard.b.fowler@nasa.gov>
Subject: RE: [EXTERNAL] RE: STEERS Update Ready - FOP O1552/Project 36233 National Aeronautics and Space Administration/Lyndon B. Johnson Space Center

Correspondence Log No. JE-25-065A

Ref: Response to Additional Comments
JSC Title V FOP O-1552 Revision
NASA-Johnson Space Center
Houston, Harris County, TX
Air Acct No. HG-1601A; CN601572868; RN100665579

Ryan: Enclosed is a brief synopsis of the additional changes that were made based on the additional comments that you submitted to us on 9/25/2025. We have incorporated and submitted these changes into our pending permit revision application; Project No. 36233 in STEERS.

Anything Highlighted in Yellow required further changes. Unit ID PROPAINT is documented on Form OP-PBRSUP Table D but is not documented on Table B. Please include Unit ID PROPAINT on Table B.

Response: Unit ID PROPAINT has been added to Table B.

Anything Highlighted in Red is missing from Form OP-PBRSUP.

- ***Unit ID LS1GEN01 is missing from Tables B & D. Note: after reviewing Form OP-PBRSUP there is a unit name "LSGEN01". Please confirm if this is supposed to be Unit ID LS1GEN01 or is a separate unit. If it's supposed to be Unit ID LS1GEN01 please correct the unit ID name on Tables B and D of Form OP-PBRSUP.***

Response: A typo resulted in the Unit Name "LSGEN01", whereas the correct name is "LS1GEN01." This typo has been corrected on Tables B and D.

- ***Unit ID B32TANK04 is missing from Form OP-PBRSUP Tables B and D. Please include this unit on Form OP-PBRSUP.***

Response: B32TANK04 has been added to Tables B and D.

Anything Highlighted in Blue has conflicting information that needs to be corrected. The units listed in blue are authorized by PBR 106.472 with a version no./issuance date of 03/14/1997 according to the WDP. However, on Form OP-PBRSUP the version no./issuance date is 09/04/2000. Which version no./issuance date for these units authorized by PBR 106.472 is correct. If 03/14/1997 is the correct version no./issuance date, please update Form OP-PBRSUP Tables B and D for these units.

Response: The version date of 03/14/1997 was the correct version for the blue highlighted unit ID's. Those units have all been demolished or removed from the site many years ago. This will be updated in the upcoming renewal of O-1552. The OP-PBRSUP form has been updated to reflect the correct version date for those unit IDs (Tables B, D).

PBRs 106.227, 106.265, and 106.418 on Table C are not insignificant sources according to the list of significant PBRs on Form OP-PBRSUP instructions. Please remove these PBRs from Table C and put them on Tables B and D. Note: Form OP-REQ1 page 89 will need to be updated to include PBRs 106.227, 106.265, and 106.418 since these are significant PBRs (these PBRs will be documented in the WDP once the new Form OP-PBRSUP is received).

Response: PBRs 106.227, 106.265, and 106.418 have been moved to Tables B and D. Unit Designations for the PBRS are as follows:

106.227: B300BENCH, B5NBENCH, B7BENCH, B15BENCH, B16BENCH, B44BENCH.
106.265: B300HAND, B9HAND
106.418: B8PRINT

The PBRS have been updated on form OP-REQ1. The Unit Names have also been added to Form OP-2, however, note that these units have no Title V applicability. 106.418 regards large format UV and inkjet print for occasional communication/education displays using no-VOC inks, or ultra-low digital VOC UV set inks. Unit only uses maximum 0.047 g/L VOC Roland ECO-UV Inks. Maximum use 9.0 liters per year (equivalent to 0.001 lbs VOC per year). Non-industrial, no HRVOCs, 30 TAC 115 exempt, no offset lithographic printing, no flexographic and no rotogravure printing. Non-UV Inkjet ink used is non-HAP, non-VOC ink.

Attaching the updated PBRSUP form for your convenience.

Based on review of the OP-REQ1 submitted/dated previously, PBRs 106.227, 106.265, and 106.418 were already included in Table I of page 89. Let us know if there is some other discrepancy.

I will provide a copy of the application to EPA and TCEQ R12 once the designated RO is changed to Ms, Mary Beth Schwartz, Director Center Operations; the OP-CRO2 is being submitted directly to your attention and should be there later this week.

Please note that due to a lack of appropriations, I am currently in an "on-call" status. So please contact me at (832) 693-6394 if you require additional information. I am also copying Mark Kolkmeier, as he should be able to provide additional clarifications regarding this response, as necessary, if I am unavailable.

From: Ryan Glaze <James.Glaze@tceq.texas.gov>
Sent: Thursday, September 25, 2025 8:26 AM
To: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Subject: [EXTERNAL] RE: STEERS Update Ready - FOP O1552/Project 36233 National Aeronautics and Space Administration/Lyndon B. Johnson Space Center

Good morning John,

Thank you for providing the updated information. I have made the following changes to the Working Draft Permit (WDP) and after further review a few minor changes are required.

The following changes have been made to the Working Draft Permit.

- Special Term and Condition No. 11 has been updated to reference the submitted Form OP-PBRSUP that was received on September 9, 2025 for project #36233.
    - Note: this will change once the new Form OP-PBRSUP is received with the changes listed below to reference the new Form OP-PBRSUP.

Form OP-PBRSUP

- On the New Source Review Authorization References by Emissions Unit table, Pages 117-120 of the WDP, I have highlighted changes that need to be made to Form OP-PBRSUP.
- Anything Highlighted in Green has been documented on Form OP-PBRSUP correctly. Note: on the updated Form OP-PBRSUP please make sure that all units highlighted in green are carried over to the new form.

- Anything Highlighted in Yellow required further changes. Unit ID PROPAINT is documented on Form OP-PBRSUP Table D but is not documented on Table B. Please include Unit ID PROPAINT on Table B.
- Anything Highlighted in Red is missing from Form OP-PBRSUP.
    - Unit ID LS1GEN01 is missing from Tables B & D. Note: after reviewing Form OP-PBRSUP there is a unit name "LSGEN01". Please confirm if this is supposed to be Unit ID LS1GEN01 or is a separate unit. If it's supposed to be Unit ID LS1GEN01 please correct the unit ID name on Tables B and D of Form OP-PBRSUP.
    - Unit ID B32TANK04 is missing from Form OP-PBRSUP Tables B and D. Please include this unit on Form OP-PBRSUP.
- Anything Highlighted in Blue has conflicting information that needs to be corrected. The units listed in blue are authorized by PBR 106.472 with a version no./issuance date of 03/14/1997 according to the WDP. However, on Form OP-PBRSUP the version no./issuance date is 09/04/2000. Which version no./issuance date for these units authorized by PBR 106.472 is correct. If 03/14/1997 is the correct version no./issuance date, please update Form OP-PBRSUP Tables B and D for these units.

- PBRs 106.227, 106.265, and 106.418 on Table C are not insignificant sources according to the list of significant PBRs on Form OP-PBRSUP instructions. Please remove these PBRs from Table C and put them on Tables B and D. Note: Form OP-REQ1 page 89 will need to be updated to include PBRs 106.227, 106.265, and 106.418 since these are significant PBRs (these PBRs will be documented in the WDP once the new Form OP-PBRSUP is received).

Additional Comments

Comment 1: *Since the Title V FOP O-1552 expires in December 2026, we did not make the additional effort to remove all PBRs for those units which no longer exist. With your permission, we would like to delay that "fine tuning" of the OP-PBRSUP list as well as providing the associated unit attribute deletion forms until we process the Title V renewal application, which will likely begin within the next six months.*

- That is fine. The fine turning of Form OP-PBRSUP can be done and completed for the upcoming renewal of Title V Permit No. O1552. The changes to Form OP-PBRSUP for this minor revision are because of modifications to PBR authorizations in the permit. The changes above to Form OP-PBRSUP are based on changes that need to be done to satisfy this Minor Revision application. The PBR information provided in the Title V permit must match on what is on Form OP-PBRSUP.

Comment 2: *I have not cc'd EPA Region 6 nor TCEQ Region 12 since we are addressing your comments. Once you have reviewed and are satisfied with our responses, we will formally transmit the Title V FOP modification request, as required.*

- Thanks for letting me know. Please make sure to do so.

Comment 3: *With respect to the OP-CRO2, since this form requires a "wet signature" I was holding off submitting it to your office until we received additional direction on our permit modification request. That being said, Mary Beth Schwartz formally accepted the appointment as Responsible Official under the Title V program for NASA-Johnson Space Center on February 2, 2025, and after updating our records in STEERS for all of the various compliance programs, she signed the OP-CRO2 on May 21, 2025. I am mailing the executed original OP-CRO2 to your attention, as required.*

Throughout the period of RO transition from Mr. Walker to Ms. Schwartz and for continuity purposes, I have retained full responsibility as the Duly Authorized Representative (DAR) for NASA-JSC, including the

authority to sign Title V related permitting and compliance documents. As I understand the instructions, there is no specific need for me to submit an updated OP-DEL form to due to a RO change, but I am prepared to submit the OP-DEL with both of our original signatures, dated May 21,2025, if desired or considered appropriate.

- Form OP-CRO2 can be submitted in an application update in STEERS as long as it is signed and submitted by Mary Beth Schwartz in STEERS.
- Please go ahead (if you have not done so already) submit Form OP-CRO2 certifying Ms. Schwartz as the RO. Please note you can either submit it in STEERS or mail it to my office (my address is below) and I will get this handled.
- Please make sure Form OP-CRO2 effective date is May 21, 2025 since that is the date Ms. Schwartz became the RO.

Please provide all updated changes back by ***October 13, 2025*** at the latest. Please let me know if you have any questions.

Thanks,

Ryan Glaze
Operating Permits Section
Air Permits Division
Texas Commission on Environmental Quality
P.O. Box 13087 MC 163
Austin, TX, 78711
(512) 239-6212

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

---

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Friday, September 12, 2025 7:05 PM
To: Ryan Glaze <James.Glaze@tceq.texas.gov>
Cc: Fowler, Richard B. (JSC-JE111) <richard.b.fowler@nasa.gov>; Valdez, Paul M. (JSC-JE111)[STRAUGHAN ENVIRONMENTAL] <paul.m.valdez@nasa.gov>; KOLKMEIER, MARK A. (JSC-JP111)[STRAUGHAN ENVIRONMENTAL] <mark.a.kolkmeier@nasa.gov>; Howard, Amy (JSC-JP111)[BARRIOS TECHNOLOGY LTD] <amy.howard-1@nasa.gov>
Subject: STEERS Update Ready - FOP O1552/Project 36233 National Aeronautics and Space Administration/Lyndon B. Johnson Space Center
Importance: High

Correspondence Log No. JE-25-065

Ref: Modification for NASA-JSC Title V Federal Operating Permit (FOP) O-1552; Project 36233
Air Account No. HG-1601A; RN100665579; CN601572878
Houston, Harris County, TX 77058

Ryan:

Thank you for your patience in allowing us some extra time to address your comments, dated August 26, 2025. I am unaware of your submitting any additional comments since that date. This response is also being incorporated into Title V Permit Modification revised application and has been transmitted into STEERS.

We have completed the O-1552/Project 36233 updates requested. This took longer than anticipated due to the requirement for filling out the master PBRSUP (which is 15 pages long) along with other related forms as well. Because TCEQ Title V permitting practices have changed since our initial application in 2020, TCEQ now requires *all PBR Units* be listed on the PBRSUP, including those with no Title V applicability.

Since the Title V FOP O-1552 expires in December 2026, we did not make the additional effort to remove all PBRs for those units which no longer exist. With your permission, we would like to delay that "fine tuning" of the OP-PBRSUP list as well as providing the associated unit attribute deletion forms until we process the Title V renewal application, which will likely begin within the next six months.

I have not cc'd EPA Region 6 nor TCEQ Region 12 since we are addressing your comments. Once you have reviewed and are satisfied with our responses, we will formally transmit the Title V FOP modification request, as required.

Your comments of August 26, 2025 and our responses are summarized below; our responses to your comments/questions are highlighted in red.

Good morning,

I have attached an updated Working Draft Permit (WDP) based on the comments received on January 10, 2025. The following changes have been made to the New Source Review Authorization References on Page 115-116

- NSR Standard Permit Nos. 114721 and 130148 have been updated to the most recent issuance date.
- Standard Exemption 61 Version No./Date 05/04/1994 has been included.

Acknowledged. Thank you.

The following changes have been made to the New Source review Authorization References by Emissions Unit on Page 117-121

- PBR Registration No. 46837 has been included for Unit ID B24TANK01A
- PBR Registration No. 107316 has been included for Unit ID B329TANK01
- PBR Registration No. 92402 has been included for Unit IDs B9AC01 and B9AC02
- PBR Registration No. 141276 has been included for Unit ID BSTART-1

Acknowledged, those changes are correct. Thank you.

Below I have listed additional changes that need to be made.

Form OP-PBRSUP

Starting on page 117 of the WDP, I have highlighted the units that need to be documented on Form OP-PBRSUP.
All units highlighted in Green have been documented on Form OP-PBRSUP. Note, the highlighted units will still need to be include on the updated Form OP-PBRSUP submitted.

Acknowledged, we will continue to include Green highlighted units on the updated OP-PBRSUP submitted.

All units highlighted in Yellow are required to be documented on the Form OP-PBRSUP. Units authorized by a Permit by Rule (PBR) and/or Standard Exemption (SE) are required to be documented on Form OP-PBRSUP.

Acknowledged, all Yellow highlighted units will be included in the updated OP-PBRSUP submitted.

If the unit has a PBR Registration No. associated for that unit, then the unit needs to be documented on Tables A and D on Form OP-PBRSUP.

Based on review the previously submitted OP-PBRSUP, all PBRs with Registrations were included on Tables A and D on Form OP-PBRSUP, for a total of 12 PBR registration numbers, corresponding authorization to 14 units. All other PBR registrations have been voided. As of this application there are no pending PBR registrations.

If the unit does not have a PBR Registration No. associated with that unit but has a claimed PBR, then the unit will need to be documented on Tables B and D on the Form OP-PBRSUP.

All claimed PBRs have been added to the updated OP-PBRSUP.

Please note this includes all site Cooling Towers via claimed PBR 106.371, which are non-industrial water cooling only, no VOC or HRVOC contact. No chromium treatment is used. Compliance with PBR recordkeeping and permitting requirements is documented by Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate) and site data (Total Dissolved Solids). Therefore, JSC believes the cooling towers have no Title V applicability - only PM emissions from drift. JSC plans to register the PM/PM10/PM2.5 of the cooling towers in the near future.

Cooling towers are named B24CT01, B24CT02, B24CT03, B24CT05, B24CT06, B24CT07, B24CT08, B28CT01, B28CT02, B28CT03, B32CT01, B33CT01, B48CT01, B48CT02, B48CT05 and B48CT06.

Any PBRs for insignificant sources at the site need to be included on Table C of the Form OP-PBRSUP.

JSC has added insignificant sources to Table C.

All PBRs utilized at a site need to be included on Form OP-PBRSUP. If you do not wish to list a PBR Registration because it is no longer used, then that PBR registration must be voided.

All PBRs for active units are now included. Thank you.

Unit ID B329TANK01 which is highlighted in Red requires further information. The unit is authorized by PBR Registration No. 107316 which has been documented on the WDP and on Form OP-PBRSUP. However, it is also authorized by PBR 106.472 09/04/2000. If this unit is authorized by this PBR, then this unit will need to be documented on Form OP-PBRSUP Tables B and D for PBR 106.472 09/04/2000. If not, then an updated Form OP-2 needs to be submitted documenting the removal of PBR 106.472 from Unit ID B329TANK01's list of authorizations.

The referenced unit is not authorized by PBR but rather is authorized by SE61, as described within Registration No. 107316. This was mistakenly entered as a PBR. An updated Form OP-2 will be submitted documenting the request to remove of PBR 106.472 from Unit ID B329TANK01's list of authorizations.

Additional changes needed to Form OP-PBRSUP are as follows.

On Table A, PBR Registration No. 821888 needs to have the updated issuance date of 10/24/2012 not the issuance date of 08/07/2007. PBR Registration No. 821888 was initially issued on 08/07/2007 with only PBRs 106.227 and 106.262 associated with that Registration No. A revision was made on 10/24/2012 to include PBR 106.261. Since PBR 106.261 was included, the issuance date of 10/24/2012 needs to be used to showcase that three PBRs are associated with that PBR Registration No.

That is correct. Thank you.
We will update Table A to reflect the most recent issuance date which includes PBR 106.261.
In summary B24TANK01A, B14LASER, CYLVENT, and B9AC01 and B9AC02 have been updated on OP-PBRSUP as well with the most recent issuance dates.

On Table A, PBR Registration No. 86369 has a revision date of 12/03/2014. Although this revision didn't remove or add any PBRs, would the site like to include the more recent issuance date?

Yes, the revision date of 12/3/2014 is the most recent update and will be included.
JSC has also included the most recent updated issuance date for 46837 of 6/13/2006.

Form OP-REQ1 page 89
Standard Exemption 124 05/12/1981, Permits by Rule (PBRs) 106.472 03/14/1997, 106.472 09/04/2000, 106.478 03/14/1997, 106.478 09/04/2000, 106.511 03/14/1997, 106.511 09/04/2000, and 106.512 09/04/2000 need to be included on Form OP-REQ1 page 89.

They have been included on form OP-REQ1 page 89. Thank you.

Comments not approved
Unit IDs B1401, B14LASER, B32CR, B320WT, B353B5LASER, B7LASER, CYLVENT, and ESTA01 will not be included in the Title V permit. If these units do not have Title V requirements, they would not be documented in the Title V permit. These units are authorized by a PBRs and/or SE which means they would still need to be documented on the Form OP-PBRSUP.

We acknowledge that the listed units do not have applicable Title V requirements. Thank you.
We will document them on Form OP-PBRSUP as required.

Please note that units that do not have Title V requirements do not get included in the Title V permit. However, if those units are authorized by either a PBR or SE they would still need to be documented on the Form OP-PBRSUP.

Noted. Thank you.

If the site has any additional units, that don't have Title V requirements but are authorized by PBR and/or SE, please include them on Form OP-PBRSUP.

Additional units will be included on Form OP-PBRSUP that are authorized by PBR/SE.
The applicable PBRs are claimed and do not require registration.

Final Notes
Once all comments have been addressed, I will update Special Term and Condition No. 11 in the WDP to reference the updated Form OP-PBRSUP that was received. Thank you.

Once the changes have been made, please submit the updated forms in STEERS. Please have this completed by **September 9, 2025** at the latest.

We apologize for missing your requested date for a response.
Your comments were detailed and in conjunction with preparing and submitting the update in STEERS, the requested response date was challenging. We hope the additional days did not cause you significant inconvenience.

Please let me know if you have any questions.

Thanks,

Ryan Glaze
Operating Permits Section
Air Permits Division
Texas Commission on Environmental Quality
P.O. Box 13087 MC 163
Austin, TX, 78711
(512) 239-6212

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

NOTE: With respect to the OP-CRO2, since this form requires a "wet signature" I was holding off submitting it to your office until we received additional direction on our permit modification request. That being said, Mary Beth Schwartz formally accepted the appointment as Responsible Official under the Title V program for NASA-Johnson Space Center on February 2, 2025, and after updating our records in STEERS for all of the various compliance programs, she signed the OP-CRO2 on May 21, 2025. I am mailing the executed original OP-CRO2 to your attention, as required.

Throughout the period of RO transition from Mr. Walker to Ms. Schwartz and for continuity purposes, I have retained full responsibility as the Duly Authorized Representative (DAR) for NASA-JSC, including the authority to sign Title V related permitting and compliance documents. As I understand the instructions, there is no specific need for me to submit an updated OP-DEL form to due to a RO change, but I am prepared to submit the OP-DEL with both of our original signatures, dated May 21,2025, if desired or considered appropriate.

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
2101 NASA Parkway
Houston, Texas 77058-3696

AIR PERMITS DIVISION
OCT 06 2025
RECEIVED
NR

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Reply to Attn of : JE-25-069

SEP 3 0 2025

Mr. Ryan Glaze
Operating Permits Section
Air Permits Division, MC163
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711

Subject: Submittal of OP-CRO2

Dear Mr. Glaze:

NASA-JSC is transmitting updated OP-CRO2, which designates Ms. Mary Beth Schwartz as Responsible Official under the Title V program for NASA Johnson Space Center. Please note that the effective date is May 21, 2025.

If you require any additional information, please contact me at (281) 667-6371 or by e-mail at john.p.herrmann@nasa.gov.

Sincerely,

JOHN HERRMANN
Digitally signed by JOHN HERRMANN
Date: 2025.09.30 12:21:24 -05'00'

John P. Herrmann, P.E.
Acting Chief, Environmental Office

Enclosure

Form OP-CRO2
Change of Responsible Official Information
Federal Operating Permit Program

AIR PERMITS DIVISION
OCT 06 2025
RECEIVED

The Texas Commission on Environmental Quality (TCEQ) shall be notified of a new appointment or administrative information change (e.g., address, phone number, title) for a Responsible Official (RO), Designated Representative (DR), or Alternate Designated Representative (ADR) in the next submittal. This form satisfies the requirements for notification (a revised Certificate of Representation must also be submitted to the U.S. Environmental Protection agency for changes in the DR and ADR). After the initial submittal, if there is a change of Duly Authorized Representative (DAR) appointment or administrative information changes for the DAR, include a revised Form OP-DEL (Delegation of Responsible Official) with the next submittal to TCEQ.

I. Identifying Information
Account No.: HG-1601-A
Regulated Entity Number: RN 100665579
Customer Reference Number: CN 601572868
Permit Number: O-1552
Area Name: NASA - Johnson Space Center
Company: National Aeronautics and Space Administration
II. Change Type
Action Type: ☒ New Appointment ☐ Administrative Information Change
Contact Type **(only one response accepted per form)**: ☒ Responsible Official ☐ Designated Representative *(Acid Rain Program and/or CSAPR sources only)* ☐ Alternate Designated Representative *(Acid Rain Program and/or CSAPR sources only)*

Form OP-CRO2
Change of Responsible Official Information
Federal Operating Permit Program

III. Responsible Official/Designated Representative/Alternate Designated Representative Information
Conventional Title: ☐ Mr. ☐ Mrs. ☒ Ms. ☐ Dr.
Name (Driver's License/STEERS): Mary Beth Schwartz
Title: Director, Center Operations
Appointment Effective Date: 02/02/25
Telephone Number: 832-415-7274
Fax Number.: N/A
Company Name: National Aeronautics and Space Administration
Mailing Address: 2101 NASA Parkway (MC:JA)
City: Houston
State: Texas
ZIP Code: 77058
Email Address: mary.b.schwartz@nasa.gov

Form OP-CRO2
Change of Responsible Official Information
Federal Operating Permit Program

IV. Certification of Truth, Accuracy, and Completeness
This certification does not extend to information, which is designated by TCEQ as information for reference only.
I, Mary Beth Schwartz, certify that based on information and belief formed Reasonable inquiry, the statement and information stated above are true, accurate, and complete.
Signature: M B Schwartz
Signature Date: 5-21-25

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 1

Date	Permit No.	Regulated Entity No.
10/16/2024	O-01552	RN100665579

Unit/Process AI	Unit/Process Revision No.	Unit/Process ID No.	Unit/Process Applicable Form	Unit/Process Name/ Description	Unit/Process CAM	Preconstruction Authorizations 30 TAC Chapter 116/ 30 TAC Chapter 106	Preconstruction Authorizations Title I
A	1	B220GEN01	OP-UA2	B220 Emergency Diesel Generator		106.511/09/04/2000	
A	2	B25GEN02A	OP-UA2	B25 EOC Emergency Gas Generator		106.511/09/04/2000	
A	3	B31GEN01	OP-UA2	B31 Emergency Gas Generator		106.511/09/04/2000	
D	4	B9PLAT	OP-UA1	B9 Metal Finishing		106.375/03/14/1997	
D	5	B25GEN02	OP-UA2	B25 Emergency Diesel Generator		106.511/09/04/2000	
	6	T-1	OP-UA11	Natural Gas Combustion Turbine		#130148	
	7	T-2	OP-UA11	Natural Gas Combustion Turbine		#130148	
A	8	B16GEN01	OP-UA2	B16 Emergency Diesel Generator		106.511/09/04/2000	

Individual Unit Summary for Revisions
Form OP-SUMR
Table 1

Date	Permit No.	Regulated Entity No.
10/16/2024	O-01552	RN100665579

Unit/Process AI	Unit/Process Revision No.	Unit/Process ID No.	Unit/Process Applicable Form	Unit/Process Name/ Description	Unit/Process CAM	Preconstruction Authorizations 30 TAC Chapter 116/ 30 TAC Chapter 106	Preconstruction Authorizations Title I

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 2

Date	Permit No.	Regulated Entity No.
12/30/2023	0-01552	RN100665579

Revision No.	ID No.	Applicable Form	Group AI	Group ID No.
1	B220GEN01	OP-UA2	A	None
2	B25GEN02A	OP-UA2	A	None
3	B31GEN01	OP-UA2	A	None
4	B9PLAT	OP-UA1	D	None
5	B25GEN02	OP-UA2	D	GRPGEN5
6	T-1	OP-UA11		GRPTBN
7	T-2	OP-UA11		GRPTBN
8	B16GEN01	OP-UA2	A	None

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 2

Date	Permit No.	Regulated Entity No.
12/30/2023	0-01552	RN100665579

Revision No.	ID No.	Applicable Form	Group AI	Group ID No.

Application Area-Wide Applicability Determinations and General Information
Form OP-REQ1 (Page 88)
Federal Operating Permit Program
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
1/9/2025	O1552	RN100665579

For SOP applications, answer ALL questions unless otherwise directed.
♦ For GOP applications, answer ONLY these questions unless otherwise directed.

XII. NSR Authorizations (Attach additional sheets if necessary for sections XII.E-J.)

E. PSD Permits and PSD Major Pollutants

Permit No.	Issuance Date	Pollutant(s):	Permit No.	Issuance Date	Pollutant(s):

If PSD Permits are held for the application area, please complete the Major NSR Summary Table located under the Technical Forms heading at: www.tceq.texas.gov/permitting/air/titlev/site/site_experts.html.

F. Nonattainment (NA) Permits and NA Major Pollutants

Permit No.	Issuance Date	Pollutant(s):	Permit No.	Issuance Date	Pollutant(s):

If NA Permits are held for the application area, please complete the Major NSR Summary Table located under the Technical Forms heading at: www.tceq.texas.gov/permitting/air/titlev/site/site_experts.html.

G. NSR Authorizations with FCAA § 112(g) Requirements

NSR Permit No.	Issuance Date	NSR Permit No.	Issuance Date	NSR Permit No	Issuance Date

Date	Permit No.	Regulated Entity No.
9/9/2025	O1552	RN100665579

For SOP applications, answer ALL questions unless otherwise directed.
♦ For GOP applications, answer ONLY these questions unless otherwise directed.

XII. NSR Authorizations (continued) - (Attach additional sheets if necessary for sections XII.E-J.)

♦ **H. Title 30 TAC Chapter 116 Permits, Special Permits, Standard Permits, Other Authorizations (Other Than Permits By Rule, PSD Permits, NA Permits) for the Application Area**

Authorization No.	Issuance Date	Authorization No.	Issuance Date	Authorization No.	Issuance Date
76247	08/26/2015				
114721	10/31/2024				
130148	07/22/2024				

♦ **I. Permits by Rule (30 TAC Chapter 106) for the Application Area**

A list of selected Permits by Rule (previously referred to as standard exemptions) that are required to be listed in the FOP application is available in the instructions.

PBR No.	Version No./Date	PBR No.	Version No./Date	PBR No.	Version No./Date
5	12/01/1972	106.122	09/04/2000	106.265	09/04/2000
5	05/04/1994	106.124	09/04/2000	106.371	09/04/2000
41	07/20/1992	106.183	09/04/2000	106.375	03/14/1997
51	08/30/1988	106.227	09/04/2000	106.412	09/04/2000
51	07/20/1992	106.242	09/04/2000	106.418	09/04/2000
51	05/04/1994	106.261	11/01/2003	106.454	07/08/1998
61	07/20/1992	106.262	12/24/1998	106.454	11/01/2001
61	05/04/1994	106.262	09/04/2000	SE 124	05/12/1981
75	09/12/1989	106.262	11/01/2003	106.472	03/14/1997
106.102	09/04/2000	106.263	11/01/2001	106.472	09/04/2000
106.478	03/14/1997	106.478	09/04/2000	106.511	03/14/1997
106.511	09/04/2000	106.512	09/04/2000		

♦ **J. Municipal Solid Waste and Industrial Hazardous Waste Permits with an Air Addendum**

Permit No.	Issuance Date	Permit No.	Issuance Date	Permit No.	Issuance Date

Applicable Requirements Summary
Form OP-REQ3 (Page 1)
Federal Operating Permit Program

Table 1a: Additions

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
1	GRPGEN2	OP-UA2	R7201-2	EXEMP	30 TAC Chapter 117, Subchapter B	[G]§117.303(a)(11) [G]§117.310(f)
2	B25GEN02A	OP-UA2	R7ICI-2	EXEMP	30 TAC Chapter 117, Subchapter B	117.303(a)(11)
3	B31GEN01	OP-UA2	R7ICI -2	EXEMP	30 TAC Chapter 117, Subchapter B	117.303(a)(6)(D)
8	GRPGEN8	OP-UA2	R7201-2	EXEMP	30 TAC Chapter 117, Subchapter B	[G]§117.303(a)(11) [G]§117.310(f)
1	GRPGEN2	OP-UA2	60IIII	CO	40 CFR Part 60, Subpart IIII	5.0 g/KW-hr § 60.4205(b) § 60.4202(a)(2) §1039-Appendix I § 60.4206 § 60.4207(b) [G]§ 60.4211(f) § 60.4218 §60.4211(c) [G]§60.4211(a)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
1	GRPGEN2	OP-UA2	60IIII	NMHC + NOX	40 CFR Part 60, Subpart IIII	7.5 g/KW-hr § 60.4205(b) § 60.4202(a)(2) §1039-Appendix I § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218
1	GRPGEN2	OP-UA2	60IIII	PM	40 CFR Part 60, Subpart IIII	0.40 g/KW-hr §60.4205(b)| §60.4202(a)(2) §60.4206 §1039-Appendix I §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)
1	GRPGEN2	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)
2	B25GEN02A	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)
3	B31GEN01	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
8	GRPGEN8	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)
2	B25GEN02A	OP-UA2	60JJJJ	NOx	40 CFR Part 60, Subpart JJJJ	2.0 g/HP-hr §60.4233(e)-Table 1|34 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)
2	B25GEN02A	OP-UA2	60JJJJ	CO	40 CFR Part 60, Subpart JJJJ	4.0 g/HP-hr §60.4233(e)-Table 1|36 §60.4234 §60.4243(b)(1)
2	B25GEN02A	OP-UA2	60JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	1.0 g/HP-hr §60.4233(e)-Table 1|37 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)
3	B31GEN01	OP-UA2	60JJJJ	NOx	40 CFR Part 60, Subpart JJJJ	2.0 g/HP-hr §60.4233(e)-Table 1|34 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
3	B31GEN01	OP-UA2	60JJJJ	CO	40 CFR Part 60, Subpart JJJJ	4.0 g/HP-hr §60.4233(e)-Table 1|36 §60.4234 §60.4243(b), [G](d), (g) §60.4246. §60.4243(b)(1)
3	B31GEN01	OP-UA2	60JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	1.0 g/HP-hr §60.4233(e)-Table 1|37 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)
8	GRPGEN8	OP-UA2	60IIII	NMHC+ NOx	40 CFR Part 60, Subpart IIII	4.0 g/KW-hr §60.4205(b)|14 §60.4202(a)(2) §1039-Appendix I §60.4206 §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
8	GRPGEN8	OP-UA2	60IIII	CO	40 CFR Part 60, Subpart IIII	5.0 g/KW-hr §60.4205(b)| §60.4202(a)(2) §1039-Appendix I §60.4206 §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)
8	GRPGEN8	OP-UA2	60IIII	PM	40 CFR Part 60, Subpart IIII	0.30 g/KW-hr §60.4205(b)|21 §60.4202(a)(2) §1039-Appendix I §60.4206 §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)

Applicable Requirements Summary
Form OP-REQ3 (Page 2)
Federal Operating Permit Program1

Table 1b: Additions

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	**Permit No.:** 0-01552
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	SOP/GOP Index No.	Pollutant	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
1	GRPGEN2	R7201-2	EXEMP	None	§117.340(j) §117.345(f) [G]§117.345(f)(6) [G]§117.345(f)(10)	None
2	B25GEN02A	R7ICI-2	EXEMP	None	§117.340(j) §117.345(f), [G](f)(6)	None
3	B31GEN01	R7ICI-2	EXEMP	None	§117.340(j) §117.345(f), [G](f)(6)	None
8	GRPGEN8	R7201-2	EXEMP	None	§117.340(j) §117.345(f) [G]§117.345(f)(6) [G]§117.345(f)(10)	None
2	B25GEN02A	60JJJJ	NOx	§60.4237(b)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)

Date: 12/30/2023	Regulated Entity No.: RN100665579	Permit No.: 0-01552
Company Name: National Aeronautics and Space Administration	Area Name: Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	SOP/GOP Index No.	Pollutant	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
2	B25GEN02A	60JJJJ	CO	§60.4237(b)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
2	B25GEN02A	60JJJJ	VOC	§60.4237(b)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
3	B31GEN01	60JJJJ	NOx	§60.4237(a)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
3	B31GEN01	60JJJJ	CO	§60.4237(a)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
3	B31GEN01	60JJJJ	VOC	§60.4237(a)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
1	GRPGEN2	60IIII	NMHC + NOX	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	**Permit No.:** 0-01552
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	SOP/GOP Index No.	Pollutant	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
1	GRPGEN2	60IIII	CO	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
1	GRPGEN2	60IIII	PM	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
8	GRPGEN8	60IIII	NMHC+ NOx	§60.4209(a)	§60.4214(b)	[G]§60.4214(d)
8	GRPGEN8	60IIII	CO	§60.4209(a)	§60.4214(b)	[G]§60.4214(d)
8	GRPGEN8	60IIII	PM	§60.4209(a)	§60.4214(b)	[G]§60.4214(d)
1	GRPGEN2	63ZZZZ	HAPs	None	None	None
2	B25GEN02A	63ZZZZ	HAPs	None	None	None
3	B31GEN01	63ZZZZ	HAPs	None	None	None
8	GRPGEN8	63ZZZZ	HAPs	None	None	None

Permit By Rule Supplemental Table (Page 1)
Table A: Registered Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01522	RN100665579

Unit ID No.	Registration No.	PBR No.	Registration Date
B-14-01	22827	SE 41 7/20/1992	8/16/1993
B24TANK01A	46837	106.478	6/13/2006
B14LASER	82188	106.261, 106.262, 106.227	10/24/2012
CYLVENT	86369	106.261, 106.262	12/3/2014
B9AC01, B9AC02	92402	106.124	12/15/2011
ESTA01	107313	106.122	10/20/1999
B320WT	107314	SE 61	4/17/1995
B417OWS01, B329TANK01	107316	SE 61	6/17/1994
B7LASER	108114	106.227, 106.261	2/22/2013
B32CR	111091	106.263	7/17/2013
BSTART-1	141276	106.511	8/3/2016
B353B5LASER	168041	106.261, 106.262	3/18/2022

Permit By Rule Supplemental Table (Page 2)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
B10GEN02A	106.511	9/4/2000
B15GEN01	106.511	3/14/1997
B16GEN01	106.511	9/4/2000
B17GEN02	106.511	9/4/2000
B21GEN01	106.511	9/4/2000
B220GEN01	106.511	9/4/2000
B221ENG01	106.512	9/4/2000
B223ENG02	106.512	9/4/2000
B24LOAD01	106.472	9/4/2000
B25GEN02A	106.511	9/4/2000
B30AGEN02	106.511	9/4/2000
B31GEN01	106.511	9/4/2000

Permit By Rule Supplemental Table (Page 3)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
B322ENG01A	106.511	9/4/2000
B322GEN01	106.511	9/4/2000
B326TANK01	51	8/30/1988
B326TANK03	106.478	9/4/2000
B329ENG01A	106.511	9/4/2000
B32GEN06	106.511	3/14/1997
B32GEN07	106.511	9/4/2000
B32GEN09	106.511	9/4/2000
B347GEN01	106.511	9/4/2000
B347TANK01	106.478	9/4/2000
B3GEN01A	106.511	9/4/2000
B420BLR02	106.183	9/4/2000
B420WOOD01	124	5/12/1981

Permit By Rule Supplemental Table (Page 4)

Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
B9WOOD01, B9WOOD02, B9WOOD03	124	5/12/1981
B421BLR01	106.183	9/4/2000
B42TANK02	106.478	9/4/2000
B46GEN01	106.511	9/4/2000
B46TANK01	106.472	9/4/2000
B48GEN01, B48GEN02, B48GEN03, B48GEN07, B48GEN09	5	12/1/1972
B48GEN07A	106.511	9/4/2000
B48GEN09A	106.511	9/4/2000
B48TANK01	51	7/20/1992
B48TANK02	51	7/20/1992
B7GEN02	106.511	9/4/2000
B9GEN01A	106.511	9/4/2000
B9PAINT01	75	9/12/1989
LS1GEN01, LS2GEN01, LS3GEN01, LS7GEN01, LS14GEN01, LS15GEN01	106.511	9/4/2000

Permit By Rule Supplemental Table (Page 5)

Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
TK-DSL	106.472	9/4/2000
B24CT01, B24CT02, B24CT03, B24CT05, B24CT06, B24CT07, B24CT08	106.371	9/4/2000
B28CT01, B28CT02, B28CT03	106.371	9/4/2000
B32CT01	106.371	9/4/2000
B33CT01	106.371	9/4/2000
B48CT01, B48CT02, B48CT05, B48CT06	106.371	9/4/2000
B10TANK01	106.472	03/14/1997
B15TANK01	106.472	03/14/1997
B3TANK01	106.472	03/14/1997
B44TANK01	106.472	9/4/2000
B9TANK01	106.472	03/14/1997
B17TANK01	106.472	9/4/2000
B25TANK01	106.472	9/4/2000

Permit By Rule Supplemental Table (Page 6)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
B30ATANK01	106.472	9/4/2000
B32TANK02, B32TANK03, B32TANK04	106.472	9/4/2000
B32TANK01	106.472	03/14/1997
B343TANK01	106.472	03/14/1997
B48TANK03, B48TANK04, B48TANK05	106.472	03/14/1997
B37TANK01, B37TANK02	106.472	9/4/2000
PROPAINT	75	9/12/1989
B300BENCH, B5NBENCH, B7BENCH, B15BENCH, B16BENCH, B44BENCH	106.227	9/4/2000
B300HAND, B9HAND	106.265	9/4/2000
B8PRINT	106.418	9/4/2000

Permit By Rule Supplemental Table (Page 7)
Table C: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for Insignificant Sources for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01552	100665579

PBR No.	Version No./Date
106.102 Comfort Heating (Natural Gas and Electric Space Heaters)	9/4/2000
106.122 Bench Scale Laboratory Equipment (Building Laboratories)	9/4/2000
106.242 Food Preparation and Processing (B17 Food Lab, Cafeterias)	9/4/2000
106.266 Vacuum Cleaning Systems (Building Housekeeping)	9/4/2000

Permit By Rule Supplemental Table (Page 8)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B14-01	SE 41	7/20/1992 22827	Annual Records of Throughput and Mass Balance
B24TANK01A	106.478	46837	Monthly Records of Throughput and Contents, Record of Tank Construction, Tank/Process Knowledge, Fuel Analysis
B14LASER	106.227, 106.261, 106.262	82188	Annual Records of Throughput and Process Knowledge
CYLVENT	106.261, 106.262	86369	Annual Records of Throughput and Mass Balance
B9AC01, B9AC02	106.124	92402	Annual and Monthly Records of Throughput; SDS, Process Knowledge
ESTA01	106.122	107313	Cylinder Volume, Process Knowledge, Annual Throughput
B417OWS01, B329TANK	SE 61	7/20/1992 107316	Sum of partial pressures of all species of VOC in any sample is less than 1.5 psia
B7LASER	106.227, 106.261	108114	Annual Records of Throughput and Process Knowledge
BSTART-1	106.511	141276	Non-resettable hourly meter; monthly operating hours records; maintenance records
B320WT	SE 61	5/4/1994 107314	Ensure that only natural earthen grit is washed with water from vehicles / equipment.
B32CR	106.263	111091	Annual Records of Throughput and Mass Balance, SDS
B353B5LASER	106.261, 106.262	168041	Annual Records of Throughput and Process Knowledge

Permit By Rule Supplemental Table (Page 9)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B10GEN02A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B15GEN01	106.511	3/14/1997	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B16GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B17GEN02	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B21GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B220GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B221ENG01	106.512	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B223ENG02	106.512	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data

Permit By Rule Supplemental Table (Page 10)

Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B24LOAD01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis
B25GEN02A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B30AGEN02	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B31GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B322ENG01A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B322GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B326TANK01	51	8/30/1988	Loading/Unloading Throughput, Fuel Analysis
B326TANK03	106.478	9/4/2000	Loading/Unloading Throughput, Fuel Analysis
B329ENG01A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B32GEN06	106.511	3/14/1997	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B32GEN07	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data

Permit By Rule Supplemental Table (Page 11)

Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B32GEN09	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B347GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B347TANK01	106.478	9/4/2000	Loading/Unloading Throughput, Fuel Analysis
B3GEN01A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B420BLR02	106.183	9/4/2000	Natural Gas Usage Meter, Hours of Operation, Emissions Test Data
B420WOOD01	124	5/12/1981	Process Knowledge, Mass Balance, Hours of Operation
B9WOOD01, B9WOOD02, B9WOOD03	124	5/12/1981	Process Knowledge, Mass Balance, Hours of Operation
B421BLR01	106.183	9/4/2000	Natural Gas Usage Meter, Hours of Operation, Emissions Test Data
B42TANK02	106.478	9/4/2000	Loading/Unloading Throughput, Fuel Analysis
B46GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data

Permit By Rule Supplemental Table (Page 12)

Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B48GEN01	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN02	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN03	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN07	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN07A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN09	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN09A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48TANK01	51	7/20/1992	Loading/Unloading Throughput, Fuel Analysis
B48TANK02	51	7/20/1992	Loading/Unloading Throughput, Fuel Analysis
B7GEN02	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data

Permit By Rule Supplemental Table (Page 13)

Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B9GEN01A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B9PAINT01	75	9/12/1989	Coatings Use Records (Gallons), Mass Balance, Inspections
BSTART-1	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
LS1GEN01, LS2GEN01, LS3GEN01, LS7GEN01, LS14GEN01, LS15GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
PROPAINT	75	9/12/1989	Coatings Use Records (Gallons), Mass Balance, Inspections
TK-DSL	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B24CT01, B24CT02, B24CT03, B24CT05, B24CT06, B24CT07, B24CT08	106.371	9/4/2000	Non-industrial mechanical draft water cooling only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)
B28CT01, B28CT02, B28CT03	106.371	9/4/2000	Non-industrial mechanical draft water cooling only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)

Permit By Rule Supplemental Table (Page 14)

Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B32CT01	106.371	9/4/2000	Water Cooling Only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)
B33CT01	106.371	9/4/2000	Non-industrial Water Cooling Only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)
B48CT01, B48CT02, B48CT05, B48CT06	106.371	9/4/2000	Non-industrial mechanical draft water cooling only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)
B10TANK01	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B15TANK01	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B3TANK01	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B44TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B9TANK01	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B17TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B25TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B30ATANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge

Permit By Rule Supplemental Table (Page 15)

Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B32TANK02, B32TANK03, B32TANK04	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B32TANK01	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B343TANK01	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B48TANK03, B48TANK04, B48TANK05	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B37TANK01, B37TANK02	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B300BENCH, B5NBENCH, B7BENCH, B15BENCH, B16BENCH, B44BENCH	106.227	9/4/2000	Safety Data Sheets, Equipment Inventory Records and Throughput Mass Balance, Process Knowledge
B300HAND, B9HAND	106.265	9/4/2000	Equipment Inventory Records and Throughput Mass Balance, Process Knowledge
B8PRINT	106.418	9/4/2000	Safety Data Sheets, Inventory Records and Throughput Mass Balance. No greater than 0.001 lbs VOC / Year in low VOC UV inks. No HRVOC. Non-industrial printers.

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 1
Texas Commission on Environmental Quality

Date: 9/9/2025	
Permit No.: 0-01552	
Regulated Entity No.: RN100665579	
Company Name: National Aeronautics and Space Administration	
For Submissions to EPA	
Has an electronic copy of this application been submitted (or is being submitted) to EPA?	☒ YES ☐ NO
I. Application Type	
Indicate the type of application:	
☐ Renewal	
☒ Streamlined Revision (Must include provisional terms and conditions as explained in the instructions.)	
☐ Significant Revision	
☐ Revision Requesting Prior Approval	
☐ Administrative Revision	
☐ Response to Reopening	
II. Qualification Statement	
For SOP Revisions Only	☒ YES ☐ NO
For GOP Revisions Only	☐ YES ☐ NO

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 1 *(continued)*
Texas Commission on Environmental Quality

III. Major Source Pollutants (Complete this section if the permit revision is due to a change at the site or change in regulations.)						
Indicate all pollutants for which the site is a major source based on the site's potential to emit: *(Check the appropriate box[es].)*						
☐ VOC	☒ NO_X	☐ SO_2	☐ PM_{10}	☐ CO	☐ Pb	☐ HAP
Other:						
IV. Reference Only Requirements *(For reference only)*						
Has the applicant paid emissions fees for the most recent agency fiscal year (September 1 - August 31)?					☒ YES ☐ NO ☐ N/A	
V. Delinquent Fees and Penalties						
Notice: 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 are paid in accordance with the Delinquent Fee and penalty protocol.						

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 2
Texas Commission on Environmental Quality

Date: 9/9/2025
Permit No.: O-01552
Regulated Entity No.: RN100665579
Company Name: National Aeronautics and Space Administration

Using the table below, provide a description of the revision.

Revision No.	Revision Code		Unit/Group	Process	NSR Authorization	Description of Change and Provisional Terms and Conditions
		New Unit	ID No.	Applicable Form		
1	MS-A	YES	B220GEN01	OP-UA2	106.511	New emergency generator installed at Building 220
2	MS-A	YES	B25GEN02A	OP-UA2	106.511	New emergency generator installed at Building 25
3	MS-A	YES	B31GEN01	OP-UA2	106.511	New emergency generator installed at Building 31
4	MS-C	NO	B9PLAT	OP-UA1	106.375	Permanently shut down. Delete from permit.
5	MS-C	NO	B25GEN02	OP-UA2	106.511	Permanently shut down. Delete from permit.
6	MS-C	NO	T-1	OP-UA11	130148	Monitoring update regarding replacing turbine CEMS with PEMS; Update Permit Issuance Date. No other changes applicable to this unit.
7	MS-C	NO	T-2	OP-UA11	130148	Monitoring update regarding replacing turbine CEMS with PEMS; Update Permit Issuance Date. No other changes applicable to this unit.
8	MS-A	YES	B16GEN01	OP-UA2	106.511	New emergency generator installed at Building 16
9	MS-C	NO	B14-01	OP-PBRSUP	22827	Adding unit to Form OP-PBRSUP.
10	MS-C	NO	B24TANK01A	OP-UA3	46837	Adding pre-existing registration number to OP-PBRSUP only. No changing unit attributes for this existing source. Applicable requirements (ARS) already established in O-1552.
11	MS-C	NO	B14LASER	OP-PBRSUP	82188	Adding unit to Form OP-PBRSUP.
12	MS-C	NO	CYLVENT	OP-PBRSUP	86369	Adding unit to Form OP-PBRSUP.
13	MS-C	NO	B9AC01, B9AC02	OP-UA15	92402	Adding preconstruction authorization registration number to Form OP-PBRSUP.
14	MS-C	NO	ESTA01	OP-PBRSUP	107313	Adding unit to Form OP-PBRSUP.

15	MS-C	NO	B417OWS01, B329TANK01	OP-UA3, OP-PBRSUP	107316	Adding preconstruction authorization registration number to Form OP-PBRSUP. B329TANK was authorized by SE 61, and was never authorized by PBR 106.472 9/4/2000; therefore reference to PBR 106.472 9/4/2000 must be removed for B329TANK01. Applicable requirements (ARS) already established in O-1552.
16	MS-C	NO	B7LASER	OP-PBRSUP	108114	Adding unit to Form OP-PBRSUP.
17	MS-C	NO	BSTART-1	OP-UA2	141276	Adding preconstruction authorization registration number to Form OP-PBRSUP only. No changing unit attributes for this existing source. Applicable requirements (ARS) already established in O-1552.
18	MS-C	NO	B353B5LASER	OP-PBRSUP	168041	Adding unit to Form OP-PBRSUP.
19	MS-C	NO	B320WT	OP-PBRSUP	107314	Registered and authorized by SE 61. Adding unit to Form OP-PBRSUP.
20	MS-C	NO	B32CR	OP-PBRSUP	111091	Registered and authorized by 106.263 Adding unit to Form OP-PBRSUP.

21	MS-C	NO	B24CT01, B24CT02, B24CT03, B24CT05, B24CT06, B24CT07, B24CT08, B28CT01, B28CT02, B28CT03, B32CT01, B33CT01, B48CT01, B48CT02, B48CT05 B48CT06.	OP-PBRSUP	106.371	Adding non-industrial water-cooling tower mechanical draft unit names to Form OP-PBRSUP for unit-name documentation. PBR 106.371 was already previously claimed on Permit O-1552 for this authorization purpose. No VOC/HRVOC contact. No Chromium treatment of any kind.
22	MS-C	NO	B300BENCH, B5NBENCH, B7BENCH, B15BENCH, B16BENCH, B44BENCH	OP-PBRSUP	106.227	Added to OP-PBRSUP pre-existing units where activities associated with 106.227 occur. Non-industrial bench scale soldering, welding, brazing using hand/manual equipment.
23	MS-C	NO	B300HAND, B9HAND	OP-PBRSUP	106.265	Added to OP-PBRSUP pre-existing units where activities associated with 106.265 occur. Hand and manually operated tools.

24	MS-C	NO	B8PRINT	OP-PBRSUP	106.418	Added to OP-PBRSUP pre-existing unit where large format UV and inkjet print in an office setting in Building 8 for occasional communication/education displays and custom items using no-VOC inks, or ultra-low digital VOC UV set inks. Unit only uses maximum 0.047 g/L VOC Roland ECO-UV Inks. Maximum use 9.0 liters per year (equivalent to 0.001 lbs VOC per year). Non-industrial, no HRVOCs, 30 TAC 115 exempt, no offset lithographic printing, no flexographic and no rotogravure printing. Non-UV Inkjet ink used is non-HAP, non-VOC ink.

Application for Permit Revision/Renewal
Form OP-2-Table 3
Texas Commission on Environmental Quality

Date: 9/9/2025		
Permit No.: O-01552		
Regulated Entity No.: RN100665579		
Company Name: National Aeronautics and Space Administration		
I.	**Significant Revision** *(Complete this section if you are submitting a significant revision application or a renewal application that includes a significant revision.)*	
A.	Is the site subject to bilingual requirements pursuant to 30 TAC § 122.322?	☐ YES ☐ NO
B.	Indicate the alternate language(s) in which public notice is required: Spanish	
C.	Will, there be a change in air pollutant emissions as a result of the significant revision?	☐ YES ☐ NO

Permit By Rule Supplemental Table (Page 1)
Table A: Registered Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/29/2025	O-1522	RN100665579

Unit ID No.	Registration No.	PBR No.	Registration Date
B-14-01	22827	SE 41 7/20/1992	8/16/1993
B24TANK01A	46837	106.478	6/13/2006
B14LASER	82188	106.261, 106.262, 106.227	10/24/2012
CYLVENT	86369	106.261, 106.262	12/3/2014
B9AC01, B9AC02	92402	106.124	12/15/2011
ESTA01	107313	106.122	10/20/1999
B320WT	107314	SE 61	4/17/1995
B417OWS01, B329TANK01	107316	SE 61	6/17/1994
B7LASER	108114	106.227, 106.261	2/22/2013
B32CR	111091	106.263	7/17/2013
BSTART-1	141276	106.511	8/3/2016
B353B5LASER	168041	106.261, 106.262	3/18/2022

Permit By Rule Supplemental Table (Page 2)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/29/2025	O-1552	100665579

Unit ID No.	PBR No.	Version No./Date
B10GEN02A	106.511	9/4/2000
B15GEN01	106.511	3/14/1997
B16GEN01	106.511	9/4/2000
B17GEN02	106.511	9/4/2000
B21GEN01	106.511	9/4/2000
B220GEN01	106.511	9/4/2000
B221ENG01	106.512	9/4/2000
B223ENG02	106.512	9/4/2000
B24LOAD01	106.472	9/4/2000
B25GEN02A	106.511	9/4/2000
B30AGEN02	106.511	9/4/2000
B31GEN01	106.511	9/4/2000

Permit By Rule Supplemental Table (Page 3)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/29/2025	O-1552	100665579

Unit ID No.	PBR No.	Version No./Date
B322ENG01A	106.511	9/4/2000
B322GEN01	106.511	9/4/2000
B326TANK01	51	8/30/1988
B326TANK03	106.478	9/4/2000
B329ENG01A	106.511	9/4/2000
B32GEN06	106.511	3/14/1997
B32GEN07	106.511	9/4/2000
B32GEN09	106.511	9/4/2000
B347GEN01	106.511	9/4/2000
B347TANK01	106.478	9/4/2000
B3GEN01A	106.511	9/4/2000
B420BLR02	106.183	9/4/2000
B420WOOD01	124	5/12/1981

Permit By Rule Supplemental Table (Page 4)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/29/2025	O-1552	100665579

Unit ID No.	PBR No.	Version No./Date
B9WOOD01, B9WOOD02, B9WOOD03	124	5/12/1981
B421BLR01	106.183	9/4/2000
B42TANK02	106.478	9/4/2000
B46GEN01	106.511	9/4/2000
B46TANK01	106.472	9/4/2000
B48GEN01, B48GEN02, B48GEN03, B48GEN07, B48GEN09	5	12/1/1972
B48GEN07A	106.511	9/4/2000
B48GEN09A	106.511	9/4/2000
B48TANK01	51	7/20/1992
B48TANK02	51	7/20/1992
B7GEN02	106.511	9/4/2000
B9GEN01A	106.511	9/4/2000
B9PAINT01	75	9/12/1989
LS1GEN01, LS2GEN01, LS3GEN01, LS7GEN01, LS14GEN01, LS15GEN01	106.511	9/4/2000

Permit By Rule Supplemental Table (Page 5)

Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/29/2025	O-1552	100665579

Unit ID No.	PBR No.	Version No./Date
TK-DSL	106.472	9/4/2000
B24CT01, B24CT02, B24CT03, B24CT05, B24CT06, B24CT07, B24CT08	106.371	9/4/2000
B28CT01, B28CT02, B28CT03	106.371	9/4/2000
B32CT01	106.371	9/4/2000
B33CT01	106.371	9/4/2000
B48CT01, B48CT02, B48CT05, B48CT06	106.371	9/4/2000
B10TANK01	106.472	03/14/1997
B15TANK01	106.472	03/14/1997
B3TANK01	106.472	03/14/1997
B44TANK01	106.472	9/4/2000
B9TANK01	106.472	03/14/1997
B17TANK01	106.472	9/4/2000
B25TANK01	106.472	9/4/2000

Permit By Rule Supplemental Table (Page 6)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/29/2025	O-1552	100665579

Unit ID No.	PBR No.	Version No./Date
B30ATANK01	106.472	9/4/2000
B32TANK02, B32TANK03, B32TANK04	106.472	9/4/2000
B32TANK01	106.472	03/14/1997
B343TANK01	106.472	03/14/1997
B48TANK03, B48TANK04, B48TANK05	106.472	03/14/1997
B37TANK01, B37TANK02	106.472	9/4/2000
PROPAINT	75	9/12/1989
B300BENCH, B5NBENCH, B7BENCH, B15BENCH, B16BENCH, B44BENCH	106.227	9/4/2000
B300HAND, B9HAND	106.265	9/4/2000
B8PRINT	106.418	9/4/2000

Permit By Rule Supplemental Table (Page 7)
Table C: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for Insignificant Sources for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-1552	100665579

PBR No.	Version No./Date
106.102 Comfort Heating (Natural Gas and Electric Space Heaters)	9/4/2000
106.122 Bench Scale Laboratory Equipment (Building Laboratories)	9/4/2000
106.242 Food Preparation and Processing (B17 Food Lab, Cafeterias)	9/4/2000
106.266 Vacuum Cleaning Systems (Building Housekeeping)	9/4/2000

Permit By Rule Supplemental Table (Page 8)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-1522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B14-01	SE 41	7/20/1992 22827	Annual Records of Throughput and Mass Balance
B24TANK01A	106.478	46837	Monthly Records of Throughput and Contents, Record of Tank Construction, Tank/Process Knowledge, Fuel Analysis
B14LASER	106.227, 106.261, 106.262	82188	Annual Records of Throughput and Process Knowledge
CYLVENT	106.261, 106.262	86369	Annual Records of Throughput and Mass Balance
B9AC01, B9AC02	106.124	92402	Annual and Monthly Records of Throughput; SDS, Process Knowledge
ESTA01	106.122	107313	Cylinder Volume, Process Knowledge, Annual Throughput
B417OWS01, B329TANK	SE 61	7/20/1992 107316	Sum of partial pressures of all species of VOC in any sample is less than 1.5 psia
B7LASER	106.227, 106.261	108114	Annual Records of Throughput and Process Knowledge
BSTART-1	106.511	141276	Non-resettable hourly meter; monthly operating hours records; maintenance records
B320WT	SE 61	5/4/1994 107314	Ensure that only natural earthen grit is washed with water from vehicles / equipment.
B32CR	106.263	111091	Annual Records of Throughput and Mass Balance, SDS
B353B5LASER	106.261, 106.262	168041	Annual Records of Throughput and Process Knowledge

Permit By Rule Supplemental Table (Page 9)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-1522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B10GEN02A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B15GEN01	106.511	3/14/1997	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B16GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B17GEN02	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B21GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B220GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B221ENG01	106.512	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B223ENG02	106.512	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data

Permit By Rule Supplemental Table (Page 10)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-1522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B24LOAD01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis
B25GEN02A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B30AGEN02	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B31GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B322ENG01A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B322GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B326TANK01	51	8/30/1988	Loading/Unloading Throughput, Fuel Analysis
B326TANK03	106.478	9/4/2000	Loading/Unloading Throughput, Fuel Analysis
B329ENG01A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B32GEN06	106.511	3/14/1997	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B32GEN07	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data

Permit By Rule Supplemental Table (Page 11)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/29/2025	O-1522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B32GEN09	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B347GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B347TANK01	106.478	9/4/2000	Loading/Unloading Throughput, Fuel Analysis
B3GEN01A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B420BLR02	106.183	9/4/2000	Natural Gas Usage Meter, Hours of Operation, Emissions Test Data
B420WOOD01	124	5/12/1981	Process Knowledge, Mass Balance, Hours of Operation
B9WOOD01, B9WOOD02, B9WOOD03	124	5/12/1981	Process Knowledge, Mass Balance, Hours of Operation
B421BLR01	106.183	9/4/2000	Natural Gas Usage Meter, Hours of Operation, Emissions Test Data
B42TANK02	106.478	9/4/2000	Loading/Unloading Throughput, Fuel Analysis
B46GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data

Permit By Rule Supplemental Table (Page 12)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-1522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B48GEN01	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN02	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN03	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN07	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN07A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN09	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN09A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48TANK01	51	7/20/1992	Loading/Unloading Throughput, Fuel Analysis
B48TANK02	51	7/20/1992	Loading/Unloading Throughput, Fuel Analysis
B7GEN02	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data

Permit By Rule Supplemental Table (Page 13)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-1522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B9GEN01A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B9PAINT01	75	9/12/1989	Coatings Use Records (Gallons), Mass Balance, Inspections
BSTART-1	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
LS1GEN01, LS2GEN01, LS3GEN01, LS7GEN01, LS14GEN01, LS15GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
PROPAINT	75	9/12/1989	Coatings Use Records (Gallons), Mass Balance, Inspections
TK-DSL	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B24CT01, B24CT02, B24CT03, B24CT05, B24CT06, B24CT07, B24CT08	106.371	9/4/2000	Non-industrial mechanical draft water cooling only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)
B28CT01, B28CT02, B28CT03	106.371	9/4/2000	Non-industrial mechanical draft water cooling only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)

Permit By Rule Supplemental Table (Page 14)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-1522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B32CT01	106.371	9/4/2000	Water Cooling Only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)
B33CT01	106.371	9/4/2000	Non-industrial Water Cooling Only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)
B48CT01, B48CT02, B48CT05, B48CT06	106.371	9/4/2000	Non-industrial mechanical draft water cooling only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)
B10TANK01	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B15TANK01	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B3TANK01	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B44TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B9TANK01	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B17TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B25TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B30ATANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge

Permit By Rule Supplemental Table (Page 15)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-1522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B32TANK02, B32TANK03, B32TANK04	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B32TANK01	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B343TANK01	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B48TANK03, B48TANK04, B48TANK05	106.472	03/14/1997	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B37TANK01, B37TANK02	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B300BENCH, B5NBENCH, B7BENCH, B15BENCH, B16BENCH, B44BENCH	106.227	9/4/2000	Safety Data Sheets, Equipment Inventory Records and Throughput Mass Balance, Process Knowledge
B300HAND, B9HAND	106.265	9/4/2000	Equipment Inventory Records and Throughput Mass Balance, Process Knowledge
B8PRINT	106.418	9/4/2000	Safety Data Sheets, Inventory Records and Throughput Mass Balance. No greater than 0.001 lbs VOC / Year in low VOC UV inks. No HRVOC. Non-industrial printers.

Stationary Turbine Attributes
Form OP-UA11 (Page 6)
Federal Operating Permit Program
Table 3a: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Area
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP/GOP Index No.	Megawatt Rating	RACT Date Placed in Service (ICI)	Functionally Identical Replacement (ICI)	Service Type (ICI)	NO_x Emission Limitation (ICI)	23C-Option
T-1	R-7201	1-10			TURB	310D	
T-2	R-7201	1-10			TURB	310D	

Stationary Turbine Attributes
Form OP-UA11 (Page 7)
Federal Operating Permit Program
Table 3b: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	30 TAC Chapter 116 Limit (ICI)	EGF System Cap Unit	Averaging Method	NO_x Reduction (ICI)	NO_x Monitoring System (ICI)
T-1	R-7201		NO	30D	POST1	PEMS
T-2	R-7201		NO	30D	POST1	PEMS

Stationary Turbine Attributes
Form OP-UA11 (Page 8)
Federal Operating Permit Program
Table 3c: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Fuel Flow Monitoring	CO Emission Limitation	CO Monitoring System	NH3 Emission Limitation	NH3 Monitoring
T-1	R-7201	X40A	310C	PEMS	310C	PEMS
T-2	R-7201	X40A	310C	PEMS	310C	PEMS

Stationary Turbine Attributes
Stationary Turbine Attributes
Form OP-UA11 (Page 12)
Federal Operating Permit Program
Table 6a: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Unit Type	Construction/Modification Date	Heat Input	Subject to Da	Service Type	NO_x Standard	Fuel Type
T-1	60KKKK	CHPT	2005C	50-850	NO	NOTER	YES	NGO
T-2	60KKKK	CHPT	2005C	50-850	NO	NOTER	YES	NGO

Stationary Turbine Attributes
Form OP-UA11 (Page 13)
Federal Operating Permit Program
Table 6b: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	75% of Peak	30 MW	Turbine Use	NO_x Control	NO_x Monitoring	Common Steam Header	Duct Burner
T-1	60KKKK	NO		ELCT	NO	CPMS	CMN-	YES
T-2	60KKKK	NO		ELCT	NO	CPMS	CMN-	YES

Stationary Turbine Attributes
Form OP-UA11 (Page 14)
Federal Operating Permit Program
Table 6c: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Location	SO_2 Standard	Fuel Monitoring	Fuel Quality	Performance Test	Intermediate Storage	Fuel Schedules
T-1	60KKKK	NO	NO	YES	SAMP	SAMP		
T-2	60KKKK	NO	NO	YES	SAMP	SAMP		

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 1)
Federal Operating Permit Program
Table 1a: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Horsepower Rating	RACT Date Placed in Service	Functionally Identical Replacement	Type of Service	Fuel Fired	Engine Type	ESAD Date Placed in Service	Diesel HP Rating
B220GEN01	R7201-2				D2001+				
B25GEN02A	R7ICI-2				ENG	NG	Rich-burn		
B31GEN01	R7ICI-2				ENG	NG	Lean-Burn		
B16GEN01	R7201-2				D2001+				

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 2)
Federal Operating Permit Program
Table 1b: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	NO_x Emission Limitation	23-C Option	30 TAC Chapter 116 Limit	EGF System CAP Unit	NO_x Averaging Method	NO_x Reduction	NO_x Monitoring System
B220GEN01	R7201-2							
B25GEN02A	R7ICI-2				NO	1HR	NONE	MERT
B31GEN01	R7ICI-2				NO	1HR	NONE	MERT
B16GEN01	R7201-2							

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 3)
Federal Operating Permit Program
Table 1c: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Fuel Flow Monitoring	CO Emission Limitation	CO Averaging Method	CO Monitoring System	NH_3 Emission Limitation	NH_3 Monitoring
B220GEN01	R7201-2						
B25GEN02A	R7ICI-2	X40A	310C	1HR	OTHER		
B31GEN01	R7ICI-2	X40A	310C	1HR	OTHER		
B16GEN01	R7201-2						

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 4)
Federal Operating Permit Program
Table 2a: Title 40 Code of Federal Regulations Part 63 (40 CFR Part 63)
Subpart ZZZZ: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	HAP Source	Brake HP	Construction/ Reconstruction Date	Nonindustrial Emergency Engine	Service Type	Stationary RICE Type
B220GEN01	63ZZZZ	AREA	100-	06+			
B25GEN02A	63ZZZZ	AREA	300-500	06+			
B31GEN01	63ZZZZ	AREA	500+	06+			
B16GEN01	63ZZZZ	AREA	100-250	06+			

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 8)
Federal Operating Permit Program
Table 4a: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Construction/ Reconstruction/ Modification Date	Test Cell	Exemption	Temp Replacement	Horsepower	Fuel	AEL No.	Lean Burn	Commencing
B25GEN02A	63JJJJ	YES	NO	NONE	NO	130-500E	NATGAS			CON
B31GEN01	63JJJJ	YES	NO	NONE	NO	500+E	NATGAS			CON

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 9)
Federal Operating Permit Program
Table 4b: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Manufacture Date	Displacement	Certified	Operation	Certified Modification	Service	Severe Duty	Optional Compliance
B25GEN02A	63JJJJ	N0111+E		YES	YES		EMERG	NO	
B31GEN01	63JJJJ	N0710+E		YES	YES		EMERG	NO	

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 10)
Federal Operating Permit Program
Table 5a: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Applicability Date	Exemptions	Service	Commencing	Manufacture Date
B220GEN01	63IIII	2005+	NONE	EMERG	CON	0406+
B16GEN01	63IIII	2005+	NONE	EMERG	CON	0406+

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 11)
Federal Operating Permit Program
Table 5b: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Diesel	AES No.	Displacement	Generator Set	Model Year	Install Date
B220GEN01	63IIII	DIESEL		10-CS		2007	
B16GEN01	63IIII	DIESEL		10-CS		2017+	

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 12)
Federal Operating Permit Program
Table 5c: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Kilowatts	Filter	AECD	Standard	Compliance Option	PM Compliance	Options
B220GEN01	63IIII	E37-75	NO	NO	YES	MANU YES		
B16GEN01	63IIII	E75-130	NO	NO	YES	MANU YES		

Texas Commission on Environmental Quality

Title V Existing

1552

Site Information (Regulated Entity)

What is the name of the permit area to be authorized?	LYNDON B JOHNSON SPACE CENTER
Does the site have a physical address?	Yes
Physical Address	
Number and Street	2101 NASA PKWY
City	HOUSTON
State	TX
ZIP	77058
County	HARRIS
Latitude (N) (##.######)	29.557777
Longitude (W) (-###.######)	95.086666
Primary SIC Code	9661
Secondary SIC Code	
Primary NAICS Code	927110
Secondary NAICS Code	
Regulated Entity Site Information	
What is the Regulated Entity's Number (RN)?	RN100665579
What is the name of the Regulated Entity (RE)?	LYNDON B JOHNSON SPACE CENTER
Does the RE site have a physical address?	Yes
Physical Address	
Number and Street	2101 NASA PKWY
City	HOUSTON
State	TX
ZIP	77058
County	HARRIS
Latitude (N) (##.######)	29.557777
Longitude (W) (-###.######)	-95.086666
Facility NAICS Code	
What is the primary business of this entity?	FLEET REFUELING

Customer (Applicant) Information

How is this applicant associated with this site?	Owner Operator
What is the applicant's Customer Number (CN)?	CN601572878
Type of Customer	Federal Government
Full legal name of the applicant:	
Legal Name	National Aeronautics And Space Administration
Texas SOS Filing Number	
Federal Tax ID	
State Franchise Tax ID	
State Sales Tax ID	

Local Tax ID	
DUNS Number	
Number of Employees	501+
Independently Owned and Operated?	

Responsible Official Contact

Person TCEQ should contact for questions about this application:	
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR.
First	JOEL
Middle	
Last	WALKER
Suffix	
Credentials	
Title	DIRECTOR, CENTER OPERATIONS
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	MC JE111
City	HOUSTON
State	TX
ZIP	77058
Phone (###-###-####)	2814830541
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	joel.b.walker@nasa.gov

Duly Authorized Representative Contact

Person TCEQ should contact for questions about this application	
Select existing DAR contact or enter a new contact.	JOHN HERRMANN(NATIONAL AERONA...)
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR
First	JOHN
Middle	
Last	HERRMANN
Suffix	
Credentials	
Title	ENVIRONMENTAL ENGINEER
Enter new address or copy one from list	
Mailing Address	
Address Type	Domestic

Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	MC JE111
City	HOUSTON
State	TX
Zip	77058
Phone (###-###-####)	8326936394
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	2814833048
E-mail	john.p.herrmann@nasa.gov

Technical Contact

Person TCEQ should contact for questions about this application:	
Select existing TC contact or enter a new contact.	JOHN HERRMANN(NATIONAL AERONA...)
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR
First	JOHN
Middle	
Last	HERRMANN
Suffix	
Credentials	
Title	ENVIRONMENTAL ENGINEER
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	
City	HOUSTON
State	TX
ZIP	77058
Phone (###-###-####)	2814835213
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	2814837027
E-mail	john.p.herrmann@nasa.gov

Title V General Information - Existing

1) Permit Type:	SOP
2) Permit Latitude Coordinate:	29 Deg 33 Min 28 Sec
3) Permit Longitude Coordinate:	95 Deg 5 Min 12 Sec
4) Is this submittal a new application or an update to an existing application?	Update
4.1. Select the permit/project number for which this update should be applied.	1552-36233

5) Who will electronically sign this Title V application?	Duly Authorized Representative
6) Does this application include Acid Rain Program or Cross-State Air Pollution Rule requirements?	No

Title V Attachments Existing

Attach OP-1 (Site Information Summary)

Attach OP-2 (Application for Permit Revision/Renewal)

[File Properties]

File Name	OP_2_OP_2_FORM_9-29-25.docx
Hash	30A1D5B8FD9C36B9F090D27DE4212AA6C6402592924099669EA8C1775A6CBE72
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-ACPS (Application Compliance Plan and Schedule)

Attach OP-REQ1 (Application Area-Wide Applicability Determinations and General Information)

[File Properties]

File Name	OP-REQ1 pages 88-89 9-29-25.docx
Hash	F80E6E5B33173C63653A0AF62E65704E7673E61B386AA019E5853936F09F1424
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-REQ2 (Negative Applicable Requirement Determinations)

Attach OP-REQ3 (Applicable Requirements Summary)

[File Properties]

File Name	OP_REQ3_OP_REQ3_Form_no_change.docx
Hash	7FB56BD4AD039200B2A36C743016639E75ECBBF05A93A7D382C44F8BE7116AD3
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-PBRSUP (Permits by Rule Supplemental Table)

[File Properties]

File Name	OP_PBRSUP_JSC OP-PBRSUP 9-29-25.docx
Hash	D4057BC466AEB51F7C63658B659135A5C90E8AE4D7C0B69FBF84D978018EAAC2
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

[File Properties]

File Name	OP_PBRSUP_JSC OP-PBRSUP 9-29-25.pdf
Hash	D7DAE161881BA9C782FAD36B66C669447DA89E275C0D5021E27222A514A37290
MIME-Type	application/pdf

Attach OP-SUMR (Individual Unit Summary for Revisions)

[File Properties]

File Name	OP_SUMR_OP_SUMR_no_change.docx
Hash	CFFA2F3192723C1978370219E08F87A01535CB0216DA4E136497410AEF143F38
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-MON (Monitoring Requirements)

Attach OP-UA (Unit Attribute) Forms

[File Properties]

File Name	Form OP-UA11_no_change.docx
Hash	A26566205BFD99EE261050D00AC92B153F63F88CAFF578DC78F023514C04F441
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

[File Properties]

File Name	Form OP-UA2_no_change.docx
Hash	E20149819E298CFC894E4A711BFC2240E689A3BDECB4A4AF43D4A2DB3FC673A8
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

If applicable, attach OP-AR1 (Acid Rain Permit Application)

Attach OP-CRO2 (Change of Responsible Official Information)

Attach OP-DEL (Delegation of Responsible Official)

Attach Void Request Form

Attach any other necessary information needed to complete the permit.

An additional space to attach any other necessary information needed to complete the permit.

Certification

I certify that I am the Duly Authorized Representative for this application and that, based on information and belief formed after reasonable inquiry, the statements and information on this form are true, accurate, and complete.

1. I am John P Herrmann, the owner of the STEERS account ER008559.
2. I have the authority to sign this data on behalf of the applicant named above.
3. I have personally examined the foregoing and am familiar with its content and the content of any attachments, and based upon my personal knowledge and/or inquiry of any individual responsible for information contained herein, that this information is true, accurate, and complete.
4. I further certify that I have not violated any term in my TCEQ STEERS participation agreement and that I have no reason to believe that the confidentiality or use of my password has been compromised at any time.
5. I understand that use of my password constitutes an electronic signature legally equivalent to my written signature.

6. I also understand that the attestations of fact contained herein pertain to the implementation, oversight and enforcemer of a state and/or federal environmental program and must be true and complete to the best of my knowledge.
7. I am aware that criminal penalties may be imposed for statements or omissions that I know or have reason to believe are untrue or misleading.
8. I am knowingly and intentionally signing Title V Existing 1552.
9. My signature indicates that I am in agreement with the information on this form, and authorize its submittal to the TCEC

OWNER OPERATOR Signature: John P Herrmann OWNER OPERATOR

Account Number:	ER008559
Signature IP Address:	130.40.246.195
Signature Date:	2025-10-01
Signature Hash:	876C45BB676559AA19D36B8B6CE6297B1AA51D63834F1BA58BBE8CDCE65C5D6C
Form Hash Code at time of Signature:	1E77B75E6703EED762E192952F58F43A9DC1A4743D2A2F7262323388B57A550D

Submission

Reference Number:	The application reference number is 821585
Submitted by:	The application was submitted by ER008559/John P Herrmann
Submitted Timestamp:	The application was submitted on 2025-10-01 at 11:59:11 CDT
Submitted From:	The application was submitted from IP address 130.40.246.195
Confirmation Number:	The confirmation number is 682127
Steers Version:	The STEERS version is 6.93
Permit Number:	The permit number is 1552

Additional Information

Application Creator: This account was created by Mark A Kolkmeier

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
B10GEN02A	B10 DIESEL GENERATOR	106.511/09/04/2000
B10TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B15GEN01	STATIONARY EMERGENCY GENERATOR	106.511/03/14/1997
B15TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B16GEN01	B16 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B17GEN02	STATIONARY EMERGENCY GENERATOR	106.511/09/04/2000
B17TANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B21GEN01	EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B220GEN01	B220 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B221ENG01	BUILDING 221 ENGINE 1	106.512/09/04/2000
B223ENG02	BUILDING 223 ENGINE 2	106.512/09/04/2000
B24-3A	BUILDING 24 BOILER 3A	114721
B24-5A	BOILER B24-5A	76247
B24LOAD01	DIESEL LOADING	106.472/09/04/2000
B24TANK01A	BUILDING 24 DIESEL TANK	106.478/09/04/2000
B25GEN02A	B25 EOC EMERGENCY GAS GENERATOR	106.511/09/04/2000
B25TANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B30AGEN02	STATIONARY EMERGENCY GENERATOR	106.511/09/04/2000
B30ATANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B31GEN01	B31 EMERGENCY GAS GENERATOR	106.511/09/04/2000
B322ENG01A	EMERGENCY NATURAL GAS FIRED ENGINE	106.511/09/04/2000
B322GEN01	B322 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
B326TANK01	BUILDING 326 DIESEL TANK	51/08/30/1988
B326TANK03	GASOLINE STORAGE TANK	106.478/09/04/2000
B329ENG01A	EMERGENCY NATURAL GAS FIRED ENGINE	106.511/09/04/2000
B329TANK01	BUILDING 329 WASTEWATER TANK	106.472/09/04/2000
B32GEN06	STATIONARY EMERGENCY GENERATOR	106.511/03/14/1997
B32GEN07	STATIONARY EMERGENCY GENERATOR	106.511/09/04/2000
B32GEN09	BUILDING 32 GENERATOR 9	106.511/09/04/2000
B32TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B32TANK02	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B32TANK03	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B32TANK04	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B343TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B347GEN01	STATIONARY EMERGENCY GENERATOR	106.511/09/04/2000
B347TANK01	DIESEL FUEL STORAGE TANK	106.478/09/04/2000
B37TANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B37TANK02	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B3GEN01A	B3 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B3TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B417OWS01	OIL/WATER SEPARATOR	61/07/20/1992
B420BLR02	BOILER	106.183/09/04/2000
B420WOOD01	BUILDING 420 DUST COLLECTION SYSTEM	124/05/12/1981
B421BLR01	BOILER	106.183/09/04/2000

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
B42TANK02	DIESEL FUEL STORAGE TANK	106.478/09/04/2000
B46GEN01	B46 NON-EMERGENCY GENERATOR	106.511/09/04/2000
B46TANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B48GEN01	BUILDING 48 GENERATOR 1	5/12/01/1972
B48GEN02	BUILDING 48 GENERATOR 2	5/12/01/1972
B48GEN03	BUILDING 48 GENERATOR 3	5/12/01/1972
B48GEN07	BUILDING 48 GENERATOR 7	5/12/01/1972
B48GEN07A	B48 EMERGENCY DIESEL GENERATOR#7	106.511/09/04/2000
B48GEN09	BUILDING 48 GENERATOR 9	5/12/01/1972
B48GEN09A	B48 EMERGENCY DIESEL GENERATOR#9	106.511/09/04/2000
B48TANK01	BUILDING 48 DIESEL TANK NO. 1	51/07/20/1992
B48TANK02	BUILDING 48 DIESEL TANK NO. 2	51/07/20/1992
B48TANK03	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B48TANK04	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B48TANK05	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B7GEN02	BUILDING 7 GENERATOR #2	106.511/09/04/2000
B9AC01	BUILDING 9 AUTOCLAVE 1	106.124/09/04/2000
B9AC02	BUILDING 9 AUTOCLAVE 2	106.124/09/04/2000
B9GEN01A	B9 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B9PAINT01	BUILDING 9 PAINT BOOTH	75/09/12/1989
B9TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B9WOOD01	BUILDING 9 DUST COLLECTION SYSTEM	124/05/12/1981

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
B9WOOD02	BUILDING 9 DUST COLLECTION SYSTEM	124/05/12/1981
B9WOOD03	BUILDING 9 DUST COLLECTION SYSTEM	124/05/12/1981
BSTART-1	BLACK START DIESEL GENERATOR	106.511/09/04/2000
LS14GEN01	LS14 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS15GEN01	LS15 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS1GEN01	LS1 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS2GEN01	LS2 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS3GEN01	LS3 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS7GEN01	LS7 NON-EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
PROPAINT	PAINT BOOTH PROCESSES	75/09/12/1989
T-1	NATURAL GAS COMBUSTION TURBINE	130148
T-2	NATURAL GAS COMBUSTION TURBINE	130148
TK-DSL	DIESEL FUEL STORAGE TANK	106.472/09/04/2000

Appendix A

Acronym List 122

Acronym List

The following abbreviations or acronyms may be used in this permit:

ACFM ..... actual cubic feet per minute
AMOC ..... alternate means of control
ARP ..... Acid Rain Program
ASTM ..... American Society of Testing and Materials
B/PA ..... Beaumont/Port Arthur (nonattainment area)
CAM ..... Compliance Assurance Monitoring
CD ..... control device
CEMS ..... continuous emissions monitoring system
CFR ..... Code of Federal Regulations
COMS ..... continuous opacity monitoring system
CVS ..... closed vent system
D/FW ..... Dallas/Fort Worth (nonattainment area)
EP ..... emission point
EPA ..... U.S. Environmental Protection Agency
EU ..... emission unit
FCAA Amendments ..... Federal Clean Air Act Amendments
FOP ..... federal operating permit
gr/100 scf ..... grains per 100 standard cubic feet
HAP ..... hazardous air pollutant
H/G/B ..... Houston/Galveston/Brazoria (nonattainment area)
H_2S ..... hydrogen sulfide
ID No. ..... identification number
lb/hr ..... pound(s) per hour
MACT ..... Maximum Achievable Control Technology (40 CFR Part 63)
MMBtu/hr ..... Million British thermal units per hour
NA ..... nonattainment
N/A ..... not applicable
NADB ..... National Allowance Data Base
NESHAP ..... National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)
NO_x ..... nitrogen oxides
NSPS ..... New Source Performance Standard (40 CFR Part 60)
NSR ..... New Source Review
ORIS ..... Office of Regulatory Information Systems
Pb ..... lead
PBR ..... Permit By Rule
PEMS ..... predictive emissions monitoring system
PM ..... particulate matter
ppmv ..... parts per million by volume
PRO ..... process unit
PSD ..... prevention of significant deterioration
psia ..... pounds per square inch absolute
SIP ..... state implementation plan
SO_2 ..... sulfur dioxide
TCEQ ..... Texas Commission on Environmental Quality
TSP ..... total suspended particulate
TVP ..... true vapor pressure
U.S.C. ..... United States Code
VOC ..... volatile organic compound

FEDERAL OPERATING PERMIT

A FEDERAL OPERATING PERMIT IS HEREBY ISSUED TO
National Aeronautics and Space Administration

AUTHORIZING THE OPERATION OF
Lyndon B Johnson Space Center
Space Research and Technology

LOCATED AT
Harris County, Texas
Latitude 29° 33′ 28″ Longitude 95° 5′ 12″
Regulated Entity Number: RN100665579

This permit is issued in accordance with and subject to the Texas Clean Air Act (TCAA), Chapter 382 of the Texas Health and Safety Code and Title 30 Texas Administrative Code Chapter 122 (30 TAC Chapter 122), Federal Operating Permits. Under 30 TAC Chapter 122, this permit constitutes the permit holder's authority to operate the site and emission units listed in this permit. Operations of the site and emission units listed in this permit are subject to all additional rules or amended rules and orders of the Commission pursuant to the TCAA.

This permit does not relieve the permit holder from the responsibility of obtaining New Source Review authorization for new, modified, or existing facilities in accordance with 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification.

The site and emission units authorized by this permit shall be operated in accordance with 30 TAC Chapter 122, the general terms and conditions, special terms and conditions, and attachments contained herein.

This permit shall expire five years from the date of issuance. The renewal requirements specified in 30 TAC § 122.241 must be satisfied in order to renew the authorization to operate the site and emission units.

Permit No: O1552 Issuance Date: December 22, 2021

For the Commission

Table of Contents

Section **Page**

General Terms and Conditions 1

Special Terms and Conditions: 1
- Emission Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting 1
- Additional Monitoring Requirements 8
- New Source Review Authorization Requirements 8
- Compliance Requirements 9
- Protection of Stratospheric Ozone 10
- Permit Location 11
- Permit Shield (30 TAC § 122.148) 11

Attachments 12
- Applicable Requirements Summary 13
- Additional Monitoring Requirements 91
- Permit Shield 111
- New Source Review Authorization References 114

Appendix A 121
- Acronym List 122

General Terms and Conditions

The permit holder shall comply with all terms and conditions contained in 30 TAC § 122.143 (General Terms and Conditions), 30 TAC § 122.144 (Recordkeeping Terms and Conditions), 30 TAC § 122.145 (Reporting Terms and Conditions), and 30 TAC § 122.146 (Compliance Certification Terms and Conditions).

In accordance with 30 TAC § 122.144(1), records of required monitoring data and support information required by this permit, or any applicable requirement codified in this permit, are required to be maintained for a period of five years from the date of the monitoring report, sample, or application unless a longer data retention period is specified in an applicable requirement. The five year record retention period supersedes any less stringent retention requirement that may be specified in a condition of a permit identified in the New Source Review Authorization attachment.

If the permit holder chooses to demonstrate that this permit is no longer required, a written request to void this permit shall be submitted to the Texas Commission on Environmental Quality (TCEQ) by the Responsible Official in accordance with 30 TAC § 122.161(e). The permit holder shall comply with the permit's requirements, including compliance certification and deviation reporting, until notified by the TCEQ that this permit is voided.

The permit holder shall comply with 30 TAC Chapter 116 by obtaining a New Source Review authorization prior to new construction or modification of emission units located in the area covered by this permit.

All reports required by this permit must include in the submittal a cover letter which identifies the following information: company name, TCEQ regulated entity number, air account number (if assigned), site name, area name (if applicable), and Air Permits Division permit number(s).

Special Terms and Conditions:

Emission Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting

1. Permit holder shall comply with the following requirements:

    A. Emission units (including groups and processes) in the Applicable Requirements Summary attachment shall meet the limitations, standards, equipment specifications, monitoring, recordkeeping, reporting, testing, and other requirements listed in the Applicable Requirements Summary attachment to assure compliance with the permit.

    B. The textual description in the column titled "Textual Description" in the Applicable Requirements Summary attachment is not enforceable and is not deemed as a substitute for the actual regulatory language. The Textual Description is provided for information purposes only.

    C. A citation listed on the Applicable Requirements Summary attachment, which has a notation [G] listed before it, shall include the referenced section and subsection for all commission rules, or paragraphs for all federal and state regulations and all subordinate paragraphs, subparagraphs and clauses, subclauses, and items contained within the referenced citation as applicable requirements.

    D. When a grouped citation, notated with a [G] in the Applicable Requirements Summary, contains multiple compliance options, the permit holder must keep records of when each compliance option was used.

    E. Emission units subject to 40 CFR Part 63, Subparts ZZZZ and WWWWWW as identified in the attached Applicable Requirements Summary table are subject to 30 TAC Chapter

113, Subchapter C, § 113.1090 and § 113.1500, respectively, which incorporate the 40 CFR Part 63 Subparts by reference.

F. For the purpose of generating emission reduction credits through 30 TAC Chapter 101, Subchapter H, Division 1 (Emission Credit Banking and Trading), the permit holder shall comply with the following requirements:

(i) Title 30 TAC § 101.302 (relating to General Provisions)

(ii) Title 30 TAC § 101.303 (relating to Emission Reduction Credit Generation Certification)

(iii) Title 30 TAC § 101.304 (relating to Mobile Emission Reduction Credit Generation and Certification)

(iv) Title 30 TAC § 101.309 (relating to Emission Credit Banking and Trading)

(v) The terms and conditions by which the emission limits are established to generate the reduction credit are applicable requirements of this permit

G. The permit holder shall comply with the following 30 TAC Chapter 101, Subchapter H, Division 3 (Mass Emission Cap and Trade Program) Requirements:

(i) Title 30 TAC § 101.352 (relating to General Provisions)

(ii) Title 30 TAC § 101.353 (relating to Allocation of Allowances)

(iii) Title 30 TAC § 101.354 (relating to Allowance Deductions)

(iv) Title 30 TAC § 101.356 (relating to Allowance Banking and Trading)

(v) Title 30 TAC § 101.359 (relating to Reporting)

(vi) Title 30 TAC § 101.360 (relating to Level of Activity Certification)

(vii) The terms and conditions by which the emission limits are established to meet or exceed the cap are applicable requirements of this permit

2. The permit holder shall comply with the following sections of 30 TAC Chapter 101 (General Air Quality Rules):

A. Title 30 TAC § 101.1 (relating to Definitions), insofar as the terms defined in this section are used to define the terms used in other applicable requirements

B. Title 30 TAC § 101.3 (relating to Circumvention)

C. Title 30 TAC § 101.8 (relating to Sampling), if such action has been requested by the TCEQ

D. Title 30 TAC § 101.9 (relating to Sampling Ports), if such action has been requested by the TCEQ

E. Title 30 TAC § 101.10 (relating to Emissions Inventory Requirements)

F. Title 30 TAC § 101.201 (relating to Emission Event Reporting and Recordkeeping Requirements)

G. Title 30 TAC § 101.211 (relating to Scheduled Maintenance, Start-up, and Shutdown Reporting and Recordkeeping Requirements)

H. Title 30 TAC § 101.221 (relating to Operational Requirements)

I. Title 30 TAC § 101.222 (relating to Demonstrations)

J. Title 30 TAC § 101.223 (relating to Actions to Reduce Excessive Emissions)

3. Permit holder shall comply with the following requirements of 30 TAC Chapter 111:

A. Visible emissions from stationary vents with a flow rate of less than 100,000 actual cubic feet per minute and constructed after January 31, 1972 that are not listed in the Applicable Requirements Summary attachment for 30 TAC Chapter 111, Subchapter A, Division 1, shall not exceed 20% opacity averaged over a six-minute period. The permit holder shall comply with the following requirements for stationary vents at the site subject to this standard:

(i) Title 30 TAC § 111.111(a)(1)(B) (relating to Requirements for Specified Sources)

(ii) Title 30 TAC § 111.111(a)(1)(E)

(iii) Title 30 TAC § 111.111(a)(1)(F)(i), (ii), (iii), or (iv)

(iv) For emission units with vent emissions subject to 30 TAC § 111.111(a)(1)(B), complying with 30 TAC § 111.111(a)(1)(F)(ii), (iii), or (iv), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO_x, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146. These periodic monitoring requirements do not apply to vents that are not capable of producing visible emissions such as vents that emit only colorless VOCs; vents from non-fuming liquids; vents that provide passive ventilation, such as plumbing vents; or vent emissions from any other source that does not obstruct the transmission of light. Vents, as specified in the “Applicable Requirements Summary” attachment, that are subject to the emission limitation of 30 TAC § 111.111(a)(1)(B) are not subject to the following periodic monitoring requirements:

(1) An observation of stationary vents from emission units in operation shall be conducted at least once during each calendar quarter unless the emission unit is not operating for the entire quarter.

(2) For stationary vents from a combustion source, if an alternative to the normally fired fuel is fired for a period greater than or equal to 24 consecutive hours, the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are present. If such period is greater than 3 months, observations shall be conducted once during each quarter. Supplementing the normally fired fuel with natural gas or fuel gas to increase the net heating value to the minimum required value does not constitute creation of an alternative fuel.

(3) Records of all observations shall be maintained.

(4) Visible emissions observations of emission units operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of emission units operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions observations shall be made during times when the activities described in 30 TAC § 111.111(a)(1)(E) are not taking place. Visible emissions shall be determined with each stationary vent in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each stationary vent during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.

(5) Compliance Certification:

(a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(1) and (a)(1)(B).

(b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(1)(F) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.

(c) Some vents may be subject to multiple visible emission or monitoring requirements. All credible data must be considered when certifying compliance with this requirement even if the observation or monitoring was performed to demonstrate compliance with a different requirement.

B. For visible emissions from a building, enclosed facility, or other structure; the permit holder shall comply with the following requirements:

(i) Title 30 TAC § 111.111(a)(7)(A) (relating to Requirements for Specified Sources)

(ii) Title 30 TAC § 111.111(a)(7)(B)(i) or (ii)

(iii) For a building containing an air emission source, enclosed facility, or other structure containing or associated with an air emission source subject to 30 TAC § 111.111(a)(7)(A), complying with 30 TAC § 111.111(a)(7)(B)(i) or (ii), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO_x, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146:

(1) An observation of visible emissions from a building containing an air emission source, enclosed facility, or other structure containing or associated with an air emission source which is required to comply with 30 TAC § 111.111(a)(7)(A) shall be conducted at least once during each calendar quarter unless the air emission source or enclosed facility is not operating for the entire quarter.

(2) Records of all observations shall be maintained.

(3) Visible emissions observations of air emission sources or enclosed facilities operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of air emission sources or enclosed facilities operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions shall be determined with each emissions outlet in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each emissions outlet during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.

(4) Compliance Certification:

(a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(7) and (a)(7)(A).

(b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(7)(B) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of

compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.

C. Certification of opacity readers determining opacities under Method 9 (as outlined in 40 CFR Part 60, Appendix A) to comply with opacity monitoring requirements shall be accomplished by completing the Visible Emissions Evaluators Course, or approved agency equivalent, no more than 180 days before the opacity reading.

D. For emission units with contributions from uncombined water, the permit holder shall comply with the requirements of 30 TAC § 111.111(b).

E. Emission limits on nonagricultural processes, except for the steam generators specified in 30 TAC § 111.153, shall comply with the following requirements:

(i) Emissions of PM from any source may not exceed the allowable rates as required in 30 TAC § 111.151(a) (relating to Allowable Emissions Limits)

(ii) Sources with an effective stack height (h_e) less than the standard effective stack height (H_e), must reduce the allowable emission level by multiplying it by $[h_e/H_e]^2$ as required in 30 TAC § 111.151(b)

(iii) Effective stack height shall be calculated by the equation specified in 30 TAC § 111.151(c)

F. Outdoor burning, as stated in 30 TAC § 111.201, shall not be authorized unless the following requirements are satisfied:

(i) Title 30 TAC § 111.205 (relating to Exception for Fire Training)

(ii) Title 30 TAC § 111.207 (relating to Exception for Recreation, Ceremony, Cooking, and Warmth)

(iii) Title 30 TAC § 111.219 (relating to General Requirements for Allowable Outdoor Burning)

(iv) Title 30 TAC § 111.221 (relating to Responsibility for Consequences of Outdoor Burning)

4. For storage vessels maintaining working pressure as specified in 30 TAC Chapter 115, Subchapter B, Division 1: Storage of Volatile Organic Compounds, the permit holder shall comply with the requirements of 30 TAC § 115.112(e)(1).

5. Permit holder shall comply with the following 30 TAC Chapter 115, Subchapter C requirements:

A. When filling stationary gasoline storage vessels (Stage I) for motor vehicle fuel dispensing facilities specified in 30 TAC Chapter 115, Subchapter C, the permit holder shall comply with the following requirements:

(i) Title 30 TAC § 115.221 (relating to Emission Specifications)

(ii) Title 30 TAC § 115.222 (relating to Control Requirements)

(iii) Title 30 TAC § 115.223 (relating to Alternate Control Requirements)

(iv) Title 30 TAC § 115.224 (relating to Inspection Requirements)

(v) Title 30 TAC § 115.225 (relating to Testing Requirements)

(vi) Title 30 TAC § 115.226 (relating to Recordkeeping Requirements)

6. The permit holder shall comply with the following requirements for units subject to any subpart of 40 CFR Part 60, unless otherwise stated in the applicable subpart:

A. Title 40 CFR § 60.7 (relating to Notification and Recordkeeping)

B. Title 40 CFR § 60.8 (relating to Performance Tests)

C. Title 40 CFR § 60.11 (relating to Compliance with Standards and Maintenance Requirements)

D. Title 40 CFR § 60.12 (relating to Circumvention)

E. Title 40 CFR § 60.13 (relating to Monitoring Requirements)

F. Title 40 CFR § 60.14 (relating to Modification)

G. Title 40 CFR § 60.15 (relating to Reconstruction)

H. Title 40 CFR § 60.19 (relating to General Notification and Reporting Requirements)

7. The permit holder shall comply with the requirements of 30 TAC Chapter 113, Subchapter C, § 113.100 for units subject to any subpart of 40 CFR Part 63, unless otherwise stated in the applicable subpart.

8. For each gasoline dispensing facility, with a throughput of less than 10,000 gallons per month as specified in 40 CFR Part 63, Subpart CCCCCC, the permit holder shall comply with the following requirements (Title 30 TAC, Subchapter C, § 113.1380 incorporated by reference):

A. Title 40 CFR § 63.11111(e), for records of monthly throughput

B. Title 40 CFR § 63.11111(i), for compliance due to increase of throughput

C. Title 40 CFR § 63.11111(j), for dispensing from fixed tank into portable tank for on-site delivery

D. Title 40 CFR § 63.11113(c), for compliance due to increase of throughput

E. Title 40 CFR § 63.11115(a), for operation of the source

F. Title 40 CFR § 63.11116(a) and (a)(1) - (4), for work practices

G. Title 40 CFR § 63.11116(b), for records availability

H. Title 40 CFR § 63.11116(d), for portable gasoline containers

9. The permit holder shall comply with certified registrations submitted to the TCEQ for purposes of establishing federally enforceable emission limits. A copy of the certified registration shall be maintained with the permit. Records sufficient to demonstrate compliance with the established limits shall be maintained. The certified registration and records demonstrating compliance shall

be provided, on request, to representatives of the appropriate TCEQ regional office and any local air pollution control agency having jurisdiction over the site. The permit holder shall submit updated certified registrations when changes at the site require establishment of new emission limits. If changes result in emissions that do not remain below major source thresholds, the permit holder shall submit a revision application to codify the appropriate requirements in the permit.

Additional Monitoring Requirements

10. The permit holder shall comply with the periodic monitoring requirements as specified in the attached "Periodic Monitoring Summary" upon issuance of the permit. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permit holder shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. The permit holder may elect to collect monitoring data on a more frequent basis and average the data, consistent with the averaging time or minimum frequency specified in the "Periodic Monitoring Summary," for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis. In no event shall data be collected and used in particular instances to avoid reporting deviations. Deviations shall be reported according to 30 TAC § 122.145 (Reporting Terms and Conditions).

New Source Review Authorization Requirements

11. Permit holder shall comply with the requirements of New Source Review authorizations issued or claimed by the permit holder for the permitted area, including permits, permits by rule, standard permits, flexible permits, special permits, permits for existing facilities including Voluntary Emissions Reduction Permits and Electric Generating Facility Permits issued under 30 TAC Chapter 116, Subchapter I, or special exemptions referenced in the New Source Review Authorization References attachment. These requirements:

    A. Are incorporated by reference into this permit as applicable requirements

    B. Shall be located with this operating permit

    C. Are not eligible for a permit shield

12. The permit holder shall comply with the general requirements of 30 TAC Chapter 106, Subchapter A or the general requirements, if any, in effect at the time of the claim of any PBR.

13. The permit holder shall maintain records to demonstrate compliance with any emission limitation or standard that is specified in a permit by rule (PBR) or Standard Permit listed in the New Source Review Authorizations attachment. The records shall yield reliable data from the relevant time period that are representative of the emission unit's compliance with the PBR or Standard Permit. These records may include, but are not limited to, production capacity and throughput, hours of operation, safety data sheets (SDS), chemical composition of raw materials, speciation of air contaminant data, engineering calculations, maintenance records, fugitive data, performance tests, capture/control device efficiencies, direct pollutant monitoring (CEMS, COMS, or PEMS), or control device parametric monitoring. These records shall be made readily accessible and available as required by 30 TAC § 122.144. Any monitoring or recordkeeping data indicating noncompliance with the PBR or Standard Permit shall be considered and reported as a deviation according to 30 TAC § 122.145 (Reporting Terms and Conditions).

14. The permit holder shall comply with the following requirements for Air Quality Standard Permits:

A. Registration requirements listed in 30 TAC § 116.611, unless otherwise provided for in an Air Quality Standard Permit

B. General Conditions listed in 30 TAC § 116.615, unless otherwise provided for in an Air Quality Standard Permit

C. Requirements of the Electric Generating Unit Standard Permit for facilities located in the East Texas region based on the information contained in the registration application.

Compliance Requirements

15. The permit holder shall certify compliance in accordance with 30 TAC § 122.146. The permit holder shall comply with 30 TAC § 122.146 using at a minimum, but not limited to, the continuous or intermittent compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information. The certification period may not exceed 12 months and the certification must be submitted within 30 days after the end of the period being certified.

16. Permit holder shall comply with the following 30 TAC Chapter 117 requirements:

    A. The permit holder shall comply with the compliance schedules and submit written notification to the TCEQ Executive Director as required in 30 TAC Chapter 117, Subchapter H, Division 1:

        (i) For sources in the Houston-Galveston-Brazoria Nonattainment area, 30 TAC § 117.9020:

            (1) Title 30 TAC § 117.9020(2)(A), (C), and (D)

    B. The permit holder shall comply with the Initial Control Plan unit listing requirement in 30 TAC § 117.350(c) and (c)(1).

    C. The permit holder shall comply with the requirements of 30 TAC § 117.354 for Final Control Plan Procedures for Attainment Demonstration Emission Specifications and 30 TAC § 117.356 for Revision of Final Control Plan.

17. Use of Emission Credits to comply with applicable requirements:

    A. Unless otherwise prohibited, the permit holder may use emission credits to comply with the following applicable requirements listed elsewhere in this permit:

        (i) Title 30 TAC Chapter 115

        (ii) Title 30 TAC Chapter 117

        (iii) Offsets for Title 30 TAC Chapter 116

    B. The permit holder shall comply with the following requirements in order to use the emission credits to comply with the applicable requirements:

        (i) The permit holder must notify the TCEQ according to 30 TAC § 101.306(c)-(d)

        (ii) The emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 1

(iii) The executive director has approved the use of the credit according to 30 TAC § 101.306(c)-(d)

(iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.302(g) and 30 TAC Chapter 122

(v) Title 30 TAC § 101.305 (relating to Emission Reductions Achieved Outside the United States)

18. Use of Discrete Emission Credits to comply with the applicable requirements:

A. Unless otherwise prohibited, the permit holder may use discrete emission credits to comply with the following applicable requirements listed elsewhere in this permit:

(i) Title 30 TAC Chapter 115

(ii) Title 30 TAC Chapter 117

(iii) If applicable, offsets for Title 30 TAC Chapter 116

(iv) Temporarily exceed state NSR permit allowables

B. The permit holder shall comply with the following requirements in order to use the credit to comply with the applicable requirements:

(i) The permit holder must notify the TCEQ according to 30 TAC § 101.376(d)

(ii) The discrete emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 4

(iii) The executive director has approved the use of the discrete emission credits according to 30 TAC § 101.376(d)(1)(A)

(iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.372(h) and 30 TAC Chapter 122

(v) Title 30 TAC § 101.375 (relating to Emission Reductions Achieved Outside the United States)

Protection of Stratospheric Ozone

19. Permit holders at a site subject to Title VI of the FCAA Amendments shall meet the following requirements for protection of stratospheric ozone:

A. Any on site servicing, maintenance, and repair on refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants or non-exempt substitutes shall be conducted in accordance with 40 CFR Part 82, Subpart F. Permit holders shall ensure that repairs on or refrigerant removal from refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants are performed only by properly certified technicians using certified equipment. Records shall be maintained as required by 40 CFR Part 82, Subpart F.

B. The permit holder shall comply with 40 CFR Part 82, Subpart D related to the procurement requirements of Class I or Class II (ozone-depleting) substances or products containing those substances as specified in 40 CFR § 82.80 - § 82.86 and the applicable Part 82 Appendices.

C. The permit holder shall comply with 40 CFR Part 82, Subpart F related to the disposal requirements for appliances using Class I or Class II (ozone-depleting) substances or non-exempt substitutes as specified in 40 CFR §§ 82.150 - 82.166 and the applicable Part 82 Appendices.

Permit Location

20. The permit holder shall maintain a copy of this permit and records related to requirements listed in this permit on site.

Permit Shield (30 TAC § 122.148)

21. A permit shield is granted for the emission units, groups, or processes specified in the attached "Permit Shield." Compliance with the conditions of the permit shall be deemed compliance with the specified potentially applicable requirements or specified potentially applicable state-only requirements listed in the attachment "Permit Shield." Permit shield provisions shall not be modified by the executive director until notification is provided to the permit holder. No later than 90 days after notification of a change in a determination made by the executive director, the permit holder shall apply for the appropriate permit revision to reflect the new determination. Provisional terms are not eligible for this permit shield. Any term or condition, under a permit shield, shall not be protected by the permit shield if it is replaced by a provisional term or condition or the basis of the term and condition changes.

Attachments

Applicable Requirements Summary

Additional Monitoring Requirements

Permit Shield

New Source Review Authorization References

Applicable Requirements Summary

Unit Summary **14**

Applicable Requirements Summary **24**

Note: A “none” entry may be noted for some emission sources in this permit’s “Applicable Requirements Summary” under the heading of “Monitoring and Testing Requirements” and/or “Recordkeeping Requirements” and/or “Reporting Requirements.” Such a notation indicates that there are no requirements for the indicated emission source as identified under the respective column heading(s) for the stated portion of the regulation when the emission source is operating under the conditions of the specified SOP Index Number. However, other relevant requirements pursuant to 30 TAC Chapter 122 including Recordkeeping Terms and Conditions (30 TAC § 122.144), Reporting Terms and Conditions (30 TAC § 122.145), and Compliance Certification Terms and Conditions (30 TAC § 122.146) continue to apply.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
B10GEN02A	SRIC ENGINES	N/A	R7201-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B10GEN02A	SRIC ENGINES	N/A	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
B10GEN02A	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B16GEN01	SRIC ENGINES	N/A	R7201-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B16GEN01	SRIC ENGINES	N/A	63IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
B16GEN01	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B17GEN02	SRIC ENGINES	N/A	R7201-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B17GEN02	SRIC ENGINES	N/A	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
B17GEN02	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B21GEN01	SRIC ENGINES	N/A	R7201-1	30 TAC Chapter 117, Subchapter B	No changing attributes.
B21GEN01	SRIC ENGINES	N/A	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
B21GEN01	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B220GEN01	SRIC ENGINES	N/A	R7201-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B220GEN01	SRIC ENGINES	N/A	63IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
B220GEN01	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B24-3A	EMISSION POINTS/STATIONARY	N/A	R1111	30 TAC Chapter 111, Visible Emissions	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
	VENTS/PROCESS VENTS				
B24-3A	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	REG2	30 TAC Chapter 112, Sulfur Compounds	No changing attributes.
B24-3A	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	R7ICI-B243A-NG	30 TAC Chapter 117, Subchapter B	Fuel Type #1 = Natural gas.
B24-3A	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	R7ICI-B243A-OIL	30 TAC Chapter 117, Subchapter B	Fuel Type #1 = Liquid fuel
B24-3A	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	60DC-NG	40 CFR Part 60, Subpart Dc	D-Series Fuel Type = Natural gas., SO2 Inlet Monitoring Type = No SO2 monitoring because there is no applicable SO2 emission limit
B24-3A	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	60DC-OIL	40 CFR Part 60, Subpart Dc	D-Series Fuel Type = Distillate oil., SO2 Inlet Monitoring Type = Fuel certification (or maintaining receipts)., 47C-Option = COMS exemption § 60.47c(c) for a facility burning only distillate oil containing 0.5 % or less by weight sulfur and/or liquid or gaseous fuels with potential SO_2 emission rates of no more than 26 ng/J (0.060 lb/MMBtu), no post-combustion technology, 43CE-Option = Exemption § 60.43c(e)(4), facility combusts only oil containing no more than 0.50% by weight sulfur or a mixture of 0.50% by weight sulfur oil with other fuels not subject to a PM standard under § 60.43c, not using post-combustion

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
					technology.
B24-5A	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1111	30 TAC Chapter 111, Visible Emissions	No changing attributes.
B24-5A	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	REG2	30 TAC Chapter 112, Sulfur Compounds	No changing attributes.
B24-5A	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	R7ICI-B245A-NG	30 TAC Chapter 117, Subchapter B	Fuel Type #1 = Natural gas.
B24-5A	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	R7ICI-B245A-OIL	30 TAC Chapter 117, Subchapter B	Fuel Type #1 = Liquid fuel
B24-5A	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	60DC-NG	40 CFR Part 60, Subpart Dc	D-Series Fuel Type = Natural gas., SO2 Inlet Monitoring Type = No SO2 monitoring because there is no applicable SO2 emission limit
B24-5A	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	60DC-OIL	40 CFR Part 60, Subpart Dc	D-Series Fuel Type = Distillate oil., SO2 Inlet Monitoring Type = Fuel certification (or maintaining receipts)., 47C-Option = COMS exemption § 60.47c(c) for a facility burning only distillate oil containing 0.5 % or less by weight sulfur and/or liquid or gaseous fuels with potential SO_2 emission rates of no more than 26 ng/J (0.060 lb/MMBtu), no post-combustion technology, 43CE-Option = Exemption § 60.43c(e)(4), facility combusts only oil containing no more than 0.50% by weight sulfur or a mixture of 0.50% by

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
					weight sulfur oil with other fuels not subject to a PM standard under § 60.43c, not using post-combustion technology.
B24LOAD01	LOADING/UNLOADING OPERATIONS	N/A	R5211	30 TAC Chapter 115, Loading and Unloading of VOC	No changing attributes.
B24TANK01A	STORAGE TANKS/VESSELS	N/A	R5112	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
B25GEN02A	SRIC ENGINES	N/A	R7ICI-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B25GEN02A	SRIC ENGINES	N/A	63JJJJ	40 CFR Part 60, Subpart JJJJ	No changing attributes.
B25GEN02A	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B31GEN01	SRIC ENGINES	N/A	R7ICI-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B31GEN01	SRIC ENGINES	N/A	63JJJJ	40 CFR Part 60, Subpart JJJJ	No changing attributes.
B31GEN01	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B322ENG01A	SRIC ENGINES	N/A	R7ICI-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B322ENG01A	SRIC ENGINES	N/A	60JJJJ	40 CFR Part 60, Subpart JJJJ	No changing attributes.
B322ENG01A	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B322GEN01	SRIC ENGINES	N/A	R7201-2	30 TAC Chapter 117,	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
				Subchapter B	
B322GEN01	SRIC ENGINES	N/A	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
B322GEN01	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B329ENG01A	SRIC ENGINES	N/A	R7ICI-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B329ENG01A	SRIC ENGINES	N/A	60JJJJ	40 CFR Part 60, Subpart JJJJ	No changing attributes.
B329ENG01A	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B329TANK01	STORAGE TANKS/VESSELS	N/A	R5112	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
B32GEN06	SRIC ENGINES	N/A	R7201-3	30 TAC Chapter 117, Subchapter B	No changing attributes.
B32GEN09	SRIC ENGINES	N/A	R7201-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B32GEN09	SRIC ENGINES	N/A	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
B32GEN09	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B3GEN01A	SRIC ENGINES	N/A	R7201-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B3GEN01A	SRIC ENGINES	N/A	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
B3GEN01A	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B420BLR02	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	R7ICI-B420	30 TAC Chapter 117, Subchapter B	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
B420WOOD01	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1111A	30 TAC Chapter 111, Visible Emissions	No changing attributes.
B421BLR01	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	R7ICI-B421	30 TAC Chapter 117, Subchapter B	No changing attributes.
B46GEN01	SRIC ENGINES	N/A	R7201-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B46GEN01	SRIC ENGINES	N/A	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
B46GEN01	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B48GEN01	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1111A	30 TAC Chapter 111, Visible Emissions	No changing attributes.
B48GEN02	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1111A	30 TAC Chapter 111, Visible Emissions	No changing attributes.
B48GEN03	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1111A	30 TAC Chapter 111, Visible Emissions	No changing attributes.
B7GEN02	SRIC ENGINES	N/A	R7ICI-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B7GEN02	SRIC ENGINES	N/A	60JJJJ	40 CFR Part 60, Subpart JJJJ	No changing attributes.
B7GEN02	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B9AC01	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R5122	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
B9AC02	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R5122	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.
B9GEN01A	SRIC ENGINES	N/A	R7201-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
B9GEN01A	SRIC ENGINES	N/A	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
B9GEN01A	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
B9PAINT01	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1111A	30 TAC Chapter 111, Visible Emissions	No changing attributes.
B9WOOD01	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1111A	30 TAC Chapter 111, Visible Emissions	No changing attributes.
B9WOOD02	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1111A	30 TAC Chapter 111, Visible Emissions	No changing attributes.
B9WOOD03	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1111A	30 TAC Chapter 111, Visible Emissions	No changing attributes.
BSTART-1	SRIC ENGINES	N/A	R7201-1	30 TAC Chapter 117, Subchapter B	No changing attributes.
BSTART-1	SRIC ENGINES	N/A	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
BSTART-1	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
GRPGEN	SRIC ENGINES	B48GEN02, B48GEN03	R7ICI-1	30 TAC Chapter 117, Subchapter B	No changing attributes.
GRPGEN-B	SRIC ENGINES	B347GEN01	R7ICI-1	30 TAC Chapter 117,	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
				Subchapter B	
GRPGEN-C	SRIC ENGINES	B221ENG01, B223ENG02	R7ICI-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
GRPGEN-C	SRIC ENGINES	B221ENG01, B223ENG02	60JJJJ	40 CFR Part 60, Subpart JJJJ	No changing attributes.
GRPGEN-C	SRIC ENGINES	B221ENG01, B223ENG02	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
GRPGEN2	SRIC ENGINES	B30AGEN02, B32GEN07	R7201-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
GRPGEN2	SRIC ENGINES	B30AGEN02, B32GEN07	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
GRPGEN2	SRIC ENGINES	B30AGEN02, B32GEN07	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
GRPGEN3	SRIC ENGINES	B48GEN01, B48GEN07, B48GEN09	R7201-3	30 TAC Chapter 117, Subchapter B	No changing attributes.
GRPGEN4	SRIC ENGINES	B15GEN01	R7201-3	30 TAC Chapter 117, Subchapter B	No changing attributes.
GRPGEN4	SRIC ENGINES	B15GEN01	63ZZZZ-1	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
GRPGEN6	SRIC ENGINES	LS14GEN01, LS15GEN01, LS1GEN01, LS2GEN01, LS3GEN01	R7201-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
GRPGEN6	SRIC ENGINES	LS14GEN01, LS15GEN01, LS1GEN01, LS2GEN01,	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
		LS3GEN01			
GRPGEN6	SRIC ENGINES	LS14GEN01, LS15GEN01, LS1GEN01, LS2GEN01, LS3GEN01	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
GRPGEN7	SRIC ENGINES	B48GEN07A, B48GEN09A	R7201-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
GRPGEN7	SRIC ENGINES	B48GEN07A, B48GEN09A	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
GRPGEN7	SRIC ENGINES	B48GEN07A, B48GEN09A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
GRPTANK	STORAGE TANKS/VESSELS	B326TANK01, B48TANK01, B48TANK02	R5112	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
GRPTANK2	LOADING/UNLOADING OPERATIONS	B10TANK01, B15TANK01, B17TANK01, B25TANK01, B30ATANK01, B32TANK01, B32TANK02, B32TANK03, B343TANK01, B347TANK01, B37TANK01, B37TANK02, B3TANK01, B46TANK01, B48TANK03, B48TANK04, B48TANK05,	R5211	30 TAC Chapter 115, Loading and Unloading of VOC	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
		B9TANK01			
GRPTBN	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	T-1, T-2	R1111	30 TAC Chapter 111, Visible Emissions	No changing attributes.
GRPTBN	STATIONARY TURBINES	T-1, T-2	R-7201	30 TAC Chapter 117, Subchapter B	No changing attributes.
GRPTBN	STATIONARY TURBINES	T-1, T-2	60KKKK	40 CFR Part 60, Subpart KKKK	No changing attributes.
LS7GEN01	SRIC ENGINES	N/A	R7201-2	30 TAC Chapter 117, Subchapter B	No changing attributes.
LS7GEN01	SRIC ENGINES	N/A	60IIII	40 CFR Part 60, Subpart IIII	No changing attributes.
LS7GEN01	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
B10GEN02A	EU	R7201-2	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a)(2)(C) § 117.340(h) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a) § 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)	§ 117.345(a) § 117.345(f) [G]§ 117.345(f)(10) § 117.345(f)(3) § 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
B10GEN02A	EU	R7201-2	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(9)(E)(vi)(III) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) [G]§ 117.310(f) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(2)(C) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO_x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a)(2)(C) § 117.340(h) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.340(p)(2)(A) § 117.340(p)(2)(B) § 117.340(p)(2)(C) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1)	§ 117.345(a) § 117.345(f) [G]§ 117.345(f)(10) § 117.345(f)(3) § 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(3)(B) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) § 117.340(p)(2)(D) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						alternative methods specified in § 117.9800 to comply with § 117.320.	§ 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a) § 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)		
B10GEN02A	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4204(b) § 1039.101 § 60.4201(a) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) § 60.4218	Owners and operators of non-emergency stationary CI ICE with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 3.5 g/KW-hr as stated in 40 CFR 60.4201(a) and 40 CFR 89.112(a) and 40 CFR 1039.102 and 40 CFR 1039.101.	None	None	None
B10GEN02A	EU	60IIII	NO_X	40 CFR Part 60, Subpart IIII	§ 60.4204(b) § 1039.101 § 60.4201(a) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) § 60.4218	Owners and operators of non-emergency stationary CI ICE with a maximum engine power greater than or equal to 56 KW but less than 560 KW and a displacement of less than 10 liters per cylinder and is a 2014 model year and later must comply with a NOx emission limit of 0.40 g/KW-	None	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						hr as stated in 40 CFR 60.4201(a) and 40 CFR 1039.102 and 40 CFR 1039.101.			
B10GEN02A	EU	60IIII	Nonmethane Hydrocarbons	40 CFR Part 60, Subpart IIII	§ 60.4204(b) § 1039.101 § 60.4201(a) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) § 60.4218	Owners and operators of non-emergency stationary CI ICE with a maximum engine power greater than or equal to 56 KW but less than 560 KW and a displacement of less than 10 liters per cylinder and is a 2014 model year and later must comply with an NMHC emission limit of 0.19 g/KW-hr as stated in 40 CFR 60.4201(a) and 40 CFR 1039.102 and 40 CFR 1039.101.	None	None	None
B10GEN02A	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4204(b) § 1039.101 § 60.4201(a) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) § 60.4218	Owners and operators of non-emergency stationary CI ICE with a maximum engine power greater than or equal to 130 KW and less than 560 KW and a displacement of less than 10 liters per cylinder and is a 2011 model year and later must comply with a PM emission limit of 0.02 g/KW-hr as stated in 40 CFR 60.4201(a) and 40 CFR 1039.102 and 40 CFR 1039.101.	None	None	None
B10GEN02A	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the	None	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.			
B16GEN01	EU	R7201-2	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after October 1, 2001, that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)	None	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None
B16GEN01	EU	63IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 1039-Appendix I § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 37 KW and less	None	None	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.4211(c) [G]§ 60.4211(f)	than 130 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 5.0 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 1039-Appendix I.			
B16GEN01	EU	63IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 1039-Appendix I § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 75 KW and less than or equal to 560 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with an NMHC+NOx emission limit of 4.0 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 1039-Appendix I.	None	None	[G]§ 60.4214(d)
B16GEN01	EU	63IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 1039-Appendix I § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 75 KW and less than 130 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a PM emission limit of 0.30 g/KW-hr, as stated in 40 CFR	None	None	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						60.4202(a)(2) and 40 CFR 1039-Appendix I.			
B16GEN01	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
B17GEN02	EU	R7201-2	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after October 1, 2001, that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)	None	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
B17GEN02	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 3.5 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
B17GEN02	EU	60IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 75 KW and less than or equal to 560 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with an NMHC+NOx emission limit of 4.0 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
B17GEN02	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.4218 § 89.112(a)	and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a PM emission limit of 0.20 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).			
B17GEN02	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
B21GEN01	EU	R7201-1	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after October 1, 2001, that operates less than 100 hours per year, based on a	None	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)			
B21GEN01	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 3.5 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
B21GEN01	EU	60IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than 560 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with an NMHC+NOx emission limit of 6.4 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
B21GEN01	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2)	Owners and operators of emergency stationary CI	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a PM emission limit of 0.20 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).			
B21GEN01	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
B220GEN01	EU	R7201-2	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or	None	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						relocated stationary diesel engine placed into service on or after October 1, 2001, that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)			
B220GEN01	EU	63IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 1039-Appendix I § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 37 KW and less than 130 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 5.0 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 1039-Appendix I.	None	None	None
B220GEN01	EU	63IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 1039-Appendix I § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 37 KW and less than 75 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year must comply with an NMHC+NOx emission limit of 7.5 g/KW-	None	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 1039-Appendix I.			
B220GEN01	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
B24-3A	EP	R1111	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(B) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 20% averaged over a six minute period for any source on which construction was begun after January 31, 1972.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
B24-3A	EU	REG2	SO_2	30 TAC Chapter 112, Sulfur Compounds	§ 112.9(c)	No person shall use liquid fuel with a sulfur content greater than 0.3% by weight, or allow emissions of SO2 to exceed 150 ppmv, based on 20% excess air, averaged over a 3-hour period.	§ 112.2(a) ** See Periodic Monitoring Summary	§ 112.2(c)	§ 112.2(b)
B24-3A	EU	R7ICI-	CO	30 TAC Chapter	§ 117.310(c)(1)	CO emissions must not	[G]§ 117.335(a)(1)	§ 117.345(a)	§ 117.335(b)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
		B243A-NG		117, Subchapter B	§ 117.310(c)(1)(B) § 117.310(c)(3)	exceed 400 ppmv at 3.0% O 2, dry basis.	§ 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) ** See Periodic Monitoring Summary	§ 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
B24-3A	EU	R7ICI-B243A-NG	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(1)(B) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(2)(C) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO_x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.340(p)(2)(A) § 117.340(p)(2)(B) § 117.340(p)(2)(C) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) § 117.340(p)(2)(D) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
B24-3A	EU	R7ICI-B243A-	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B)	CO emissions must not exceed 400 ppmv at 3.0%	[G]§ 117.335(a)(1) § 117.335(a)(4)	§ 117.345(a) § 117.345(f)	§ 117.335(b) § 117.335(g)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
		OIL			§ 117.310(c)(3)	O 2, dry basis.	§ 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) ** See Periodic Monitoring Summary	§ 117.345(f)(1) § 117.345(f)(9)	[G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
B24-3A	EU	R7ICI-B243A-OIL	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(7) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(2)(C) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO_x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.340(p)(2)(A) § 117.340(p)(2)(B) § 117.340(p)(2)(C) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) § 117.340(p)(2)(D) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
B24-3A	EU	60DC-NG	PM	40 CFR Part 60, Subpart Dc	§ 60.40c(a)	This subpart applies to each steam generating unit constructed, reconstructed,	None	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3)	[G]§ 60.48c(a)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						or modified after 6/9/89 and that has a maximum design heat input capacity of 2.9-29 megawatts (MW).		§ 60.48c(i)	
B24-3A	EU	60DC-NG	PM (Opacity)	40 CFR Part 60, Subpart Dc	§ 60.40c(a)	This subpart applies to each steam generating unit constructed, reconstructed, or modified after 6/9/89 and that has a maximum design heat input capacity of 2.9-29 megawatts (MW).	None	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a)
B24-3A	EU	60DC-NG	SO_2	40 CFR Part 60, Subpart Dc	§ 60.40c(a)	This subpart applies to each steam generating unit constructed, reconstructed, or modified after 6/9/89 and that has a maximum design heat input capacity of 2.9-29 megawatts (MW).	None	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a)
B24-3A	EU	60DC-OIL	PM	40 CFR Part 60, Subpart Dc	§ 60.43c(e)(4) § 60.40c(c) § 60.43c(d)	A facility constructed, reconstructed, or modified after February 28, 2005 and that combusts only oil that contains no more than 0.50% by weight sulfur or a mixture of 0.50% by weight sulfur oil with other fuels not subject to a PM standard under §60.43c and not using a post-combustion technology (except a wet scrubber) to reduce PM or sulfur dioxide emissions is not subject to the PM limit in this section.	§ 60.45c(a) § 60.45c(d)	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a) § 60.48c(b) § 60.48c(j)
B24-3A	EU	60DC-OIL	PM (Opacity)	40 CFR Part 60, Subpart Dc	§ 60.43c(c) § 60.40c(c) § 60.43c(d)	Facilities firing the specified fuels and that have heat input capacity of 8.7 MW	§ 60.45c(a) § 60.45c(a)(8) § 60.47c(a)	§ 60.47c(a) [G]§ 60.48c(f) § 60.48c(g)(1)	[G]§ 60.48c(a) § 60.48c(b) [G]§ 60.48c(c)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.47c(a) § 60.47c(c)	(30 MMBtu/hr) or greater, shall not exhibit opacity greater than 20%, 6-minute average, except as specified.	[G]§ 60.47c(a)(1) [G]§ 60.47c(a)(2) § 60.47c(a)(3)	§ 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	§ 60.48c(j)
B24-3A	EU	60DC-OIL	SO_2	40 CFR Part 60, Subpart Dc	§ 60.42c(d) § 60.40c(c) § 60.42c(h) § 60.42c(i) § 60.42c(j)	On/after the §60.8 test, oil-fired facilities shall not discharge SO2 gases in excess of 215 ng/J (0.50 lb/MMBtu) heat input or, alternatively, combust oil with a greater than 0.5 weight % sulfur.	§ 60.44c(a) § 60.44c(d) § 60.44c(h) § 60.44c(j) § 60.46c(e)	[G]§ 60.48c(e) [G]§ 60.48c(f) § 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a) § 60.48c(b) § 60.48c(d) [G]§ 60.48c(e) § 60.48c(j)
B24-5A	EP	R1111	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(B) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 20% averaged over a six minute period for any source on which construction was begun after January 31, 1972.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
B24-5A	EU	REG2	SO_2	30 TAC Chapter 112, Sulfur Compounds	§ 112.9(c)	No person shall use liquid fuel with a sulfur content greater than 0.3% by weight, or allow emissions of SO2 to exceed 150 ppmv, based on 20% excess air, averaged over a 3-hour period.	§ 112.2(a) ** See Periodic Monitoring Summary	§ 112.2(c)	§ 112.2(b)
B24-5A	EU	R7ICI-B245A-NG	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B) § 117.310(c)(3)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.8000(b)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) ** See Periodic Monitoring Summary		§ 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
B24-5A	EU	R7ICI-B245A-NG	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(1)(B) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(2)(C) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO_x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.340(p)(2)(A) § 117.340(p)(2)(B) § 117.340(p)(2)(C) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) § 117.340(p)(2)(D) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
B24-5A	EU	R7ICI-B245A-OIL	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B) § 117.310(c)(3)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.8000(b) § 117.8000(c)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) ** See Periodic Monitoring Summary		[G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
B24-5A	EU	R7ICI-B245A-OIL	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(7) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(2)(C) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO_x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.340(p)(2)(A) § 117.340(p)(2)(B) § 117.340(p)(2)(C) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) § 117.340(p)(2)(D) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
B24-5A	EU	60DC-NG	PM	40 CFR Part 60, Subpart Dc	§ 60.40c(a)	This subpart applies to each steam generating unit constructed, reconstructed, or modified after 6/9/89 and that has a maximum design heat input capacity of 2.9-29 megawatts (MW).	None	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a)
B24-5A	EU	60DC-NG	PM (Opacity)	40 CFR Part 60, Subpart Dc	§ 60.40c(a)	This subpart applies to each steam generating unit constructed, reconstructed,	None	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3)	[G]§ 60.48c(a)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						or modified after 6/9/89 and that has a maximum design heat input capacity of 2.9-29 megawatts (MW).		§ 60.48c(i)	
B24-5A	EU	60DC-NG	SO_2	40 CFR Part 60, Subpart Dc	§ 60.40c(a)	This subpart applies to each steam generating unit constructed, reconstructed, or modified after 6/9/89 and that has a maximum design heat input capacity of 2.9-29 megawatts (MW).	None	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a)
B24-5A	EU	60DC-OIL	PM	40 CFR Part 60, Subpart Dc	§ 60.43c(e)(4) § 60.40c(c) § 60.43c(d)	A facility constructed, reconstructed, or modified after February 28, 2005 and that combusts only oil that contains no more than 0.50% by weight sulfur or a mixture of 0.50% by weight sulfur oil with other fuels not subject to a PM standard under §60.43c and not using a post-combustion technology (except a wet scrubber) to reduce PM or sulfur dioxide emissions is not subject to the PM limit in this section.	§ 60.45c(a) § 60.45c(d)	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a) § 60.48c(b) § 60.48c(j)
B24-5A	EU	60DC-OIL	PM (Opacity)	40 CFR Part 60, Subpart Dc	§ 60.43c(c) § 60.40c(c) § 60.43c(d) § 60.47c(a) § 60.47c(c)	Facilities firing the specified fuels and that have heat input capacity of 8.7 MW (30 MMBtu/hr) or greater, shall not exhibit opacity greater than 20%, 6-minute average, except as specified.	§ 60.45c(a) § 60.45c(a)(8) § 60.47c(a) [G]§ 60.47c(a)(1) [G]§ 60.47c(a)(2) § 60.47c(a)(3)	§ 60.47c(a) [G]§ 60.48c(f) § 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a) § 60.48c(b) [G]§ 60.48c(c) § 60.48c(j)
B24-5A	EU	60DC-OIL	SO_2	40 CFR Part 60, Subpart Dc	§ 60.42c(d) § 60.40c(c)	On/after the §60.8 test, oil-fired facilities shall not	§ 60.44c(a) § 60.44c(d)	[G]§ 60.48c(e) [G]§ 60.48c(f)	[G]§ 60.48c(a) § 60.48c(b)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.42c(h) § 60.42c(i) § 60.42c(j)	discharge SO2 gases in excess of 215 ng/J (0.50 lb/MMBtu) heat input or, alternatively, combust oil with a greater than 0.5 weight % sulfur.	§ 60.44c(h) § 60.44c(j) § 60.46c(e)	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	§ 60.48c(d) [G]§ 60.48c(e) § 60.48c(j)
B24LOAD01	EU	R5211	VOC	30 TAC Chapter 115, Loading and Unloading of VOC	§ 115.217(a)(1) § 115.214(a)(1)(B) § 115.214(a)(1)(D) § 115.214(a)(1)(D)(i)	Vapor pressure (at land-based operations). All land-based loading and unloading of VOC with a true vapor pressure less than 0.5 psia is exempt from the requirements of this division, except as specified.	§ 115.214(a)(1)(A) § 115.214(a)(1)(A)(i) § 115.215 § 115.215(4)	§ 115.216 § 115.216(2) § 115.216(3)(B)	None
B24TANK01A	EU	R5112	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(6)(A) § 115.118(a)(7)	None
B25GEN02A	EU	R7ICI-2	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(h) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(3) § 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) [G]§ 117.345(e) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)		
B25GEN02A	EU	63JJJJ	CO	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(1) [G]§ 60.4243(d) § 60.4243(g)	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a CO emission limit of 4.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(b)	§ 60.4243(a)(1) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(3) § 60.4245(b)	[G]§ 60.4245(e)
B25GEN02A	EU	63JJJJ	NO_X	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(1) [G]§ 60.4243(d) § 60.4243(g)	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a NOx emission limit of 2.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(b)	§ 60.4243(a)(1) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(3) § 60.4245(b)	[G]§ 60.4245(e)
B25GEN02A	EU	63JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(1) [G]§ 60.4243(d) § 60.4243(g)	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a VOC emission limit of 1.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(b)	§ 60.4243(a)(1) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(3) § 60.4245(b)	[G]§ 60.4245(e)
B25GEN02A	EU	63ZZZZ	112(B)	40 CFR Part 63,	§ 63.6590(c)	Stationary RICE subject to	None	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
			HAPS	Subpart ZZZZ		Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.			
B31GEN01	EU	R7ICI-2	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(h) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a) § 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(3) § 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) [G]§ 117.345(e) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
B31GEN01	EU	63JJJJ	CO	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(1) [G]§ 60.4243(d) § 60.4243(g)	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a CO emission limit of 4.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(b)	§ 60.4243(a)(1) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(3) § 60.4245(b)	[G]§ 60.4245(e)
B31GEN01	EU	63JJJJ	NO_X	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(1) [G]§ 60.4243(d) § 60.4243(g)	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a NOx emission limit of 2.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(b)	§ 60.4243(a)(1) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(3) § 60.4245(b)	[G]§ 60.4245(e)
B31GEN01	EU	63JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(1) [G]§ 60.4243(d) § 60.4243(g)	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a VOC emission limit of 1.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(b)	§ 60.4243(a)(1) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(3) § 60.4245(b)	[G]§ 60.4245(e)
B31GEN01	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the	None	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.			
B322ENG01A	EU	R7ICI-2	Exempt	30 TAC Chapter 117, Subchapter B	§ 117.303(a)(6)(D)	Units exempted from the provisions of this division, except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1), and 117.354(a)(5), include stationary gas turbines and stationary internal combustion engines that are used exclusively in emergency situations, except that operation for testing or maintenance purposes is allowed for up to 52 hours per year, based on a rolling 12-month average.	§ 117.8140(a) § 117.8140(a)(3)	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(6)	None
B322ENG01A	EU	60JJJJ	CO	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(2) § 60.4243(b)(2)(i) [G]§ 60.4243(d) § 60.4243(g) § 60.4246	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a CO emission limit of 4.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(b) § 60.4243(b)(2)(i) § 60.4243(f) § 60.4244(a) § 60.4244(b) § 60.4244(c) § 60.4244(e)	§ 60.4243(b)(2)(i) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(4) § 60.4245(b)	§ 60.4245(d) [G]§ 60.4245(e)
B322ENG01	EU	60JJJJ	NO_X	40 CFR Part 60,	§ 60.4233(e)-Table	Owners and operators of	§ 60.4243(b)(2)(i)	§ 60.4243(b)(2)(i)	§ 60.4245(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
A				Subpart JJJJ	1 § 60.4234 § 60.4243(b) § 60.4243(b)(2) § 60.4243(b)(2)(i) [G]§ 60.4243(d) § 60.4243(g) § 60.4246	stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a NOx emission limit of 2.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4243(f) § 60.4244(a) § 60.4244(b) § 60.4244(c) § 60.4244(d)	§ 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(4)	[G]§ 60.4245(e)
B322ENG01A	EU	60JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(2) § 60.4243(b)(2)(i) [G]§ 60.4243(d) § 60.4243(g) § 60.4246	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a VOC emission limit of 1.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(b) § 60.4243(b)(2)(i) § 60.4243(f) § 60.4244(a) § 60.4244(b) § 60.4244(c) § 60.4244(f) § 60.4244(g)	§ 60.4243(b)(2)(i) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(4) § 60.4245(b)	§ 60.4245(d) [G]§ 60.4245(e)
B322ENG01A	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
B322GEN01	EU	R7201-2	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division	None	§ 117.340(j) § 117.345(f)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after October 1, 2001, that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)		[G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	
B322GEN01	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 3.5 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
B322GEN01	EU	60IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 75 KW and less	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					[G]§ 60.4211(f) § 60.4218 § 89.112(a)	than or equal to 560 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with an NMHC+NOx emission limit of 4.0 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).			
B322GEN01	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a PM emission limit of 0.20 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
B322GEN01	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark	None	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						ignition engines as applicable. No further requirements apply for such engines under this part.			
B329ENG01A	EU	R7ICI-2	Exempt	30 TAC Chapter 117, Subchapter B	§ 117.303(a)(6)(D)	Units exempted from the provisions of this division, except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1), and 117.354(a)(5), include stationary gas turbines and stationary internal combustion engines that are used exclusively in emergency situations, except that operation for testing or maintenance purposes is allowed for up to 52 hours per year, based on a rolling 12-month average.	§ 117.8140(a) § 117.8140(a)(3)	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(6)	None
B329ENG01A	EU	60JJJJ	CO	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(2) § 60.4243(b)(2)(i) [G]§ 60.4243(d) § 60.4243(g) § 60.4246	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a CO emission limit of 4.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(b) § 60.4243(b)(2)(i) § 60.4243(f) § 60.4244(a) § 60.4244(b) § 60.4244(c) § 60.4244(e)	§ 60.4243(b)(2)(i) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(4) § 60.4245(b)	§ 60.4245(d) [G]§ 60.4245(e)
B329ENG01A	EU	60JJJJ	NO_X	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(2) § 60.4243(b)(2)(i)	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after	§ 60.4243(b)(2)(i) § 60.4243(f) § 60.4244(a) § 60.4244(b) § 60.4244(c) § 60.4244(d)	§ 60.4243(b)(2)(i) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(4)	§ 60.4245(d) [G]§ 60.4245(e)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					[G]§ 60.4243(d) § 60.4243(g) § 60.4246	01/01/2009 must comply with a NOx emission limit of 2.0 g/HP-hr, as listed in Table 1 to this subpart.			
B329ENG01A	EU	60JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(2) § 60.4243(b)(2)(i) [G]§ 60.4243(d) § 60.4243(g) § 60.4246	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a VOC emission limit of 1.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(b) § 60.4243(b)(2)(i) § 60.4243(f) § 60.4244(a) § 60.4244(b) § 60.4244(c) § 60.4244(f) § 60.4244(g)	§ 60.4243(b)(2)(i) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(4) § 60.4245(b)	§ 60.4245(d) [G]§ 60.4245(e)
B329ENG01A	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
B329TANK01	EU	R5112	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(7)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
B32GEN06	EU	R7201-3	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(h) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a) § 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) [G]§ 117.345(f)(10) § 117.345(f)(3) § 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
B32GEN06	EU	R7201-3	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(9)(D) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) [G]§ 117.310(f) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(2)(C) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO_x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(h) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.340(p)(2)(A) § 117.340(p)(2)(B) § 117.340(p)(2)(C) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) [G]§ 117.345(f)(10) § 117.345(f)(3) § 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(3)(B) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) § 117.340(p)(2)(D) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						alternative methods specified in § 117.9800 to comply with § 117.320.	§ 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a) § 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)		
B32GEN09	EU	R7201-2	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after October 1, 2001, that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)	None	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None
B32GEN09	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 89.112(a)	than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 3.5 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).			
B32GEN09	EU	60IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than 560 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with an NMHC+NOx emission limit of 6.4 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
B32GEN09	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a PM emission limit of 0.20 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
B32GEN09	EU	63ZZZZ	112(B)	40 CFR Part 63,	§ 63.6590(c)	Stationary RICE subject to	None	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
			HAPS	Subpart ZZZZ		Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.			
B3GEN01A	EU	R7201-2	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after October 1, 2001, that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)	None	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None
B3GEN01A	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206	Owners and operators of emergency stationary CI ICE, that are not fire pump	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	engines, with a maximum engine power greater than or equal to 37 KW and less than 130 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 5.0 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).			
B3GEN01A	EU	60IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 75 KW and less than or equal to 560 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with an NMHC+NOx emission limit of 4.0 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
B3GEN01A	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 75 KW and less than 130 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						must comply with a PM emission limit of 0.30 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).			
B3GEN01A	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
B420BLR02	EU	R7ICI-B420	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B) § 117.310(c)(3)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) ** See Periodic Monitoring	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							Summary		
B420BLR02	EU	R7ICI-B420	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(1)(C) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(2)(C) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO_x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.340(p)(2)(A) § 117.340(p)(2)(B) § 117.340(p)(2)(C) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) § 117.340(p)(2)(D) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
B420WOOD 01	EP	R1111A	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six minute period.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
B421BLR01	EU	R7ICI-B421	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B) § 117.310(c)(3)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 117.8000(c)(6) [G]§ 117.8000(d) ** See Periodic Monitoring Summary		§ 117.8010(6) [G]§ 117.8010(7)
B421BLR01	EU	R7ICI-B421	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(1)(C) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(2)(C) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO_x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.340(p)(2)(A) § 117.340(p)(2)(B) § 117.340(p)(2)(C) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) § 117.340(p)(2)(D) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
B46GEN01	EU	R7201-2	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a)(2)(C) § 117.340(h) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5)	§ 117.345(a) § 117.345(f) [G]§ 117.345(f)(10) § 117.345(f)(3) § 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a) § 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)		[G]§ 117.8010(7)
B46GEN01	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4204(b) § 60.4201(a) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) § 60.4218 § 89.112(a)	Owners and operators of non-emergency stationary CI ICE with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 3.5 g/KW-hr as stated in 40 CFR 60.4201(a) and 40 CFR 89.112(a) and 40 CFR 1039.102 and 40 CFR 1039.101.	None	None	None
B46GEN01	EU	60IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4204(b) § 60.4201(a) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) § 60.4218 § 89.112(a)	Owners and operators of non-emergency stationary CI ICE with a maximum engine power greater than 560 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 - 2010 model year must comply with an NMHC+NOx emission limit of 6.4 g/KW-hr as stated in 40 CFR 60.4201(a) and 40	None	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						CFR 89.112(a).			
B46GEN01	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4204(b) § 60.4201(a) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) § 60.4218 § 89.112(a)	Owners and operators of non-emergency stationary CI ICE with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 - 2010 model year must comply with a PM emission limit of 0.20 g/KW-hr as stated in 40 CFR 60.4201(a) and 40 CFR 89.112(a).	None	None	None
B46GEN01	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
B48GEN01	EP	R1111A	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six minute period.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
B48GEN02	EP	R1111A	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six minute period.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
B48GEN03	EP	R1111A	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six minute period.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
B7GEN02	EU	R7ICI-2	Exempt	30 TAC Chapter 117, Subchapter B	§ 117.303(a)(6)(D)	Units exempted from the provisions of this division, except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1), and 117.354(a)(5), include stationary gas turbines and stationary internal combustion engines that are used exclusively in emergency situations, except that operation for testing or maintenance purposes is allowed for up to 52 hours per year, based on a rolling 12-month average.	§ 117.8140(a) § 117.8140(a)(3)	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(6)	None
B7GEN02	EU	60JJJJ	CO	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table1 § 60.4234 § 60.4243(b) § 60.4243(b)(2) § 60.4243(b)(2)(i) [G]§ 60.4243(d) § 60.4243(g) § 60.4246	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a CO emission limit of 4.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(b) § 60.4243(b)(2)(i) § 60.4243(f) § 60.4244(a) § 60.4244(b) § 60.4244(c) § 60.4244(e)	§ 60.4243(b)(2)(i) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(4) § 60.4245(b)	§ 60.4245(d) [G]§ 60.4245(e)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
B7GEN02	EU	60JJJJ	NO_X	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table1 § 60.4234 § 60.4243(b) § 60.4243(b)(2) § 60.4243(b)(2)(i) [G]§ 60.4243(d) § 60.4243(g) § 60.4246	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a NOx emission limit of 2.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4243(b)(2)(i) § 60.4243(f) § 60.4244(a) § 60.4244(b) § 60.4244(c) § 60.4244(d)	§ 60.4243(b)(2)(i) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(4)	§ 60.4245(d) [G]§ 60.4245(e)
B7GEN02	EU	60JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	§ 60.4233(e)-Table1 § 60.4234 § 60.4243(b) § 60.4243(b)(2) § 60.4243(b)(2)(i) [G]§ 60.4243(d) § 60.4243(g) § 60.4246	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than or equal to 130 HP and were manufactured on or after 01/01/2009 must comply with a VOC emission limit of 1.0 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(b) § 60.4243(b)(2)(i) § 60.4243(f) § 60.4244(a) § 60.4244(b) § 60.4244(c) § 60.4244(f) § 60.4244(g)	§ 60.4243(b)(2)(i) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(4) § 60.4245(b)	§ 60.4245(d) [G]§ 60.4245(e)
B7GEN02	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
B9AC01	EP	R5122	VOC	30 TAC Chapter	§ 115.127(a)(2)(A)	A vent gas stream having a	None	§ 115.126	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
				115, Vent Gas Controls	[G]§ 115.122(a)(4) § 115.127(a)(2)	combined weight of volatile organic compounds (VOC) < 100 lbs (45.4 kg) in any continuous 24-hour period is exempt from the requirements of § 115.121(a)(1).		§ 115.126(4)	
B9AC02	EP	R5122	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.127(a)(2)(A) [G]§ 115.122(a)(4) § 115.127(a)(2)	A vent gas stream having a combined weight of volatile organic compounds (VOC) < 100 lbs (45.4 kg) in any continuous 24-hour period is exempt from the requirements of § 115.121(a)(1).	None	§ 115.126 § 115.126(4)	None
B9GEN01A	EU	R7201-2	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after October 1, 2001, that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)	None	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None
B9GEN01A	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum	None	None	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					[G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 3.5 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).			
B9GEN01A	EU	60IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 75 KW and less than or equal to 560 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with an NMHC+NOx emission limit of 4.0 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	None	None	[G]§ 60.4214(d)
B9GEN01A	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with	None	None	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						a PM emission limit of 0.20 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).			
B9GEN01A	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
B9PAINT01	EP	R1111A	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six minute period.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
B9WOOD01	EP	R1111A	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six minute period.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
B9WOOD02	EP	R1111A	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six minute period.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
B9WOOD03	EP	R1111A	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six minute period.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
BSTART-1	EU	R7201-1	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after October 1, 2001, that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)	None	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None
BSTART-1	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 3.5 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						CFR 89.112(a).			
BSTART-1	EU	60IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than 560 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with an NMHC+NOx emission limit of 6.4 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
BSTART-1	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a PM emission limit of 0.20 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
BSTART-1	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements	None	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.			
GRPGEN	EU	R7ICI-1	Exempt	30 TAC Chapter 117, Subchapter B	§ 117.303(a)(6)(D) [G]§ 117.310(f)	Units exempted from the provisions of this division, except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1), and 117.354(a)(5), include stationary gas turbines and stationary internal combustion engines that are used exclusively in emergency situations, except that operation for testing or maintenance purposes is allowed for up to 52 hours per year, based on a rolling 12-month average.	§ 117.8140(a) § 117.8140(a)(3)	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None
GRPGEN-B	EU	R7ICI-1	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service	None	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						on or after October 1, 2001, that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)			
GRPGEN-C	EU	R7ICI-2	Exempt	30 TAC Chapter 117, Subchapter B	§ 117.303(a)(6)(D)	Units exempted from the provisions of this division, except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1), and 117.354(a)(5), include stationary gas turbines and stationary internal combustion engines that are used exclusively in emergency situations, except that operation for testing or maintenance purposes is allowed for up to 52 hours per year, based on a rolling 12-month average.	§ 117.8140(a) § 117.8140(a)(3)	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(6)	None
GRPGEN-C	EU	60JJJJ	CO	40 CFR Part 60, Subpart JJJJ	§ 60.4233(d)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(2) § 60.4243(b)(2)(i) [G]§ 60.4243(d) § 60.4243(g) § 60.4246	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than 25 HP and less than 100 HP and were manufactured on or after 01/01/2009 must comply with a CO emission limit of 387 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(c) § 60.4243(b)(2)(i) § 60.4243(f) § 60.4244(a) § 60.4244(b) § 60.4244(c) § 60.4244(e)	§ 60.4243(b)(2)(i) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(4) § 60.4245(b)	§ 60.4245(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
GRPGEN-C	EU	60JJJJ	HC and NO_X	40 CFR Part 60, Subpart JJJJ	§ 60.4233(d)-Table 1 § 60.4234 § 60.4243(b) § 60.4243(b)(2) § 60.4243(b)(2)(i) [G]§ 60.4243(d) § 60.4243(g) § 60.4246	Owners and operators of stationary emergency SI ICE with a maximum engine power greater than 25 HP and less than 100 HP and were manufactured on or after 01/01/2009 must comply with an HC+NOx emission limit of 10 g/HP-hr, as listed in Table 1 to this subpart.	§ 60.4237(c) § 60.4243(b)(2)(i) § 60.4243(f) § 60.4244(a) § 60.4244(b) § 60.4244(c) § 60.4244(d)	§ 60.4243(b)(2)(i) § 60.4245(a) § 60.4245(a)(1) § 60.4245(a)(2) § 60.4245(a)(4) § 60.4245(b)	§ 60.4245(d)
GRPGEN-C	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
GRPGEN2	EU	R7201-2	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service	None	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						on or after October 1, 2001, that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)			
GRPGEN2	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 37 KW and less than 130 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 5.0 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	None
GRPGEN2	EU	60IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 37 KW and less than 75 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year must comply with an NMHC+NOx emission limit of 7.5 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR	§ 60.4209(a)	§ 60.4214(b)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						89.112(a).			
GRPGEN2	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 37 KW and less than 75 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a PM emission limit of 0.40 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	None
GRPGEN2	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
GRPGEN3	EU	R7201-3	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) [G]§ 117.345(f)(10) § 117.345(f)(3)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 117.335(g) § 117.340(a) § 117.340(h) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a) § 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)	§ 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(9)	[G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
GRPGEN3	EU	R7201-3	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(9)(D) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) [G]§ 117.310(f) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(2)(C) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO_x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(h) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.340(p)(2)(A) § 117.340(p)(2)(B) § 117.340(p)(2)(C) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) [G]§ 117.345(f)(10) § 117.345(f)(3) § 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(3)(B) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) § 117.340(p)(2)(D) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)		
GRPGEN4	EU	R7201-3	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(h) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a) § 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) [G]§ 117.345(f)(10) § 117.345(f)(3) § 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
GRPGEN4	EU	R7201-3	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(9)(D) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) [G]§ 117.310(f) § 117.340(l)(2)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO_x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3,	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(h) § 117.340(l)(2) § 117.340(o)(1)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) [G]§ 117.345(f)(10) § 117.345(f)(3) § 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(3)(B) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) § 117.340(p)(2)(D) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 117.340(p)(1) § 117.340(p)(2)(C) § 117.340(p)(3)	except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	§ 117.340(p)(1) § 117.340(p)(2)(A) § 117.340(p)(2)(B) § 117.340(p)(2)(C) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a) § 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)		§ 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
GRPGEN4	EU	63ZZZZ-1	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6603(a)-Table2d.1 § 63.6595(a)(1) § 63.6605(a) § 63.6605(b) § 63.6625(e) § 63.6625(h) § 63.6625(i)	For each existing non-emergency, non-black start CI stationary RICE with a site rating less than or equal to 300 HP, located at an area source, you must comply with the requirements as specified in Table 2d.1.a-c.	§ 63.6625(i) § 63.6640(a) § 63.6640(a)-Table6.9.a.i § 63.6640(a)-Table6.9.a.ii	§ 63.6625(i) § 63.6655(e) § 63.6660(a) § 63.6660(b) § 63.6660(c)	§ 63.6640(e) § 63.6650(f)
GRPGEN6	EU	R7201-2	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after October 1, 2001,	None	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)			
GRPGEN6	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 37 KW and less than 130 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 5.0 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	None
GRPGEN6	EU	60IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 37 KW and less than 75 KW and a displacement of less than 10 liters per cylinder and is a 2008 model year and later, must comply with an NMHC+NOx emission limit of 4.7 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
GRPGEN6	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 37 KW and less than 75 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a PM emission limit of 0.40 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	None
GRPGEN6	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
GRPGEN7	EU	R7201-2	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and	None	§ 117.340(j) § 117.345(f) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after October 1, 2001, that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)			
GRPGEN7	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(b)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than 2237 KW and a displacement of less than 10 liters per cylinder and is a 2011 model year and later must comply with a CO emission limit of 3.5 g/KW-hr, as stated in 40 CFR 60.4202(b)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
GRPGEN7	EU	60IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(b)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than 2237 KW and a displacement of less than 10 liters per cylinder and is a 2011 model year and later must comply with an NMHC+NOx emission limit	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						of 6.4 g/KW-hr, as stated in 40 CFR 60.4202(b)(2) and 40 CFR 89.112(a).			
GRPGEN7	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(b)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than 2237 KW and a displacement of less than 10 liters per cylinder and is a 2011 model year and later must comply with a PM emission limit of 0.20 g/KW-hr, as stated in 40 CFR 60.4202(b)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
GRPGEN7	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
GRPTANK	EU	R5112	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(7)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						1.5 psia is exempt from the requirements of this division.			
GRPTANK2	EU	R5211	VOC	30 TAC Chapter 115, Loading and Unloading of VOC	§ 115.217(a)(1) § 115.212(a)(2) § 115.214(a)(1)(B) § 115.214(a)(1)(D) § 115.214(a)(1)(D)(i)	Vapor pressure (at land-based operations). All land-based loading and unloading of VOC with a true vapor pressure less than 0.5 psia is exempt from the requirements of this division, except as specified.	§ 115.214(a)(1)(A) § 115.214(a)(1)(A)(i) § 115.215 § 115.215(4)	§ 115.216 § 115.216(2) § 115.216(3)(B)	None
GRPTBN	EP	R1111	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(B) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 20% averaged over a six minute period for any source on which construction was begun after January 31, 1972.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
GRPTBN	EU	R-7201	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(A)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(c) § 117.335(d) § 117.335(f) § 117.335(f)(3) § 117.335(g) § 117.340(a) § 117.340(e) [G]§ 117.340(g) § 117.8100(b) § 117.8100(b)(1) [G]§ 117.8100(b)(1)(A) § 117.8100(b)(1)(B) § 117.8100(b)(2) § 117.8100(b)(3)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) [G]§ 117.345(f)(2) § 117.345(f)(7) § 117.345(f)(8) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.345(d) § 117.345(d)(2) § 117.345(d)(3) § 117.345(d)(4) § 117.345(d)(5) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 117.8100(b)(3)(A) § 117.8100(b)(3)(B) § 117.8100(b)(4) § 117.8100(b)(4)(A) § 117.8100(b)(4)(A)(i)(II) § 117.8100(b)(4)(A)(i)(III) [G]§ 117.8100(b)(4)(B) § 117.8100(b)(4)(C) § 117.8100(b)(4)(C)(i) § 117.8100(b)(4)(C)(ii) § 117.8100(b)(4)(C)(iii) § 117.8100(b)(4)(C)(iii)(I) § 117.8100(b)(4)(C)(iii)(II) § 117.8100(b)(4)(C)(iii)(II)(-a-) § 117.8100(b)(4)(C)(iii)(II)(-b-) § 117.8100(b)(5) § 117.8100(b)(6) § 117.8120 § 117.8120(1) § 117.8120(1)(B)		[G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)
GRPTBN	EU	R-7201	NH_3	30 TAC Chapter	§ 117.310(c)(2)	For stationary gas turbines	§ 117.335(a)(2)	§ 117.345(a)	§ 117.335(b)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
				117, Subchapter B	§ 117.310(c)(2)(B)	that inject urea or ammonia into the exhaust stream for NO_x control, ammonia emissions must not exceed 10 ppmv at 15% O_2, dry.	§ 117.335(a)(4) § 117.335(b) § 117.335(c) § 117.335(d) § 117.335(g) § 117.340(d) [G]§ 117.340(g) § 117.8100(b) § 117.8100(b)(1) [G]§ 117.8100(b)(1)(A) § 117.8100(b)(1)(B) § 117.8100(b)(2) § 117.8100(b)(3) § 117.8100(b)(3)(A) § 117.8100(b)(3)(B) § 117.8100(b)(4) § 117.8100(b)(4)(A) § 117.8100(b)(4)(A)(i)(II) [G]§ 117.8100(b)(4)(B) § 117.8100(b)(4)(C) § 117.8100(b)(4)(C)(i) § 117.8100(b)(4)(C)(ii) § 117.8100(b)(4)(C)(iii) § 117.8100(b)(4)(C)(iii)(I) § 117.8100(b)(4)(C)(iii)(II) § 117.8100(b)(4)(C)(iii	§ 117.345(f) § 117.345(f)(11) [G]§ 117.345(f)(2) § 117.345(f)(8) § 117.345(f)(9)	§ 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.345(d) § 117.345(d)(2) § 117.345(d)(3) § 117.345(d)(4) § 117.345(d)(5) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							)(II)(-a-) § 117.8100(b)(6) § 117.8130 § 117.8130(4)		
GRPTBN	EU	R-7201	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(10)(B) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO_x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(c) § 117.335(d) § 117.335(g) § 117.340(a) § 117.340(c)(1) [G]§ 117.340(c)(3) [G]§ 117.340(g) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.8100(b) § 117.8100(b)(1) [G]§ 117.8100(b)(1)(A) § 117.8100(b)(1)(B) § 117.8100(b)(2) § 117.8100(b)(3) § 117.8100(b)(3)(A) § 117.8100(b)(3)(B) § 117.8100(b)(4) § 117.8100(b)(4)(A) § 117.8100(b)(4)(A)(i) § 117.8100(b)(4)(A)(i)(I) § 117.8100(b)(4)(A)(i)(II) [G]§ 117.8100(b)(4)(A)(ii)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) [G]§ 117.345(f)(2) § 117.345(f)(8) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.345(d) § 117.345(d)(3) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							[G]§ 117.8100(b)(4)(B) § 117.8100(b)(4)(C) § 117.8100(b)(4)(C)(i) § 117.8100(b)(4)(C)(ii) § 117.8100(b)(4)(C)(iii) § 117.8100(b)(4)(C)(iii)(I) § 117.8100(b)(4)(C)(iii)(II) § 117.8100(b)(4)(C)(iii)(II)(-a-) § 117.8100(b)(5) § 117.8100(b)(6)		
GRPTBN	EU	60KKKK	NO_X	40 CFR Part 60, Subpart KKKK	§ 60.4320(a)-Table 1 § 60.4320(a) § 60.4320(b) § 60.4325 § 60.4333(a)	New turbine firing natural gas with a heat input at peak load greater than 50 MMBtu/h and less than or equal to 850 MMBtu/h must meet the nitrogen oxides emission standard of 150 ng/J of useful output (1.2 lb/MWh).	§ 60.4340(b)(2)(i) § 60.4340(b)(2)(ii) § 60.4340(b)(2)(iii) [G]§ 60.4355(a) [G]§ 60.4400(a) § 60.4400(b) § 60.4400(b)(1) § 60.4400(b)(4) § 60.4400(b)(6) § 60.4410	[G]§ 60.4355(a) § 60.4410	§ 60.4375(a) § 60.4380 [G]§ 60.4380(c) § 60.4395
GRPTBN	EU	60KKKK	SO_2	40 CFR Part 60, Subpart KKKK	§ 60.4330(a)(2) § 60.4333(a)	You must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO2/J	§ 60.4365 § 60.4365(b) § 60.4415(a) § 60.4415(a)(2) § 60.4415(a)(2)(ii)	§ 60.4365(b)	§ 60.4375(a)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						(0.060 lb SO2/MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement.			
LS7GEN01	EU	R7201-2	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B)	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a)(2)(C) § 117.340(h) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a) § 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)	§ 117.345(a) § 117.345(f) [G]§ 117.345(f)(10) § 117.345(f)(3) § 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
LS7GEN01	EU	R7201-2	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(9)(E)(iv)(III) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) [G]§ 117.310(f)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO_x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a)(2)(C) § 117.340(h) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1)	§ 117.345(a) § 117.345(f) [G]§ 117.345(f)(10) § 117.345(f)(3) § 117.345(f)(3)(A) § 117.345(f)(3)(A)(ii) § 117.345(f)(3)(B) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) § 117.340(p)(2)(D) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(2)(C) § 117.340(p)(3)	generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	§ 117.340(p)(2)(A) § 117.340(p)(2)(B) § 117.340(p)(2)(C) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8140(a) § 117.8140(a)(1) § 117.8140(a)(2) § 117.8140(a)(2)(A) [G]§ 117.8140(a)(2)(B) § 117.8140(b)		§ 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
LS7GEN01	EU	60IIII	CO	40 CFR Part 60, Subpart IIII	§ 60.4204(b) § 1039.102 § 60.4201(a) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) § 60.4218	Owners and operators of non-emergency stationary CI ICE with a maximum engine power greater than or equal to 37 KW and less than 130 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 5.0 g/KW-hr as stated in 40 CFR 60.4201(a) and 40 CFR 89.112(a) and 40 CFR 1039.102 and 40 CFR 1039.101.	None	None	None
LS7GEN01	EU	60IIII	NMHC and NO_X	40 CFR Part 60, Subpart IIII	§ 60.4204(b) § 1039.102 § 60.4201(a) § 60.4206 § 60.4207(b)	Owners and operators of non-emergency stationary CI ICE with a maximum engine power greater than or equal to 37 KW but less	None	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					[G]§ 60.4211(a) § 60.4211(c) § 60.4218	than 56 KW and a displacement of less than 10 liters per cylinder and is a 2008 model year and later must comply with an NMHC+NOx emission limit of 4.7 g/KW-hr as stated in 40 CFR 60.4201(a) and 40 CFR 89.112(a) and 40 CFR 1039.102 and 40 CFR 1039.101.			
LS7GEN01	EU	60IIII	PM	40 CFR Part 60, Subpart IIII	§ 60.4204(b) § 1039.102 § 60.4201(a) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) § 60.4218	Owners and operators of non-emergency stationary CI ICE with a maximum engine power greater than or equal to 19 KW and less than 56 KW and a displacement of less than 10 liters per cylinder and is a 2013 model year and later must comply with a PM emission limit of 0.03 g/KW-hr as stated in 40 CFR 60.4201(a) and 40 CFR 1039.102 and 40 CFR 1039.101.	None	None	None
LS7GEN01	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60	None	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.			

Additional Monitoring Requirements

Periodic Monitoring Summary 92

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B24-3A	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 112, Sulfur Compounds	SOP Index No.: REG2
Pollutant: SO_2	Main Standard: § 112.9(c)
Monitoring Information	
Indicator: Sulfur content of fuel	
Minimum Frequency: Each fuel delivery	
Averaging Period: N/A	
Deviation Limit: Liquid fuel shall not contain more than 0.3% by weight sulfur.	
Periodic Monitoring Text: Each delivery of diesel fuel shall have a fuel supplier certification or laboratory analysis stating that the fuel sulfur content is less than 0.3% by weight.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B24-3A	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 117, Subchapter B	SOP Index No.: R7ICI-B243A-NG
Pollutant: CO	Main Standard: § 117.310(c)(1)
Monitoring Information	
Indicator: CO Concentration	
Minimum Frequency: Annual	
Averaging Period: N/A	
Deviation Limit: CO emissions that exceed 400 ppmv at 3% O2, dry basis shall be reported as a deviation.	
Periodic Monitoring Text: Measure and record the CO concentration in conjunction with annual combustion tuning procedures.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B24-3A	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 117, Subchapter B	SOP Index No.: R7ICI-B243A-OIL
Pollutant: CO	Main Standard: § 117.310(c)(1)
Monitoring Information	
Indicator: CO Concentration	
Minimum Frequency: Annual	
Averaging Period: N/A	
Deviation Limit: CO emissions that exceed 400 ppmv at 3% O2, dry basis shall be reported as a deviation.	
Periodic Monitoring Text: Measure and record the CO concentration in conjunction with annual combustion tuning procedures.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B24-3A	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(B)
Monitoring Information	
Indicator: Fuel Type	
Minimum Frequency: Annually or at any time an alternate fuel is used	
Averaging Period: N/A	
Deviation Limit: Opacity greater than 20% averaged over a six-minute period.	
Periodic Monitoring Text: Record the type of fuel used by the unit. If an alternate fuel is fired, either alone or in combination with the specified gas, for a period greater than or equal to 24 consecutive hours it shall be considered and reported as a deviation or the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are observed. Any time an alternate fuel is fired for a period of greater than 7 consecutive days then visible emissions observations will be conducted no less than once per week. Documentation of all observations shall be maintained. If visible emissions are present during the firing of an alternate fuel, the permit holder shall either list this occurrence as a deviation or the permit holder may determine the opacity consistent with Test Method 9. Any opacity readings that are above the opacity limit from the underlying applicable requirement shall be reported as a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B24-5A	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 112, Sulfur Compounds	SOP Index No.: REG2
Pollutant: SO_2	Main Standard: § 112.9(c)
Monitoring Information	
Indicator: Sulfur content of fuel	
Minimum Frequency: Each fuel delivery	
Averaging Period: N/A	
Deviation Limit: Sulfur content of fuel greater than 0.3% by weight.	
Periodic Monitoring Text: Each delivery of diesel fuel shall have a fuel supplier certification or laboratory analysis stating that the fuel sulfur content is less than 0.3% by weight.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B24-5A	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 117, Subchapter B	SOP Index No.: R7ICI-B245A-NG
Pollutant: CO	Main Standard: § 117.310(c)(1)
Monitoring Information	
Indicator: CO Concentration	
Minimum Frequency: Annual	
Averaging Period: N/A	
Deviation Limit: CO emissions that exceed 400 ppmv at 3% O2, dry basis shall be reported as a deviation.	
Periodic Monitoring Text: Measure and record the CO concentration in conjunction with annual combustion tuning procedures.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B24-5A	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 117, Subchapter B	SOP Index No.: R7ICI-B245A-OIL
Pollutant: CO	Main Standard: § 117.310(c)(1)
Monitoring Information	
Indicator: CO Concentration	
Minimum Frequency: Annual	
Averaging Period: N/A	
Deviation Limit: CO emissions that exceed 400 ppmv at 3% O2, dry basis shall be reported as a deviation.	
Periodic Monitoring Text: Measure and record the CO concentration in conjunction with combustion tuning procedures.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B24-5A	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(B)
Monitoring Information	
Indicator: Fuel Type	
Minimum Frequency: Annually or at any time an alternate fuel is used	
Averaging Period: N/A	
Deviation Limit: Opacity greater than 20% averaged over a six-minute period.	
Periodic Monitoring Text: Record the type of fuel used by the unit. If an alternate fuel is fired, either alone or in combination with the specified gas, for a period greater than or equal to 24 consecutive hours it shall be considered and reported as a deviation or the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are observed. Any time an alternate fuel is fired for a period of greater than 7 consecutive days then visible emissions observations will be conducted no less than once per week. Documentation of all observations shall be maintained. If visible emissions are present during the firing of an alternate fuel, the permit holder shall either list this occurrence as a deviation or the permit holder may determine the opacity consistent with Test Method 9. Any opacity readings that are above the opacity limit from the underlying applicable requirement shall be reported as a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B420BLR02	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 117, Subchapter B	SOP Index No.: R7ICI-B420
Pollutant: CO	Main Standard: § 117.310(c)(1)
Monitoring Information	
Indicator: Fuel Usage	
Minimum Frequency: Monthly	
Averaging Period: N/A	
Deviation Limit: Monthly fuel gas usage above 2,232 MMBtu/month (2,187 Mscf/month) shall be reported as a deviation.	
Periodic Monitoring Text: Monitor hourly fuel gas usage when the boiler (water heater) is in operation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B420WOOD01	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111A
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(A)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: once per calendar quarter	
Averaging Period: N/A	
Deviation Limit: Opacity greater than 30% averaged over a six-minute period.	
Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B421BLR01	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 117, Subchapter B	SOP Index No.: R7ICI-B421
Pollutant: CO	Main Standard: § 117.310(c)(1)
Monitoring Information	
Indicator: Fuel Usage	
Minimum Frequency: Monthly	
Averaging Period: N/A	
Deviation Limit: Monthly fuel gas usage above 2,232 MMBtu/month (2,187 Mscf/month) shall be reported as a deviation.	
Periodic Monitoring Text: Monitor hourly fuel gas usage when the boiler (water heater) is in operation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B48GEN01	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111A
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(A)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: once per calendar quarter	
Averaging Period: N/A	
Deviation Limit: Opacity greater than 30% averaged over a six-minute period.	
Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B48GEN02	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111A
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(A)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: once per calendar quarter	
Averaging Period: N/A	
Deviation Limit: Opacity greater than 30% averaged over a six-minute period.	
Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B48GEN03	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111A
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(A)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: once per calendar quarter	
Averaging Period: N/A	
Deviation Limit: Opacity greater than 30% averaged over a six-minute period.	
Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B9PAINT01	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111A
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(A)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: once per calendar quarter	
Averaging Period: N/A	
Deviation Limit: Opacity greater than 30% averaged over a six-minute period.	
Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B9WOOD01	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111A
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(A)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: once per calendar quarter	
Averaging Period: N/A	
Deviation Limit: Opacity greater than 30% averaged over a six-minute period.	
Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B9WOOD02	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111A
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(A)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: once per calendar quarter	
Averaging Period: N/A	
Deviation Limit: Opacity greater than 30% averaged over a six-minute period.	
Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B9WOOD03	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111A
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(A)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: once per calendar quarter	
Averaging Period: N/A	
Deviation Limit: Opacity greater than 30% averaged over a six-minute period.	
Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: GRPTBN	
Control Device ID No.: T1SCR	Control Device Type: Selective catalytic reduction
Control Device ID No.: T2SCR	Control Device Type: Selective catalytic reduction
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(B)
Monitoring Information	
Indicator: Fuel Type	
Minimum Frequency: Annually or at any time an alternate fuel is used	
Averaging Period: N/A	
Deviation Limit: Opacity greater than 20% averaged over six-minute period.	
Periodic Monitoring Text: Record the type of fuel used by the unit. If an alternate fuel is fired, either alone or in combination with the specified gas, for a period greater than or equal to 24 consecutive hours it shall be considered and reported as a deviation or the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are observed. Any time an alternate fuel is fired for a period of greater than 7 consecutive days then visible emissions observations will be conducted no less than once per week. Documentation of all observations shall be maintained. If visible emissions are present during the firing of an alternate fuel, the permit holder shall either list this occurrence as a deviation or the permit holder may determine the opacity consistent with Test Method 9. Any opacity readings that are above the opacity limit from the underlying applicable requirement shall be reported as a deviation.	

Permit Shield

Permit Shield 112

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit / Group / Process ID No.	Group / Inclusive Units	Regulation	Basis of Determination
B24-5A	N/A	40 CFR Part 64, Compliance Assurance Monitoring	The boiler's potential to emit is limited to below major source level before control.
B24TANK01A	N/A	40 CFR Part 60, Subpart Kb	The liquid stored in this unit, which has a capacity of greater than 151 cubic meters (39,900 gallons), has a maximum true vapor pressure less than 3.5 kilopascals (0.5 psia).
B326TANK03	N/A	30 TAC Chapter 115, Storage of VOCs	Storage tank capacity is less than or equal to 1,000 gallons (3,785 L).
B326TANK03	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 75 cubic meters (19,800 gallons).
B329TANK01	N/A	40 CFR Part 60, Subpart Kb	This unit has a capacity of less than 75 cubic meters (19,800 gallons).
B32TANK04	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 75 cubic meters (19,800 gallons).
B417OWS01	N/A	30 TAC Chapter 115, Water Separation	This unit is not subject to Chapter 115 Division 3 Water Separation because the separator is designed solely to capture stormwater, spills, or exterior cleanup waters and is fully covered.
B42TANK02	N/A	30 TAC Chapter 115, Storage of VOCs	Storage tank capacity is less than or equal to 1,000 gallons (3,785 L).
B42TANK02	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 75 cubic meters (19,800 gallons).
GRPTANK	B326TANK01, B48TANK01, B48TANK02	40 CFR Part 60, Subpart Kb	Each unit in this group has a capacity of less than 75 cubic meters (19,800 gallons).
GRPTANK2	B10TANK01, B15TANK01, B17TANK01, B25TANK01,	30 TAC Chapter 115, Storage of VOCs	Storage tank capacity is less than or equal to 1,000 gallons (3,785 L).

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit / Group / Process ID No.	Group / Inclusive Units	Regulation	Basis of Determination
	B30ATANK01, B32TANK01, B32TANK02, B32TANK03, B343TANK01, B347TANK01, B37TANK01, B37TANK02, B3TANK01, B46TANK01, B48TANK03, B48TANK04, B48TANK05, B9TANK01		
GRPTANK2	B10TANK01, B15TANK01, B17TANK01, B25TANK01, B30ATANK01, B32TANK01, B32TANK02, B32TANK03, B343TANK01, B347TANK01, B37TANK01, B37TANK02, B3TANK01, B46TANK01, B48TANK03, B48TANK04, B48TANK05, B9TANK01	40 CFR Part 60, Subpart Kb	Tank capacity is less than 75 cubic meters (19,800 gallons).
PROPAINT	N/A	30 TAC Chapter 115, Surface Coating Operations	PROPAINT is solely engaged in research and development activities associated with NASA manned space program. Any solvents used in this process for thinning and/or cleanup are also exempt.
PROPAINT	N/A	40 CFR Part 63, Subpart GG	The units do not engage in the manufacture or rework of commercial, civil, or military aerospace vehicles or components. These units are solely engaged in research and development activities associated with NASA manned space program.
TK-DSL	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 75 cubic meters (19,800 gallons).

New Source Review Authorization References

New Source Review Authorization References 115

New Source Review Authorization References by Emission Unit 117

New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Title 30 TAC Chapter 116 Permits, Special Permits, and Other Authorizations (Other Than Permits By Rule, PSD Permits, or NA Permits) for the Application Area.	
Authorization No.: 76247	Issuance Date: 08/26/2015
Authorization No.: 114721	Issuance Date: 10/31/2024
Authorization No.: 130148	Issuance Date: 07/22/2024
Permits By Rule (30 TAC Chapter 106) for the Application Area	
Number: 5	Version No./Date: 12/01/1972
Number: 5	Version No./Date: 05/04/1994
Number: 41	Version No./Date: 07/20/1992
Number: 51	Version No./Date: 08/30/1988
Number: 51	Version No./Date: 07/20/1992
Number: 51	Version No./Date: 05/04/1994
Number: 61	Version No./Date: 07/20/1992
Number: 61	Version No./Date: 05/04/1994
Number: 75	Version No./Date: 09/12/1989
Number: 106.102	Version No./Date: 09/04/2000
Number: 106.122	Version No./Date: 09/04/2000
Number: 106.124	Version No./Date: 09/04/2000
Number: 106.183	Version No./Date: 09/04/2000
Number: 106.227	Version No./Date: 09/04/2000
Number: 106.242	Version No./Date: 09/04/2000
Number: 106.261	Version No./Date: 11/01/2003
Number: 106.262	Version No./Date: 12/24/1998
Number: 106.262	Version No./Date: 09/04/2000
Number: 106.262	Version No./Date: 11/01/2003
Number: 106.263	Version No./Date: 11/01/2001
Number: 106.265	Version No./Date: 09/04/2000
Number: 106.371	Version No./Date: 09/04/2000
Number: 106.375	Version No./Date: 03/14/1997
Number: 106.412	Version No./Date: 09/04/2000
Number: 106.418	Version No./Date: 09/04/2000
Number: 106.454	Version No./Date: 07/08/1998
Number: 106.454	Version No./Date: 11/01/2001

New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Number: 106.472	Version No./Date: 03/14/1997
Number: 106.472	Version No./Date: 09/04/2000
Number: 106.478	Version No./Date: 03/14/1997
Number: 106.478	Version No./Date: 09/04/2000
Number: 106.511	Version No./Date: 03/14/1997
Number: 106.511	Version No./Date: 09/04/2000
Number: 106.512	Version No./Date: 09/04/2000
Number: 124	Version No./Date: 05/12/1981

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
B10GEN02A	B10 DIESEL GENERATOR	106.511/09/04/2000
B10TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B15GEN01	STATIONARY EMERGENCY GENERATOR	106.511/03/14/1997
B15TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B16GEN01	B16 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B17GEN02	STATIONARY EMERGENCY GENERATOR	106.511/09/04/2000
B17TANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B21GEN01	EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B220GEN01	B220 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B221ENG01	BUILDING 221 ENGINE 1	106.512/09/04/2000
B223ENG02	BUILDING 223 ENGINE 2	106.512/09/04/2000
B24-3A	BUILDING 24 BOILER 3A	114721
B24-5A	BOILER B24-5A	76247
B24LOAD01	DIESEL LOADING	106.472/09/04/2000
B24TANK01A	BUILDING 24 DIESEL TANK	106.478/09/04/2000 [46837]
B25GEN02A	B25 EOC EMERGENCY GAS GENERATOR	106.511/09/04/2000
B25TANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B30AGEN02	STATIONARY EMERGENCY GENERATOR	106.511/09/04/2000
B30ATANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B31GEN01	B31 EMERGENCY GAS GENERATOR	106.511/09/04/2000
B322ENG01A	EMERGENCY NATURAL GAS FIRED ENGINE	106.511/09/04/2000

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
B322GEN01	B322 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B326TANK01	BUILDING 326 DIESEL TANK	51/08/30/1988
B326TANK03	GASOLINE STORAGE TANK	106.478/09/04/2000
B329ENG01A	EMERGENCY NATURAL GAS FIRED ENGINE	106.511/09/04/2000
B329TANK01	BUILDING 329 WASTEWATER TANK	61/05/04/1994 [107316], 106.472/09/04/2000
B32GEN06	STATIONARY EMERGENCY GENERATOR	106.511/03/14/1997
B32GEN07	STATIONARY EMERGENCY GENERATOR	106.511/09/04/2000
B32GEN09	BUILDING 32 GENERATOR 9	106.511/09/04/2000
B32TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B32TANK02	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B32TANK03	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B32TANK04	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B343TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B347GEN01	STATIONARY EMERGENCY GENERATOR	106.511/09/04/2000
B347TANK01	DIESEL FUEL STORAGE TANK	106.478/09/04/2000
B37TANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B37TANK02	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B3GEN01A	B3 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B3TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B417OWS01	OIL/WATER SEPARATOR	61/07/20/1992
B420BLR02	BOILER	106.183/09/04/2000

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
B420WOOD01	BUILDING 420 DUST COLLECTION SYSTEM	124/05/12/1981
B421BLR01	BOILER	106.183/09/04/2000
B42TANK02	DIESEL FUEL STORAGE TANK	106.478/09/04/2000
B46GEN01	B46 NON-EMERGENCY GENERATOR	106.511/09/04/2000
B46TANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B48GEN01	BUILDING 48 GENERATOR 1	5/12/01/1972
B48GEN02	BUILDING 48 GENERATOR 2	5/12/01/1972
B48GEN03	BUILDING 48 GENERATOR 3	5/12/01/1972
B48GEN07	BUILDING 48 GENERATOR 7	5/12/01/1972
B48GEN07A	B48 EMERGENCY DIESEL GENERATOR#7	106.511/09/04/2000
B48GEN09	BUILDING 48 GENERATOR 9	5/12/01/1972
B48GEN09A	B48 EMERGENCY DIESEL GENERATOR#9	106.511/09/04/2000
B48TANK01	BUILDING 48 DIESEL TANK NO. 1	51/07/20/1992
B48TANK02	BUILDING 48 DIESEL TANK NO. 2	51/07/20/1992
B48TANK03	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B48TANK04	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B48TANK05	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B7GEN02	BUILDING 7 GENERATOR #2	106.511/09/04/2000
B9AC01	BUILDING 9 AUTOCLAVE 1	106.124/09/04/2000 [92402]
B9AC02	BUILDING 9 AUTOCLAVE 2	106.124/09/04/2000 [92402]
B9GEN01A	B9 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
B9PAINT01	BUILDING 9 PAINT BOOTH	75/09/12/1989
B9TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B9WOOD01	BUILDING 9 DUST COLLECTION SYSTEM	124/05/12/1981
B9WOOD02	BUILDING 9 DUST COLLECTION SYSTEM	124/05/12/1981
B9WOOD03	BUILDING 9 DUST COLLECTION SYSTEM	124/05/12/1981
BSTART-1	BLACK START DIESEL GENERATOR	106.511/09/04/2000 [141276]
LS14GEN01	LS14 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS15GEN01	LS15 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS1GEN01	LS1 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS2GEN01	LS2 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS3GEN01	LS3 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS7GEN01	LS7 NON-EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
PROPAINT	PAINT BOOTH PROCESSES	75/09/12/1989
T-1	NATURAL GAS COMBUSTION TURBINE	130148
T-2	NATURAL GAS COMBUSTION TURBINE	130148
TK-DSL	DIESEL FUEL STORAGE TANK	106.472/09/04/2000

Appendix A

Acronym List 122

Acronym List

The following abbreviations or acronyms may be used in this permit:

ACFM ..... actual cubic feet per minute
AMOC ..... alternate means of control
ARP ..... Acid Rain Program
ASTM ..... American Society of Testing and Materials
B/PA ..... Beaumont/Port Arthur (nonattainment area)
CAM ..... Compliance Assurance Monitoring
CD ..... control device
CEMS ..... continuous emissions monitoring system
CFR ..... Code of Federal Regulations
COMS ..... continuous opacity monitoring system
CVS ..... closed vent system
D/FW ..... Dallas/Fort Worth (nonattainment area)
EP ..... emission point
EPA ..... U.S. Environmental Protection Agency
EU ..... emission unit
FCAA Amendments ..... Federal Clean Air Act Amendments
FOP ..... federal operating permit
gr/100 scf ..... grains per 100 standard cubic feet
HAP ..... hazardous air pollutant
H/G/B ..... Houston/Galveston/Brazoria (nonattainment area)
H_2S ..... hydrogen sulfide
ID No. ..... identification number
lb/hr ..... pound(s) per hour
MACT ..... Maximum Achievable Control Technology (40 CFR Part 63)
MMBtu/hr ..... Million British thermal units per hour
NA ..... nonattainment
N/A ..... not applicable
NADB ..... National Allowance Data Base
NESHAP ..... National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)
NO_x ..... nitrogen oxides
NSPS ..... New Source Performance Standard (40 CFR Part 60)
NSR ..... New Source Review
ORIS ..... Office of Regulatory Information Systems
Pb ..... lead
PBR ..... Permit By Rule
PEMS ..... predictive emissions monitoring system
PM ..... particulate matter
ppmv ..... parts per million by volume
PRO ..... process unit
PSD ..... prevention of significant deterioration
psia ..... pounds per square inch absolute
RO ..... Responsible Official
SIP ..... state implementation plan
SO_2 ..... sulfur dioxide
TCEQ ..... Texas Commission on Environmental Quality
TSP ..... total suspended particulate
TVP ..... true vapor pressure
U.S.C. ..... United States Code
VOC ..... volatile organic compound

September 9, 2025

Please see NASA JSC responses to questions in red.

Good morning,

I have attached an updated Working Draft Permit (WDP) based on the comments received on January 10, 2025. The following changes have been made to the New Source Review Authorization References on Page 115-116

- NSR Standard Permit Nos. 114721 and 130148 have been updated to the most recent issuance date.
- Standard Exemption 61 Version No./Date 05/04/1994 has been included.

Acknowledged, thank you.

The following changes have been made to the New Source review Authorization References by Emissions Unit on Page 117-121

- PBR Registration No. 46837 has been included for Unit ID B24TANK01A
- PBR Registration No. 107316 has been included for Unit ID B329TANK01
- PBR Registration No. 92402 has been included for Unit IDs B9AC01 and B9AC02
- PBR Registration No. 141276 has been included for Unit ID BSTART-1

Acknowledged, those changes are correct. Thank you.

Below I have listed additional changes that need to be made.

Form OP-PBRSUP

Starting on page 117 of the WDP, I have highlighted the units that need to be documented on Form OP-PBRSUP. All units highlighted in Green have been documented on Form OP-PBRSUP. Note, the highlighted units will still need to be include on the updated Form OP-PBRSUP submitted.

Acknowledged, we will continue to include Green highlighted units on the updated OP-PBRSUP submitted.

All units highlighted in Yellow are required to be documented on the Form OP-PBRSUP. Units authorized by a Permit by Rule (PBR) and/or Standard Exemption (SE) are required to be documented on Form OP-PBRSUP.

Acknowledged, all Yellow highlighted units will be included in the updated OP-PBRSUP submitted.

If the unit has a PBR Registration No. associated for that unit, then the unit needs to be documented on Tables A and D on Form OP-PBRSUP.

Based on review the previously submitted OP-PBRSUP, all PBRs with Registrations were included on Tables A and D on Form OP-PBRSUP, for a total of 12 PBR registration numbers, corresponding authorization to 14 units. All other PBR registrations have been voided. As of this application there are no pending PBR registrations.

If the unit does not have a PBR Registration No. associated with that unit but has a claimed PBR, then the unit will need to be documented on Tables B and D on the Form OP-PBRSUP.

All claimed PBRs been added to the updated OP-PBRSUP.

Please note this includes all site Cooling Towers via claimed PBR 106.371, which are non-industrial water cooling only, no VOC or HRVOC contact. No chromium treatment is used. Compliance with PBR recordkeeping and permitting requirements is documented by Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate) and site data (Total Dissolved Solids). Therefore, JSC believes the cooling towers have no Title V applicability, only PM emissions from drift. JSC plans to register the PM/PM10/PM2.5 of the said cooling towers in the near future. Cooling towers are named B24CT01, B24CT02, B24CT03, B24CT05, B24CT06,

B24CT07, B24CT08, B28CT01, B28CT02, B28CT03, B32CT01, B33CT01, B48CT01, B48CT02, B48CT05 and B48CT06.

Any PBRs for insignificant sources at the site need to be included on Table C of the Form OP-PBRSUP.

JSC has added insignificant sources to Table C.

All PBRs utilized at a site need to be included on Form OP-PBRSUP. If you do not wish to list a PBR Registration because it is no longer used, then that PBR registration must be voided.

All PBRs are included now, thank you.

Unit ID B329TANK01 which is highlighted in Red requires further information. The unit is authorized by PBR Registration No. 107316 which has been documented on the WDP and on Form OP-PBRSUP. However, it is also authorized by PBR 106.472 09/04/2000. If this unit is authorized by this PBR, then this unit will need to be documented on Form OP-PBRSUP Tables B and D for PBR 106.472 09/04/2000. If not, then an updated Form OP-2 needs to be submitted documenting the removal of PBR 106.472 from Unit ID B329TANK01's list of authorizations.

The unit is not authorized by PBR but authorized by SE61, as described within Registration No. 107316. This was mistakenly entered as a PBR. An updated Form OP-2 will be submitted documenting the remove of PBR 106.472 from Unit ID B329TANK01's list of authorizations.

Additional changes needed to Form OP-PBRSUP are as follows.
On Table A, PBR Registration No. 821888 needs to have the updated issuance date of 10/24/2012 not the issuance date of 08/07/2007. PBR Registration No. 821888 was initially issued on 08/07/2007 with only PBRs 106.227 and 106.262 associated with that Registration No. A revision was made on 10/24/2012 to include PBR 106.261. Since PBR 106.261 was included, the issuance date of 10/24/2012 needs to be used to showcase that three PBRs are associated with that PBR Registration No.

That is correct, thank you. We will update Table A to reflect the most recent issuance date which includes PBR 106.261. In summary B24TANK01A, B14LASER, CYLVENT, and B9AC01 and B9AC02 have been updated on OP-PBRSUP as well with the most recent issuance dates.

On Table A, PBR Registration No. 86369 has a revision date of 12/03/2014. Although this revision didn't remove or add any PBRs, would the site like to include the more recent issuance date?

Yes, the revision date of 12/3/2014 is the most recent update and will be included. JSC has also included the most recent updated issuance date for 46837 of 6/13/2006.

Form OP-REQ1 page 89
Standard Exemption 124 05/12/1981, Permits by Rule (PBRs) 106.472 03/14/1997, 106.472 09/04/2000, 106.478 03/14/1997, 106.478 09/04/2000, 106.511 03/14/1997, 106.511 09/04/2000, and 106.512 09/04/2000 need to be included on Form OP-REQ1 page 89.

Thank you they have been included on form OP-REQ1 page 89.

Comments not approved
Unit IDs B1401, B14LASER, B32CR, B320WT, B353B5LASER, B7LASER, CYLVENT, and ESTA01 will not be included in the Title V permit. If these units do not have Title V requirements, they would not be documented in the Title V permit. These units are authorized by a PBRs and/or SE which means they would still need to be documented on the Form OP-PBRSUP.

Thank you, we acknowledge that the said units do not have applicable Title V requirements . We will document them on Form OP-PBRSUP as required.

Please note that units that do not have Title V requirements do not get included in the Title V permit. However, if those units are authorized by either a PBR or SE they would still need to be documented on the Form OP-PBRSUP.

Noted, thank you.

If the site has any additional units, that don't have Title V requirements but are authorized by PBR and/or SE, please include them on Form OP-PBRSUP.

Additional units will be included on Form OP-PBRSUP that are authorized by PBR/SE. The applicable PBRs are claimed and do not require registration.

Final Notes
Once all comments have been addressed, I will update Special Term and Condition No. 11 in the WDP to reference the updated Form OP-PBRSUP that was received.

Once the changes have been made, please submit the updated forms in STEERS. Please have this completed by **September 9, 2025** at the latest.

Please let me know if you have any questions.

Thanks,

Ryan Glaze
Operating Permits Section
Air Permits Division
Texas Commission on Environmental Quality
P.O. Box 13087 MC 163
Austin, TX, 78711
(512) 239-6212

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

Application Area-Wide Applicability Determinations and General Information
Form OP-REQ1 (Page 88)
Federal Operating Permit Program
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
1/9/2025	O1552	RN100665579

For SOP applications, answer ALL questions unless otherwise directed.
♦ For GOP applications, answer ONLY these questions unless otherwise directed.

XII. NSR Authorizations (Attach additional sheets if necessary for sections XII.E-J.)

E. PSD Permits and PSD Major Pollutants

Permit No.	Issuance Date	Pollutant(s):	Permit No.	Issuance Date	Pollutant(s):

If PSD Permits are held for the application area, please complete the Major NSR Summary Table located under the Technical Forms heading at: www.tceq.texas.gov/permitting/air/titlev/site/site_experts.html.

F. Nonattainment (NA) Permits and NA Major Pollutants

Permit No.	Issuance Date	Pollutant(s):	Permit No.	Issuance Date	Pollutant(s):

If NA Permits are held for the application area, please complete the Major NSR Summary Table located under the Technical Forms heading at: www.tceq.texas.gov/permitting/air/titlev/site/site_experts.html.

G. NSR Authorizations with FCAA § 112(g) Requirements

NSR Permit No.	Issuance Date	NSR Permit No.	Issuance Date	NSR Permit No	Issuance Date

Date	Permit No.	Regulated Entity No.
9/9/2025	O1552	RN100665579

For SOP applications, answer ALL questions unless otherwise directed.
♦ For GOP applications, answer ONLY these questions unless otherwise directed.

XII. NSR Authorizations (continued) - (Attach additional sheets if necessary for sections XII.E-J.)

♦ **H. Title 30 TAC Chapter 116 Permits, Special Permits, Standard Permits, Other Authorizations (Other Than Permits By Rule, PSD Permits, NA Permits) for the Application Area**

Authorization No.	Issuance Date	Authorization No.	Issuance Date	Authorization No.	Issuance Date
76247	08/26/2015				
114721	10/31/2024				
130148	07/22/2024				

♦ **I. Permits by Rule (30 TAC Chapter 106) for the Application Area**

A list of selected Permits by Rule (previously referred to as standard exemptions) that are required to be listed in the FOP application is available in the instructions.

PBR No.	Version No./Date	PBR No.	Version No./Date	PBR No.	Version No./Date
5	12/01/1972	106.122	09/04/2000	106.265	09/04/2000
5	05/04/1994	106.124	09/04/2000	106.371	09/04/2000
41	07/20/1992	106.183	09/04/2000	106.375	03/14/1997
51	08/30/1988	106.227	09/04/2000	106.412	09/04/2000
51	07/20/1992	106.242	09/04/2000	106.418	09/04/2000
51	05/04/1994	106.261	11/01/2003	106.454	07/08/1998
61	07/20/1992	106.262	12/24/1998	106.454	11/01/2001
61	05/04/1994	106.262	09/04/2000	SE 124	05/12/1981
75	09/12/1989	106.262	11/01/2003	106.472	03/14/1997
106.102	09/04/2000	106.263	11/01/2001	106.472	09/04/2000
106.478	03/14/1997	106.478	09/04/2000	106.511	03/14/1997
106.511	09/04/2000	106.512	09/04/2000		

♦ **J. Municipal Solid Waste and Industrial Hazardous Waste Permits with an Air Addendum**

Permit No.	Issuance Date	Permit No.	Issuance Date	Permit No.	Issuance Date

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 1

Date	Permit No.	Regulated Entity No.
10/16/2024	O-01552	RN100665579

Unit/Process AI	Unit/Process Revision No.	Unit/Process ID No.	Unit/Process Applicable Form	Unit/Process Name/ Description	Unit/Process CAM	Preconstruction Authorizations 30 TAC Chapter 116/ 30 TAC Chapter 106	Preconstruction Authorizations Title I
A	1	B220GEN01	OP-UA2	B220 Emergency Diesel Generator		106.511/09/04/2000	
A	2	B25GEN02A	OP-UA2	B25 EOC Emergency Gas Generator		106.511/09/04/2000	
A	3	B31GEN01	OP-UA2	B31 Emergency Gas Generator		106.511/09/04/2000	
D	4	B9PLAT	OP-UA1	B9 Metal Finishing		106.375/03/14/1997	
D	5	B25GEN02	OP-UA2	B25 Emergency Diesel Generator		106.511/09/04/2000	
	6	T-1	OP-UA11	Natural Gas Combustion Turbine		#130148	
	7	T-2	OP-UA11	Natural Gas Combustion Turbine		#130148	
A	8	B16GEN01	OP-UA2	B16 Emergency Diesel Generator		106.511/09/04/2000	

Individual Unit Summary for Revisions
Form OP-SUMR
Table 1

Date	Permit No.	Regulated Entity No.
10/16/2024	O-01552	RN100665579

Unit/Process AI	Unit/Process Revision No.	Unit/Process ID No.	Unit/Process Applicable Form	Unit/Process Name/ Description	Unit/Process CAM	Preconstruction Authorizations 30 TAC Chapter 116/ 30 TAC Chapter 106	Preconstruction Authorizations Title I

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 2

Date	Permit No.	Regulated Entity No.
12/30/2023	0-01552	RN100665579

Revision No.	ID No.	Applicable Form	Group AI	Group ID No.
1	B220GEN01	OP-UA2	A	None
2	B25GEN02A	OP-UA2	A	None
3	B31GEN01	OP-UA2	A	None
4	B9PLAT	OP-UA1	D	None
5	B25GEN02	OP-UA2	D	GRPGEN5
6	T-1	OP-UA11		GRPTBN
7	T-2	OP-UA11		GRPTBN
8	B16GEN01	OP-UA2	A	None

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 2

Date	Permit No.	Regulated Entity No.
12/30/2023	0-01552	RN100665579

Revision No.	ID No.	Applicable Form	Group AI	Group ID No.

Permit By Rule Supplemental Table (Page 1)
Table A: Registered Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01522	RN100665579

Unit ID No.	Registration No.	PBR No.	Registration Date
B-14-01	22827	SE 41 7/20/1992	8/16/1993
B24TANK01A	46837	106.478	6/13/2006
B14LASER	82188	106.261, 106.262, 106.227	10/24/2012
CYLVENT	86369	106.261, 106.262	12/3/2014
B9AC01, B9AC02	92402	106.124	12/15/2011
ESTA01	107313	106.122	10/20/1999
B320WT	107314	SE 61	4/17/1995
B417OWS01, B329TANK01	107316	SE 61	6/17/1994
B7LASER	108114	106.227, 106.261	2/22/2013
B32CR	111091	106.263	7/17/2013
BSTART-1	141276	106.511	8/3/2016
B353B5LASER	168041	106.261, 106.262	3/18/2022

Permit By Rule Supplemental Table (Page 2)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
B10GEN02A	106.511	9/4/2000
B15GEN01	106.511	3/14/1997
B16GEN01	106.511	9/4/2000
B17GEN02	106.511	9/4/2000
B21GEN01	106.511	9/4/2000
B220GEN01	106.511	9/4/2000
B221ENG01	106.512	9/4/2000
B223ENG02	106.512	9/4/2000
B220GEN01	106.511	9/4/2000
B221ENG01	106.512	9/4/2000
B223ENG02	106.512	9/4/2000
B24LOAD01	106.472	9/4/2000
B25GEN02A	106.511	9/4/2000
B30AGEN02	106.511	9/4/2000
B31GEN01	106.511	9/4/2000

Permit By Rule Supplemental Table (Page 3)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
B322ENG01A	106.511	9/4/2000
B322GEN01	106.511	9/4/2000
B326TANK01	51	8/30/1988
B326TANK03	106.478	9/4/2000
B329ENG01A	106.511	9/4/2000
B32GEN06	106.511	3/14/1997
B32GEN07	106.511	9/4/2000
B32GEN09	106.511	9/4/2000
B347GEN01	106.511	9/4/2000
B347TANK01	106.478	9/4/2000
B3GEN01A	106.511	9/4/2000
B420BLR02	106.183	9/4/2000
B420WOOD01	124	5/12/1981

Permit By Rule Supplemental Table (Page 4)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
B9WOOD01, B9WOOD02, B9WOOD03	124	5/12/1981
B421BLR01	106.183	9/4/2000
B42TANK02	106.478	9/4/2000
B46GEN01	106.511	9/4/2000
B46TANK01	106.472	9/4/2000
B48GEN01, B48GEN02, B48GEN03, B48GEN07, B48GEN09	5	12/1/1972
B48GEN07A	106.511	9/4/2000
B48GEN09A	106.511	9/4/2000
B48TANK01	51	7/20/1992
B48TANK02	51	7/20/1992
B7GEN02	106.511	9/4/2000
B9GEN01A	106.511	9/4/2000
B9PAINT01	75	9/12/1989
LSGEN01, LS2GEN01, LS3GEN01, LS7GEN01, LS14GEN01, LS15GEN01	106.511	9/4/2000

Permit By Rule Supplemental Table (Page 5)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
TK-DSL	106.472	9/4/2000
B24CT01, B24CT02, B24CT03, B24CT05, B24CT06, B24CT07, B24CT08	106.371	9/4/2000
B28CT01, B28CT02, B28CT03	106.371	9/4/2000
B32CT01	106.371	9/4/2000
B33CT01	106.371	9/4/2000
B48CT01, B48CT02, B48CT05, B48CT06	106.371	9/4/2000
B10TANK01	106.472	9/4/2000
B15TANK01	106.472	9/4/2000
B3TANK01	106.472	9/4/2000
B44TANK01	106.472	9/4/2000
B9TANK01	106.472	9/4/2000
B17TANK01	106.472	9/4/2000
B25TANK01	106.472	9/4/2000
B30ATANK01	106.472	9/4/2000
B32TANK01, B32TANK02, B32TANK03	106.472	9/4/2000

Permit By Rule Supplemental Table (Page 6)

Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
B343TANK01	106.472	9/4/2000
B48TANK03, B48TANK04, B48TANK05	106.472	9/4/2000
B37TANK01, B37TANK02	106.472	9/4/2000

Permit By Rule Supplemental Table (Page 7)

Table C: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for Insignificant Sources for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01552	100665579

PBR No.	Version No./Date
106.102 Comfort Heating (Natural Gas and Electric Space Heaters)	9/4/2000
106.122 Bench Scale Laboratory Equipment (Building Laboratories)	9/4/2000
106.227 Soldering, Brazing, Welding (Lead Free, Occasional Lab Use, Maintenance)	9/4/2000
106.242 Food Preparation and Processing (B17 Food Lab, Cafeterias)	9/4/2000
106.265 Hand-held and Manually Operated Machines (General Building Maintenance)	9/4/2000
106.266 Vacuum Cleaning Systems (Building Housekeeping)	9/4/2000
106.418 Printing Presses (Office Inkjet Printers, VOC-Free)	9/4/2000

Permit By Rule Supplemental Table (Page 8)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B14-01	SE 41	7/20/1992 22827	Annual Records of Throughput and Mass Balance
B24TANK01A	106.478	46837	Monthly Records of Throughput and Contents, Record of Tank Construction, Tank/Process Knowledge, Fuel Analysis
B14LASER	106.227, 106.261, 106.262	82188	Annual Records of Throughput and Process Knowledge
CYLVENT	106.261, 106.262	86369	Annual Records of Throughput and Mass Balance
B9AC01, B9AC02	106.124	92402	Annual and Monthly Records of Throughput; SDS, Process Knowledge
ESTA01	106.122	107313	Cylinder Volume, Process Knowledge, Annual Throughput
B417OWS01, B329TANK	SE 61	7/20/1992 107316	Sum of partial pressures of all species of VOC in any sample is less than 1.5 psia
B7LASER	106.227, 106.261	108114	Annual Records of Throughput and Process Knowledge
BSTART-1	106.511	141276	Non-resettable hourly meter; monthly operating hours records; maintenance records
B320WT	SE 61	5/4/1994 107314	Ensure that only natural earthen grit is washed with water from vehicles / equipment.
B32CR	106.263	111091	Annual Records of Throughput and Mass Balance, SDS
B353B5LASER	106.261, 106.262	168041	Annual Records of Throughput and Process Knowledge

Reset Form Print Form

Permit By Rule Supplemental Table (Page 9)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B10GEN02A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B15GEN01	106.511	3/14/1997	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B16GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B17GEN02	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B21GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B220GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B221ENG01	106.512	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B223ENG02	106.512	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B220GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B221ENG01	106.512	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B223ENG02	106.512	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data

Permit By Rule Supplemental Table (Page 10)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B24LOAD01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis
B25GEN02A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B30AGEN02	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B31GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B322ENG01A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B322GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B326TANK01	51	8/30/1988	Loading/Unloading Throughput, Fuel Analysis
B326TANK03	106.478	9/4/2000	Loading/Unloading Throughput, Fuel Analysis
B329ENG01A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B32GEN06	106.511	3/14/1997	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B32GEN07	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data

Permit By Rule Supplemental Table (Page 11)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
09/09/2025	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B32GEN09	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B347GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B347TANK01	106.478	9/4/2000	Loading/Unloading Throughput, Fuel Analysis
B3GEN01A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B420BLR02	106.183	9/4/2000	Natural Gas Usage Meter, Hours of Operation, Emissions Test Data
B420WOOD01	124	5/12/1981	Process Knowledge, Mass Balance, Hours of Operation
B9WOOD01, B9WOOD02, B9WOOD03	124	5/12/1981	Process Knowledge, Mass Balance, Hours of Operation
B421BLR01	106.183	9/4/2000	Natural Gas Usage Meter, Hours of Operation, Emissions Test Data
B42TANK02	106.478	9/4/2000	Loading/Unloading Throughput, Fuel Analysis
B46GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data

Reset Form Print Form

Permit By Rule Supplemental Table (Page 12)

Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B48GEN01	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN02	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN03	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN07	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN07A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN09	5	12/1/1972	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48GEN09A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B48TANK01	51	7/20/1992	Loading/Unloading Throughput, Fuel Analysis
B48TANK02	51	7/20/1992	Loading/Unloading Throughput, Fuel Analysis
B7GEN02	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data

Reset Form Print Form

Permit By Rule Supplemental Table (Page 13)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B9GEN01A	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
B9PAINT01	75	9/12/1989	Coatings Use Records (Gallons), Mass Balance, Inspections
BSTART-1	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
LSGEN01, LS2GEN01, LS3GEN01, LS7GEN01, LS14GEN01, LS15GEN01	106.511	9/4/2000	Non-resettable hourly meter; monthly operating hours records; maintenance records, manufacturer data, emissions test data
PROPAINT	75	9/12/1989	Coatings Use Records (Gallons), Mass Balance, Inspections
TK-DSL	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B24CT01, B24CT02, B24CT03, B24CT05, B24CT06, B24CT07, B24CT08	106.371	9/4/2000	Non-industrial mechanical draft water cooling only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)
B28CT01, B28CT02, B28CT03	106.371	9/4/2000	Non-industrial mechanical draft water cooling only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)

Permit By Rule Supplemental Table (Page 14)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B32CT01	106.371	9/4/2000	Water Cooling Only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)
B33CT01	106.371	9/4/2000	Non-industrial Water Cooling Only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)
B48CT01, B48CT02, B48CT05, B48CT06	106.371	9/4/2000	Non-industrial mechanical draft water cooling only; no VOC/HRVOC contact. No Chromium treatment. Hours of Operation, Process Knowledge and Manufacturer's Data (Recirculation Rates, Drift Rate, Total Dissolved Solids)
B10TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B15TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B3TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B44TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B9TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B17TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B25TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B30ATANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge

Reset Form Print Form

Permit By Rule Supplemental Table (Page 15)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B32TANK01, B32TANK02, B32TANK03	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B343TANK01	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B48TANK03, B48TANK04, B48TANK05	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge
B37TANK01, B37TANK02	106.472	9/4/2000	Loading/Unloading Throughput, Fuel Analysis, Tank/Process Knowledge

Reset Form Print Form

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 1
Texas Commission on Environmental Quality

Date: 9/9/2025	
Permit No.: 0-01552	
Regulated Entity No.: RN100665579	
Company Name: National Aeronautics and Space Administration	
For Submissions to EPA	
Has an electronic copy of this application been submitted (or is being submitted) to EPA?	☒ YES ☐ NO
I. Application Type	
Indicate the type of application:	
☐ Renewal	
☒ Streamlined Revision (Must include provisional terms and conditions as explained in the instructions.)	
☐ Significant Revision	
☐ Revision Requesting Prior Approval	
☐ Administrative Revision	
☐ Response to Reopening	
II. Qualification Statement	
For SOP Revisions Only	☒ YES ☐ NO
For GOP Revisions Only	☐ YES ☐ NO

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 1 *(continued)*
Texas Commission on Environmental Quality

III. Major Source Pollutants (Complete this section if the permit revision is due to a change at the site or change in regulations.)						
Indicate all pollutants for which the site is a major source based on the site's potential to emit: *(Check the appropriate box[es].)*						
☐ VOC	☒ NO_X	☐ SO_2	☐ PM_{10}	☐ CO	☐ Pb	☐ HAP
Other:						
IV. Reference Only Requirements *(For reference only)*						
Has the applicant paid emissions fees for the most recent agency fiscal year (September 1 - August 31)?					☒ YES ☐ NO ☐ N/A	
V. Delinquent Fees and Penalties						
Notice: 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 are paid in accordance with the Delinquent Fee and penalty protocol.						

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 2
Texas Commission on Environmental Quality

Date: 9/9/2025
Permit No.: O-01552
Regulated Entity No.: RN100665579
Company Name: National Aeronautics and Space Administration

Using the table below, provide a description of the revision.

Revision No.	Revision Code		Unit/Group	Process	NSR Authorization	Description of Change and Provisional Terms and Conditions
		New Unit	ID No.	Applicable Form		
1	MS-A	YES	B220GEN01	OP-UA2	106.511	New emergency generator installed at Building 220
2	MS-A	YES	B25GEN02A	OP-UA2	106.511	New emergency generator installed at Building 25
3	MS-A	YES	B31GEN01	OP-UA2	106.511	New emergency generator installed at Building 31
4	MS-C	NO	B9PLAT	OP-UA1	106.375	Permanently shut down. Delete from permit.
5	MS-C	NO	B25GEN02	OP-UA2	106.511	Permanently shut down. Delete from permit.
6	MS-C	NO	T-1	OP-UA11	130148	Monitoring update regarding replacing turbine CEMS with PEMS; Update Permit Issuance Date. No other changes applicable to this unit.
7	MS-C	NO	T-2	OP-UA11	130148	Monitoring update regarding replacing turbine CEMS with PEMS; Update Permit Issuance Date. No other changes applicable to this unit.
8	MS-A	YES	B16GEN01	OP-UA2	106.511	New emergency generator installed at Building 16
9	MS-C	NO	B14-01	OP-PBRSUP	22827	Adding unit to Form OP-PBRSUP.
10	MS-C	NO	B24TANK01A	OP-UA3	46837	Adding pre-existing registration number to OP-PBRSUP only. No changing unit attributes for this existing source. Applicable requirements (ARS) already established in O-1552.
11	MS-C	NO	B14LASER	OP-PBRSUP	82188	Adding unit to Form OP-PBRSUP.
12	MS-C	NO	CYLVENT	OP-PBRSUP	86369	Adding unit to Form OP-PBRSUP.
13	MS-C	NO	B9AC01, B9AC02	OP-UA15	92402	Adding preconstruction authorization registration number to Form OP-PBRSUP.
14	MS-C	NO	ESTA01	OP-PBRSUP	107313	Adding unit to Form OP-PBRSUP.

15	MS-C	NO	B417OWS01, B329TANK01	OP-UA3, OP-PBRSUP	107316	Adding preconstruction authorization registration number to Form OP-PBRSUP. B329TANK was authorized by SE 61, and was never authorized by PBR 106.472 9/4/2000; therefore reference to PBR 106.472 9/4/2000 must be removed for B329TANK01. Applicable requirements (ARS) already established in O-1552.
16	MS-C	NO	B7LASER	OP-PBRSUP	108114	Adding unit to Form OP-PBRSUP.
17	MS-C	NO	BSTART-1	OP-UA2	141276	Adding preconstruction authorization registration number to Form OP-PBRSUP only. No changing unit attributes for this existing source. Applicable requirements (ARS) already established in O-1552.
18	MS-C	NO	B353B5LASER	OP-PBRSUP	168041	Adding unit to Form OP-PBRSUP.
19	MS-C	NO	B320WT	OP-PBRSUP	107314	Registered and authorized by SE 61. Adding unit to Form OP-PBRSUP.
20	MS-C	NO	B32CR	OP-PBRSUP	111091	Registered and authorized by 106.263 Adding unit to Form OP-PBRSUP.

21	MS-C	NO	B24CT01, B24CT02, B24CT03, B24CT05, B24CT06, B24CT07, B24CT08, B28CT01, B28CT02, B28CT03, B32CT01, B33CT01, B48CT01, B48CT02, B48CT05 B48CT06.	OP-PBRSUP	106.371	Adding non-industrial water-cooling tower mechanical draft unit names to Form OP-PBRSUP for unit-name documentation. PBR 106.371 was already previously claimed on Permit O-1552 for this authorization purpose. No VOC/HRVOC contact. No Chromium treatment of any kind.

Application for Permit Revision/Renewal
Form OP-2-Table 3
Texas Commission on Environmental Quality

Date: 9/9/2025		
Permit No.: O-01552		
Regulated Entity No.: RN100665579		
Company Name: National Aeronautics and Space Administration		
I.	**Significant Revision** *(Complete this section if you are submitting a significant revision application or a renewal application that includes a significant revision.)*	
A.	Is the site subject to bilingual requirements pursuant to 30 TAC § 122.322?	☐ YES ☐ NO
B.	Indicate the alternate language(s) in which public notice is required: Spanish	
C.	Will, there be a change in air pollutant emissions as a result of the significant revision?	☐ YES ☐ NO

Stationary Turbine Attributes
Form OP-UA11 (Page 6)
Federal Operating Permit Program
Table 3a: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Area
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP/GOP Index No.	Megawatt Rating	RACT Date Placed in Service (ICI)	Functionally Identical Replacement (ICI)	Service Type (ICI)	NO_x Emission Limitation (ICI)	23C-Option
T-1	R-7201	1-10			TURB	310D	
T-2	R-7201	1-10			TURB	310D	

Stationary Turbine Attributes
Form OP-UA11 (Page 7)
Federal Operating Permit Program
Table 3b: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	30 TAC Chapter 116 Limit (ICI)	EGF System Cap Unit	Averaging Method	NO_x Reduction (ICI)	NO_x Monitoring System (ICI)
T-1	R-7201		NO	30D	POST1	PEMS
T-2	R-7201		NO	30D	POST1	PEMS

Stationary Turbine Attributes
Form OP-UA11 (Page 8)
Federal Operating Permit Program
Table 3c: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Fuel Flow Monitoring	CO Emission Limitation	CO Monitoring System	NH3 Emission Limitation	NH3 Monitoring
T-1	R-7201	X40A	310C	PEMS	310C	PEMS
T-2	R-7201	X40A	310C	PEMS	310C	PEMS

Stationary Turbine Attributes
Stationary Turbine Attributes
Form OP-UA11 (Page 12)
Federal Operating Permit Program
Table 6a: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Unit Type	Construction/Modification Date	Heat Input	Subject to Da	Service Type	NO_x Standard	Fuel Type
T-1	60KKKK	CHPT	2005C	50-850	NO	NOTER	YES	NGO
T-2	60KKKK	CHPT	2005C	50-850	NO	NOTER	YES	NGO

Stationary Turbine Attributes
Form OP-UA11 (Page 13)
Federal Operating Permit Program
Table 6b: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	75% of Peak	30 MW	Turbine Use	NO_x Control	NO_x Monitoring	Common Steam Header	Duct Burner
T-1	60KKKK	NO		ELCT	NO	CPMS	CMN-	YES
T-2	60KKKK	NO		ELCT	NO	CPMS	CMN-	YES

Stationary Turbine Attributes
Form OP-UA11 (Page 14)
Federal Operating Permit Program
Table 6c: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Location	SO_2 Standard	Fuel Monitoring	Fuel Quality	Performance Test	Intermediate Storage	Fuel Schedules
T-1	60KKKK	NO	NO	YES	SAMP	SAMP		
T-2	60KKKK	NO	NO	YES	SAMP	SAMP		

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 1)
Federal Operating Permit Program
Table 1a: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Horsepower Rating	RACT Date Placed in Service	Functionally Identical Replacement	Type of Service	Fuel Fired	Engine Type	ESAD Date Placed in Service	Diesel HP Rating
B220GEN01	R7201-2				D2001+				
B25GEN02A	R7ICI-2				ENG	NG	Rich-burn		
B31GEN01	R7ICI-2				ENG	NG	Lean-Burn		
B16GEN01	R7201-2				D2001+				

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 2)
Federal Operating Permit Program
Table 1b: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	NO_x Emission Limitation	23-C Option	30 TAC Chapter 116 Limit	EGF System CAP Unit	NO_x Averaging Method	NO_x Reduction	NO_x Monitoring System
B220GEN01	R7201-2							
B25GEN02A	R7ICI-2				NO	1HR	NONE	MERT
B31GEN01	R7ICI-2				NO	1HR	NONE	MERT
B16GEN01	R7201-2							

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 3)
Federal Operating Permit Program
Table 1c: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Fuel Flow Monitoring	CO Emission Limitation	CO Averaging Method	CO Monitoring System	NH_3 Emission Limitation	NH_3 Monitoring
B220GEN01	R7201-2						
B25GEN02A	R7ICI-2	X40A	310C	1HR	OTHER		
B31GEN01	R7ICI-2	X40A	310C	1HR	OTHER		
B16GEN01	R7201-2						

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 4)
Federal Operating Permit Program
Table 2a: Title 40 Code of Federal Regulations Part 63 (40 CFR Part 63)
Subpart ZZZZ: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	HAP Source	Brake HP	Construction/ Reconstruction Date	Nonindustrial Emergency Engine	Service Type	Stationary RICE Type
B220GEN01	63ZZZZ	AREA	100-	06+			
B25GEN02A	63ZZZZ	AREA	300-500	06+			
B31GEN01	63ZZZZ	AREA	500+	06+			
B16GEN01	63ZZZZ	AREA	100-250	06+			

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 8)
Federal Operating Permit Program
Table 4a: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Construction/ Reconstruction/ Modification Date	Test Cell	Exemption	Temp Replacement	Horsepower	Fuel	AEL No.	Lean Burn	Commencing
B25GEN02A	63JJJJ	YES	NO	NONE	NO	130-500E	NATGAS			CON
B31GEN01	63JJJJ	YES	NO	NONE	NO	500+E	NATGAS			CON

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 9)
Federal Operating Permit Program
Table 4b: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Manufacture Date	Displacement	Certified	Operation	Certified Modification	Service	Severe Duty	Optional Compliance
B25GEN02A	63JJJJ	N0111+E		YES	YES		EMERG	NO	
B31GEN01	63JJJJ	N0710+E		YES	YES		EMERG	NO	

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 10)
Federal Operating Permit Program
Table 5a: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Applicability Date	Exemptions	Service	Commencing	Manufacture Date
B220GEN01	63IIII	2005+	NONE	EMERG	CON	0406+
B16GEN01	63IIII	2005+	NONE	EMERG	CON	0406+

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 11)
Federal Operating Permit Program
Table 5b: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Diesel	AES No.	Displacement	Generator Set	Model Year	Install Date
B220GEN01	63IIII	DIESEL		10-CS		2007	
B16GEN01	63IIII	DIESEL		10-CS		2017+	

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 12)
Federal Operating Permit Program
Table 5c: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Kilowatts	Filter	AECD	Standard	Compliance Option	PM Compliance	Options
B220GEN01	63IIII	E37-75	NO	NO	YES	MANU YES		
B16GEN01	63IIII	E75-130	NO	NO	YES	MANU YES		

Texas Commission on Environmental Quality

Title V Existing

1552

Site Information (Regulated Entity)

What is the name of the permit area to be authorized?	LYNDON B JOHNSON SPACE CENTER
Does the site have a physical address?	Yes
Physical Address	
Number and Street	2101 NASA PKWY
City	HOUSTON
State	TX
ZIP	77058
County	HARRIS
Latitude (N) (##.######)	29.557777
Longitude (W) (-###.######)	95.086666
Primary SIC Code	9661
Secondary SIC Code	
Primary NAICS Code	927110
Secondary NAICS Code	
Regulated Entity Site Information	
What is the Regulated Entity's Number (RN)?	RN100665579
What is the name of the Regulated Entity (RE)?	LYNDON B JOHNSON SPACE CENTER
Does the RE site have a physical address?	Yes
Physical Address	
Number and Street	2101 NASA PKWY
City	HOUSTON
State	TX
ZIP	77058
County	HARRIS
Latitude (N) (##.######)	29.557777
Longitude (W) (-###.######)	-95.086666
Facility NAICS Code	
What is the primary business of this entity?	FLEET REFUELING

Customer (Applicant) Information

How is this applicant associated with this site?	Owner Operator
What is the applicant's Customer Number (CN)?	CN601572878
Type of Customer	Federal Government
Full legal name of the applicant:	
Legal Name	National Aeronautics And Space Administration
Texas SOS Filing Number	
Federal Tax ID	
State Franchise Tax ID	
State Sales Tax ID	

Local Tax ID	
DUNS Number	
Number of Employees	501+
Independently Owned and Operated?	

Responsible Official Contact

Person TCEQ should contact for questions about this application:	
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR.
First	JOEL
Middle	
Last	WALKER
Suffix	
Credentials	
Title	DIRECTOR, CENTER OPERATIONS
Enter new address or copy one from list:	RE Physical Address
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	MC JE111
City	HOUSTON
State	TX
ZIP	77058
Phone (###-###-####)	2814830541
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	joel.b.walker@nasa.gov

Duly Authorized Representative Contact

Person TCEQ should contact for questions about this application	
Select existing DAR contact or enter a new contact.	JOHN HERRMANN(NATIONAL AERONA...)
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR
First	JOHN
Middle	
Last	HERRMANN
Suffix	
Credentials	
Title	ENVIRONMENTAL ENGINEER
Enter new address or copy one from list	
Mailing Address	
Address Type	Domestic

Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	MC JE111
City	HOUSTON
State	TX
Zip	77058
Phone (###-###-####)	8326936394
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	2814833048
E-mail	john.p.herrmann@nasa.gov

Technical Contact

Person TCEQ should contact for questions about this application:	
Select existing TC contact or enter a new contact.	JOHN HERRMANN(NATIONAL AERONA...)
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR
First	JOHN
Middle	
Last	HERRMANN
Suffix	
Credentials	
Title	ENVIRONMENTAL ENGINEER
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	
City	HOUSTON
State	TX
ZIP	77058
Phone (###-###-####)	2814835213
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	2814837027
E-mail	john.p.herrmann@nasa.gov

Title V General Information - Existing

1) Permit Type:	SOP
2) Permit Latitude Coordinate:	29 Deg 33 Min 28 Sec
3) Permit Longitude Coordinate:	95 Deg 5 Min 12 Sec
4) Is this submittal a new application or an update to an existing application?	Update
4.1. Select the permit/project number for which this update should be applied.	1552-36233

5) Who will electronically sign this Title V application?	Duly Authorized Representative
6) Does this application include Acid Rain Program or Cross-State Air Pollution Rule requirements?	No

Title V Attachments Existing

Attach OP-1 (Site Information Summary)

Attach OP-2 (Application for Permit Revision/Renewal)

[File Properties]

File Name	OP_2_OP_2_FORM_9-9-25.docx
Hash	8D3A6A6C4C8D70974409C3BAFCDEDED0FB2E7428756CB439B75673D085CAE1B1
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-ACPS (Application Compliance Plan and Schedule)

Attach OP-REQ1 (Application Area-Wide Applicability Determinations and General Information)

[File Properties]

File Name	OP-REQ1 pages 88-89 9-9-25.docx
Hash	F80E6E5B33173C63653A0AF62E65704E7673E61B386AA019E5853936F09F1424
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-REQ2 (Negative Applicable Requirement Determinations)

Attach OP-REQ3 (Applicable Requirements Summary)

Attach OP-PBRSUP (Permits by Rule Supplemental Table)

[File Properties]

File Name	OP_PBRSUP_JSC OP-PBRSUP 9-9-25.pdf
Hash	14B17F3BCB63F6B6C35761805A80B1473D37C5F4CE0AA5495398EDCF7E2FBE8F
MIME-Type	application/pdf

Attach OP-SUMR (Individual Unit Summary for Revisions)

[File Properties]

File Name	OP_SUMR_OP_SUMR_no_change.docx
Hash	CFFA2F3192723C1978370219E08F87A01535CB0216DA4E136497410AEF143F38
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-MON (Monitoring Requirements)

Attach OP-UA (Unit Attribute) Forms

[File Properties]

File Name	Form OP-UA11_no_change.docx
Hash	A26566205BFD99EE261050D00AC92B153F63F88CAFF578DC78F023514C04F441
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

[File Properties]

File Name	Form OP-UA2_no_change.docx
Hash	E20149819E298CFC894E4A711BFC2240E689A3BDECB4A4AF43D4A2DB3FC673A8
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

If applicable, attach OP-AR1 (Acid Rain Permit Application)

Attach OP-CRO2 (Change of Responsible Official Information)

Attach OP-DEL (Delegation of Responsible Official)

Attach Void Request Form

Attach any other necessary information needed to complete the permit.

[File Properties]

File Name	SOP - O1552 National Aeronautics and Space Adminstration (Minor 36233).docx
Hash	F4B63A52D4CB93A9E0A835BDD485CE21E171BD6D7E6F6D23DC02922F7878E520
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

An additional space to attach any other necessary information needed to complete the permit.

[File Properties]

File Name	Response to WDP Comments 9-9-25.docx
Hash	B7704808A90529B53B1BC0CA35810CCA8D7B5C0C48855473BC9D5C93150E0F71
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Certification

I certify that I am the Duly Authorized Representative for this application and that, based on information and belief formed after reasonable inquiry, the statements and information on this form are true, accurate, and complete.

1. I am John P Herrmann, the owner of the STEERS account ER008559.
2. I have the authority to sign this data on behalf of the applicant named above.
3. I have personally examined the foregoing and am familiar with its content and the content of any attachments, and based upon my personal knowledge and/or inquiry of any individual responsible for information contained herein, that this information is true, accurate, and complete.
4. I further certify that I have not violated any term in my TCEQ STEERS participation agreement and that I have no reason to believe that the confidentiality or use of my password has been compromised at any time.
5. I understand that use of my password constitutes an electronic signature legally equivalent to my written signature.

6. I also understand that the attestations of fact contained herein pertain to the implementation, oversight and enforcemer of a state and/or federal environmental program and must be true and complete to the best of my knowledge.
7. I am aware that criminal penalties may be imposed for statements or omissions that I know or have reason to believe are untrue or misleading.
8. I am knowingly and intentionally signing Title V Existing 1552.
9. My signature indicates that I am in agreement with the information on this form, and authorize its submittal to the TCEC

OWNER OPERATOR Signature: John P Herrmann OWNER OPERATOR

Account Number:	ER008559
Signature IP Address:	130.40.246.195
Signature Date:	2025-09-12
Signature Hash:	876C45BB676559AA19D36B8B6CE6297B1AA51D63834F1BA58BBE8CDCE65C5D6C
Form Hash Code at time of Signature:	A4609BBAF86FAB32654AF07544489F4343A5C9BC9236E3599F1F517C38723907

Submission

Reference Number:	The application reference number is 816532
Submitted by:	The application was submitted by ER008559/John P Herrmann
Submitted Timestamp:	The application was submitted on 2025-09-12 at 18:28:32 CDT
Submitted From:	The application was submitted from IP address 130.40.246.195
Confirmation Number:	The confirmation number is 678050
Steers Version:	The STEERS version is 6.92
Permit Number:	The permit number is 1552

Additional Information

Application Creator: This account was created by Mark A Kolkmeier

Ryan Glaze

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Wednesday, August 20, 2025 2:50 PM
To: Ryan Glaze
Subject: RE: [EXTERNAL] FOP O1552/Project 36233 National Aeronautics and Space Administration/Lyndon B. Johnson Space Center

Ryan: Thank you for letting us know about the change; we appreciate the support Mr. Walker had given us over the past few years and we look forward to working with you in the immediate future. As the DAR for JSC, I will serve as your primary POC, and will keep the other addressees on our team advised of questions or issues that may arise.

As you will see while looking through our file, we had submitted a Title V Permit Modification request - which is currently pending. Considering how close we are for submitting a permit renewal (i.e., FOP O-1552 will expire in December 2026), it might make sense to incorporate that previous modification request into the permit renewal. But we will be interested in whether that is an acceptable approach for you.

Let me know if you need anything from us.

From: Ryan Glaze <James.Glaze@tceq.texas.gov>
Sent: Wednesday, August 20, 2025 1:51 PM
To: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Cc: Schwartz, Mary Beth (JSC-JA111) <mary.b.schwartz@nasa.gov>; KOLKMEIER, MARK A. (JSC-JP111)[STRAUGHAN ENVIRONMENTAL] <mark.a.kolkmeier@nasa.gov>; Valdez, Paul M. (JSC-JE111)[STRAUGHAN ENVIRONMENTAL] <paul.m.valdez@nasa.gov>; Fowler, Richard B. (JSC-JE111) <richard.b.fowler@nasa.gov>
Subject: [EXTERNAL] FOP O1552/Project 36233 National Aeronautics and Space Administration/Lyndon B. Johnson Space Center

Greetings,

I have been reassigned as the Permit Reviewer to Permit O1552 for National Aeronautics and Space Administration (NASA), Lyndon B. Johnson Space Center for Project No. 36233. Going forward please contact me with all updates/questions as John Walker is no longer the Permit Reviewer for this project.

As I familiarize myself with this project, I will be making any previous updates to this project that were requested when John Walker was the Permit Reviewer. Please be patient with me at this time. I will be in contact soon with updates/questions pertaining to this project.

If you have any questions in the meantime, please fill free to reach out and ask.

Thanks,

Ryan Glaze
Operating Permits Section
Air Permits Division
Texas Commission on Environmental Quality
P.O. Box 13087 MC 163
Austin, TX, 78711

(512) 239-6212

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

Go To: Title V Federal Operating Permits

01/03/2025 ----------AirPermits IMS - PROJECT RECORD ----------

Project#: **386929** Status: **COMPLETE**
Project Administrative Name: **NSR VOID PERMIT**
Project Technical Name: **LYNDON B JOHNSON SPACE CENTER**

PROJECT ACTIONS

Permit	Action Type	Permit Type	Received Date	Permit Status	Renewal Date	Action Status	Complete Date
50655	VOIDPMT	PBR	12/31/2024	VOID		COMPLETE	12/31/2024
70524	VOIDPMT	PBR	12/31/2024	VOID		COMPLETE	12/31/2024
93511	VOIDPMT	PBR	12/31/2024	VOID		COMPLETE	12/31/2024
107312	VOIDPMT	PBR	12/31/2024	VOID		COMPLETE	12/31/2024

Assigned Staff:
REVIEW ENG: STAFF , EPERMIT

Customer Name: **NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**
Legal Name: **National Aeronautics And Space Administration**
CN Number : **CN601572878**

Permit Information:
REGULATED ENTITY NUMBER: RN100665579

Permit	Account	Permittee Name	County	Region	City	State	Location
70524	HG1601A	NASA JOHNSON SPACE CENTER	HARRIS	REGION 12 - HOUSTON	HOUSTON	TEXAS	ON 2101 NASA RD
50655	HG1601A	NASA JOHNSON SPACE CENTER	HARRIS	REGION 12 - HOUSTON	HOUSTON	TEXAS	ON 2101 NASA RD
107312	HG1601A	LYNDON B JOHNSON SPACE CENTER	HARRIS	REGION 12 - HOUSTON	HOUSTON	TEXAS	ON 2101 NASA RD
93511	HG1601A	NASA JOHNSON SPACE CENTER	HARRIS	REGION 12 - HOUSTON	HOUSTON	TEXAS	ON 2101 NASA RD

FEE:

Permit	Action Type	Reference	Fee Receipt Number	Fee Amount Paid	Fee Refund Amount	Fee Receipt Date	Fee Payment Type

TRACKING ELEMENTS

TE Name	Start Date	Complete Date

© 2002 - 2025 Texas Commission on Environmental Quality

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 1)
Federal Operating Permit Program
Table 1a: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Horsepower Rating	RACT Date Placed in Service	Functionally Identical Replacement	Type of Service	Fuel Fired	Engine Type	ESAD Date Placed in Service	Diesel HP Rating
B220GEN01	R7201-2				D2001+				
B25GEN02A	R7ICI-2				ENG	NG	Rich-burn		
B31GEN01	R7ICI-2				ENG	NG	Lean-Burn		
B16GEN01	R7201-2				D2001+				

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 2)
Federal Operating Permit Program
Table 1b: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	NO_x Emission Limitation	23-C Option	30 TAC Chapter 116 Limit	EGF System CAP Unit	NO_x Averaging Method	NO_x Reduction	NO_x Monitoring System
B220GEN01	R7201-2							
B25GEN02A	R7ICI-2				NO	1HR	NONE	MERT
B31GEN01	R7ICI-2				NO	1HR	NONE	MERT
B16GEN01	R7201-2							

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 3)
Federal Operating Permit Program
Table 1c: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Fuel Flow Monitoring	CO Emission Limitation	CO Averaging Method	CO Monitoring System	NH_3 Emission Limitation	NH_3 Monitoring
B220GEN01	R7201-2						
B25GEN02A	R7ICI-2	X40A	310C	1HR	OTHER		
B31GEN01	R7ICI-2	X40A	310C	1HR	OTHER		
B16GEN01	R7201-2						

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 4)
Federal Operating Permit Program
Table 2a: Title 40 Code of Federal Regulations Part 63 (40 CFR Part 63)
Subpart ZZZZ: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	HAP Source	Brake HP	Construction/ Reconstruction Date	Nonindustrial Emergency Engine	Service Type	Stationary RICE Type
B220GEN01	63ZZZZ	AREA	100-	06+			
B25GEN02A	63ZZZZ	AREA	300-500	06+			
B31GEN01	63ZZZZ	AREA	500+	06+			
B16GEN01	63ZZZZ	AREA	100-250	06+			

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 8)
Federal Operating Permit Program
Table 4a: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Construction/ Reconstruction/ Modification Date	Test Cell	Exemption	Temp Replacement	Horsepower	Fuel	AEL No.	Lean Burn	Commencing
B25GEN02A	63JJJJ	YES	NO	NONE	NO	130-500E	NATGAS			CON
B31GEN01	63JJJJ	YES	NO	NONE	NO	500+E	NATGAS			CON

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 9)
Federal Operating Permit Program
Table 4b: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Manufacture Date	Displacement	Certified	Operation	Certified Modification	Service	Severe Duty	Optional Compliance
B25GEN02A	63JJJJ	N0111+E		YES	YES		EMERG	NO	
B31GEN01	63JJJJ	N0710+E		YES	YES		EMERG	NO	

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 10)
Federal Operating Permit Program
Table 5a: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Applicability Date	Exemptions	Service	Commencing	Manufacture Date
B220GEN01	63IIII	2005+	NONE	EMERG	CON	0406+
B16GEN01	63IIII	2005+	NONE	EMERG	CON	0406+

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 11)
Federal Operating Permit Program
Table 5b: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Diesel	AES No.	Displacement	Generator Set	Model Year	Install Date
B220GEN01	63IIII	DIESEL		10-CS		2007	
B16GEN01	63IIII	DIESEL		10-CS		2017+	

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 12)
Federal Operating Permit Program
Table 5c: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Kilowatts	Filter	AECD	Standard	Compliance Option	PM Compliance	Options
B220GEN01	63IIII	E37-75	NO	NO	YES	MANU YES		
B16GEN01	63IIII	E75-130	NO	NO	YES	MANU YES		

Application Area-Wide Applicability Determinations and General Information
Form OP-REQ1 (Page 88)
Federal Operating Permit Program
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
1/9/2025	O1552	RN100665579

For SOP applications, answer ALL questions unless otherwise directed.
♦ For GOP applications, answer ONLY these questions unless otherwise directed.

XII. NSR Authorizations (Attach additional sheets if necessary for sections XII.E-J.)

E. PSD Permits and PSD Major Pollutants

Permit No.	Issuance Date	Pollutant(s):	Permit No.	Issuance Date	Pollutant(s):

If PSD Permits are held for the application area, please complete the Major NSR Summary Table located under the Technical Forms heading at: www.tceq.texas.gov/permitting/air/titlev/site/site_experts.html.

F. Nonattainment (NA) Permits and NA Major Pollutants

Permit No.	Issuance Date	Pollutant(s):	Permit No.	Issuance Date	Pollutant(s):

If NA Permits are held for the application area, please complete the Major NSR Summary Table located under the Technical Forms heading at: www.tceq.texas.gov/permitting/air/titlev/site/site_experts.html.

G. NSR Authorizations with FCAA § 112(g) Requirements

NSR Permit No.	Issuance Date	NSR Permit No.	Issuance Date	NSR Permit No	Issuance Date

Date	Permit No.	Regulated Entity No.
1/9/2025	O1552	RN100665579

For SOP applications, answer ALL questions unless otherwise directed.
♦ For GOP applications, answer ONLY these questions unless otherwise directed.

XII. NSR Authorizations (continued) - (Attach additional sheets if necessary for sections XII.E-J.)

♦ **H. Title 30 TAC Chapter 116 Permits, Special Permits, Standard Permits, Other Authorizations (Other Than Permits By Rule, PSD Permits, NA Permits) for the Application Area**

Authorization No.	Issuance Date	Authorization No.	Issuance Date	Authorization No.	Issuance Date
76247	08/26/2015				
114721	10/31/2024				
130148	07/22/2024				

♦ **I. Permits by Rule (30 TAC Chapter 106) for the Application Area**

A list of selected Permits by Rule (previously referred to as standard exemptions) that are required to be listed in the FOP application is available in the instructions.

PBR No.	Version No./Date	PBR No.	Version No./Date	PBR No.	Version No./Date
5	12/01/1972	106.122	09/04/2000	106.265	09/04/2000
5	05/04/1994	106.124	09/04/2000	106.371	09/04/2000
41	07/20/1992	106.183	09/04/2000	106.375	03/14/1997
51	08/30/1988	106.227	09/04/2000	106.412	09/04/2000
51	07/20/1992	106.242	09/04/2000	106.418	09/04/2000
51	05/04/1994	106.261	11/01/2003	106.454	07/08/1998
61	07/20/1992	106.262	12/24/1998	106.454	11/01/2001
61	05/04/1994	106.262	09/04/2000		
75	09/12/1989	106.262	11/01/2003		
106.102	09/04/2000	106.263	11/01/2001		

♦ **J. Municipal Solid Waste and Industrial Hazardous Waste Permits with an Air Addendum**

Permit No.	Issuance Date	Permit No.	Issuance Date	Permit No.	Issuance Date

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 1

Date	Permit No.	Regulated Entity No.
10/16/2024	O-01552	RN100665579

Unit/Process AI	Unit/Process Revision No.	Unit/Process ID No.	Unit/Process Applicable Form	Unit/Process Name/ Description	Unit/Process CAM	Preconstruction Authorizations 30 TAC Chapter 116/ 30 TAC Chapter 106	Preconstruction Authorizations Title I
A	1	B220GEN01	OP-UA2	B220 Emergency Diesel Generator		106.511/09/04/2000	
A	2	B25GEN02A	OP-UA2	B25 EOC Emergency Gas Generator		106.511/09/04/2000	
A	3	B31GEN01	OP-UA2	B31 Emergency Gas Generator		106.511/09/04/2000	
D	4	B9PLAT	OP-UA1	B9 Metal Finishing		106.375/03/14/1997	
D	5	B25GEN02	OP-UA2	B25 Emergency Diesel Generator		106.511/09/04/2000	
	6	T-1	OP-UA11	Natural Gas Combustion Turbine		#130148	
	7	T-2	OP-UA11	Natural Gas Combustion Turbine		#130148	
A	8	B16GEN01	OP-UA2	B16 Emergency Diesel Generator		106.511/09/04/2000	

Individual Unit Summary for Revisions
Form OP-SUMR
Table 1

Date	Permit No.	Regulated Entity No.
10/16/2024	O-01552	RN100665579

Unit/Process AI	Unit/Process Revision No.	Unit/Process ID No.	Unit/Process Applicable Form	Unit/Process Name/ Description	Unit/Process CAM	Preconstruction Authorizations 30 TAC Chapter 116/ 30 TAC Chapter 106	Preconstruction Authorizations Title I

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 2

Date	Permit No.	Regulated Entity No.
12/30/2023	0-01552	RN100665579

Revision No.	ID No.	Applicable Form	Group AI	Group ID No.
1	B220GEN01	OP-UA2	A	None
2	B25GEN02A	OP-UA2	A	None
3	B31GEN01	OP-UA2	A	None
4	B9PLAT	OP-UA1	D	None
5	B25GEN02	OP-UA2	D	GRPGEN5
6	T-1	OP-UA11		GRPTBN
7	T-2	OP-UA11		GRPTBN
8	B16GEN01	OP-UA2	A	None

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 2

Date	Permit No.	Regulated Entity No.
12/30/2023	0-01552	RN100665579

Revision No.	ID No.	Applicable Form	Group AI	Group ID No.

Applicable Requirements Summary
Form OP-REQ3 (Page 1)
Federal Operating Permit Program

Table 1a: Additions

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
1	GRPGEN2	OP-UA2	R7201-2	EXEMP	30 TAC Chapter 117, Subchapter B	[G]§117.303(a)(11) [G]§117.310(f)
2	B25GEN02A	OP-UA2	R7ICI-2	EXEMP	30 TAC Chapter 117, Subchapter B	117.303(a)(11)
3	B31GEN01	OP-UA2	R7ICI -2	EXEMP	30 TAC Chapter 117, Subchapter B	117.303(a)(6)(D)
8	GRPGEN8	OP-UA2	R7201-2	EXEMP	30 TAC Chapter 117, Subchapter B	[G]§117.303(a)(11) [G]§117.310(f)
1	GRPGEN2	OP-UA2	60IIII	CO	40 CFR Part 60, Subpart IIII	5.0 g/KW-hr § 60.4205(b) § 60.4202(a)(2) §1039-Appendix I § 60.4206 § 60.4207(b) [G]§ 60.4211(f) § 60.4218 §60.4211(c) [G]§60.4211(a)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
1	GRPGEN2	OP-UA2	60IIII	NMHC + NOX	40 CFR Part 60, Subpart IIII	7.5 g/KW-hr § 60.4205(b) § 60.4202(a)(2) §1039-Appendix I § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218
1	GRPGEN2	OP-UA2	60IIII	PM	40 CFR Part 60, Subpart IIII	0.40 g/KW-hr §60.4205(b)| §60.4202(a)(2) §60.4206 §1039-Appendix I §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)
1	GRPGEN2	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)
2	B25GEN02A	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)
3	B31GEN01	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
8	GRPGEN8	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)
2	B25GEN02A	OP-UA2	60JJJJ	NOx	40 CFR Part 60, Subpart JJJJ	2.0 g/HP-hr §60.4233(e)-Table 1|34 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)
2	B25GEN02A	OP-UA2	60JJJJ	CO	40 CFR Part 60, Subpart JJJJ	4.0 g/HP-hr §60.4233(e)-Table 1|36 §60.4234 §60.4243(b)(1)
2	B25GEN02A	OP-UA2	60JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	1.0 g/HP-hr §60.4233(e)-Table 1|37 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)
3	B31GEN01	OP-UA2	60JJJJ	NOx	40 CFR Part 60, Subpart JJJJ	2.0 g/HP-hr §60.4233(e)-Table 1|34 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
3	B31GEN01	OP-UA2	60JJJJ	CO	40 CFR Part 60, Subpart JJJJ	4.0 g/HP-hr §60.4233(e)-Table 1|36 §60.4234 §60.4243(b), [G](d), (g) §60.4246. §60.4243(b)(1)
3	B31GEN01	OP-UA2	60JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	1.0 g/HP-hr §60.4233(e)-Table 1|37 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)
8	GRPGEN8	OP-UA2	60IIII	NMHC+ NOx	40 CFR Part 60, Subpart IIII	4.0 g/KW-hr §60.4205(b)|14 §60.4202(a)(2) §1039-Appendix I §60.4206 §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
8	GRPGEN8	OP-UA2	60IIII	CO	40 CFR Part 60, Subpart IIII	5.0 g/KW-hr §60.4205(b)| §60.4202(a)(2) §1039-Appendix I §60.4206 §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)
8	GRPGEN8	OP-UA2	60IIII	PM	40 CFR Part 60, Subpart IIII	0.30 g/KW-hr §60.4205(b)|21 §60.4202(a)(2) §1039-Appendix I §60.4206 §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)

Applicable Requirements Summary
Form OP-REQ3 (Page 2)
Federal Operating Permit Program1

Table 1b: Additions

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	**Permit No.:** 0-01552
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	SOP/GOP Index No.	Pollutant	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
1	GRPGEN2	R7201-2	EXEMP	None	§117.340(j) §117.345(f) [G]§117.345(f)(6) [G]§117.345(f)(10)	None
2	B25GEN02A	R7ICI-2	EXEMP	None	§117.340(j) §117.345(f), [G](f)(6)	None
3	B31GEN01	R7ICI-2	EXEMP	None	§117.340(j) §117.345(f), [G](f)(6)	None
8	GRPGEN8	R7201-2	EXEMP	None	§117.340(j) §117.345(f) [G]§117.345(f)(6) [G]§117.345(f)(10)	None
2	B25GEN02A	60JJJJ	NOx	§60.4237(b)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)

Date: 12/30/2023	Regulated Entity No.: RN100665579	Permit No.: 0-01552
Company Name: National Aeronautics and Space Administration	Area Name: Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	SOP/GOP Index No.	Pollutant	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
2	B25GEN02A	60JJJJ	CO	§60.4237(b)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
2	B25GEN02A	60JJJJ	VOC	§60.4237(b)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
3	B31GEN01	60JJJJ	NOx	§60.4237(a)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
3	B31GEN01	60JJJJ	CO	§60.4237(a)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
3	B31GEN01	60JJJJ	VOC	§60.4237(a)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
1	GRPGEN2	60IIII	NMHC + NOX	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	**Permit No.:** 0-01552
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	SOP/GOP Index No.	Pollutant	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
1	GRPGEN2	60IIII	CO	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
1	GRPGEN2	60IIII	PM	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
8	GRPGEN8	60IIII	NMHC+ NOx	§60.4209(a)	§60.4214(b)	[G]§60.4214(d)
8	GRPGEN8	60IIII	CO	§60.4209(a)	§60.4214(b)	[G]§60.4214(d)
8	GRPGEN8	60IIII	PM	§60.4209(a)	§60.4214(b)	[G]§60.4214(d)
1	GRPGEN2	63ZZZZ	HAPs	None	None	None
2	B25GEN02A	63ZZZZ	HAPs	None	None	None
3	B31GEN01	63ZZZZ	HAPs	None	None	None
8	GRPGEN8	63ZZZZ	HAPs	None	None	None

Permit By Rule Supplemental Table (Page 1)
Table A: Registered Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	Registration No.	PBR No.	Registration Date
B14-01	22827	SE 41	8/16/1993
B24TANK01A	46837	106.478	1/22/2001
B14LASER	82188	106.261, 106.262, 106.227	8/6/2007
CYLVENT	86369	106.261, 106.262	11/7/2008
B9AC01, B9AC02	92402	106.124	5/17/2010
ESTA01	107313	106.122	10/20/1999
B417OWS01, B329TANK01	107316	SE 61	6/17/1994
B7LASER	108114	106.227, 106.261	2/22/2013
BSTART-1	141276	106.511	8/3/2016
B353B5LASER	168041	106.261, 106.262	3/18/2022
B320WT	107314	SE 61	4/17/1995
B32CR	111091	106.263	7/17/2013

Permit By Rule Supplemental Table (Page 2)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
B220GEN01	106.511	9/4/2000
B25GEN02A	106.511	9/4/2000
B31GEN01	106.511	9/4/2000
B16GEN01	106.511	9/4/2000

Permit By Rule Supplemental Table (Page 3)
Table C: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for Insignificant Sources for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01552	100665579

PBR No.	Version No./Date

Permit By Rule Supplemental Table (Page 4)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B14-01	SE 41	7/20/1992 22827	Annual Records of Throughput and Mass Balance
B24TANK01A	106.478	46837	Monthly Records of Throughput and Contents, Record of Tank Construction
B14LASER	106.227, 106.261, 106.262,	82188	Annual Records of Throughput and Process Knowledge
CYLVENT	106.261, 106.262	86369	Annual Records of Throughput and Mass Balance
B9AC01, B9AC02	106.124	92402	Annual and Monthly Records of Throughput; SDS of Content, Process Knowledge
ESTA01	106.122	107313	Cylinder Volume, Process Knowledge, Annual Throughput
B417OWS01, B329TANK	SE 61	7/20/1992 107316	Sum of partial pressures of all species of VOC in any sample is less than 1.5 psia
B7LASER	106.227, 106.261	108114	Annual Records of Throughput and Process Knowledge
BSTART-1	106.511	141276	Non-resettable hourly meter; monthly operating hours records; maintenance records
B320WT	SE 61	5/4/1994 107314	Ensure that only natural earthen grit is washed from vehicles / equipment.
B32CR	111091	106.263	Annual Records of Throughput and Mass Balance
B353B5LASER	106.261, 106.262	168041	Annual Records of Throughput and Process Knowledge

Reset Form Print Form

Permit By Rule Supplemental Table (Page 1)
Table A: Registered Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	Registration No.	PBR No.	Registration Date
B14-01	22827	SE 41	8/16/1993
B24TANK01A	46837	106.478	1/22/2001
B14LASER	82188	106.261, 106.262, 106.227	8/6/2007
CYLVENT	86369	106.261, 106.262	11/7/2008
B9AC01, B9AC02	92402	106.124	5/17/2010
ESTA01	107313	106.122	10/20/1999
B417OWS01, B329TANK01	107316	SE 61	6/17/1994
B7LASER	108114	106.227, 106.261	2/22/2013
BSTART-1	141276	106.511	8/3/2016
B353B5LASER	168041	106.261, 106.262	3/18/2022
B320WT	107314	SE 61	4/17/1995
B32CR	111091	106.263	7/17/2013

Permit By Rule Supplemental Table (Page 2)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
B220GEN01	106.511	9/4/2000
B25GEN02A	106.511	9/4/2000
B31GEN01	106.511	9/4/2000
B16GEN01	106.511	9/4/2000

Permit By Rule Supplemental Table (Page 3)
Table C: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for Insignificant Sources for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01552	100665579

PBR No.	Version No./Date

Permit By Rule Supplemental Table (Page 4)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B14-01	SE 41	7/20/1992 22827	Annual Records of Throughput and Mass Balance
B24TANK01A	106.478	46837	Monthly Records of Throughput and Contents, Record of Tank Construction
B14LASER	106.227, 106.261, 106.262,	82188	Annual Records of Throughput and Process Knowledge
CYLVENT	106.261, 106.262	86369	Annual Records of Throughput and Mass Balance
B9AC01, B9AC02	106.124	92402	Annual and Monthly Records of Throughput; SDS of Content, Process Knowledge
ESTA01	106.122	107313	Cylinder Volume, Process Knowledge, Annual Throughput
B417OWS01, B329TANK	SE 61	7/20/1992 107316	Sum of partial pressures of all species of VOC in any sample is less than 1.5 psia
B7LASER	106.227, 106.261	108114	Annual Records of Throughput and Process Knowledge
BSTART-1	106.511	141276	Non-resettable hourly meter; monthly operating hours records; maintenance records
B320WT	SE 61	5/4/1994 107314	Ensure that only natural earthen grit is washed from vehicles / equipment.
B32CR	111091	106.263	Annual Records of Throughput and Mass Balance
B353B5LASER	106.261, 106.262	168041	Annual Records of Throughput and Process Knowledge

Reset Form Print Form

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 1
Texas Commission on Environmental Quality

Date: 1/9/2025	
Permit No.: 0-01552	
Regulated Entity No.: RN100665579	
Company Name: National Aeronautics and Space Administration	
For Submissions to EPA	
Has an electronic copy of this application been submitted (or is being submitted) to EPA?	☒ YES ☐ NO
I. Application Type	
Indicate the type of application:	
☐ Renewal	
☒ Streamlined Revision (Must include provisional terms and conditions as explained in the instructions.)	
☐ Significant Revision	
☐ Revision Requesting Prior Approval	
☐ Administrative Revision	
☐ Response to Reopening	
II. Qualification Statement	
For SOP Revisions Only	☒ YES ☐ NO
For GOP Revisions Only	☐ YES ☐ NO

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 1 *(continued)*
Texas Commission on Environmental Quality

III. Major Source Pollutants (Complete this section if the permit revision is due to a change at the site or change in regulations.)						
Indicate all pollutants for which the site is a major source based on the site's potential to emit: *(Check the appropriate box[es].)*						
☐ VOC	☒ NO_X	☐ SO_2	☐ PM_{10}	☐ CO	☐ Pb	☐ HAP
Other:						
IV. Reference Only Requirements *(For reference only)*						
Has the applicant paid emissions fees for the most recent agency fiscal year (September 1 - August 31)?					☒ YES ☐ NO ☐ N/A	
V. Delinquent Fees and Penalties						
Notice: 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 are paid in accordance with the Delinquent Fee and penalty protocol.						

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 2
Texas Commission on Environmental Quality

Date: 1/9/2025
Permit No.: O-01552
Regulated Entity No.: RN100665579
Company Name: National Aeronautics and Space Administration

Using the table below, provide a description of the revision.

Revision No.	Revision Code	New Unit	Unit/Group ID No.	Process Applicable Form	NSR Authorization	Description of Change and Provisional Terms and Conditions
1	MS-A	YES	B220GEN01	OP-UA2	106.511	New emergency generator installed at Building 220
2	MS-A	YES	B25GEN02A	OP-UA2	106.511	New emergency generator installed at Building 25
3	MS-A	YES	B31GEN01	OP-UA2	106.511	New emergency generator installed at Building 31
4	MS-C	NO	B9PLAT	OP-UA1	106.375	Permanently shut down. Delete from permit.
5	MS-C	NO	B25GEN02	OP-UA2	106.511	Permanently shut down. Delete from permit.
6	MS-C	NO	T-1	OP-UA11	130148	Monitoring update regarding replacing turbine CEMS with PEMS; Update Permit Issuance Date. No other changes applicable to this unit.
7	MS-C	NO	T-2	OP-UA11	130148	Monitoring update regarding replacing turbine CEMS with PEMS; Update Permit Issuance Date. No other changes applicable to this unit.
8	MS-A	YES	B16GEN01	OP-UA2	106.511	New emergency generator installed at Building 16
9	MS-C	NO	B14-01		22827	Adding unit to Form OP-PBRSUP.
10	MS-C	NO	B24TANK01A	OP-UA3	46837	Adding pre-existing registration number to OP-PBRSUP only. No changing unit attributes for this existing source. Applicable requirements (ARS) already established in O-1552.
11	MS-C	NO	B14LASER		82188	Adding unit to Form OP-PBRSUP.
12	MS-C	NO	CYLVENT		86369	Adding unit to Form OP-PBRSUP.
13	MS-C	NO	B9AC01, B9AC02	OP-UA15	92402	Adding preconstruction authorization registration number to Form OP-PBRSUP.
14	MS-C	NO	ESTA01		107313	Adding unit to Form OP-PBRSUP.

15	MS-C	NO	B417OWS01, B329TANK01	OP-UA3	107316	Only adding preconstruction authorization registration number to Form OP-PBRSUP. No changing unit attributes for this existing source. Applicable requirements (ARS) already established in O-1552.
16	MS-C	NO	B7LASER		108114	Adding unit to Form OP-PBRSUP.
17	MS-C	NO	BSTART-1	OP-UA2	141276	Adding preconstruction authorization registration number to Form OP-PBRSUP only. No changing unit attributes for this existing source. Applicable requirements (ARS) already established in O-1552.
18	MS-C	NO	B353B5LASER		168041	Adding unit to Form OP-PBRSUP.
19	MS-C	NO	B320WT		107314	Adding unit to Form OP-PBRSUP.
20	MS-C	No	B32CR		111091	Adding unit to Form OP-PBRSUP.

Application for Permit Revision/Renewal
Form OP-2-Table 3
Texas Commission on Environmental Quality

Date: 1/9/2025		
Permit No.: O-01552		
Regulated Entity No.: RN100665579		
Company Name: National Aeronautics and Space Administration		
I.	**Significant Revision** *(Complete this section if you are submitting a significant revision application or a renewal application that includes a significant revision.)*	
A.	Is the site subject to bilingual requirements pursuant to 30 TAC § 122.322?	☐ YES ☐ NO
B.	Indicate the alternate language(s) in which public notice is required: Spanish	
C.	Will, there be a change in air pollutant emissions as a result of the significant revision?	☐ YES ☐ NO

Stationary Turbine Attributes
Form OP-UA11 (Page 6)
Federal Operating Permit Program
Table 3a: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Area
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP/GOP Index No.	Megawatt Rating	RACT Date Placed in Service (ICI)	Functionally Identical Replacement (ICI)	Service Type (ICI)	NO_x Emission Limitation (ICI)	23C-Option
T-1	R-7201	1-10			TURB	310D	
T-2	R-7201	1-10			TURB	310D	

Stationary Turbine Attributes
Form OP-UA11 (Page 7)
Federal Operating Permit Program
Table 3b: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	30 TAC Chapter 116 Limit (ICI)	EGF System Cap Unit	Averaging Method	NO_x Reduction (ICI)	NO_x Monitoring System (ICI)
T-1	R-7201		NO	30D	POST1	PEMS
T-2	R-7201		NO	30D	POST1	PEMS

Stationary Turbine Attributes
Form OP-UA11 (Page 8)
Federal Operating Permit Program
Table 3c: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Fuel Flow Monitoring	CO Emission Limitation	CO Monitoring System	NH3 Emission Limitation	NH3 Monitoring
T-1	R-7201	X40A	310C	PEMS	310C	PEMS
T-2	R-7201	X40A	310C	PEMS	310C	PEMS

Stationary Turbine Attributes
Stationary Turbine Attributes
Form OP-UA11 (Page 12)
Federal Operating Permit Program
Table 6a: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Unit Type	Construction/Modification Date	Heat Input	Subject to Da	Service Type	NO_x Standard	Fuel Type
T-1	60KKKK	CHPT	2005C	50-850	NO	NOTER	YES	NGO
T-2	60KKKK	CHPT	2005C	50-850	NO	NOTER	YES	NGO

Stationary Turbine Attributes
Form OP-UA11 (Page 13)
Federal Operating Permit Program
Table 6b: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	75% of Peak	30 MW	Turbine Use	NO_x Control	NO_x Monitoring	Common Steam Header	Duct Burner
T-1	60KKKK	NO		ELCT	NO	CPMS	CMN-	YES
T-2	60KKKK	NO		ELCT	NO	CPMS	CMN-	YES

Stationary Turbine Attributes
Form OP-UA11 (Page 14)
Federal Operating Permit Program
Table 6c: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Location	SO_2 Standard	Fuel Monitoring	Fuel Quality	Performance Test	Intermediate Storage	Fuel Schedules
T-1	60KKKK	NO	NO	YES	SAMP	SAMP		
T-2	60KKKK	NO	NO	YES	SAMP	SAMP		

Texas Commission on Environmental Quality

Title V Existing

1552

Site Information (Regulated Entity)

What is the name of the permit area to be authorized?	LYNDON B JOHNSON SPACE CENTER
Does the site have a physical address?	Yes
Physical Address	
Number and Street	2101 NASA PKWY
City	HOUSTON
State	TX
ZIP	77058
County	HARRIS
Latitude (N) (##.######)	29.557777
Longitude (W) (-###.######)	95.086666
Primary SIC Code	9661
Secondary SIC Code	
Primary NAICS Code	927110
Secondary NAICS Code	
Regulated Entity Site Information	
What is the Regulated Entity's Number (RN)?	RN100665579
What is the name of the Regulated Entity (RE)?	LYNDON B JOHNSON SPACE CENTER
Does the RE site have a physical address?	Yes
Physical Address	
Number and Street	2101 NASA PKWY
City	HOUSTON
State	TX
ZIP	77058
County	HARRIS
Latitude (N) (##.######)	29.557777
Longitude (W) (-###.######)	-95.086666
Facility NAICS Code	
What is the primary business of this entity?	FLEET REFUELING

Customer (Applicant) Information

How is this applicant associated with this site?	Owner Operator
What is the applicant's Customer Number (CN)?	CN601572878
Type of Customer	Federal Government
Full legal name of the applicant:	
Legal Name	National Aeronautics And Space Administration
Texas SOS Filing Number	
Federal Tax ID	
State Franchise Tax ID	
State Sales Tax ID	

Local Tax ID	
DUNS Number	
Number of Employees	501+
Independently Owned and Operated?	

Responsible Official Contact

Person TCEQ should contact for questions about this application:	
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR.
First	JOEL
Middle	
Last	WALKER
Suffix	
Credentials	
Title	DIRECTOR, CENTER OPERATIONS
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	MC JE111
City	HOUSTON
State	TX
ZIP	77058
Phone (###-###-####)	2814830541
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	joel.b.walker@nasa.gov

Technical Contact

Person TCEQ should contact for questions about this application:	
Select existing TC contact or enter a new contact.	JOHN HERRMANN(NATIONAL AERONA...)
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR
First	JOHN
Middle	
Last	HERRMANN
Suffix	
Credentials	
Title	ENVIRONMENTAL ENGINEER
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic

Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	
City	HOUSTON
State	TX
ZIP	77058
Phone (###-###-####)	2814835213
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	2814837027
E-mail	john.p.herrmann@nasa.gov

Title V General Information - Existing

1) Permit Type:	SOP
2) Permit Latitude Coordinate:	29 Deg 33 Min 28 Sec
3) Permit Longitude Coordinate:	95 Deg 5 Min 12 Sec
4) Is this submittal a new application or an update to an existing application?	Update
4.1. Select the permit/project number for which this update should be applied.	1552-36233
5) Does this application include Acid Rain Program or Cross-State Air Pollution Rule requirements?	No

Title V Attachments Existing

Attach OP-1 (Site Information Summary)

Attach OP-2 (Application for Permit Revision/Renewal)

[File Properties]

File Name	OP_2_OP_2_FORM_1-9-25.docx
Hash	74CDC6F30D51D3B211C04F383E5A308E64CD785EC15C92273EFF9946FAB64D1A
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-ACPS (Application Compliance Plan and Schedule)

Attach OP-REQ1 (Application Area-Wide Applicability Determinations and General Information)

[File Properties]

File Name	OP-REQ1 pages 88-89 1-9-25.docx
Hash	BC8984B6F006E1F771F73BF8290B31C62F0B30C2D1A72DA458AD99F0BC361FDE
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-REQ2 (Negative Applicable Requirement Determinations)

Attach OP-REQ3 (Applicable Requirements Summary)

[File Properties]

File Name OP_REQ3_OP_REQ3_Form.docx

Hash 7FB56BD4AD039200B2A36C743016639E75ECBBF05A93A7D382C44F8BE7116AD3

MIME-Type application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-PBRSUP (Permits by Rule Supplemental Table)

[File Properties]

File Name OP_PBRSUP_JSC OP-PBRSUP 1-9-25.docx

Hash 70F4A3A7E3D3AE817E20279A78517B0C1AA962EC9B4B91B47F8351639BFAD6E0

MIME-Type application/vnd.openxmlformats-officedocument.wordprocessingml.document

[File Properties]

File Name OP_PBRSUP_JSC OP-PBRSUP 1-9-25.pdf

Hash 9451B85B45CA52553D7F43CAD7178DC985D5F05DD0B5D959F5D6BBC8560F4664

MIME-Type application/pdf

Attach OP-SUMR (Individual Unit Summary for Revisions)

[File Properties]

File Name OP_SUMR_OP_SUMR_OP_SUMR_Form_10-16-2024_JWalker comments.docx

Hash B8B5FD66642854D1766C652DD6823A436BEE23AADABA4DA3B63D88DC1C4320FD

MIME-Type application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-MON (Monitoring Requirements)

Attach OP-UA (Unit Attribute) Forms

[File Properties]

File Name Form OP-UA11.docx

Hash A26566205BFD99EE261050D00AC92B153F63F88CAFF578DC78F023514C04F441

MIME-Type application/vnd.openxmlformats-officedocument.wordprocessingml.document

[File Properties]

File Name OP-UA2.docx

Hash E20149819E298CFC894E4A711BFC2240E689A3BDECB4A4AF43D4A2DB3FC673A8

MIME-Type application/vnd.openxmlformats-officedocument.wordprocessingml.document

If applicable, attach OP-AR1 (Acid Rain Permit Application)

Attach OP-CRO2 (Change of Responsible Official Information)

Attach OP-DEL (Delegation of Responsible Official)

Attach Void Request Form

Attach any other necessary information needed to complete the permit.

[File Properties]

File Name	20250109_Working Draft Permit_FOP O1552_Project 36233_NASA_LBJ Space Center_.docx
Hash	D11E2117F7328C633D7D42DA012F43CB9BBEE564DB669816D4D48F5A3E1E4292
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

An additional space to attach any other necessary information needed to complete the permit.

[File Properties]

File Name	PBR Void record 12-31-2024.pdf
Hash	10D33FCC5C191C039E079D8A57C5E78664A6347FFE407301F8E3AAF4665540E9
MIME-Type	application/pdf

Certification

I certify that I am the Responsible Official for this application and that, based on information and belief formed after reasonable inquiry, the statements and information on this form are true, accurate, and complete.

1. I am John P Herrmann, the owner of the STEERS account ER008559.
2. I have the authority to sign this data on behalf of the applicant named above.
3. I have personally examined the foregoing and am familiar with its content and the content of any attachments, and based upon my personal knowledge and/or inquiry of any individual responsible for information contained herein, that this information is true, accurate, and complete.
4. I further certify that I have not violated any term in my TCEQ STEERS participation agreement and that I have no reason to believe that the confidentiality or use of my password has been compromised at any time.
5. I understand that use of my password constitutes an electronic signature legally equivalent to my written signature.
6. I also understand that the attestations of fact contained herein pertain to the implementation, oversight and enforcemer of a state and/or federal environmental program and must be true and complete to the best of my knowledge.
7. I am aware that criminal penalties may be imposed for statements or omissions that I know or have reason to believe are untrue or misleading.
8. I am knowingly and intentionally signing Title V Existing 1552.
9. My signature indicates that I am in agreement with the information on this form, and authorize its submittal to the TCEC

OWNER OPERATOR Signature: John P Herrmann OWNER OPERATOR

Account Number:	ER008559
Signature IP Address:	130.40.230.159
Signature Date:	2025-01-10
Signature Hash:	3919D770CEB274C303F872FCB5BC13ED27AAF57F4653F14CCABB18BB0C66D56E
Form Hash Code at time of Signature:	AA44AAD4759A42AC33FB70CB550BC4F0AC497D909AC2785538FB4D9130589368

Submission

Reference Number:	The application reference number is 744117
Submitted by:	The application was submitted by ER008559/John P Herrmann
Submitted Timestamp:	The application was submitted on 2025-01-10 at 15:54:48 CST

Submitted From:	The application was submitted from IP address 130.40.230.159
Confirmation Number:	The confirmation number is 618134
Steers Version:	The STEERS version is 6.85
Permit Number:	The permit number is 1552

Additional Information

Application Creator: This account was created by Mark A Kolkmeier

Ryan Glaze

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Friday, January 10, 2025 4:14 PM
To: John Walker
Cc: Fowler, Richard B. (JSC-JE111); Valdez, Paul M. (JSC-JP111)[Straughan Environmental, Inc]; KOLKMEIER, MARK A. (JSC-JA111)[Straughan Environmental, Inc]; Schwartz, Mary Beth (JSC-JA111)
Subject: FW: [EXTERNAL] Working Draft Permit - FOP O1552/Project 36233 National Aeronautics
Attachments: Area PCA data request.xlsx; OP-SUM data request.xls; OP_2_OP_2_FORM_ 10-16-24)_Jwalker comments.docx; OP_SUMR_OP_SUMR_Form_10-16-2024_JWalker comments.docx; 20250109_Working Draft Permit_FOP O1552_Project 36233_NASA_LBJ Space Center_ (002).docx

Follow Up Flag: Follow up
Flag Status: Flagged

John: Happy New Year.
Thank you, again, for your patience with me, and allowing us the additional time to complete our application and verify with organizational elements their continuing needs for previously registered Permits by Rule (PBRs).
In particular, we noted that the Clean Room in B32 will likely be renamed, since although it was originally constructed in support of the James Webb Telescope, the program office envisions its continued use for processing flight hardware well into the foreseeable future.

I have taken the liberty of inserting our responses to each of your suggestions below, and reattaching the modified WDP based on our previous correspondence trail for this project.

I have signed the application in STEERS as the JSC's Duly Authorized Representative(DAR) on behalf of the Responsible Official, JSC's Center Operations Director.
The OP-CR01/OP-DEL form was not uploaded into STEERS, per se, but is being included with the "hard" printed copies being transmitted to the US EPA Region VI and to the TCEQ District 12 Houston Regional Office.

Please contact me by e-mail or by phone at (832) 693-6394 should you have any further questions.

From: John Walker <John.Walker@tceq.texas.gov>
Sent: Friday, December 13, 2024 4:33 PM
To: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Subject: [EXTERNAL] Working Draft Permit - FOP O1552/Project 36233 National Aeronautics and Space Administration/Lyndon B. Johnson Space Center

Good Afternoon,

I have reviewed the application updates provided to me on 10/21/2024. Additional information is required. Please submit the requested information below as soon as possible but no later than **01/10/2025.**

1. There are several deficiencies that must be addressed on Forms OP-2, OP-SUMR, OP-PBRSUP, and OP-REQ1 Pages 88 – 89. Essentially, there is conflicting information in regard to preconstruction authorizations provided on the forms and within the draft permit. I have attached excel documents that reflects the area-wide preconstruction authorization list and the OP-SUMR data. I have also attached Forms OP-2 and OP-SUMR with my comments identifying deficiencies. Please use the documents as a

reference to help address the following issues.

If there are Permits by Rule (PBR) or Standard Exemptions (SE) documented as a preconstruction authorization for a unit, the PBR or SE should be documented on Form OP-REQ1 Page 89 and either Table A or B and Table D of Form OP-PBRSUP. That is, that the PBR and SE documentation is consistent across the forms.

Response:

That is correct, and thank you for this comment.

The majority of sources do not have potentially applicable requirements, and were erroneously included on OP-UA1 forms. Based on the WDP you (TCEQ) sent on 9/20/2024 via email, there are no additional applicable requirements to add. As you have stated we are adding and updating many registered PBR/SE units to the OP-PBRSUP, per the updated descriptions we have included in the OP-2 form. Those PBR/SE units have been removed from the OP-SUMR as well since no Title V applicable requirements apply to them. Remaining PBR/SE registered units have been voided as of 12/31/2024, per Project # 386929. The aforementioned additions and updates bring the OP-PBRSUP up to date. In addition, NASA has updated the WDP with tracked changes and brief comments as necessary to describe the changes and hopefully provide greater clarity. All updated documents are being uploaded with our application within STEERS.

However, there may be cases in which units are authorized by a PBR or SE that do not have Title V requirements which are only documented on Form OP-PBRSUP. There seems to be some units that fit into this criteria in which you have added to OP-UA1 but have not provided any Title V requirements on any Unit Attribute Forms, OP-REQ2, or OP-REQ3. These units should be removed from OP-SUMR and OP-UA1, however you may have a revision item on Form OP-2 stating you are adding the units to Form OP-PBRSUP. If the units provided on Form OP-UA1 do have potentially applicable requirements that should be documented on a Unit Attribute Form, OP-REQ2, or OP-REQ3, please provide those forms.

Response:

That is correct, thank for this comment.

There are several units which are authorized by PBR or SE that do not have Title V requirements , and which should only be documented on form OP-PBRSUP. NASA has completed and incorporated these updates.

Additionally, please address the following issues:

- Several NSR permits were provided on Form OP-REQ1 Page 88 Section G. for NSR Authorizations with FCAA § 112(g) Requirements. Please confirm if these NSR permits have FCAA § 112(g) Requirements. If they do not, please provide them in the correct section on Form OP-REQ1 Pages 88 – 89.

Response:

This addition to Page 88 Section G was an error. The NSR Permits are being moved to the correct section on Form OP-REQ1 Pages 88-99.

- In your most recent response, you mentioned not including various PBR registrations on Form OP-PBRSUP and Title V Forms due to various reasons. This is incorrect. If there is an active PBR registration, it must be documented on Form OP-PBRSUP Table A and D, and any Title V forms as required. If the PBR Registration is no longer wanted, it must be voided. Please add all PBR registrations to the necessary forms.

Response:

All pertinent PBR/SE registrations are now included, with the remainder PBR/SE registrations voided on 12/31/2024, Project # 386929.

- There were several PBRs and SEs that authorize units within the permit (refer to the WDP and the OP-SUMR excel document) that were not included on Form OP-REQ1 Page 89. If there are units within the permit that are authorized by PBRs or SEs, they must be documented on Form OP-REQ1 and Form OP-PBRSUP. Also, any PBRs or SEs documented on Form OP-PBRSUP, should be documented on Form OP-REQ1 Page 89.

Response:

The WDP has been updated to reflect this, and the OP-REQ1 and PBRSUP forms have been updated, as appropriate.

- Please address the units provided on Form OP-2 and OP-UA1 with no applicable requirements provided on any UA form, OP-REQ2, or OP-REQ3. If these units do not have any Title V requirements and are documented on Form OP-PBRSUP, please remove them from Form OP-UA1. You may have a revision item on Form OP-2 stating you are adding them to Form OP-PBRSUP.

Response:

The majority of PBR/SEs added or updated in this revision do not have applicable Title V requirements and will not be included on OP-UA1. NASA is including a revision item on Form OP-2 noting this.

- Please ensure that the PBR and SE information is consistent between Forms OP-2, OP-SUMR, and OP-PBRSUP, as required.

Response:

NASA has verified consistency between OP-2, OP-SUMR, OP-PBRSUP. In addition, the OP-2 order of PBR/SE units should match the OP-PBRSUP to make for easier line-by-line comparison.

- If there are any changes that should be made to existing preconstruction authorizations to units that are outside the scope of revision application, please add a revision item for those changes on Form OP-2 and make the necessary updates on Form OP-SUMR.

Response:

We have carefully reviewed the WDP, and there are no additional changes necessary for the OP-SUMR from the 9/20/24 WDP; non-applicable PBRs/SEs were removed. The additional updates remaining were updates to the PBRSUP.

As indicated above, please review the revised the WDP. This should now be consistent with the WDP modifications uploaded into STEERS.

If you have any questions in regard to completing these forms, please contact me.

Application updates may now be submitted through Title V STEERS. Any application updates that are submitted by the RO/DAR through STEERS are certified and do not require the submittal of an original signature OP-CRO1. Application updates that are provided through email or physical mail require certification using an original signature OP-CRO1.

Please notify me when these updates have been submitted.

As required on Form OP-1, question IV.D, please remember the FOP application and all application updates must be submitted to EPA Region 6 at R6AirPermitsTX@epa.gov and to the TCEQ regional office having jurisdiction. This submittal information can be found on our website at Where to Submit FOP Applications and Permit-Related Documents.

As required on Form OP-1, question IV.D, please remember the FOP application and all application updates must be submitted to EPA Region 6 at R6AirPermitsTX@epa.gov and to the TCEQ regional office having jurisdiction. This submittal information can be found on our website at Where to Submit FOP Applications and Permit-Related Documents.

Response:

I hope this communication is fully responsive to your comments, and that the revised WDP and the various supporting forms are reflective of your direction as well as TCEQ's permitting instructions and guidelines.

Contact me if you have any questions regarding the guidelines, the project schedule, or any other details regarding your application or permit.

Thank you for your cooperation.

Sincerely,

John Walker
Permit Reviewer
OA/Air Permits Division/OP Section
Texas Commission on Environmental Quality
MC-163, P.O. Box 13087
Austin, TX 78711-3087
John.Walker@tceq.texas.gov

Phone: (512) 239-1277

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Title 30 TAC Chapter 116 Permits, Special Permits, and Other Authorizations (Other Than Permits By Rule, PSD Permits, or NA Permits) for the Application Area.	
Authorization No.: 76247	Issuance Date: 08/26/2015
Authorization No.: 114721	Issuance Date: ~~05/24/2016~~10/31/2024
Authorization No.: 130148	Issuance Date: ~~12/21/2020~~07/22/2024
Permits By Rule (30 TAC Chapter 106) for the Application Area	
Number: 5	Version No./Date: 12/01/1972
Number: 5	Version No./Date: 05/04/1994
Number: 41	Version No./Date: 07/20/1992
Number: 51	Version No./Date: 08/30/1988
Number: 51	Version No./Date: 07/20/1992
Number: 51	Version No./Date: 05/04/1994
Number: 61	Version No./Date: 07/20/1992
Number: 61	Version No./Date: 05/04/1994
Number: 75	Version No./Date: 09/12/1989
Number: 106.102	Version No./Date: 09/04/2000
Number: 106.122	Version No./Date: 09/04/2000
Number: 106.124	Version No./Date: 09/04/2000
Number: 106.183	Version No./Date: 09/04/2000
Number: 106.227	Version No./Date: 09/04/2000
Number: 106.242	Version No./Date: 09/04/2000
Number: 106.261	Version No./Date: 11/01/2003
Number: 106.262	Version No./Date: 12/24/1998
Number: 106.262	Version No./Date: 09/04/2000
Number: 106.262	Version No./Date: 11/01/2003
Number: 106.263	Version No./Date: 11/01/2001
Number: 106.265	Version No./Date: 09/04/2000
Number: 106.371	Version No./Date: 09/04/2000
Number: 106.375	Version No./Date: 03/14/1997
Number: 106.412	Version No./Date: 09/04/2000
Number: 106.418	Version No./Date: 09/04/2000
Number: 106.454	Version No./Date: 07/08/1998
Number: 106.454	Version No./Date: 11/01/2001
Number: 106.472	Version No./Date: 03/14/1997

Commented [KMA(JEI1]: Date permit renewal issued (most recent action)

Commented [KMA(JEI2]: Revision (for PEMS representation) issued 7/22/2024 (most recent action)

Commented [KMA(JEI3]: Version newly added for PBRSUP addition of Unit Id 320WT Reg. No. 107314.

New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Number: 106.472	Version No./Date: 09/04/2000
Number: 106.478	Version No./Date: 03/14/1997
Number: 106.478	Version No./Date: 09/04/2000
Number: 106.511	Version No./Date: 03/14/1997
Number: 106.511	Version No./Date: 09/04/2000
Number: 106.512	Version No./Date: 09/04/2000
Number: 124	Version No./Date: 05/12/1981

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
B10GEN02A	B10 DIESEL GENERATOR	106.511/09/04/2000
B10TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B1401	BUILDING 14 INTEGRATED CIRCUIT LAB	41/07/20/1992[22827]
B14LASER	BUILDING 14 LASER PROCESSING	106.227/09/04/2000[82188] 106.261/11/01/2003[82188] 106.262/11/01/2003[82188]
B15GEN01	STATIONARY EMERGENCY GENERATOR	106.511/03/14/1997
B15TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B16GEN01	B16 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B17GEN02	STATIONARY EMERGENCY GENERATOR	106.511/09/04/2000
B17TANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B21GEN01	EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B220GEN01	B220 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B221ENG01	BUILDING 221 ENGINE 1	106.512/09/04/2000
B223ENG02	BUILDING 223 ENGINE 2	106.512/09/04/2000
B24-3A	BUILDING 24 BOILER 3A	114721
B24-5A	BOILER B24-5A	76247
B24LOAD01	DIESEL LOADING	106.472/09/04/2000
B24TANK01A	BUILDING 24 DIESEL TANK	106.478/09/04/2000[46837]
B25GEN02A	B25 EOC EMERGENCY GAS GENERATOR	106.511/09/04/2000
B25TANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B30AGEN02	STATIONARY EMERGENCY GENERATOR	106.511/09/04/2000

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
B30ATANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B31GEN01	B31 EMERGENCY GAS GENERATOR	106.511/09/04/2000
B322ENG01A	EMERGENCY NATURAL GAS FIRED ENGINE	106.511/09/04/2000
B322GEN01	B322 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B326TANK01	BUILDING 326 DIESEL TANK	51/08/30/1988
B326TANK03	GASOLINE STORAGE TANK	106.478/09/04/2000
B329ENG01A	EMERGENCY NATURAL GAS FIRED ENGINE	106.511/09/04/2000
B329TANK01	BUILDING 329 WASTEWATER TANK	106.472/09/04/2000[107316]
B32CR	BUILDING 32 CLEAN ROOM	106.263/11/1/2001[111091]
B32GEN06	STATIONARY EMERGENCY GENERATOR	106.511/03/14/1997
B32GEN07	STATIONARY EMERGENCY GENERATOR	106.511/09/04/2000
B32GEN09	BUILDING 32 GENERATOR 9	106.511/09/04/2000
B32TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B32TANK02	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B32TANK03	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B32TANK04	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B320WT	BUILDING 320 WASH GRIT TANK,	SE 61/05/04/1994[107314]
B343TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B347GEN01	STATIONARY EMERGENCY GENERATOR	106.511/09/04/2000
B347TANK01	DIESEL FUEL STORAGE TANK	106.478/09/04/2000
B353B5LASER	BUILDING 5NAND 353H LASER PROCESSING	106.261/11/01/2003[168041] 106.262/11/01/2003[168041]
B37TANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
B37TANK02	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B3GEN01A	B3 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B3TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B7LASER	BUILDING 7 LASER PROCESSING	106.227 09/04/2000; PBR 106.261 11/01/2003[108114]
B417OWS01	OIL/WATER SEPARATOR	61/07/20/1992[107316]
B420BLR02	BOILER	106.183/09/04/2000
B420WOOD01	BUILDING 420 DUST COLLECTION SYSTEM	124/05/12/1981
B421BLR01	BOILER	106.183/09/04/2000
B42TANK02	DIESEL FUEL STORAGE TANK	106.478/09/04/2000
B46GEN01	B46 NON-EMERGENCY GENERATOR	106.511/09/04/2000
B46TANK01	DIESEL FUEL STORAGE TANK	106.472/09/04/2000
B48GEN01	BUILDING 48 GENERATOR 1	5/12/01/1972
B48GEN02	BUILDING 48 GENERATOR 2	5/12/01/1972
B48GEN03	BUILDING 48 GENERATOR 3	5/12/01/1972
B48GEN07	BUILDING 48 GENERATOR 7	5/12/01/1972
B48GEN07A	B48 EMERGENCY DIESEL GENERATOR#7	106.511/09/04/2000
B48GEN09	BUILDING 48 GENERATOR 9	5/12/01/1972
B48GEN09A	B48 EMERGENCY DIESEL GENERATOR#9	106.511/09/04/2000
B48TANK01	BUILDING 48 DIESEL TANK NO. 1	51/07/20/1992
B48TANK02	BUILDING 48 DIESEL TANK NO. 2	51/07/20/1992
B48TANK03	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B48TANK04	DIESEL FUEL STORAGE TANK	106.472/03/14/1997

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
B48TANK05	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B7GEN02	BUILDING 7 GENERATOR #2	106.511/09/04/2000
B9AC01	BUILDING 9 AUTOCLAVE 1	106.124/09/04/2000[92402]
B9AC02	BUILDING 9 AUTOCLAVE 2	106.124/09/04/2000[92402]
B9GEN01A	B9 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
B9PAINT01	BUILDING 9 PAINT BOOTH	75/09/12/1989
B9TANK01	DIESEL FUEL STORAGE TANK	106.472/03/14/1997
B9WOOD01	BUILDING 9 DUST COLLECTION SYSTEM	124/05/12/1981
B9WOOD02	BUILDING 9 DUST COLLECTION SYSTEM	124/05/12/1981
B9WOOD03	BUILDING 9 DUST COLLECTION SYSTEM	124/05/12/1981
BSTART-1	BLACK START DIESEL GENERATOR	106.511/09/04/2000[141276]
CYLVENT	CYLVENT, DOT MISC GAS CYLINDER VENTING	106.261/11/01/2003[86369] 106.262/11/01/2003[86369]
ESTA01	ESTA BENCH SCALE LABORATORY TESTING	106.122/09/04/2000[107313] 106.261/11/01/2003[107313] 106.262/11/01/2003[107313]
LS14GEN01	LS14 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS15GEN01	LS15 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS1GEN01	LS1 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS2GEN01	LS2 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS3GEN01	LS3 EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
LS7GEN01	LS7 NON-EMERGENCY DIESEL GENERATOR	106.511/09/04/2000
PROPAINT	PAINT BOOTH PROCESSES	75/09/12/1989

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
T-1	NATURAL GAS COMBUSTION TURBINE	130148
T-2	NATURAL GAS COMBUSTION TURBINE	130148
TK-DSL	DIESEL FUEL STORAGE TANK	106.472/09/04/2000

**New Source Review Authorization column may include Permit by Rule (PBR) numbers and version dates, PBR Registration numbers in brackets, and Standard Permit Registration numbe

Formatted: Font: (Default) Arial

Ryan Glaze

From: John Walker
Sent: Friday, December 13, 2024 4:33 PM
To: Herrmann, John P. (JSC-JP111)
Subject: Working Draft Permit - FOP O1552/Project 36233 National Aeronautics a
Attachments: Area PCA data request.xlsx; OP-SUM data request.xls; OP_2_OP_2_FORM_ 10-16-24)_Jwalker comments.docx; OP_SUMR_OP_SUMR_Form_10-16-2024_JWalker comments.docx

Good Afternoon,

I have reviewed the application updates provided to me on 10/21/2024. Additional information is required. Please submit the requested information below as soon as possible but no later than **01/10/2025.**

1. There are several deficiencies that must be addressed on Forms OP-2, OP-SUMR, OP-PBRSUP, and OP-REQ1 Pages 88 – 89. Essentially, there is conflicting information in regard to preconstruction authorizations provided on the forms and within the draft permit. I have attached excel documents that reflects the area-wide preconstruction authorization list and the OP-SUMR data. I have also attached Forms OP-2 and OP-SUMR with my comments identifying deficiencies. Please use the documents as a reference to help address the following issues.

   If there are Permits by Rule (PBR) or Standard Exemptions (SE) documented as a preconstruction authorization for a unit, the PBR or SE should be documented on Form OP-REQ1 Page 89 and either Table A or B and Table D of Form OP-PBRSUP. That is, that the PBR and SE documentation is consistent across the forms.

   However, there may be cases in which units are authorized by a PBR or SE that do not have Title V requirements which are only documented on Form OP-PBRSUP. There seems to be some units that fit into this criteria in which you have added to OP-UA1 but have not provided any Title V requirements on any Unit Attribute Forms, OP-REQ2, or OP-REQ3. These units should be removed from OP-SUMR and OP-UA1, however you may have a revision item on Form OP-2 stating you are adding the units to Form OP-PBRSUP. If the units provided on Form OP-UA1 do have potentially applicable requirements that should be documented on a Unit Attribute Form, OP-REQ2, or OP-REQ3, please provide those forms.

   Additionally, please address the following issues:

   - Several NSR permits were provided on Form OP-REQ1 Page 88 Section G. for NSR Authorizations with FCAA § 112(g) Requirements. Please confirm if these NSR permits have FCAA § 112(g) Requirements. If they do not, please provide them in the correct section on Form OP-REQ1 Pages 88 – 89.

   - In your most recent response, you mentioned not including various PBR registrations on Form OP-PBRSUP and Title V Forms due to various reasons. This is incorrect. If there is an active PBR registration, it must be documented on Form OP-PBRSUP Table A and D, and any Title V forms as required. If the PBR Registration is no longer wanted, it must be voided. Please add all PBR registrations to the necessary forms.

   - There were several PBRs and SEs that authorize units within the permit (refer to the WDP and the OP-SUMR excel document) that were not included on Form OP-REQ1 Page 89. If there are units

within the permit that are authorized by PBRs or SEs, they must be documented on Form OP-REQ1 and Form OP-PBRSUP. Also, any PBRs or SEs documented on Form OP-PBRSUP, should be documented on Form OP-REQ1 Page 89.

- Please address the units provided on Form OP-2 and OP-UA1 with no applicable requirements provided on any UA form, OP-REQ2, or OP-REQ3. If these units do not have any Title V requirements and are documented on Form OP-PBRSUP, please remove them from Form OP-UA1. You may have a revision item on Form OP-2 stating you are adding them to Form OP-PBRSUP.

- Please ensure that the PBR and SE information is consistent between Forms OP-2, OP-SUMR, and OP-PBRSUP, as required.

- If there are any changes that should be made to existing preconstruction authorizations to units that are outside the scope of revision application, please add a revision item for those changes on Form OP-2 and make the necessary updates on Form OP-SUMR.

If you have any questions in regard to completing these forms, please contact me.

Application updates may now be submitted through Title V STEERS. Any application updates that are submitted by the RO/DAR through STEERS are certified and do not require the submittal of an original signature OP-CRO1. Application updates that are provided through email or physical mail require certification using an original signature OP-CRO1.

Please notify me when these updates have been submitted.

As required on Form OP-1, question IV.D, please remember the FOP application and all application updates must be submitted to EPA Region 6 at R6AirPermitsTX@epa.gov and to the TCEQ regional office having jurisdiction. This submittal information can be found on our website at Where to Submit FOP Applications and Permit-Related Documents.

As required on Form OP-1, question IV.D, please remember the FOP application and all application updates must be submitted to EPA Region 6 at R6AirPermitsTX@epa.gov and to the TCEQ regional office having jurisdiction. This submittal information can be found on our website at Where to Submit FOP Applications and Permit-Related Documents.

Contact me if you have any questions regarding the guidelines, the project schedule, or any other details regarding your application or permit.

Thank you for your cooperation.

Sincerely,

John Walker
Permit Reviewer
OA/Air Permits Division/OP Section
Texas Commission on Environmental Quality
MC-163, P.O. Box 13087
Austin, TX 78711-3087
John.Walker@tceq.texas.gov

Phone: (512) 239-1277

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

Ryan Glaze

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Monday, October 21, 2024 6:34 PM
To: John Walker
Subject: FW: [EXTERNAL] STEERS Title V Application Submittal (Update)
Attachments: JE-24-070 Title V Minor Permit Revision Supplement NASA TL (sign w-encl).pdf

Follow Up Flag: Follow up
Flag Status: Flagged

John: Transmitting the cover letter, enclosures, and completed forms, along with date stamp for transmittal into STEERS. Thank you again for your indulgence.
I am sending you a copy of the original, as sent to USEPA and TCEQ R12. I included the OP-CRO1 and DAR, in case EPA's records require updating regarding the Title V permit certification statement.

-----Original Message-----
From: steers@tceq.texas.gov <steers@tceq.texas.gov>
Sent: Monday, October 21, 2024 6:23 PM
To: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>; KOLKMEIER, MARK A. (JSC-JA111)[Straughan Environmental, Inc] <mark.a.kolkmeier@nasa.gov>
Subject: [EXTERNAL] STEERS Title V Application Submittal (Update)

This confirms the submittal of your Title V Existing Application to the TCEQ.

Your application was successfully submitted and received by the TCEQ at 10/21/2024 06:23 PM.

The submitted application will now be reviewed by the program area. You will be notified by the program area reviewing your application if more information is needed and of final action (approval or denial) of the application.

The Reference number for this submittal is 693427.

The Area ID for this submittal is 1552.
The Project ID for this submittal is 36233.
The STEERS confirmation number for this submittal is 572962.
The hash code for this submittal is 2B5A835603F0B73FEBBDC8305DEC68BB8019220A230E1E35034D5617AD2AD79D.

You may access the copy of record (submitted application) from the submit log which is available by selecting Submissions from the Home page of STEERS
https://nam11.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww3.tceq.texas.gov%2Fsteers%2F&data=05%7C02%7CJohn.Walker%40tceq.texas.gov%7C97681492d44442fc385408dcf228e7c2%7C871a83a4a1ce4b7a81563bcd93a08fba%7C0%7C0%7C638651507270372480%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C0%7C%7C%7C&sdata=HimQPgWbutngpunm8R5Xdbm05PDyIK%2Bsn5jQPEC75CE%3D&reserved=0.

If you have any questions, please contact the Air Permits division at 512-239-1250 or by e-mail at airperm@tceq.texas.gov.

1. **Registration 53868 (B24-2A and B24-4A) Voided in 2021:**

   Registration 53868 is listed as “Active” in TCEQ Central Registry; however the same permit was voided by Project Number 323892 on 1/8/2021. This permit originally authorized Boilers B24-2A and B24-4A which have been dismantled. TCEQ, please update Central Registry to reflect that fact.

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 1)
Federal Operating Permit Program
Table 1a: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Horsepower Rating	RACT Date Placed in Service	Functionally Identical Replacement	Type of Service	Fuel Fired	Engine Type	ESAD Date Placed in Service	Diesel HP Rating
B220GEN01	R7201-2				D2001+				
B25GEN02A	R7ICI-2				ENG	NG	Rich-burn		
B31GEN01	R7ICI-2				ENG	NG	Lean-Burn		
B16GEN01	R7201-2				D2001+				

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 2)
Federal Operating Permit Program
Table 1b: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	NO_x Emission Limitation	23-C Option	30 TAC Chapter 116 Limit	EGF System CAP Unit	NO_x Averaging Method	NO_x Reduction	NO_x Monitoring System
B220GEN01	R7201-2							
B25GEN02A	R7ICI-2				NO	1HR	NONE	MERT
B31GEN01	R7ICI-2				NO	1HR	NONE	MERT
B16GEN01	R7201-2							

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 3)
Federal Operating Permit Program
Table 1c: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Fuel Flow Monitoring	CO Emission Limitation	CO Averaging Method	CO Monitoring System	NH_3 Emission Limitation	NH_3 Monitoring
B220GEN01	R7201-2						
B25GEN02A	R7ICI-2	X40A	310C	1HR	OTHER		
B31GEN01	R7ICI-2	X40A	310C	1HR	OTHER		
B16GEN01	R7201-2						

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 4)
Federal Operating Permit Program
Table 2a: Title 40 Code of Federal Regulations Part 63 (40 CFR Part 63)
Subpart ZZZZ: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	HAP Source	Brake HP	Construction/ Reconstruction Date	Nonindustrial Emergency Engine	Service Type	Stationary RICE Type
B220GEN01	63ZZZZ	AREA	100-	06+			
B25GEN02A	63ZZZZ	AREA	300-500	06+			
B31GEN01	63ZZZZ	AREA	500+	06+			
B16GEN01	63ZZZZ	AREA	100-250	06+			

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 8)
Federal Operating Permit Program
Table 4a: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Construction/ Reconstruction/ Modification Date	Test Cell	Exemption	Temp Replacement	Horsepower	Fuel	AEL No.	Lean Burn	Commencing
B25GEN02A	63JJJJ	YES	NO	NONE	NO	130-500E	NATGAS			CON
B31GEN01	63JJJJ	YES	NO	NONE	NO	500+E	NATGAS			CON

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 9)
Federal Operating Permit Program
Table 4b: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Manufacture Date	Displacement	Certified	Operation	Certified Modification	Service	Severe Duty	Optional Compliance
B25GEN02A	63JJJJ	N0111+E		YES	YES		EMERG	NO	
B31GEN01	63JJJJ	N0710+E		YES	YES		EMERG	NO	

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 10)
Federal Operating Permit Program
Table 5a: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Applicability Date	Exemptions	Service	Commencing	Manufacture Date
B220GEN01	63IIII	2005+	NONE	EMERG	CON	0406+
B16GEN01	63IIII	2005+	NONE	EMERG	CON	0406+

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 11)
Federal Operating Permit Program
Table 5b: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Diesel	AES No.	Displacement	Generator Set	Model Year	Install Date
B220GEN01	63IIII	DIESEL		10-CS		2007	
B16GEN01	63IIII	DIESEL		10-CS		2017+	

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 12)
Federal Operating Permit Program
Table 5c: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Kilowatts	Filter	AECD	Standard	Compliance Option	PM Compliance	Options
B220GEN01	63IIII	E37-75	NO	NO	YES	MANU YES		
B16GEN01	63IIII	E75-130	NO	NO	YES	MANU YES		

Texas Commission on Environmental Quality
Miscellaneous Unit Attributes
Form OP-UA1 (Page 1)
Federal Operating Permit Program

Date:	**10/16/2024**
Permit No.:	**O-1552**
Regulated Entity No.:	**RN100665579**

Unit ID No.	SOP/GOP Index No.	Unit Type	Date Constructed/Placed in Service	Functionally Identical Replacement	Maximum Rated Capacity	Technical Information and Unit Description
B-14-01	N/A	Integrated Circuit Lab 14: Laboratory	08/16/1993	NO		Laboratory chemical handling and testing. 0.051 lb/hr VOC; 8 hours/day; 5 days/week; 52 weeks/year
B14LASER	N/A	Building 14 Laser Cutting and Welding System	08/06/2007	NO		Lasag [registered] KLS-246 Nd:YAG pulsed laser. Material dependent. See registration No. 82188.
CYLVENT	N/A	Department of Transportation Compressed Gas Cylinder Venting	11/07/2008	NO		Standardized Department of Transportation (DOT) Pressured Cylinder Storage Area and Handling. See registration no. 86369.

Unit ID No.	SOP/GOP Index No.	Unit Type	Date Constructed/Placed in Service	Functionally Identical Replacement	Maximum Rated Capacity	Technical Information and Unit Description
ESTA01	N/A	Energy System Test Area Laboratories	10/20/1999	NO		General laboratory testing, Energy Systems. Laboratory testing; 70 lbs CO per year. See registration no. 107313.
B7LASER	N/A	Building 7 Laser Processing Facility / Precision Cutting	02/22/2013	NO		ProLas / Epilog Legend 36 EXT 9000. 16 applications per month (cutting, micromachining). See registration 108114.
B353B5LASER	N/A	Etching and Engraving Laser Processing for Labeling	03/18/2022	NO		Laser Processing for Engraving Labels for various equipment, components. Various types of projects per week/month/year. See registration 168041.

Application Area-Wide Applicability Determinations and General Information
Form OP-REQ1 (Page 88)
Federal Operating Permit Program
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
10/16/2024	O1552	RN100665579

For SOP applications, answer ALL questions unless otherwise directed.
♦ For GOP applications, answer ONLY these questions unless otherwise directed.

XII. NSR Authorizations (Attach additional sheets if necessary for sections XII.E-J.)

E. PSD Permits and PSD Major Pollutants

Permit No.	Issuance Date	Pollutant(s):	Permit No.	Issuance Date	Pollutant(s):

If PSD Permits are held for the application area, please complete the Major NSR Summary Table located under the Technical Forms heading at: www.tceq.texas.gov/permitting/air/titlev/site/site_experts.html.

F. Nonattainment (NA) Permits and NA Major Pollutants

Permit No.	Issuance Date	Pollutant(s):	Permit No.	Issuance Date	Pollutant(s):

If NA Permits are held for the application area, please complete the Major NSR Summary Table located under the Technical Forms heading at: www.tceq.texas.gov/permitting/air/titlev/site/site_experts.html.

G. NSR Authorizations with FCAA § 112(g) Requirements

NSR Permit No.	Issuance Date	NSR Permit No.	Issuance Date	NSR Permit No	Issuance Date
76247	08/26/2015				
114721	05/24/2016				
130148	07/22/2024				

Date	Permit No.	Regulated Entity No.
10/16/2024	O1552	RN100665579

For SOP applications, answer ALL questions unless otherwise directed.
♦ For GOP applications, answer ONLY these questions unless otherwise directed.

XII. NSR Authorizations (continued) - (Attach additional sheets if necessary for sections XII.E-J.)

♦ **H. Title 30 TAC Chapter 116 Permits, Special Permits, Standard Permits, Other Authorizations (Other Than Permits By Rule, PSD Permits, NA Permits) for the Application Area**

Authorization No.	Issuance Date	Authorization No.	Issuance Date	Authorization No.	Issuance Date
130148	07/22/2024				

♦ **I. Permits by Rule (30 TAC Chapter 106) for the Application Area**

A list of selected Permits by Rule (previously referred to as standard exemptions) that are required to be listed in the FOP application is available in the instructions.

PBR No.	Version No./Date	PBR No.	Version No./Date	PBR No.	Version No./Date
106.511	09/04/2000	106.262	11/01/2003[82188]	106.511	09/04/2000[141276]
106.511	09/04/2000	106.261	11/01/2003[86369]	106.261	11/01/2003[168041]
106.511	09/04/2000	106.262	11/01/2003[86369]	106.262	11/01/2003[168041]
106.511	09/04/2000	106.124	09/04/2000[92402]		
SE 41	07/20/1992[22827]	106.122	03/14/1997[107313]		
106.478	09/04/2000[46837]	SE61	05/04/1994[107316]		
106.227	09/04/2000[82188]	106.227	09/04/2000[108114]		
106.261	11/01/2003[82188]	106.261	11/01/2003[108114]		

♦ **J. Municipal Solid Waste and Industrial Hazardous Waste Permits with an Air Addendum**

Permit No.	Issuance Date	Permit No.	Issuance Date	Permit No.	Issuance Date

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 1

Date	Permit No.	Regulated Entity No.
10/16/2024	O-01552	RN100665579

Unit/Process AI	Unit/Process Revision No.	Unit/Process ID No.	Unit/Process Applicable Form	Unit/Process Name/ Description	Unit/Process CAM	Preconstruction Authorizations 30 TAC Chapter 116/ 30 TAC Chapter 106	Preconstruction Authorizations Title I
A	1	B220GEN01	OP-UA2	B220 Emergency Diesel Generator		106.511/09/04/2000	
A	2	B25GEN02A	OP-UA2	B25 EOC Emergency Gas Generator		106.511/09/04/2000	
A	3	B31GEN01	OP-UA2	B31 Emergency Gas Generator		106.511/09/04/2000	
D	4	B9PLAT	OP-UA1	B9 Metal Finishing		106.375/03/14/1997	
D	5	B25GEN02	OP-UA2	B25 Emergency Diesel Generator		106.511/09/04/2000	
	6	T-1	OP-UA11	Natural Gas Combustion Turbine		#130148	
	7	T-2	OP-UA11	Natural Gas Combustion Turbine		#130148	
A	8	B16GEN01	OP-UA2	B16 Emergency Diesel Generator		106.511/09/04/2000	
A	9	B-14-01	OP-UA1	Integrated Circuit Lab 14		SE41/7/20/1992[22827]	
	10	B24TANK01A	OP-UA3	BUILDING 24 DIESEL TANK		106.478/9/4/2000[46837]	
A	11	B14LASER	OP-UA1	Building 14 Laser Cutting and Welding System		106.227/9/4/2000[82188] 106.261/11/01/2003[82188] 106.262/11/01/2003[82188]	

Individual Unit Summary for Revisions
Form OP-SUMR
Table 1

Date	Permit No.	Regulated Entity No.
10/16/2024	O-01552	RN100665579

Unit/Process AI	Unit/Process Revision No.	Unit/Process ID No.	Unit/Process Applicable Form	Unit/Process Name/ Description	Unit/Process CAM	Preconstruction Authorizations 30 TAC Chapter 116/ 30 TAC Chapter 106	Preconstruction Authorizations Title I
A	12	CYLVENT	OP-UA1	Gas Cylinder Venting		106.261/11/01/2003[86369] 106.262/11/01/2003[86369]	
	13	B9AC01, B9AC02	OP-UA1	BUILDING 9 AUTOCLAVE 1, BUILDING 9 AUTOCLAVE 2		106.124/09/04/2000[92402]	
A	14	ESTA01	OP-UA1	Energy System Test Area Laboratories		106.122/03/14/1997[107313]	
	15	B417OWS01, B329TANK01	OP-UA3	OIL/WATER SEPARATOR, BUILDING 329 WASTEWATER TANK		SE61/05/04/1994[107316]	
A	16	B7LASER	OP-UA1	Building 7 Laser Processing Facility / Precision Cutting		106.227/09/04/2000[108114] 106.261/11/01/2003[108114]	
	17	BSTART-1	OP-UA2	BLACK START DIESEL GENERATOR		106.511/09/04/2000[141276]	
A	18	B353B5LASER	OP-UA1	Etching and Engraving Laser Processing		106.261/11/01/2003[168041] 106.262/11/01/2003[168041]	

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 2

Date	Permit No.	Regulated Entity No.
12/30/2023	0-01552	RN100665579

Revision No.	ID No.	Applicable Form	Group AI	Group ID No.
1	B220GEN01	OP-UA2	A	None
2	B25GEN02A	OP-UA2	A	None
3	B31GEN01	OP-UA2	A	None
4	B9PLAT	OP-UA1	D	None
5	B25GEN02	OP-UA2	D	GRPGEN5
6	T-1	OP-UA11		GRPTBN
7	T-2	OP-UA11		GRPTBN
8	B16GEN01	OP-UA2	A	None
9	B-14-01	OP-UA1	A	None
10	B24TANK01A	OP-UA1	A	None

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 2

Date	Permit No.	Regulated Entity No.
12/30/2023	0-01552	RN100665579

Revision No.	ID No.	Applicable Form	Group AI	Group ID No.
11	B14LASER	OP-UA1	A	None
12	CYLVENT	OP-UA1	A	None
13	B9AC01, B9AC02	OP-UA1	A	None
14	ESTA01	OP-UA1	A	None
15	B417OWS01, B329TANK01	OP-UA3	A	None
16	B7LASER	OP-UA1	A	None
17	BSTART-1	OP-UA2	A	None
18	B353B5LASER	OP-UA1	A	None

Applicable Requirements Summary
Form OP-REQ3 (Page 1)
Federal Operating Permit Program

Table 1a: Additions

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
1	B220GEN01	OP-UA2	R7201-2	EXEMP	30 TAC Chapter 117, Subchapter B	[G]§117.303(a)(11) [G]§117.310(f)
2	B25GEN02A	OP-UA2	R7ICI-2	EXEMP	30 TAC Chapter 117, Subchapter B	117.303(a)(11)
3	B31GEN01	OP-UA2	R7ICI -2	EXEMP	30 TAC Chapter 117, Subchapter B	117.303(a)(6)(D)
8	B16GEN01	OP-UA2	R7201-2	EXEMP	30 TAC Chapter 117, Subchapter B	[G]§117.303(a)(11) [G]§117.310(f)
1	B220GEN01	OP-UA2	60IIII	CO	40 CFR Part 60, Subpart IIII	5.0 g/KW-hr § 60.4205(b) § 60.4202(a)(2) §1039-Appendix I § 60.4206 § 60.4207(b) [G]§ 60.4211(f) § 60.4218 §60.4211(c) [G]§60.4211(a)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
1	B220GEN01	OP-UA2	60IIII	NMHC + NOX	40 CFR Part 60, Subpart IIII	7.5 g/KW-hr § 60.4205(b) § 60.4202(a)(2) §1039-Appendix I § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218
1	B220GEN01	OP-UA2	60IIII	PM	40 CFR Part 60, Subpart IIII	0.40 g/KW-hr §60.4205(b)| §60.4202(a)(2) §60.4206 §1039-Appendix I §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)
1	B220GEN01	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)
2	B25GEN02A	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)
3	B31GEN01	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
8	B16GEN01	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)
2	B25GEN02A	OP-UA2	60JJJJ	NOx	40 CFR Part 60, Subpart JJJJ	2.0 g/HP-hr §60.4233(e)-Table 1|34 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)
2	B25GEN02A	OP-UA2	60JJJJ	CO	40 CFR Part 60, Subpart JJJJ	4.0 g/HP-hr §60.4233(e)-Table 1|36 §60.4234 §60.4243(b)(1)
2	B25GEN02A	OP-UA2	60JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	1.0 g/HP-hr §60.4233(e)-Table 1|37 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)
3	B31GEN01	OP-UA2	60JJJJ	NOx	40 CFR Part 60, Subpart JJJJ	2.0 g/HP-hr §60.4233(e)-Table 1|34 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
3	B31GEN01	OP-UA2	60JJJJ	CO	40 CFR Part 60, Subpart JJJJ	4.0 g/HP-hr §60.4233(e)-Table 1|36 §60.4234 §60.4243(b), [G](d), (g) §60.4246. §60.4243(b)(1)
3	B31GEN01	OP-UA2	60JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	1.0 g/HP-hr §60.4233(e)-Table 1|37 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)
8	B16GEN01	OP-UA2	60IIII	NMHC+ NOx	40 CFR Part 60, Subpart IIII	4.0 g/KW-hr §60.4205(b)|14 §60.4202(a)(2) §1039-Appendix I §60.4206 §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
8	B16GEN01	OP-UA2	60IIII	CO	40 CFR Part 60, Subpart IIII	5.0 g/KW-hr §60.4205(b)| §60.4202(a)(2) §1039-Appendix I §60.4206 §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)
8	B16GEN01	OP-UA2	60IIII	PM	40 CFR Part 60, Subpart IIII	0.30 g/KW-hr §60.4205(b)|21 §60.4202(a)(2) §1039-Appendix I §60.4206 §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)

Applicable Requirements Summary
Form OP-REQ3 (Page 2)
Federal Operating Permit Program1

Table 1b: Additions

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	**Permit No.:** 0-01552
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	SOP/GOP Index No.	Pollutant	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
1	B220GEN01	R7201-2	EXEMP	None	§117.340(j) §117.345(f) [G]§117.345(f)(6) [G]§117.345(f)(10)	None
2	B25GEN02A	R7ICI-2	EXEMP	None	§117.340(j) §117.345(f), [G](f)(6)	None
3	B31GEN01	R7ICI-2	EXEMP	None	§117.340(j) §117.345(f), [G](f)(6)	None
8	B16GEN01	R7201-2	EXEMP	None	§117.340(j) §117.345(f) [G]§117.345(f)(6) [G]§117.345(f)(10)	None
2	B25GEN02A	60JJJJ	NOx	§60.4237(b)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)

Date: 12/30/2023	Regulated Entity No.: RN100665579	Permit No.: 0-01552
Company Name: National Aeronautics and Space Administration	Area Name: Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	SOP/GOP Index No.	Pollutant	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
2	B25GEN02A	60JJJJ	CO	§60.4237(b)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
2	B25GEN02A	60JJJJ	VOC	§60.4237(b)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
3	B31GEN01	60JJJJ	NOx	§60.4237(a)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
3	B31GEN01	60JJJJ	CO	§60.4237(a)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
3	B31GEN01	60JJJJ	VOC	§60.4237(a)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
1	B220GEN01	60IIII	NMHC + NOX	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Date: 12/30/2023	Regulated Entity No.: RN100665579	Permit No.: 0-01552
Company Name: National Aeronautics and Space Administration	Area Name: Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	SOP/GOP Index No.	Pollutant	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
1	B220GEN01	60IIII	CO	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
1	B220GEN01	60IIII	PM	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
8	B16GEN01	60IIII	NMHC+ NOx	§60.4209(a)	§60.4214(b)	[G]§60.4214(d)
8	B16GEN01	60IIII	CO	§60.4209(a)	§60.4214(b)	[G]§60.4214(d)
8	B16GEN01	60IIII	PM	§60.4209(a)	§60.4214(b)	[G]§60.4214(d)
1	B220GEN01	63ZZZZ	HAPs	None	None	None
2	B25GEN02A	63ZZZZ	HAPs	None	None	None
3	B31GEN01	63ZZZZ	HAPs	None	None	None
8	B16GEN01	63ZZZZ	HAPs	None	None	None

Permit By Rule Supplemental Table (Page 4)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B220GEN01	106.511	9/4/2000	PBR 106.511 limits annual operating hours to 10% of the normal annual operating schedule/876 hours on annual basis. Keep records on-site of the number of operating hours for the engine each month. In addition, limit non-emergency use time for testing and maintenance to 100 hours in accordance with 30 TAC 117, Part IIII. Operate only with non-resettable hourly runtime meter. Use the emission factors from EPA's AP-42 Table 3.3-1 (October 1996) and/or manufacturers data along with the monthly operating hours recorded to calculate the rolling 12-month emissions to demonstrate compliance with the limits in 106.4. Calculated emissions are kept on-site.
B25GEN02A	106.511	9/4/2000	PBR 106.511 limits annual operating hours to 10% of the normal annual operating schedule/876 hours on annual basis. Keep records on-site of the number of operating hours for the engine each month. In addition, limit non-emergency use time for testing and maintenance to 100 hours in accordance with 30 TAC 117, Part IIII. Operate only with non-resettable hourly runtime meter. Use the emission factors from EPA's AP-42 Table 3.3-1 (October 1996) and/or manufacturers data along with the monthly operating hours recorded to calculate the rolling 12-month emissions to demonstrate compliance with the limits in 106.4. Calculated emissions are kept on-site.
B31GEN01	106.511	9/4/2000	PBR 106.511 limits annual operating hours to 10% of the normal annual operating schedule/876 hours on annual basis. Keep records on-site of the number of operating hours for the engine each month. In addition, limit non-emergency use time for testing and maintenance to 100 hours in accordance with 30 TAC 117, Part IIII. Operate only with non-resettable hourly runtime meter. Use the emission factors from EPA's AP-42 Table 3.3-1 (October 1996) and/or manufacturers data along with the monthly operating hours recorded to calculate the rolling 12-month emissions to demonstrate compliance with the limits in 106.4. Calculated emissions are kept on-site.
B16GEN01	106.511	9/4/2000	PBR 106.511 limits annual operating hours to 10% of the normal annual operating schedule/876 hours on annual basis. Keep records on-site of the number of operating hours for the engine each month. In addition, limit non-emergency use time for testing and maintenance to 100 hours in accordance with 30 TAC 117, Part IIII. Operate only with non-resettable hourly runtime meter. Use the emission factors from EPA's AP-42 Table 3.3-1 (October 1996) and/or manufacturers data along with the monthly operating hours recorded to calculate the rolling 12-month emissions to demonstrate compliance with the limits in 106.4. Calculated emissions are kept on-site.

Reset Form Print Form

Permit By Rule Supplemental Table (Page 1)
Table A: Registered Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	Registration No.	PBR No.	Registration Date
B-14-01	22827	SE 41 7/20/1992	8/16/1993
B24TANK01A	46837	106.478	1/22/2001
B353B5LASER	168041	106.261, 106.262	3/18/2022
B14LASER	82188	106.261, 106.262, 106.227	8/6/2007
CYLVENT	86369	106.261, 106.262	11/7/2008
B9AC01, B9AC02	92402	106.124	5/17/2010
ESTA01	107313	106.122	10/20/1999
B417OWS01, B329TANK01	107316	SE 61	6/17/1994
B7LASER	108114	106.227, 106.261	2/22/2013
BSTART-1	141276	106.511	8/3/2016

Permit By Rule Supplemental Table (Page 2)
Table B: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01552	100665579

Unit ID No.	PBR No.	Version No./Date
B220GEN01	106.511	9/4/2000
B25GEN02A	106.511	9/4/2000
B31GEN01	106.511	9/4/2000
B16GEN01	106.511	9/4/2000

Permit By Rule Supplemental Table (Page 3)
Table C: Claimed (not registered) Permits by Rule (30 TAC Chapter 106) for Insignificant Sources for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01552	100665579

PBR No.	Version No./Date

Permit By Rule Supplemental Table (Page 4)
Table D: Monitoring Requirements for registered and claimed PBRs for the Application Area
Texas Commission on Environmental Quality

Date	Permit Number	Regulated Entity Number
10/16/2024	O-01522	RN100665579

Unit ID No.	PBR No.	Version No./Date Or Registration No.	Monitoring Requirement
B-14-01	SE 41	22827	Annual Records of Throughput and Mass Balance
B24TANK01A	106.478	46837 / 9/4/2000	Monthly Records of Throughput and Contents, Record of Tank Construction
B353B5LASER	106.261, 106.262	168041	Annual Records of Throughput and Process Knowledge
B14LASER	106.261, 106.262, 106.2	82188	Annual Records of Throughput and Process Knowledge
CYLVENT	106.261, 106.262	86369	Annual Records of Throughput and Mass Balance
B9CO1, B9AC01, B9AC0	106.124	92402	Annual and Monthly Records of Throughput; SDS of Content, Process Knowledg
ESTA01	106.122	107313	Cylinder Volume, Process Knowledge, Annual Throughput
B417OWS01, B329TANK	SE 61	107316	Sum of partial pressures of all species of VOC in any sample is less than 1.5 psia
B7LASER	106.227, 106.261	108114	Annual Records of Throughput and Process Knowledge
BSTART-1	106.511	141276	Non-resettable hourly meter; monthly operating hours records; maintenance reco

Reset Form Print Form

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 1
Texas Commission on Environmental Quality

Date: 12/30/2023	
Permit No.: 0-01552	
Regulated Entity No.: RN100665579	
Company Name: National Aeronautics and Space Administration	
For Submissions to EPA	
Has an electronic copy of this application been submitted (or is being submitted) to EPA?	☒ YES ☐ NO
I. Application Type	
Indicate the type of application:	
☐ Renewal	
☒ Streamlined Revision (Must include provisional terms and conditions as explained in the instructions.)	
☐ Significant Revision	
☐ Revision Requesting Prior Approval	
☐ Administrative Revision	
☐ Response to Reopening	
II. Qualification Statement	
For SOP Revisions Only	☒ YES ☐ NO
For GOP Revisions Only	☐ YES ☐ NO

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 1 *(continued)*
Texas Commission on Environmental Quality

III. Major Source Pollutants (Complete this section if the permit revision is due to a change at the site or change in regulations.)						
Indicate all pollutants for which the site is a major source based on the site's potential to emit: *(Check the appropriate box[es].)*						
☐ VOC	☒ NO_X	☐ SO_2	☐ PM_{10}	☐ CO	☐ Pb	☐ HAP
Other:						
IV. Reference Only Requirements *(For reference only)*						
Has the applicant paid emissions fees for the most recent agency fiscal year (September 1 - August 31)?					☒ YES ☐ NO ☐ N/A	
V. Delinquent Fees and Penalties						
Notice: 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 are paid in accordance with the Delinquent Fee and penalty protocol.						

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 2
Texas Commission on Environmental Quality

Date: 12/30/2023
Permit No.: O-01552
Regulated Entity No.: RN100665579
Company Name: National Aeronautics and Space Administration

Using the table below, provide a description of the revision.

Revision No.	Revision Code	New Unit	Unit/Group ID No.	Process Applicable Form	NSR Authorization	Description of Change and Provisional Terms and Conditions
1	MS-A	YES	B220GEN01	OP-UA2	106.511	New emergency generator installed at Building 220
2	MS-A	YES	B25GEN02A	OP-UA2	106.511	New emergency generator installed at Building 25
3	MS-A	YES	B31GEN01	OP-UA2	106.511	New emergency generator installed at Building 31
4	MS-C	NO	B9PLAT	OP-UA1	106.375	Permanently shut down. Delete from permit.
5	MS-C	NO	B25GEN02	OP-UA2	106.511	Permanently shut down. Delete from permit.
6	MS-C	NO	T-1	OP-UA11	130148	Permanently replacing turbine CEMS with PEMS
7	MS-C	NO	T-2	OP-UA11	130148	Permanently replacing turbine CEMS with PEMS
8	MS-A	YES	B16GEN01	OP-UA2	106.511	New emergency generator installed at Building 16
9	MS-C	NO	B-14-01	OP-UA1	22827	Adding pre-existing Standard Exemption (SE) 41 registration number. No changing attributes.
10	MS-C	NO	B24TANK01A	OP-UA3	46837	Adding pre-existing registration number (PBR 106.478). No changing attributes. **Applicable requirements already established in O-1552.**
11	MS-C	NO	B14LASER	OP-UA1	82188	Adding pre-existing) registration number (PBRs 106.227, 106.261, 106.262. No changing attributes.
12	MS-C	NO	CYLVENT	OP-UA1	86369	Adding pre-existing registration number (PBRs106.261, 106.262). No changing attributes.
13	MS-C	NO	B9AC01, B9AC02	OP-UA1	92402	Adding pre-existing registration number (PBR 106.124). No changing attributes. **Applicable requirements already established in O-1552.**
14	MS-C	NO	ESTA01	OP-UA1	107313	Adding pre-existing registration number (PBR 106.122). No changing attributes
15	MS-C	NO	B417OWS01, B329TANK01	OP-UA3	107316	Adding pre-existing registration number (PBR 106.124). No changing attributes. **Applicable requirements already established in O-1552.**

16	MS-C	NO	B7LASER	OP-UA1	108114	Adding pre-existing registration number (PBRs 106.227, 106.261) No changing attributes.
17	MS-C	NO	BSTART-1	OP-UA2	141276	Adding pre-existing registration number (PBR 106.511). No changing attributes. **Applicable requirements already established in O-1552.**
18	MS-C	NO	B353B5LASER	OP-UA1	168041	Adding pre-existing registration number (PBRs 106.261, 106.262) No changing attributes.

Application for Permit Revision/Renewal
Form OP-2-Table 3
Texas Commission on Environmental Quality

Date:12/30/2023		
Permit No.: O-01552		
Regulated Entity No.: RN100665579		
Company Name: National Aeronautics and Space Administration		
I.	**Significant Revision** *(Complete this section if you are submitting a significant revision application or a renewal application that includes a significant revision.)*	
A.	Is the site subject to bilingual requirements pursuant to 30 TAC § 122.322?	☐ YES ☐ NO
B.	Indicate the alternate language(s) in which public notice is required: Spanish	
C.	Will, there be a change in air pollutant emissions as a result of the significant revision?	☐ YES ☐ NO

Stationary Turbine Attributes
Form OP-UA11 (Page 6)
Federal Operating Permit Program
Table 3a: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Area
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP/GOP Index No.	Megawatt Rating	RACT Date Placed in Service (ICI)	Functionally Identical Replacement (ICI)	Service Type (ICI)	NO_x Emission Limitation (ICI)	23C-Option
T-1	R-7201	1-10			TURB	310D	
T-2	R-7201	1-10			TURB	310D	

Stationary Turbine Attributes
Form OP-UA11 (Page 7)
Federal Operating Permit Program
Table 3b: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	30 TAC Chapter 116 Limit (ICI)	EGF System Cap Unit	Averaging Method	NO_x Reduction (ICI)	NO_x Monitoring System (ICI)
T-1	R-7201		NO	30D	POST1	PEMS
T-2	R-7201		NO	30D	POST1	PEMS

Stationary Turbine Attributes
Form OP-UA11 (Page 8)
Federal Operating Permit Program
Table 3c: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Fuel Flow Monitoring	CO Emission Limitation	CO Monitoring System	NH3 Emission Limitation	NH3 Monitoring
T-1	R-7201	X40A	310C	PEMS	310C	PEMS
T-2	R-7201	X40A	310C	PEMS	310C	PEMS

Stationary Turbine Attributes
Stationary Turbine Attributes
Form OP-UA11 (Page 12)
Federal Operating Permit Program
Table 6a: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Unit Type	Construction/Modification Date	Heat Input	Subject to Da	Service Type	NO_x Standard	Fuel Type
T-1	60KKKK	CHPT	2005C	50-850	NO	NOTER	YES	NGO
T-2	60KKKK	CHPT	2005C	50-850	NO	NOTER	YES	NGO

Stationary Turbine Attributes
Form OP-UA11 (Page 13)
Federal Operating Permit Program
Table 6b: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	75% of Peak	30 MW	Turbine Use	NO_x Control	NO_x Monitoring	Common Steam Header	Duct Burner
T-1	60KKKK	NO		ELCT	NO	CPMS	CMN-	YES
T-2	60KKKK	NO		ELCT	NO	CPMS	CMN-	YES

Stationary Turbine Attributes
Form OP-UA11 (Page 14)
Federal Operating Permit Program
Table 6c: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Location	SO_2 Standard	Fuel Monitoring	Fuel Quality	Performance Test	Intermediate Storage	Fuel Schedules
T-1	60KKKK	NO	NO	YES	SAMP	SAMP		
T-2	60KKKK	NO	NO	YES	SAMP	SAMP		

Texas Commission on Environmental Quality

Title V Existing

1552

Site Information (Regulated Entity)

What is the name of the permit area to be authorized?	LYNDON B JOHNSON SPACE CENTER
Does the site have a physical address?	Yes
Physical Address	
Number and Street	2101 NASA PKWY
City	HOUSTON
State	TX
ZIP	77058
County	HARRIS
Latitude (N) (##.######)	29.557777
Longitude (W) (-###.######)	95.086666
Primary SIC Code	9661
Secondary SIC Code	
Primary NAICS Code	927110
Secondary NAICS Code	
Regulated Entity Site Information	
What is the Regulated Entity's Number (RN)?	RN100665579
What is the name of the Regulated Entity (RE)?	LYNDON B JOHNSON SPACE CENTER
Does the RE site have a physical address?	Yes
Physical Address	
Number and Street	2101 NASA PKWY
City	HOUSTON
State	TX
ZIP	77058
County	HARRIS
Latitude (N) (##.######)	29.557777
Longitude (W) (-###.######)	-95.086666
Facility NAICS Code	
What is the primary business of this entity?	FLEET REFUELING

Customer (Applicant) Information

How is this applicant associated with this site?	Owner Operator
What is the applicant's Customer Number (CN)?	CN601572878
Type of Customer	Federal Government
Full legal name of the applicant:	
Legal Name	National Aeronautics And Space Administration
Texas SOS Filing Number	
Federal Tax ID	
State Franchise Tax ID	
State Sales Tax ID	

Local Tax ID	
DUNS Number	
Number of Employees	501+
Independently Owned and Operated?	

Responsible Official Contact

Person TCEQ should contact for questions about this application:	
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR.
First	JOEL
Middle	
Last	WALKER
Suffix	
Credentials	
Title	DIRECTOR, CENTER OPERATIONS
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	MC JE111
City	HOUSTON
State	TX
ZIP	77058
Phone (###-###-####)	2814830541
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	joel.b.walker@nasa.gov

Duly Authorized Representative Contact

Person TCEQ should contact for questions about this application	
Select existing DAR contact or enter a new contact.	JOHN HERRMANN(NATIONAL AERONA...)
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR
First	JOHN
Middle	
Last	HERRMANN
Suffix	
Credentials	
Title	ENVIRONMENTAL ENGINEER
Enter new address or copy one from list	
Mailing Address	
Address Type	Domestic

Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	MC JE111
City	HOUSTON
State	TX
Zip	77058
Phone (###-###-####)	8326936394
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	2814833048
E-mail	john.p.herrmann@nasa.gov

Technical Contact

Person TCEQ should contact for questions about this application:	
Select existing TC contact or enter a new contact.	JOHN HERRMANN(NATIONAL AERONA...)
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR
First	JOHN
Middle	
Last	HERRMANN
Suffix	
Credentials	
Title	ENVIRONMENTAL ENGINEER
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	
City	HOUSTON
State	TX
ZIP	77058
Phone (###-###-####)	2814835213
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	2814837027
E-mail	john.p.herrmann@nasa.gov

Title V General Information - Existing

1) Permit Type:	SOP
2) Permit Latitude Coordinate:	29 Deg 33 Min 28 Sec
3) Permit Longitude Coordinate:	95 Deg 5 Min 12 Sec
4) Is this submittal a new application or an update to an existing application?	Update
4.1. Select the permit/project number for which this update should be applied.	1552-36233

5) Who will electronically sign this Title V application?	Duly Authorized Representative
6) Does this application include Acid Rain Program or Cross-State Air Pollution Rule requirements?	No

Title V Attachments Existing

Attach OP-1 (Site Information Summary)

Attach OP-2 (Application for Permit Revision/Renewal)

[File Properties]

File Name	OP_2_OP_2_FORM_10-16-24.docx
Hash	D80BA68E9C16048D810189CE4AE47843A6F2D65677BC1DB93150903098624463
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-ACPS (Application Compliance Plan and Schedule)

Attach OP-REQ1 (Application Area-Wide Applicability Determinations and General Information)

[File Properties]

File Name	OP-REQ1 page 87-88 10-17-24.docx
Hash	1D31981329FB4ACEDB4D2F34E8D7AE19D0B678943398D218EF80B2FF8A12FE16
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-REQ2 (Negative Applicable Requirement Determinations)

Attach OP-REQ3 (Applicable Requirements Summary)

[File Properties]

File Name	OP_REQ3_OP_REQ3_Form.docx
Hash	6ECB43B835A534BBDC17B95F2758EB2E7A97E37BD43F353FF2F10BE20861D49F
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-PBRSUP (Permits by Rule Supplemental Table)

[File Properties]

File Name	OP_PBRSUP_OP_PBRSUP_JSC Forms.pdf
Hash	1150302C35F046A19764560C8EAC422F09BA1B4BD3FBCE322FADC32C59349F6B
MIME-Type	application/pdf

[File Properties]

File Name	OP_PBRSUP_Table D 106.511 Part 2 OP_PBRSUP_JSC Forms_2024.pdf
Hash	5FC32371480C8D093E63211EC2ACD146DEE090136474145B8D438F75DAB8E84D
MIME-Type	application/pdf

Attach OP-SUMR (Individual Unit Summary for Revisions)

[File Properties]

File Name OP_SUMR_OP_SUMR_Form_10-16-2024.docx

Hash 91BB2599C4AFF30E9A069DD64C069748E32E619793AE492593278D6F92987697

MIME-Type application/vnd.openxmlformats-officedocument.wordprocessingml.document

Attach OP-MON (Monitoring Requirements)

Attach OP-UA (Unit Attribute) Forms

[File Properties]

File Name Form OP-UA11.docx

Hash A26566205BFD99EE261050D00AC92B153F63F88CAFF578DC78F023514C04F441

MIME-Type application/vnd.openxmlformats-officedocument.wordprocessingml.document

[File Properties]

File Name OP-UA1 Misc Gen Attributes.docx

Hash 6C99774281B6C4DCCF9654411E130B64AE531C87F7EADC57359616356CAD00C2

MIME-Type application/vnd.openxmlformats-officedocument.wordprocessingml.document

[File Properties]

File Name OP-UA2.docx

Hash E20149819E298CFC894E4A711BFC2240E689A3BDECB4A4AF43D4A2DB3FC673A8

MIME-Type application/vnd.openxmlformats-officedocument.wordprocessingml.document

If applicable, attach OP-AR1 (Acid Rain Permit Application)

Attach OP-CRO2 (Change of Responsible Official Information)

Attach OP-DEL (Delegation of Responsible Official)

Attach Void Request Form

Attach any other necessary information needed to complete the permit.

[File Properties]

File Name AIR NSR_22827_Permits_Public_19930101_Agency Review_1632614_.pdf

Hash D69097D82B6A49EA9FB5046D437E96959005E13A2CA5863B4183C61B3099F3C4

MIME-Type application/pdf

[File Properties]

File Name AIR NSR_46837_Permits_Public_20140829_Agency Review_530272_.pdf

Hash A739DD55A92734EC5BCC39866565F285F6E6F32CF14C9249B886B6E17A3F31D1

MIME-Type	application/pdf

An additional space to attach any other necessary information needed to complete the permit.

[File Properties]

File Name	Reg 53868 - Please Update Central Registry Request.docx
Hash	025761354F0FDE5B02AFB0D8BA75CBC8A92F9A817CB2C076DF885AE76515B973
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Certification

I certify that I am the Duly Authorized Representative for this application and that, based on information and belief formed after reasonable inquiry, the statements and information on this form are true, accurate, and complete.

1. I am John P Herrmann, the owner of the STEERS account ER008559.
2. I have the authority to sign this data on behalf of the applicant named above.
3. I have personally examined the foregoing and am familiar with its content and the content of any attachments, and based upon my personal knowledge and/or inquiry of any individual responsible for information contained herein, that this information is true, accurate, and complete.
4. I further certify that I have not violated any term in my TCEQ STEERS participation agreement and that I have no reason to believe that the confidentiality or use of my password has been compromised at any time.
5. I understand that use of my password constitutes an electronic signature legally equivalent to my written signature.
6. I also understand that the attestations of fact contained herein pertain to the implementation, oversight and enforcemer of a state and/or federal environmental program and must be true and complete to the best of my knowledge.
7. I am aware that criminal penalties may be imposed for statements or omissions that I know or have reason to believe are untrue or misleading.
8. I am knowingly and intentionally signing Title V Existing 1552.
9. My signature indicates that I am in agreement with the information on this form, and authorize its submittal to the TCEC

OWNER OPERATOR Signature: John P Herrmann OWNER OPERATOR

Account Number:	ER008559
Signature IP Address:	198.120.13.176
Signature Date:	2024-10-21
Signature Hash:	3919D770CEB274C303F872FCB5BC13ED27AAF57F4653F14CCABB18BB0C66D56E
Form Hash Code at time of Signature:	2B5A835603F0B73FEBBDC8305DEC68BB8019220A230E1E35034D5617AD2AD79D

Submission

Reference Number:	The application reference number is 693427
Submitted by:	The application was submitted by ER008559/John P Herrmann
Submitted Timestamp:	The application was submitted on 2024-10-21 at 18:22:55 CDT
Submitted From:	The application was submitted from IP address 198.120.13.176
Confirmation Number:	The confirmation number is 572962
Steers Version:	The STEERS version is 6.82
Permit Number:	The permit number is 1552

Additional Information

Application Creator: This account was created by Mark A Kolkmeier

Item Barcode: **50187855**

Air Permit

AIR PA 167

AIR PA #: HG1601A 046837

File Type: Permits

Volume: 001

Date: 1/1/2005 -

Files appearing on this roll of microfilm/electronic image were filmed/scanned as received and per instructions from the Texas Commission on Environmental Quality's Records Management Coordinator, Kate Fitzpatrick.

Box Barcode: 573117

Poor Quality Original

Record Series: AIR PA

Primary Filing ID: HG1601A

Secondary Filing ID: 046837

Document Date: multiple pages

Item Barcode: 5018785S

Box: AIR PA Misc.11

Envelope: 272

THE FOLLOWING DOCUMENT CONTAINS PAGES THAT HAVE BEEN IMAGED TO THE HIGHEST QUALITY AVAILABLE.

IN ORDER TO IDENTIFY POOR QUALITY DOCUMENTS THEY HAVE BEEN STAMPED "BEST POSSIBLE IMAGE".

Box Barcode: 573117

Kathleen Hartnett White, *Chairman*
Larry R. Soward, *Commissioner*
Glenn Shankle, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 13, 2006

Mr. Joel B. Walker
Director-center Operations
National Aeronautics and Space Administration
MC JA111 2101 NASA Parkway
Houston, Texas 77058-3696

RECEIVED
AUG 24 2006
TCEQ
CENTRAL FILE ROOM

Re: Permit by Rule Registration Number: 46837
Building 24 Diesel Storage Tank
Houston, Harris County
Regulated Entity Number: RN100665579
Customer Reference Number: CN601572878

Dear Mr. Walker:

This is in response to your Form PI-7-CERT, entitled "Certification and Registration for Permits by Rule," concerning the increase annual diesel throughput for diesel storage tank (B24TANK01A) at your site located at 2101 NASA Parkway in Houston, Harris County. We understand that the tank was originally authorized for 50,000 gallons per year (gal/yr) under Registration No. 46837 and with this registration you will increase the allowable annual diesel throughput to 600,000 gal/yr. We further understand that the total emissions associated wit this project is estimated at 0.02 tons per year of volatile organic compounds.

After evaluation of the information which you have furnished, we have determined that your installation is authorized under Title 30 Texas Administrative Code § 106.478 (30 TAC § 106.478) if constructed and operated as described in your registration request. This permit by rule was authorized by the Texas Commission on Environmental Quality (TCEQ) pursuant to 30 TAC Chapter 106. You are reminded that 30 TAC § 116.116(d)(2) requires that all changes authorized by a permit by rule to a permitted facility must be incorporated into the facility's permit when the permit is next amended or renewed. For further guidance on how this may affect your project, please go to http://www.tceq.state.tx.us/permitting/air/permitbyrule/claim_pbr.html.

A copy of the permit by rule in effect at the time of this registration is enclosed. You must install facilities in accordance with the version of the permit by rule in effect when installation actually begins [see 30 TAC § 106.4(a)(5)]. After completion of the installation, the facility shall be operated in compliance with all the applicable conditions of the claimed permit by rule and 30 TAC § 106.4.

Re: Permit by Rule Registration Number: 46837

You are reminded that regardless of whether a permit is required, these facilities must be in compliance with all rules and regulations of the TCEQ and of the U.S. Environmental Protection Agency at all times.

Your cooperation in this matter is appreciated. If you have any questions concerning this permit by rule, please contact Ms. Rahel Tadesse at (713) 767-3770 or write to the Texas Commission on Environmental Quality, Office of Permitting, Remediation, and Registration, Air Permits Division (MC-163), P.O. Box 13087, Austin, Texas 78711-3087.

This action is authorized on behalf of the TCEQ Executive Director.

Sincerely,

Anne M. Inman, P.E., Manager
General/Standard/Rule (GSR) Permit Section
Air Permits Division
Texas Commission on Environmental Quality

AMI/RGT/alb

Enclosure

cc: Mr. Arturo Blanco, Bureau Chief of Air Quality Control, Health and Human Services Department, City of Houston, Houston
Mr. Badruddin (Bud) Karachiwala, Director, Harris County Public Health and Environmental Services, Pollution Control Department, Pasadena
Air Section Managers, Region 12 - Houston

Project Number: 122827

TECHNICAL REVIEW: AIR PERMIT BY RULE

Permit No.:	46837	*Company Name:*	National Aeronautics and Space Administration	*APD Reviewer:*	Ms. Rahel Tadesse
Project No.:	122827	*Site/Area Name:*	Building 24 Diesel Storage Tank	*PBR No(s).:*	106.478

GENERAL INFORMATION			
Regulated Entity No.:	RN100665579	**Project Type:**	XRVW
Customer Reference No.:	CN601572878	**Date Received by TCEQ:**	May 17, 2006
Account No.:	HG-1601-A	**Date Received by Reviewer:**	May 23, 2006
City/County:	Houston, Harris County	**Physical Location:**	2101 nasa parkway

CONTACT INFORMATION					
Responsible Official/ Primary Contact Name and Title:	Mr. Joel B. Walker Director-center Operations	**Phone No.:** **Fax No.:**	(281) 483-0541 (281) 483-1815	**Email:**	
Technical Contact/ Consultant Name and Title:	Mr. Kirk E. Hummel Air Specialist	**Phone No.:** **Fax No.:**	(281) 483-6642 (281) 483-3048	**Email:**	

GENERAL RULES CHECK	YES	NO	COMMENTS
Is confidential information included in the application?		X	
Are there associated NSR or Title V permits for the site?	X		Permit No. 19211, 19670, 76247 O-1552
Is each PBR > 25/250 tpy?		X	
Are PBR sitewide emissions > 25/250 tpy?	X		
Are there permit limits on using PBRs at the site?		X	
Is PSD or Nonattainment netting required?		X	
Do NSPS, NESHAP, or MACT standards apply to this registration?		X	
Does NOx Cap and Trade apply to this registration?		X	
Is the facility in compliance with all other applicable rules and regulations?	X		

DESCRIBE OVERALL PROCESS AT THE SITE

Johnson Space Center (JSC) operates an existing 100,000 gallon diesel storage tank (B24TANK01A), Registration No. 46837 to back up fuel for the building 24 Central Plant boilers for testing and in case of emergencies or natural gas curtailment.

DESCRIBE PROJECT AND INVOLVED PROCESS

The purpose of this re-registration is to increase the allowable annual diesel throughput to 600,000 gallons per year. The tank was originally authorized for 50,000 gallons per year. The incremental increase in VOC emissions associated with this proposed modification is 15.16 pounds per year. The TANKS 4.0 printouts are included. JSC intends to use B24TANK01A as the central repository for all JSC diesel fuel. Increasing the tank turnovers should reduce the risks of fuel degradation caused by fuel aging and oxidation.

TECHNICAL SUMMARY - DESCRIBE HOW THE PROJECT MEETS THE RULES

For the purpose of 106.478: The applicant has represented that the tank is located over 3,000 feet from any off-plant receptor. The true vapor pressure for diesel fuel is estimated at 0.011 psia. The new diesel tank will be equipped with a submerged fill pipe. The new tank will be painted white. Emission were calculated using EPA TANKS software. The applicant submitted PI-7-CERT before revising the annual throughput or this diesel tank. The chemical is one of the approved chemical under Table 478.

ESTIMATED EMISSIONS

EPN / Emission Source	Specific VOC or Other Pollutants	VOC		NOx		CO		PM_{10}		SO_2		Other	
		lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
B24TANK01A													
TOTAL EMISSIONS (TPY):			0.02										

MAXIMUM OPERATING SCHEDULE:	Hours/Day	24	Days/Week	7	Weeks/Year	52	Hours/Year	8760

TECHNICAL REVIEW: AIR PERMIT BY RULE

Permit No.:	46837	***Company Name:***	National Aeronautics and Space Administration	***APD Reviewer:***	Ms. Rahel Tadesse
Project No.:	122827	***Site/Area Name:***	Building 24 Diesel Storage Tank	***PBR No(s).:***	106.478

SITE REVIEW / DISTANCE LIMIT	**Yes**	**No**	**Description/Outcome**	**Date**	**Reviewed by**
Site Review Required?		X	NA		
PBR Distance Limits Met?	X		>3,000 feet from the nearest off-pant receptors	06/08/06	rtadesse

	TECHNICAL REVIEWER	**PEER REVIEWER**	**FINAL REVIEWER**
SIGNATURE:	Rahel Tadesse	Rahsaan R. Cook	Clyde Price
PRINTED NAME:	Ms. Rahel Tadesse	Mr. Rahsaan R. Cook	Mr. Clyde Price
DATE:	06/08/06	06/08/2006	June 8, 2006

BASIS OF PROJECT POINTS	**POINTS**
Base Points:	1.0
Project Complexity Description and Points:	
Technical Reviewer Project Points Assessment:	1.0
Final Reviewer Project Points Confirmation:	1.00

06/09/2006 ---------- NSR PERMITS IMS- PROJECT RECORD ----------

PROJECT#: 122827 PERMIT#: **46837** STATUS: **P** DISP CODE: C

RECEIVED: **05/17/2006** PROJTYPE: **XRVW** RENEWAL:

FEE DATE: FEE AMT: $ 450 PROJ-ISSUE DATE: 6/13/06

STDX,PBR#,STDP: 0478 CHECK NUMBER: WRS0003179

PROJECT NAME: BUILDING 24 DIESEL STORAGE TANK

Rahsaan 1.0

GROUP: PAR

PAR1_2 : STEGER, JULIE

GROUP: HRT

PEERREVIEW : COOK, RAHSAAN

TECHENGR : TADESSE, RAHEL

ADMIN REVIEW

A - PAR RECEIVED : 05/17/2006 A - PAR TRANSFER TO APD : 05/19/2006

ISSUED TO: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

COMPANY NAME: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

CUSTOMER REGISTRY ID: **CN601572878**

PRIMARY CONTACT INFORMATION

CONTACT TYPE: TECHNICAL CONTACT

NAME: MR KIRK E HUMMEL PE TITLE: AIR SPECIALIST

EMPLOYER NAME: NASA JOHNSON SPACE CENTER

PHONE: 281-483-6642 ext FAX: 281-483-3048 ext

STREET: MC JE 2101 NASA PKWY CITY/STATE,ZIP: HOUSTON, TX , 77058-3696

CONTACT TYPE: RESPONSIBLE OFFICIAL

NAME: MR JOEL B WALKER TITLE: DIRECTOR-CENTER OPERATIONS

EMPLOYER NAME: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

PHONE: 281-483-0541 ext FAX: 281-483-1815 ext

STREET: MC JA111 2101 NASA PKWY CITY/STATE,ZIP: HOUSTON, TX , 77058-3696

PROJECT INFORMATION

UNIT: BUILDING 24 DIESEL STORAGE TANK

SIC: 3764 REGION: 12 ACCOUNT: **HG1601A** REG ENTITY ID: **RN100665579**

SITE NAME: NASA JOHNSON SPACE CENTER EPFOL

COUNTY: HARRIS CAPUNITS: UNITTYPE:

CAPACITY: CITY: HOUSTON

LOCATION: 2101 NASA PARKWAY

PUBLIC NOTICE

PUBLIC NOTICE REQUIRED?: N PN1 ALT LANGUAGE: NO PN2 ALT LANGUAGE: NO

EMISSION RATES

TONS/YR REDUCTION	NOX	CO	VOC	PM	SO2	OTHER	TOTAL

PROJECT NOTES

TECHNICAL ACTIVITY HISTORY

TR - ENGINEER RECEIVE PROJECT :	05/23/2006	SUP - RECEIVED FROM PAR :	05/23/2006	TR - INITIAL REVIEW COMPLETE :	05/25/2006
TR - PROJECT TO ADMIN :	06/08/2006	TR - FINAL PKG TO TEAM LEADER :	06/08/2006		
TR - PEER REVIEW :	06/08/2006	06/08/2006			

PROJECT ATTRIBUTES

PROJECT LINK

PROJECTS/PERMITS VOIDANCE

05/19/2006 ---------- NSR PERMITS IMS- PROJECT RECORD ----------

PROJECT#: 122827 PERMIT#: **46837** STATUS: **P** DISP CODE: _____

RECEIVED: **05/17/2006** PROJTYPE: **XRVW** RENEWAL:

FEE DATE: FEE AMT: $ 450 PROJ-ISSUE DATE: _____ 5/23/06

STDX,PBR#,STDP: 0478 CHECK NUMBER: WRS0003179

PROJECT NAME: BUILDING 24 DIESEL STORAGE TANK

GROUP: PAR

PAR1_2 : STEGER, JULIE

GROUP: HRT

TECHENGR : TADESSE, RAHEL

T-329502
329503

ADMIN REVIEW

A - PAR RECEIVED : 05/17/2006 A - PAR TRANSFER TO APD : 05/19/2006

ISSUED TO: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

COMPANY NAME: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

CUSTOMER REGISTRY ID: **CN601572878**

PRIMARY CONTACT INFORMATION

CONTACT TYPE: TECHNICAL CONTACT

NAME: MR KIRK E HUMMEL PE TITLE: AIR SPECIALIST

EMPLOYER NAME: NASA JOHNSON SPACE CENTER

PHONE: 281-483-6642 ext FAX: 281-483-3048 ext

STREET: MC JE 2101 NASA PKWY CITY/STATE,ZIP: HOUSTON, TX , 77058-3696

CONTACT TYPE: RESPONSIBLE OFFICIAL

NAME: MR JOEL B WALKER TITLE: DIRECTOR-CENTER OPERATIONS

EMPLOYER NAME: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

PHONE: 281-483-0541 ext FAX: 281-483-1815 ext

STREET: MC JA111 2101 NASA PKWY CITY/STATE,ZIP: HOUSTON, TX , 77058-3696

PROJECT INFORMATION

UNIT: BUILDING 24 DIESEL STORAGE TANK

SIC: 3764 REGION: 12 ACCOUNT: **HG1601A** REG ENTITY ID: **RN100665579**

SITE NAME: NASA JOHNSON SPACE CENTER EPFOL

COUNTY: HARRIS CAPUNITS: UNITTYPE:

CAPACITY: CITY: HOUSTON

LOCATION: 2101 NASA PARKWAY

PUBLIC NOTICE

PUBLIC NOTICE REQUIRED?: N PN1 ALT LANGUAGE: NO PN2 ALT LANGUAGE: NO

EMISSION

RECEIVED
MAY 2 3 2006
REGION 12

RATES

TONS/YR REDUCTION	NOX	CO	VOC	PM	SO2	OTHER	TOTAL

PROJECT NOTES

TECHNICAL ACTIVITY HISTORY

TR - ENGINEER RECEIVE PROJECT :	SUP - RECEIVED FROM PAR :	TR - PROJECT TO ADMIN :	
TR - FINAL PKG TO TEAM LEADER :	TR - DEFICIENCY CYCLE :		TR - INITIAL REVIEW COMPLETE :
TR - PEER REVIEW :			

PROJECT ATTRIBUTES

PROJECT LINK

PROJECTS/PERMITS VOIDANCE

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
2101 NASA Parkway
Houston, Texas 77058-3696

CERTIFIED MAIL

May 11, 2006

Received
MAY 17 2006
Air & Waste Applications

Reply to Attn of: JE-06-037

Mr. Donald D. Nelon
Air Permits Initial Review Team, MC-161
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Subject: Texas Commission on Environmental Quality (TCEQ) Permit-By-Rule Re-Registration, Building 24 Diesel Storage Tank (B24TANK01A), NASA Johnson Space Center (NASA JSC), TCEQ Account No. HG-1601A, Houston, Harris County

Dear Mr. Nelon:

NASA JSC hereby submits the enclosed notification and re-registration for the continued operation of our existing diesel storage tank (B24TANK01A). The purpose of this request is to increase the annual diesel throughput for better agreement with the diesel fuel consumption limits in our Central Plant boiler permits (#19211 and #76247). This request is submitted in accordance with the requirements specified in 30 TAC Chapter §106.4 and §106.478(7).

Should you have any questions regarding this action, please contact Mr. Kirk E. Hummel, Air Specialist, Environmental Office, at telephone 281-483-6642 or facsimile 281-483-3048.

Sincerely,

Joel B. Walker
Director, Center Operations

Enclosure

cc:
Ms. Linda Vasse
Region 12
Texas Commission on Environmental Quality
5425 Polk Avenue, Suite H
Houston, TX 77023-1452

Mr. Arturo Blanco
Bureau of Air Quality Control
City of Houston
Department of Health and Human Services
7411 Park Place
Houston, TX 77087

Mr. Badruddin (Bud) Karachiwala
Harris County Environmental Public Health
P.O. Box 6031
Pasadena, TX 77506

RECEIVED
MAY 17 2006
AIR & WASTE
APPLICATIONS TEAM

TCEQ PERMIT-BY-RULE REGISTRATION

TCEQ §106.478 – TANKS, STORAGE AND LOADING (STORAGE TANK AND CHANGE OF SERVICE)

TCEQ ACCOUNT ID No. HG-1601-A

Building 24 Diesel Tank
NASA Johnson Space Center
Houston, Texas

Submitted to

Texas Commission on Environmental Quality
Office of Permitting, Remediation, and Registration
Air Permits Division
Austin, Texas

4/24/2006

Enclosure

TABLE OF CONTENTS

Section		Page
1.0	INTRODUCTION 1.1 General 1.2 Facility Location 1.3 Project Schedule	1
2.0	PROCESS DESCRIPTION	2
3.0	EMISSION RATES	4
4.0	REGULATORY APPLICABILITY ANALYSIS	5

Figures

1 JSC Diesel Flow Chart

Attachments

A TCEQ Form PI-7-CERT, §106.4 Checklist, §106.478 Checklist, and TCEQ Table 7(a) (Vertical Fixed Roof Tanks)
B JSC Area Map and JSC Project Area Plot Plan
C EPA Tanks Calculation

1.0 INTRODUCTION

1.1 GENERAL

NASA Johnson Space Center (JSC) owns and operates an existing 100,000 gallon diesel storage tank authorized in 2001 under Permit-By-Rule Registration #46837 located in Houston, Harris County, Texas. JSC is submitting this notification/ re-registration to increase the annual maximum diesel throughput for the tank under the TCEQ Permit-By-Rule regulation §106.478.

There are no other affected permits or exempted sources involved in this action.

JSC requests a Texas Commission on Environmental Quality (TCEQ) Permit-By-Rule authorization to operate the Building 24 diesel storage tank under TCEQ Permit-By-Rule regulation §106.478.

TCEQ's Permit-By-Rule Form PI-7-CERT, §106.4 Checklist, §106.478 Checklist, and TCEQ Table 7(a) (Vertical Fixed Roof Tanks) are presented in Attachment A.

1.2 FACILITY LOCATION

JSC is located in Houston, Harris County, Texas. The JSC area map and JSC facility proposed project area plot plan are included in Attachment B. The plot plans show the location of Building 24 and the diesel storage tank.

1.3 PROJECT SCHEDULE

The diesel storage tank is already in operation.

2.0 PROCESS DESCRIPTION

JSC operates an existing PBR 100,000 gallon diesel storage tank (B24TANK01A) to supply backup fuel for the Building 24 Central Plant boilers for testing and in case of emergencies or natural gas curtailment.

The purpose of this re-registration is to increase the allowable annual diesel throughput to 600,000 gallons per year. JSC intends to use B24TANK01A as the central repository for all JSC diesel fuel. This is illustrated in Figure 1 (JSC Diesel Flow Chart). Increasing the tank turnovers should reduce the risks of fuel degradation caused by fuel aging and oxidation.

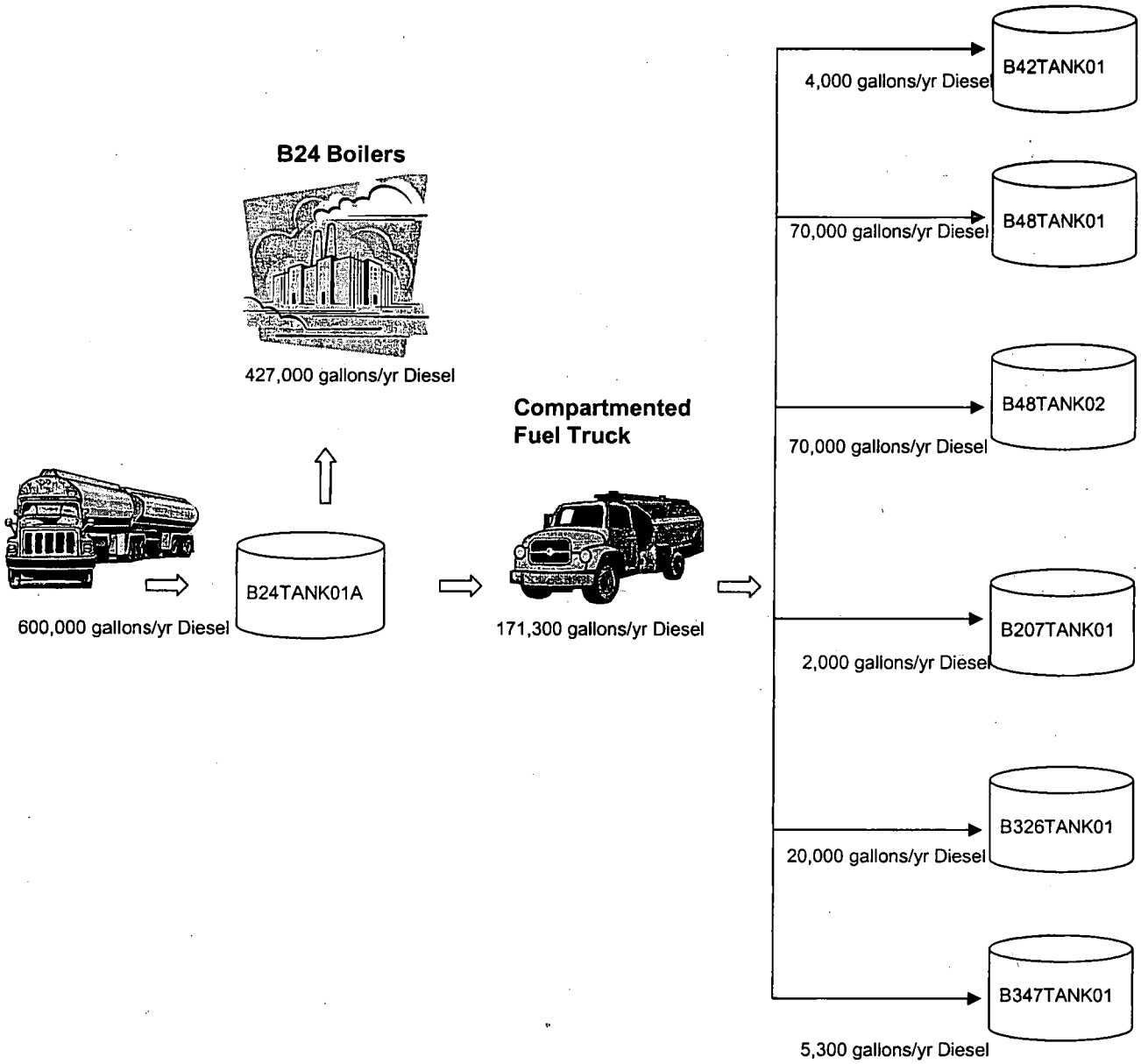


FIGURE 1
JSC DIESEL FLOW CHART

3.0 EMISSION RATES

Emissions of volatile organic compounds (VOC) from the storage tank were estimated using EPA's TANKS 4.09d software program. Detailed calculations are provided in the Attachment C. The estimated maximum VOC emission rates (hourly and annual) are summarized in the following table:

Source	Pollutant	Pounds per Hour	Tons per Year
B24TANK01A	VOC	0.26	0.021

Short-term (lb/hr) emissions were based on a monthly maximum liquid surface temperature of 77°F per AP-42 for Houston in July, and a maximum filling rate of 125 gallons per minute (gpm). This represents a worst-case scenario.

Annual emissions (includes working and breathing losses) are based on continuous operation (8,760 hours per year). An annual throughput of 600,000 gallons per year was used.[1]

[1] This corresponds to 427,000 gallons per year to B24 Central Plant boilers, plus 171,000 gallons per year to other on-site diesel tanks.

4.0 REGULATORY APPLICABILITY ANALYSIS

The operation of the diesel storage tank will continue to comply with the TCEQ applicable Permit-By-Rule rules and regulations. The specific TCEQ §106.478 Permit-By-Rule regulations are addressed in this section to demonstrate that the project will meet all applicable TCEQ Permit-By-Rule requirements. The TCEQ Form PI-7-CERT, §106.4 (Requirements for Exemption from Permitting) checklist, and §106.478 checklist are included in Attachment A.

Texas Commission on Environmental Quality
Chapter 106 - Exemptions from Permitting

TCEQ §106.478 – Tanks, Storage, and Loading (Storage Tank and Change of Service)

Any fixed or floating roof storage tank, or change of service in any tank, used to store chemicals or mixtures of chemicals shown in Table 478 in paragraph (8) of this section is permitted by rule, provided that all of the following conditions of this section are met:

(1) The tank shall be located at least 500 feet away from any recreational area or residence or other structure not occupied or used solely by the owner of the facility or the owner of the property upon which the facility is located.

The emission point associated with the project is located over 3,000 feet from any off-plant receptor.

(2) The true vapor pressure of the compound to be stored shall be less than 11.0 psia at the maximum storage temperature.

The monthly maximum true vapor pressure for diesel fuel is estimated at 0.011 psia per AP-42. The emission estimation details are presented in Section 3.0 (Emission Rates) and in Attachment C and vendor's data is presented in Attachment D.

(3) For those compounds that have a true vapor pressure greater than 0.5 psia and less than 11.0 psia at the maximum storage temperature, any storage vessel larger than 40,000 gallons capacity shall be equipped with an internal floating cover or equivalent control.

(A) An open top tank containing an external floating roof using double seal technology shall be an approved control alternative equivalent to an internal floating cover tank, provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal. Double seals having a vapor- mounted primary seal are an approved alternative for existing open top floating roof tanks undergoing a change of service.

(B) The floating cover or floating roof design shall incorporate sufficient flotation to conform to the requirements of American Petroleum Institute Code 650, Appendix C or an equivalent degree of flotation.

Not applicable because the vapor pressure of diesel fuel is less than 0.5 psia at maximum storage temperature.

(4) Compounds with a true vapor pressure of 0.5 psia or less at the maximum storage temperature may be stored in a fixed roof or cone roof tank which includes a submerged fill pipe or utilizes bottom loading.

The diesel tank is equipped with a submerged fill pipe.

(5) For fixed or cone roof tanks having no internal floating cover, all uninsulated tank exterior surfaces exposed to the sun shall be painted chalk white except where a dark color is necessary to help the tank absorb or retain heat in order to maintain the material in the tank in a liquid state.

The diesel tank is painted white.

(6) Emissions shall be calculated by methods specified in Section 4.3 of the current edition of the United States Environmental Protection Agency Publication AP-42. This document may be obtained from the Superintendent of Documents, Washington D.C. 20402. It is Stock Number 0550000251-7, Volume I.

Emissions were calculated using EPA TANKS Version 4.09d which is equivalent to AP-42.

(7) Before construction begins, storage tanks of 25,000 gallons or greater capacity and located in a designated nonattainment area for ozone shall be registered with the commission's Office of Permitting, Remediation, and Registration in Austin using Form PI-7-CERT. The registration shall include a list of all tanks, calculated emissions for each carbon compound in tons per year for each tank, and a Table 7 of Form PI-2 for each different tank design.

JSC is notifying TCEQ by providing this Form PI-7-CERT before revising the annual throughput for this diesel tank. This notification includes project calculations, and all other requested data.

(8) Mixtures of the chemicals listed in Table 478 which contain more than a total of 1.0% by volume of all other chemicals not listed in Table 478 are not covered by this section.

Table 478 lists "Approved refinery petroleum fractions: fuel oils, distillates" in Section D as approved Chemicals for 106.478.

Other Rules and Regulations

- Ch.115 – The tank is exempt from any substantive requirements in 30 TAC 115.112 (Control Requirements – Storage of VOCs in ozone nonattainment areas) because it meets the low vapor pressure exemption in 115.117(a)(1), i.e., the vapor pressure is below 1.5 psia. The only requirement in 115.116 is to keep records of the vapor pressure of materials stored. This tank will only be used to store diesel fuel. Records of fuel deliveries will be kept and provided upon request.

- NSPS Kb – The tank is exempt from any substantive requirements in 40 CFR 60 Subpart Kb (New Source Performance Standards for VOL Storage after 7/23/84) because it meets the low vapor pressure exemption in 60.110b(c). The only requirement in 60.116b(b) is to keep a record showing the dimensions of the tank and an analysis showing capacity of the tank for the life of the source. These records will be kept and provided upon request.

RECEIVED
MAY 17 2006
AIR & WASTE
APPLICATIONS TEAM

ATTACHMENT A

TCEQ Form PI-7-CERT, §106.4 Checklist, §106.478 Checklist, and TCEQ Table 7(a) (Vertical Fixed Roof Tanks)

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

I. REGISTRANT INFORMATION

A. TCEQ Customer Reference Number	CN-601572878	TCEQ Regulated Entity Number	RN-100665579

Note: If no CN or RN number was entered above, please fill out the required Core Data Form, which will be available in Step II of the submittal process.

B. Company or Other Legal Customer Name: National Aeronautics and Space Administration

Company Official Contact Name: Mr. Joel B. Walker Title: Director, Center Operations

Mailing Address: Mail Code JA111, 2101 NASA Parkway

City: Houston State: TX Zip Code: 77058-3696

Phone: 281-483-0541 Fax: 281-483-1815 E-mail:

C. Technical Contact Name: Kirk E. Hummel, P.E. Title: Air Specialist

Company: NASA Johnson Space Center

Mailing Address: Mail Code JE, 2101 NASA Parkway

City: Houston State: TX Zip Code: 77058-3696

Phone: 281-483-6642 Fax: 281-483-3048 E-mail: kirk.e.hummel@nasa.gov

D. Facility Location Information - Street Address: NASA Johnson Space Center, 2101 NASA Parkway

If no street address, provide written driving directions to the site: *(attach description if additional space is needed)*

City: Houston County: Harris Zip Code: 77058-3696

II. FACILITY AND SITE INFORMATION

A. Name and Type of Facility: Building 24 Diesel Storage Tank ☒ Permanent ☐ Portable

B. Permits by Rule (PBR) claimed under 30 TAC § 106 *(List all):* §106.478 §106.____ §106.____ §106.____ §106.____ §106.____

Are you claiming **historical standard exemption or PBR**? ☐ YES ☒ NO If "YES" enter effective date and Rule No.:

C. Are you registering a **grandfathered** facility? *If "YES," attach documentation of construction date* ☐ YES ☒ NO

D. Is there a previous **Standard Exemption or PBR** for the facility in this registration? *(Attach details regarding changes)*	☒ YES ☐ NO	If "YES," enter Registration No.:	#46837
		If "YES," enter Rule No.:	106.478
E. Are there any **other facilities** at this **site** which are **authorized by an air Standard Exemption or PBR**?	☒ YES ☐ NO	If "YES," enter Registration No.:	Several
		If "YES," enter Rule No.:	
F. Are there any **other air preconstruction permits** at this site?	☒ YES ☐ NO	If "YES," enter Permit Nos.:	#19211, #19670
			#76247
G. Is this **site** required to obtain an air **federal operating permit**?	☒ YES ☐ NO	If "YES," enter Permit No.:	O-1552

H. TCEQ Account Identification Number *(if known):* HG-1601A

III. FEE INFORMATION

To determine if a fee is required answer the following questions. If "YES," to question III. A., a fee is not required, skip to Section IV. If "NO" to answer III. A., then go to Section III. B. See Section VI for address to send fee or go to www2.tceq.state.tx.us/epay *to pay online*

A. Is this registration an update to a previously registered facility solely to establish a federally enforceable emission limit? ☐ YES ☒ NO

B. What is the fee amount? *If "YES," to any of the following three questions, a **$100 fee** is required. Otherwise, a **$450 fee** is required.*

Does this business have less than 100 employees? ☐ YES ☒ NO

Does this business have less than 1 million dollars in annual gross receipts? ☐ YES ☒ NO

Is this certification and registration submitted by a governmental entity with a population of less than 10,000? ☐ YES ☒ NO

C. Check/Money Order or Transaction Number (*Payable to TCEQ*): paid by EFT

Company Name on Check: U.S. Treasury Fee Amount: $450.00

RECEIVED
MAY 17 2006
AIR & WASTE
APPLICATIONS TEAM

Project # 122827

122827

IV. SELECTED FACILITY REVIEWS ONLY - TECHNICAL INFORMATION

Note: If claiming one of the following PBRs, complete this section, then skip to Section VI "Submitting Your Registration" below.

Animal Feeding Operations §106.161 **Livestock Auction Facilities** §106.162 **Saw Mills** §106.223
Grain Handling, Storage and Drying §106.283 **Auto Body Refinishing Facilities** §106.436 **Air Curtain Incinerator** §106.496

A.	Is the **applicable PBR checklist** attached which shows the facility meets all **general** and **specific** requirements of the PBR(s) being claimed? (*If submitting electronically, click "YES"*)	❑ YES	❑ NO
B.	Distance from this facility's emission release point to the nearest property line: **Enter in Feet:**		
	Distance from this facility's emission release point to the nearest off-property structure: **Enter in Feet:**		

V. TECHNICAL INFORMATION INCLUDING STATE AND FEDERAL REGULATORY REQUIREMENTS

Registrants must be in compliance with all applicable state and federal regulations and standards to claim a PBR.

A.	Is confidential information submitted and properly marked "CONFIDENTIAL" with this certification and registration?	❑ YES	☒ NO
B.	Is a process flow diagram or a process description attached?	☒ YES	❑ NO
C.	Are emissions data and calculations for this claim attached?	☒ YES	❑ NO
D.	Is information attached showing how the **general** requirements **(30 TAC § 106.4)** of the PBR is met for this certification and registration? (**PBR checklists** *may be used, but are optional)*	☒ YES	❑ NO
Note:	*Please be reminded that if the facilities listed in this certification and registration are subject to the Mass Emissions Cap & Trade program under **30 TAC Chapter 101, Subchapter H, Division 3**, the owner/operator of these facilities must possess NO_x allowances equivalent to the actual NO_x emissions from these facilities.*		
E.	Is information attached showing how the **specific PBR** requirements are met for this registration? (**PBR checklists** *may be used, but are optional)*	☒ YES	❑ NO
F.	Distance from this facility's emission release point to the nearest property line: **Enter in Feet:** 4,000		
	Distance from this facility's emission release point to the nearest off-property structure: **Enter in Feet:** 4,000		
Note:	*In limited cases, a map or drawing of the site and surrounding land use may be requested during the technical review or at the request of the TCEQ Regional Office or local air pollution control program during an investigation.*		

VI. SIGNATURE FOR CERTIFICATION AND REGISTRATION

The signature below indicates that the Responsible Official has knowledge of the facts herein set forth and that the same are true, accurate, and complete to the best of my knowledge and belief. By this signature, the maximum emission rates listed on this certification reflect the maximum anticipated emissions due to the operation of this facility and all representations in this certification of emissions are conditions upon which the facilities and sources will operate. It is understood that it is unlawful to vary from these representations unless the certification is first revised. The signature certifies that to the best of the Responsible Official's knowledge and belief, the project will satisfy the conditions and limitations of the indicated exemption or permit by rule and the facility will operate in compliance with all regulations of the Texas Commission on Environmental Quality and with federal U.S. Environmental Protection Agency regulations governing air pollution. The signature below certifies that, based on information and belief formed after reasonable inquiry, the statements and information above and contained in the attached document(s) are true, accurate, and complete. ***If you have questions on how to fill out this form or about air quality permits, Please call 512/239-1250.*** *Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, call 512/239-3282.*

SIGNATURE: Jack B Walk	**DATE:** 5.11.06

VII. 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*
Permits Administrative Review (PAR) Section, TCEQ	**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 F, First Floor, Room 1206, Austin, Texas 78753 OR **Facsimile** (512) 239-2123 (*do not follow fax with paper copies*)	Originals - Form PI-7, Core Data Form; all attachments
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 and Core Data Form
Appropriate TCEQ regional office	To find your regional office address, go to the TCEQ Web site at www.tceq.state.tx.us, or call (512) 239-1250	Copy of Form PI-7, Core Data Form, and all attachments
Appropriate local air pollution control program(s)	To find your local air pollution control programs go to the TCEQ, APD Web site at www.tceq.state.tx.us/nav/permits/air_permits.html, or call (512) 239-1250	Copy of Form PI-7, Core Data Form, and all attachments

RECEIVED
MAY 17 2006
AIR & WASTE
APPLICATIONS TEAM

Post-it® Fax Note 7671	Date 5/9/06 # of pages ▶ 1
To KIRK HUMMEL	From JACQUELINE
Co./Dept.	Co. TCEQ
Phone #	Phone # 512-239-1208
Fax # 281-483-3048	Fax #

80759 Xs N

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY
RECEIPT

MAY02,06

ALPHA NAME
(FEE DESCRIPT.)
ACCOUNT NAME
(PAID FOR)
AIR PERMIT BY RULE

ACCOUNT CODE: PBR
REGISTER# (REF.NO.1): WRS0003179
FAC/PER/PJT (REF.NO.2):
PAID IN BY NAME: JOHNSON SPACE CENTER
RCPT RECEIPT CODE FORM: MISC

CHEQUE NUMBER: 0
BANK BRANCH WIRE:
CARD NUMBER: 0
CARD AUTHORISE:

TRANSAC. AMOUNT: $ 450.00
USER DATA:

PERMIT BY RULE $ 450.00

BEST POSSIBLE IMAGE

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

Electronic Submittal - Only enter the PI-7 confirmation number here [ ] if submitting electronically.
Hard-Copy Submittal - Print and complete this checklist.

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 Web site at: **www.tceq.state.tx.us/permitting/air/nav/air_pbr.html**.

1. 30 TAC § 106.4(a)(1) & (4): Emission limits

List emissions in tpy for **each** facility (add additional pages or table if needed):

SO_2 = _____	PM_{10} = _____	VOC = 0.021	NO_x = _____	CO = _____	Other _____	= _____
SO_2 = _____	PM_{10} = _____	VOC = _____	NO_x = _____	CO = _____	Other _____	= _____
SO_2 = _____	PM_{10} = _____	VOC = _____	NO_x = _____	CO = _____	Other _____	= _____
Total _____	_____	0.021	_____	_____		_____

- Are the SO_2, PM_{10}, VOC, or other air contaminant emissions claimed for **each** facility in this PBR submittal less than 25 tpy? ☒ YES ☐ NO
- Are the NO_x and CO emissions claimed for each facility in this PBR submittal less than 250 tpy? ☒ YES ☐ NO

*If the answer to both is "Yes," continue to the question below. If the answer to either question is "No," a **PBR cannot be claimed**.*

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.) ☒ YES ☐ NO

If "Yes," skip to Section 2. If "No," continue to the questions below.

If the site has had no public notice, please answer the following:
- Are the SO_2, PM_{10}, VOC, or other emissions claimed for **all** facilities in this PBR submittal less than 25 tpy? ☐ YES ☐ NO
- Are the NO_x and CO emissions claimed for all facilities in this PBR submittal less than 250 tpy? ☐ YES ☐ NO

If the answer to both questions is "Yes," continue to Section 2.
*If the answer to either question is "No," **a PBR cannot be claimed**. A permit will be required under Chapter 116.*

2. 30 TAC § 106.4(a)(2): Nonattainment check

Are the facilities to be claimed under this PBR located in a designated ozone nonattainment county? ☒ YES ☐ NO
If "Yes," please indicate which county by checking the appropriate box to the right.
(Marginal) - Hardin, Jefferson, and Orange counties *(BPA)* ☐ BPA
(Moderate) - Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller counties *(HGA)* ☒ HGA
(Moderate) - Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant counties *(DFW)* ☐ DFW

If "Yes," to any of the above, continue to the next question. If "No," continue to Section 3.

RECEIVED
MAY 17 2006
AIR & WASTE
APPLICATIONS TEA

Does this project trigger a nonattainment review? To determine the answer, review the information below: • Is the project's potential to emit (PTE) for emissions of VOC or NO_x increasing by 100 tpy or more? *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, rule, or made federally enforceable by a certification.* • Is the site an existing major nonattainment site and are the emissions of VOC or NO_x increasing by 40 tpy or more? If needed, attach contemporaneous netting calculations per nonattainment guidance. Additional information can be found at: **www.tceq.state.tx.us/permitting/air/forms/newsourcereview/tables/nsr_table8.html** and **www.tceq.state.tx.us/permitting/air/nav/air_docs_newsource.html** If checklist is submitted as a hard copy, attach additional pages as needed. If checklist is submitted electronically, please email attachment to the following address: **apd@tceq.state.tx.us** *If "Yes," to any of the above, the project is a major source or a major modification and* ***a PBR may not be used.*** *A Nonattainment Permit review must be completed to authorize this project. If "No," continue to Section 3.*	❑ YES ⊠ NO ❑ YES ⊠ NO
3. 30 TAC § 106.4(a)(3): Prevention of Significant Deterioration (PSD) check	
Does this project trigger a review under PSD rules? 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? • Are emissions of any criteria pollutant increasing by 250 tpy of any criteria pollutant at an unnamed source? • Are emissions increasing above significance levels at an existing major site? PSD information can be found at: **www.tceq.state.tx.us/permitting/air/forms/newsourcereview/tables/nsr_table9.html** and **www.tceq.state.tx.us/permitting/air/nav/air_docs_newsource.html** *If "Yes," to any of the above,* ***a PBR may not be used.*** *A PSD Permit review must be completed to authorize the project. If "No," continue to Section 4.*	❑ YES ⊠ NO ❑ YES ⊠ NO ❑ YES ⊠ NO
4. 30 TAC § 106.4(a)(6): Federal Requirements	
• 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)? If "Yes," which Subparts are applicable?: _____ • Will all facilities under this PBR meet applicable requirements of 40 CFR Part 63, Hazardous Air Pollutants Maximum Achievable Control Technology (MACT) standards? If "Yes," which Subparts are applicable?: _____ • Will all facilities under this PBR meet applicable requirements of 40 CFR Part 61, National Emissions Standards for Hazardous Air Pollutants (NESHAPs)? If "Yes," which Subparts are applicable?: _____ If checklist is submitted as a hard copy, attach additional pages as needed. If checklist is submitted electronically, please email attachment to the following address: **apd@tceq.state.tx.us** *If "Yes" to any of the above, please attach a discussion of how the facilities will meet any applicable standards.*	❑ YES ❑ NO ⊠ N/A ❑ YES ❑ NO ⊠ N/A ❑ YES ❑ NO ⊠ N/A
5. 30 TAC § 106.4(a)(7): PBR prohibition check	
Are there any air permits at the site containing conditions which prohibit or restrict the use of PBRs? *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.* ***List permit number(s):*** _____ *If "No," continue to Section 6.*	❑ YES ⊠ NO

6. 30 TAC § 106.4(a)(8): NO_x Cap and Trade

• Is the facility located in Harris, Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, or Waller County? *If "Yes," answer the question below. If "No," continue to Section 7.*	❑ YES ❑ NO
• Will the proposed facility or group of facilities obtain required allowances for NO_x if they are subject to 30 TAC Chapter 101, Subchapter H, Division 3 (relating to the Mass Emissions Cap and Trade Program)?	❑ YES ❑ NO

7. Highly Reactive Volatile Organic Compounds (HRVOC) check

• Is the facility located in Harris County? *If "Yes," answer the next question. If "No," skip to the box below.*	☒ YES ❑ NO
• Will the project be constructed after June 1, 2006? *If "Yes," answer the next question. If "No," skip to the box below.*	☒ YES ❑ NO
• Will one or more of the following HRVOC be emitted as a part of this project?	❑ YES ☒ NO

If "Yes," complete the information below:	lb/hr	tpy
▸ 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? *If "Yes," answer the next question. If "No," the checklist is complete.*	❑ YES ☒ NO
• Will the project be constructed after June 1, 2006? *If "Yes," answer the next question. If "No," the checklist is complete.*	❑ YES ❑ NO
• Will one or more of the following HRVOC be emitted as a part of this project?	❑ YES ❑ NO

If "Yes," complete the information below:	lb/hr	tpy
▸ ethylene		
▸ propylene		

Texas Commission on Environmental Quality

Exemption §106.478 Checklist
(Previously Standard Exemption 86)

Storage Tank Construction and Change Of Service

REGISTRATION IS REQUIRED BEFORE CONSTRUCTION OF A TANK WITH A CAPACITY OF 25,000 GALLONS OR GREATER AND LOCATED IN A DESIGNATED OZONE NON-ATTAINMENT AREA

The following checklist is designed to help you confirm that you meet Exemption §106.478, previously standard exemption 86 (STDX), requirements. **Any "no" answers indicate that the claim of registration may not meet all requirements for the use of Exemption §106.478, previously standard exemption 86.** If you do not meet all the requirements, you may alter the project design/operation in such a way that all the requirements of the exemption are met or obtain a construction permit.

YES	NO	NA	DESCRIPTION
✔	_	_	Have you included a description of how this exemption claim meets the general rule for the use of exemptions (§106.4 checklist is available)? In particular, if EPA New Source Performance Standards Subparts A and K, Ka, or Kb apply, have all applicable requirements of those rules been met?
✔	_	_	Have you included completed Tables 7(a)-(e) (or the equivalent data) and emissions calculations for each tank?
✔	_	_	Are the chemicals or mixtures of chemicals to be stored limited to those shown in Table 86A? (Mixtures may contain no more than a total of one (1) percent by volume of all other chemicals not listed in Table 86A.)
✔	_	_	Is each tank included in this claim located at least 500 feet from any recreational area, residence, or other structure not occupied or used solely by the owner of the facility or owner of the property upon which the facility is located? Attach a scaled map.
_	_	✔	When the tank size is 40,000 gallons or more, will an internal floating roof tank (Mechanical Shoe, Liquid-Mounted, or Vapor-Mounted primary seal; vapor mounted primary seal must be supplemented with a secondary seal) or an external floating roof tank using double seal technology (Mechanical Shoe or Liquid-Mounted primary and Rim-Mounted secondary seals) be used to store all compounds with a true vapor pressure greater than 0.5 psia and less than 11.0 psia?
✔	_	_	Will the true vapor pressure of the compound to be stored in each tank be less than 11.0 psia at the maximum storage temperature?
_	_	✔	Does the floating roof or floating cover design incorporate sufficient flotation to conform to the requirements of API Code 650?
✔	_	_	Will each fixed or cone roof tank be equipped with a submerged fill pipe or utilize bottom loading when in service of compounds with a true vapor pressure of 0.5 psia or less at maximum storage temperature?
✔	_	_	Is each fixed or cone roof tank not equipped with an internal floating roof painted chalking white? (Note: Does not apply to tanks where a dark color is necessary to absorb or retain heat to help maintain the stored material in a liquid state.)

TABLE 7(a)

02-95

VERTICAL FIXED ROOF STORAGE TANK SUMMARY

I. ***Tank Identification*** *(Use a separate form for each tank).*

1. Applicant's Name: NASA Johnson Space Center
2. Location (*indicate on plot plan and provide coordinates*): Building 24 Diesel Tank
3. Tank No. B24TANK01A 4. Emission Point No. B24TANK01A
5. FIN B24TANK01A CIN
6. Status: New tank [ ] Altered tank [ ] Relocation [ ] Change of Service [ ]
   Change in throughput [x]

Previous permit or exemption number(s) Existing PBR Registration #46837

II. ***Tank Physical Characteristics***

1. Dimensions
   a. Shell Height : 12 ft.
   b. Diameter: 38 ft.
   c. Maximum Liquid Height : 12 ft.
   d. Nominal Capacity or Working Volume: 100,800 gallons.
   e. Turnovers per year: 6.0
   f. Net Throughput : 600,000 gallons/year.
   g. Maximum Filling Rate: 7,500 gallons/hour.
2. Paint Characteristics
   a. Shell Color/Shade : White/White [x] Aluminum/Specular [ ] Aluminum/Diffuse [ ] Gray/Light [ ] Gray/Medium [ ] Red/Primer [ ] Other [ ] (Describe _____)
   b. Shell Condition : Good [x] Poor [ ]
   c. Roof Color/Shade : White/White [x] Aluminum/Specular [ ] Aluminum/Diffuse [ ] Gray/Light [ ] Gray/Medium [ ] Red/Primer [ ] Other [ ] (Describe _____)
   d. Roof Condition : Good [x] Poor [ ]
3. Roof Characteristics
   a. Roof Type: Dome [ ] Cone [x]
   b. Roof Height: 6.0 ft. (*not including shell height)*
   c. Radius (*Dome Roof Only*): _____ ft.
   d. Slope (*Cone Roof Only*): 0.32 ft/ft.

4. Breather Vent Settings				SPECIFY "Atmosphere" or Discharging to: (name of abatement device)
Valve Type	Number	Pressure Setting (psig)	Vacuum Setting (psig)	
Combination Vent Valve				
Pressure Vent Valve				
Vacuum Vent Valve				
Open Vent Valve	1			Atmosphere

RECEIVED
MAY 17 2006
AIR & WASTE
APPLICATIONS TEAM

Table 7(a) VERTICAL FIXED ROOF TANK SUMMARY
Page 2
Permit No. _____ Tank No. B24TANK01A

III. ***Liquid Properties of Stored Material***

1. Chemical Category: Organic Liquids [ ] Petroleum Distillates [x] Crude Oils [ ]
2. Single or Multi-Component Liquid

   Single [x] *Complete Section III.3*

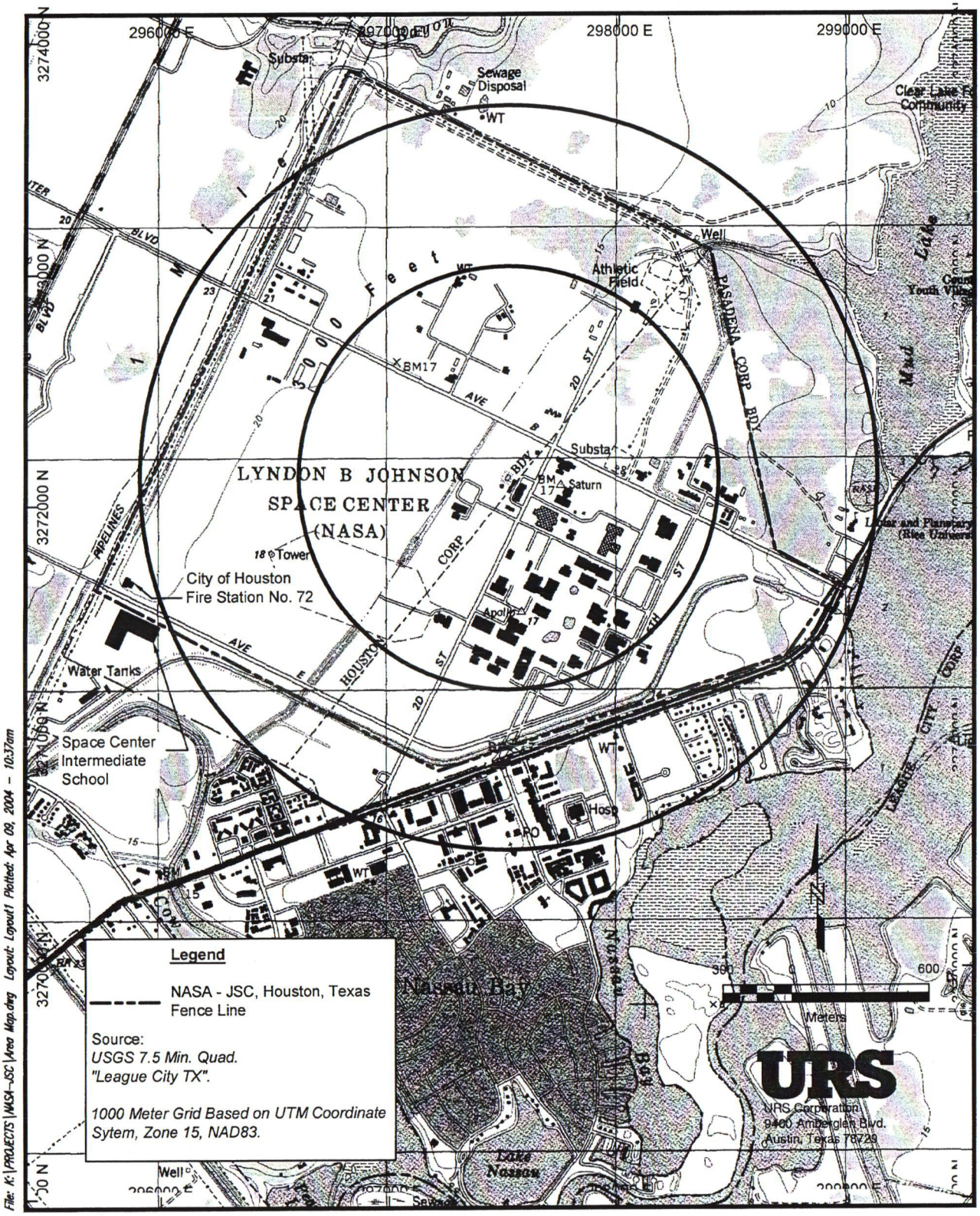
   Multiple [ ] *Complete Section III.4*
3. Single Component Information
   a. Chemical Name: Distillate Fuel Oil (No. 2 Diesel Fuel)
   b. CAS Number: _____
   c. Average Liquid Surface Temperature: 70 °F.
   d. True Vapor Pressure at Average Liquid Surface Temperature: 0.009 psia.
   e. Liquid Molecular Weight: 188
4. Multiple Component Information
   a. Mixture Name: _____
   b. Average Liquid Surface Temperature: ____ °F.
   c. Minimum Liquid Surface Temperature: ____ °F.
   d. Maximum Liquid Surface Temperature: ____ °F.
   e. True Vapor Pressure at Average Liquid Surface Temperature: _____ psia.
   f. True Vapor Pressure at Minimum Liquid Surface Temperature: _____ psia.
   g. True Vapor Pressure at Maximum Liquid Surface Temperature: _____ psia.
   h. Liquid Molecular Weight: ____
   i. Vapor Molecular Weight: ____

j. Chemical Components Information

Chemical Name	CAS Number	Percent of Total Liquid Weight (typical)	Percent of Total Vapor Weight (typical)	Molecular Weight

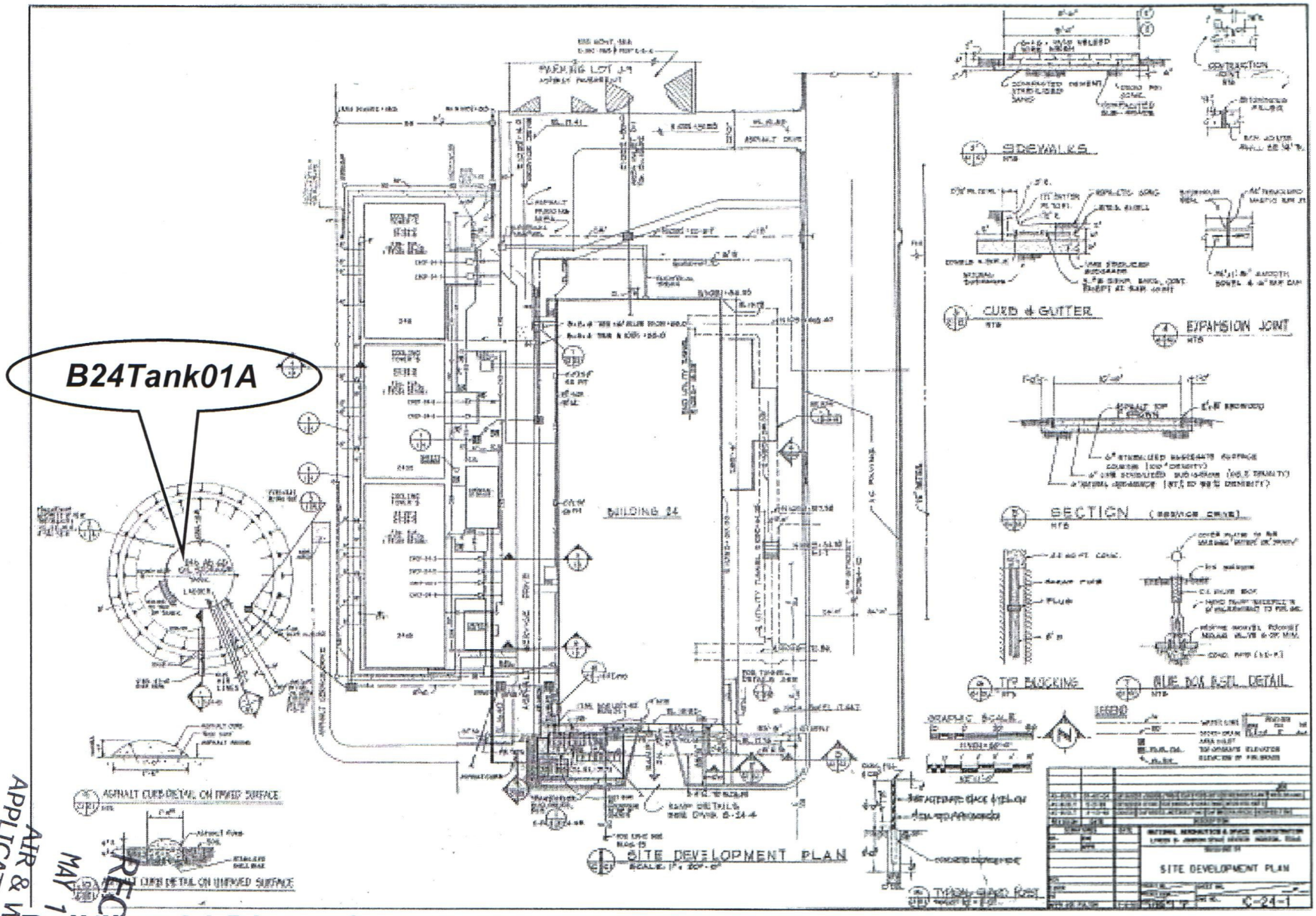
ATTACHMENT B

JSC Area Map and JSC Project Area Plot Plan



JSC Area Map

BEST POSSIBLE IMAGE



Building 24 Diesel Storage Tank – Plot Plan

BEST POSSIBLE IMAGE

RECEIVED
MAY 17 2006
AIR & WASTE
APPLICATIONS TEAM

ATTACHMENT C

EPA Tanks Calculation

EMISSION CALCULATIONS AND BACKGROUND DATA

Storage Tank B24TANK01A

Permit-By-Rule Registration Number 46837 was issued by the Texas Commission on Environmental Quality (TCEQ) on January 22, 2001. The allowable volatile organic compound (VOC) emissions were estimated using TANKS Version 4.0 and an annual diesel throughput of 50,000 gallons per year. This PBR re-registration will increase the allowable diesel throughput on storage tank B24TANK01A from 50,000 gallons per year to 600,000 gallons per year.

Two cases were reviewed using TANKS 4.0 to estimate the incremental increase in VOC emissions associated with the proposed modification. **Case 1** estimated that B24TANK01A would emit 26.75 pounds per year VOC with a net throughput of 50,000 gallons per year. **Case 2** estimated that B24TANK01A would emit 41.91 pounds per year VOC with a net throughput of 600,000 gallons per year.

Therefore, the incremental increase in VOC emissions associated with this proposed modification is **15.16 pounds per year**. The TANKS 4.0 printouts documenting these estimated VOC emissions are included in this attachment.

RECEIVED
MAY 17 2006
AIR & WASTE
APPLICATIONS TEAM

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	B24TANK01A
City:	Houston
State:	Texas
Company:	NASA-JSC
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	12.00
Diameter (ft):	38.00
Liquid Height (ft):	11.00
Avg. Liquid Height (ft):	6.00
Volume (gallons):	93,321.00
Turnovers:	0.54
Net Throughput (gal/yr):	50,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft):	6.00
Slope (ft/ft) (Cone Roof):	0.32

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Houston, Texas (Avg Atmospheric Pressure = 14.7 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	69.81	64.30	75.32	67.93	0.0089	0.0075	0.0106	130.0000			188.00	Option 5: A=12.101, B=8907

RECEIVED
MAY 17 2006
AIR & WASTE
APPLICATIONS TEAM

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	25.3691
Vapor Space Volume (cu ft):	9,072.9196
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0377
Vented Vapor Saturation Factor:	0.9962
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	9,072.9196
Tank Diameter (ft):	38.0000
Vapor Space Outage (ft):	8.0000
Tank Shell Height (ft):	12.0000
Average Liquid Height (ft):	6.0000
Roof Outage (ft):	2.0000
Roof Outage (Cone Roof)	
Roof Outage (ft):	2.0000
Roof Height (ft):	6.0000
Roof Slope (ft/ft):	0.3200
Shell Radius (ft):	19.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0089
Daily Avg. Liquid Surface Temp. (deg. R):	529.4813
Daily Average Ambient Temp. (deg. F):	67.9125
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	527.6025
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,405.5061
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0377
Daily Vapor Temperature Range (deg. R):	22.0322
Daily Vapor Pressure Range (psia):	0.0031
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0089
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0075
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0106
Daily Avg. Liquid Surface Temp. (deg R):	529.4813
Daily Min. Liquid Surface Temp. (deg R):	523.9732
Daily Max. Liquid Surface Temp. (deg R):	534.9893
Daily Ambient Temp. Range (deg. R):	21.3083
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9962
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0089
Vapor Space Outage (ft):	8.0000

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Working Losses (lb):	1.3782
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0089
Annual Net Throughput (gal/yr.):	50,000.0000
Annual Turnovers:	0.5358
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	93,321.0000
Maximum Liquid Height (ft):	11.0000
Tank Diameter (ft):	38.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	26.7473

RECEIVED
MAY 17 2006
AIR & WASTE
APPLICATIONS TEAM

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	1.38	25.37	26.75

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	B24TANK01A
City:	Houston
State:	Texas
Company:	NASA-JSC
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	12.00
Diameter (ft):	38.00
Liquid Height (ft):	11.00
Avg. Liquid Height (ft):	6.00
Volume (gallons):	93,321.00
Turnovers:	6.43
Net Throughput (gal/yr):	600,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft):	6.00
Slope (ft/ft) (Cone Roof):	0.32

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Houston, Texas (Avg Atmospheric Pressure = 14.7 psia)

RECEIVED
MAY 17 2006
AIR & WASTE
APPLICATIONS TEAM

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	69.81	64.30	75.32	67.93	0.0089	0.0075	0.0106	130.0000			188.00	Option 5: A=12.101, B=8907

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Annual Emission Calculations	
Standing Losses (lb):	25.3691
Vapor Space Volume (cu ft):	9,072.9196
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0377
Vented Vapor Saturation Factor:	0.9962
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	9,072.9196
Tank Diameter (ft):	38.0000
Vapor Space Outage (ft):	8.0000
Tank Shell Height (ft):	12.0000
Average Liquid Height (ft):	6.0000
Roof Outage (ft):	2.0000
Roof Outage (Cone Roof)	
Roof Outage (ft):	2.0000
Roof Height (ft):	6.0000
Roof Slope (ft/ft):	0.3200
Shell Radius (ft):	19.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0089
Daily Avg. Liquid Surface Temp. (deg. R):	529.4813
Daily Average Ambient Temp. (deg. F):	67.9125
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	527.6025
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,405.5061
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0377
Daily Vapor Temperature Range (deg. R):	22.0322
Daily Vapor Pressure Range (psia):	0.0031
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0089
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0075
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0106
Daily Avg. Liquid Surface Temp. (deg R):	529.4813
Daily Min. Liquid Surface Temp. (deg R):	523.9732
Daily Max. Liquid Surface Temp. (deg R):	534.9893
Daily Ambient Temp. Range (deg. R):	21.3083
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9962
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0089
Vapor Space Outage (ft):	8.0000

RECEIVED
2009
AIR QUALITY
EMISSIONS TEAM

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Working Losses (lb):	16.5382
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0089
Annual Net Throughput (gal/yr.):	600,000.0000
Annual Turnovers:	6.4294
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	93,321.0000
Maximum Liquid Height (ft):	11.0000
Tank Diameter (ft):	38.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	41.9073

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Annual Emissions Report

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	16.54	25.37	41.91

RECEIVED
MAY 17 2006
AIR & WASTE
APPLICATIONS TEAM

AIR PERMIT AND/OR EXEMPTION

AIR ACCOUNT # HG1601A

AIR PERMIT OR EXEMPTION # 22827

FILE TYPE: E

VOL# 1

INCLUSIVE DATES: 1993-1995

Media Code/Format: M

☐ Microfiche
☐ Roll Microfilm

TEXAS AIR CONTROL BOARD
PERMIT APPLICATION SUMMARY

DATE: 10-20-93 PAGE: 1
TIME: 18:09:14

***GENERAL PERMIT INFORMATION
PERMIT: 22827 ENGR: WEBB, DOIS D. / GROUP: MECH ID:HG1601A
ISSUED TO: NASA JOHNSON SPACE CENTER
UNIT NAME: INTEGRATED CIRCUIT LAB #14
OPERATING SCHEDULE: 8.0 HRS/DAY 5 DAYS/WK 52 WKS/YR
LAT: 29-80-74 LONG: 094-54-30 REGION: 12 COUNTY: HARRIS
NEAR CITY: HOUSTON LOC: 2101 NASA ROAD 1

***PERMIT/SITE CONTACT INFORMATION:
PERSON: MR. K. B. GILBREATH ADDR1: 2101 NASA ROAD 1
TITLE: DIRECTOR, CENTER OPERATIONS ADDR2:
CITY: HOUSTON STATE: TX ZIP: 77095 PHONE: (773)483-3120

** CONSTRUCTION **		** OPERATING **		** CONTINUANCE **	
TYPE APPL(C,S,X):	(X)	OPERATION START :		NOTICE MAILED :	
APPL RECD :	06-04-93	OPER APPL RECD :		APPL RECD :	
DEFIC LTR SNT :		OPER APPL CMPLT :		DEFIC LTR SNT :	
SUPP INFO REQ :		DISP(I,D): ( )		SUPP INFO REQ :	
SUPP INFO RECD :		OPR TYPE(R,S) : ( )		SUPP INFO RECD :	
APPL CMPLT :		**********		APPL CMPLT :	
COMP LTR SNT :		* *		COMP LTR SNT :	
PUB NTC SNT :		* I= ISSUED D=DENIED *		PUB NTC SNT :	
PUB NTC PUB :		* E=EXPIRED *		PUB NTC PUB :	
PUB HEAR (R,H) :	( )	* C=CNST S=SPECIAL *		PUB HEAR(R,H) :	( )
CNST TYPE(C,X,S):	(X)	* X=EXEMPT R=OPER *		DISP(I,D,E):( ) :	
DISP (I) :	08-16-93	**********			
CNST START DATE :					

***EMISSIONS CHANGED :

***REMARKS:

***OTHER PERMIT DATES:
APP/PERMIT VOIDED: REASON:
APP ON HOLD UNTIL: REASON:
CONST STOPPED UNTIL:

VOID/HOLD CODES: PD-PLT DISMANTLED
CR-COMPANY REQUEST TI-TIME EXPIRED
DD-DATA DELAY TD-TECH DIFFICULTY
RE-REISSUED NR-NO RESPONSE

***PERMIT TYPES/STANDARDS:
NEW MAJ SOURCE:> 100 TPY: SIC: 3764
MAJOR MODIFICATION: PORTABLE: RELATED PERMITS: SUFFIX REASON
NON-ATTAIN REVIEW: NSPS: TACB: CHG LOC:
INSIGNIFICANT EMISSIONS: NESHAP: PSD-TX: CHG OWN:
FUEL CONVERSION: TOXIC MATERIALS: STD EX NO.: 041

***AIR CONTAMINANT INFORMATION:

NAME	CODE	MAX ALLOWABLE RATE LBS/HR	MAX ALLOWABLE RATE TONS/YR	ACTUAL TONS/YR

***ABATEMENT EQUIPMENT:

08/13/93 P R O J E C T R E C O R D 09:45:21

Record No. 22091 GROUP:MECH TECHENGR:DDW1 PROJ NUM :22827
DATE RECD:06/04/93 COREENGR: / ADMIN.COMP: / / PROJ TYPE:XRVW
DATE FEE : / / FEE: $ 0 STDX1 : 41 PSD-TX-NO:
REG 6 NOV: / / PRE-PERM: / / BD-ORD: - - DATE B.O.: / /
ISSUED TO:NASA JOHNSON SPACE CENTER

CONTACT Name :	~~K. G. Gilbreath~~ G.E. Mc Cright ✓	Mr./Miss/Ms. + Lastname: Mr. Gilbreath
CONTACT Title:	Director Center Operations	
CONTACT Mail1:	2101 NASA Road 1	
CONTACT Mail2:		
CITY, STATE :	Houston, Texas	ZIP:77058-

NEW JOBS: 0
City:HOUSTON County:HARRIS Account ID:HG-1601-A Region: 7
UNIT (FACILITY)
Name:INTEGRATED CIRCUIT LAB # 14 Type: Capacity: Units:

DEFICIENT letter: 7/8/93 ✓ COMPLETE: 7/30/93 ✓ DATE Complete letter: / /
PROJECT DISPOSAL (Issue/Approve/Complete/Void/etc)

CHIEF SIGN = 8/16/93 ✓ DISP CODE = X ✓
DATE ISSUED = / / (Actual date)

NSPS .... = N ✓
NESHAPS . = N ✓
N.A.R. . = N ✓ Y/N=YES/NO
nonPSDmjr = 0=OFFSETS

TECH file: :\ PROV file: :\
STATUS:

HISTORY: EDAYS = 70 CDAYS = 0 ODAYS = 0 as of 08/13/93

No.	LBB TYPE ACTIVITY: ACTIVITY--ACT CODE	LBB TYPE ACTIVITY: ACTIVITY--ACT CODE	TELCONS	Other Misc. Action MISC ACT--ACT CODE
1	7/8/93 ✓ C: T-DEF FAX ✓	/ /	7/8/93 ✓	/ /
2	7/30/93 ✓ E: * T-DEF ✓	/ /	8/11/93 ✓	/ /
3	/ /	/ /	/ /	/ /
4	/ /	/ /	/ /	/ /
5	/ /	/ /	/ /	/ /
6	/ /	/ /	/ /	/ /
7	/ /	/ /	/ /	/ /
8	/ /	/ /	/ /	/ /
9	/ /	/ /	/ /	/ /
10	/ /	/ /	/ /	/ /

DATE RFC : / / Note: Code "?" = Partial; "*" = Complete.

DATE PN : / / DATE PUB: / / DATE Rec'd PN/SIGN Cert.: / /
DATE PUBLIC MEETING REQUESTED : / / DISPOSED on : / / by (PM,PH,W)
DATE PUBLIC HEARING REQUESTED : / / DISPOSED on : / / by (PM,PH,W)

Related projects:
REC ENGR PROJNUM TYPE COMPANY NAME PERMIT UNIT NAME RECEIVED ISSUED

JC

U.S. Gov't

TEXAS AIR CONTROL BOARD
REGISTRATION FORM FOR STANDARD EXEMPTIONS
FORM PI - 7

I. Company Name NASA Johnson Space Center
(Corporation, Company, Government Agency, Firm, etc.)

Mailing Address 2101 NASA Road 1, Houston, Texas 77058

Individual Authorized to Act for Applicant: Name K. G. Gilbreath Title Director, Center Ops.

Address 2101 NASA Road 1, Houston, Texas 77058 Telephone (713) 483-3120

II. LOCATION OF EXEMPT FACILITY (Latitude and Longitude must be to the nearest second):

Name of Plant or Site Johnson Space Center Street Address (If Available) 2101 NASA Road 1

Nearest City Houston County Harris Latitude see UTM coord. below Longitude

SITE REQUIREMENTS:

A. Submit a plot plan to scale of the property showing the location of plant boundaries, plant equipment, and surrounding area.

B. Furnish an area map showing the facility location relative to highways and towns.

UTM Coord. - Zone 15 East (meters) 298074.7892, North (meters) 3271776.94

III. TYPE OF FACILITY:

A. Applicable Standard Exemption Number from TACB List 41

B. Name of Facility and Company's Facility Number Integrated Circuit Lab, Building 14

C. TACB Account Identification Number HG-1601-A

D. Previous Exemption or Permit Number N/A

E. Operating Schedule: Hours/day 8 Days/week 5 Weeks/year 52

F. Proposed Start of Construction 08-24-92 (Date) Operation 05-30-93 (Date)

G. Permanent ☒ Portable ☐

RECEIVED
JUN 04 1993
Region 7
Texas Air Control Board

IV. PROCESS INFORMATION

Description of Process: Prepare and attach a written description of the exempt process. The description must be in sufficient detail to indicate that the facility will conform to the specified exemption.

V. EMISSIONS DATA

Furnish a description of the basis for emission rates including fugitives. (Calculations, emission factors, measurement, NSPS, etc.)

Emission Point Number	Name of Source	Name of Air Contaminant	Emission Rate of Each Air Contaminant lb/hr Gaseous	lb/hr Particulate	tons/yr Gaseous	tons/yr Particulate
B-14-01	Integrated Circuit	Primary VOC:	0.051	0	4.9×10^{-5}	0
	Lab	Individual compounds				
		& emissions data				
		are listed separately				

VI. A copy of the application is being sent to the Regional Office of the Texas Air Control Board - ☐ Yes ☐ No

VII. I, K. B. Gilbreath Director, Center Operations
(Name) (Title)

state that I have knowledge of the facts herein set forth and that the same 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 will satisfy the conditions and limitations of the indicated exemption. The facility will operate in compliance with all Regulations of the Texas Air Control Board and with Federal Environmental Protection Agency Regulations governing air pollution.

DATE NOV 2 8 1992 SIGNATURE Original Signed By K. B. GILBREATH

Incl #1

CITY OF HOUSTON

Health and Human Services Department
8000 N. Stadium Dr. Houston, Texas 77054

Bob Lanier, Mayor

CITY COUNCIL MEMBERS: Helen Huey Ernest McGowen, Sr. Vince Ryan Alfred J. Calloway Frank O. Mancuso John G. Goodner Christin Hartung Dale M. Gorczynski Ben T. Reyes Gracie Guzman Saenz Eleanor Tinsley Jim Greenwood Sheila Jackson Lee Judson W. Robinson, III CITY CONTROLLER: George Greanias

Reply To: Bureau of Air Quality Control
7411 Park Place Boulevard
Houston, Texas 77087-4441
Telephone: (713) 640-4200
Fax: (713) 640-4343

August 12, 1993

RECEIVED
AUG 16 1993
PERMITS PROGRAM

Mr. Lawrence E. Pewitt, P.E.
Director, Permits Division
Texas Air Control Board
12124 Park 35 Circle
Austin, Texas 78753

Re: Standard Exemption No. 41
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Integrated Circuit Lab
Houston, Harris County
Account No. HG1601A
D. Webb

Dear Mr. Pewitt:

The above referenced facility located at 2101 NASA Road 1, Houston, Texas has been investigated in response to your request for comments regarding their request for a Standard Exemption. The company applied for Standard Exemption No. 41 to operate a printed circuit board etching facility in Building 14 at the above location.

A review of the application data and emission calculations provided to us has been made and we feel that emissions are insignificant for this test lab. We recommend issuance of this exemption to NASA.

Printed on Recycled Paper

RECEIVED
AUG 16 1993
PERMITS PROGRAM

If you have further questions, please contact Mr. Larry B. York or Mr. Shan Siddiqi of our Engineering Section, at (713) 640-4200.

Sincerely,

David Fetterman

David Fetterman, P.E.
Chief, Engineering

enclosure

cc: Bob Tannis, Interim Chief, Bureau of Air Quality Control

NAS93069.LET

Request for Comments -- Site Review
RESPONSE

FROM: ☐ Region ___ ☑ City HOUSTON ☐ County _____

Copy of Application Received by your Office: ☒ Yes ☐ No Date Received: 11-25-92

PERMIT NO._____

TACB ACCOUNT NUMBER: HG · 1601 · A

Investigator's Name (Please Print): LARRY B YORK

Phone: (713) 640-4219

Comments Deadline (from pg. 1):_____

Date of Last Site Visit: _____

SITE INFORMATION:

Nuisance/Odor Potential: ☒ Low ☐ Moderate ☐ High

Hazard Potential: ☒ Low ☐ Moderate ☐ High

Surrounding Land Use: INDUSTRIAL AND BUSINESS

School within 3000 feet? ☐ Yes ☒ No

Distance to Nearest Off-Property Receptor: 1500 FEET

Receptor Type: ☐ School ☐ Residence ☐ Other SMALL BUSINESS

Describe area surrounding nearest receptor: OTHER TESTING LABS

Distance from unit to nearest property line: 1000 FEET

NOV INFORMATION (concerning affected process unit):

NOV Issued? ☐ No ☐ Yes Date: _____

Type of Violation: ☐ 116.1 ☐ RCRA ☐ Other: _____

Please provide any information the permit engineer needs concerning the current NOV status:_____

Summarize Any Recent Complaints Related To This Facility: NONE

SITE REVIEW:

In light of the proximity of sensitive receptors and the surrounding land use, please discuss any concerns you have concerning a facility of this type locating at the proposed site.

NONE

STANDARD EXEMPTION SECTION 116.6 CHECKLIST

The following checklist will be used by you and the TACB staff to confirm that all the Rule 116.6 general requirements for using standard exemptions at a facility are met. You must meet all the general requirements as well as the specific ones stated in each standard exemption. Please answer all the questions.

If you do not meet all the requirements, you must obtain a construction permit in accordance with Regulation VI, Section 116.3 before you begin construction, or propose design or operation changes that will enable the facility to meet the requirements of 116.6 and the specific standard exemption.

1. Overall description of the facilities at this location:
Research and development in support of manned space flight activities.

2. Are any facilities at the location covered by a permit? (Y) N
   a. If so, do any preclude or prohibit the use of the claimed standard exemption? Y (N) Permit Nos. C-19211, C-19670
   If yes, the standard exemption may not be used. A permit or permit amendment will be required.
   b. If so, will the construction / installation / change allowed by standard exemption affect any of the permitted facilities? Y (N) If yes, the standard exemption may be used, but a permit amendment may also be required. See Rule 116.5.

3. Emissions Checks:
   a. Calculated Tons Per Year, This Registration Only:
   CO :_____ < 250 ? (Y) N
   NOx:_____ < 250 ? (Y) N
   SOx:_____ < 25 ? (Y) N
   PM :_____ < 25 ? (Y) N
   VOC:_____ < 25 ? (Y) N
   Other:____ < 25 ? (Y) N
   If any are answered "no", a standard exemption may not be used.
   b. Total Actual Emissions (TPY) From All Facilities Built Under Any Standard Exemption At This Property:
   CO :_____ < 250 ? (Y) N
   NOx:_____ < 250 ? (Y) N
   SOx:_____ < 25 ? (Y) N
   PM :_____ < 25 ? (Y) N
   VOC:_____ < 25 ? (Y) N
   Other:____ < 25 ? (Y) N
   If any are answered "no," determine whether or not at least one facility at the property has been subject to public notification and comment as required by Section 116.10 of Regulation VI . If public notice has been done, what permit or standard exemption required doing so? _____ If public notice has not been done for that compound, a permit is needed for the proposed facility.

4. Is the facility located in a Non-attainment area (see listing below)? (Y) N

5. PSD/Non-attainment Check: Use the PSD and Non-attainment Guidance Documents and Flow Diagrams to determine if netting is required.
   a. If netting must be done, attach the netting calculations to the specific exemption checklist.
   b. Is PSD/Non-Attainment review required? Y N
      If so, a permit is needed.

6. If all Section 116.6 requirements are met, we suggest completion of the individual standard exemption worksheet(s), where available, to ensure your PI-7 registration request is complete.

NAME: John P. Herrmann COMPANY: NASA Johnson Space Center
TITLE: Chief, Env. Svcs. FACILITY NAME: Johnson Space Center
PHONE#: (713) 483-3120 TACB ACCOUNT #: HG-1601-A
FAX #: (713) 483-3048

SIGNATURE OF COMPANY OFFICER:

G. E. McCright DATE: 7/28/93
G. E. McCright
Director, Center Operations

NON-ATTAINMENT AREAS

FOR OZONE (VOC OR NOX)
Brazoria, Chambers, Collin, Dallas, Denton, El Paso, Fort Bend, Galveston, Hardin, Harris, Jefferson, Liberty, Montgomery, Orange, Tarrant, Waller Counties for VOC and NOx as precursors. Victoria County for VOC only.

FOR LEAD
Section of Collin County

FOR PARTICULATE MATTER (PM 10)
El Paso County

FOR CARBON MONOXIDE
Section of El Paso County

FOR SULFUR DIOXIDE
Section of Harris County

revised 5/27/93

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas
77058

NASA

RECEIVED

JUN 0 4 1993

Region 7
Texas Air Control Board

Reply to Attn of: JJ12-93-121

JUN 03 1993

Ms. Jodena Henneke
Regional Director
Texas Air Control Board
5555 West Loop South, Suite 300
Bellaire, Texas 77401

Dear Ms. Henneke:

Enclosed is a copy of an application for standard exemption 41 we had submitted to your office last November. Ms. Liz Messenger telephoned recently to check the status of the application and found that it was either lost or had never been received. Please review this application to determine if NASA can operate these laboratories under standard exemption 41.

Please contact Mr. John P. Herrmann at (713) 483-3120 if you have questions or if you need additional information. Your prompt consideration would be greatly appreciated.

Sincerely,

G. E. McCright
Director, Center Operations

Enclosure

cc:
Mr. Gene McMullen
Director, Bureau of Air Quality Control
City of Houston
7411 Park Place
Houston, Texas 77087

12124 Park 35 Circle
Austin, Texas 78753
for Fax dial 512/908-1300

FAX COVER LETTER

TO: Subject: Microwave Etching Lab - SIS Exempt # 41

Name Ms Liz Messenger
Company Johnson Space Center
City Houston State Tx
Fax # 713-483-3048

FROM: PERMITS PROGRAM

Name Dois Webb Extension 512-908-1575
Note: Attached form provided per our phone con. Please return completed form with MSDS sheets for Compounds identified in our phone con.

Total no. of pages being sent, including this cover letter: 3

Please deliver this document as soon as possible to the person named above. If any problem occurs during the transmission, or if the pages received are illegible, please call 512/908-1250. Thank you.

TRANSMISSION REPORT

THIS DOCUMENT WAS CONFIRMED
(REDUCED SAMPLE ABOVE - SEE DETAILS BELOW)

** COUNT **
TOTAL PAGES SCANNED : 3
TOTAL PAGES CONFIRMED : 3

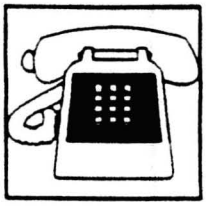
*** SEND ***

No.	REMOTE STATION	START TIME	DURATION	#PAGES	MODE	RESULTS
1	713 483 3048	7- 8-93 2:03PM	1'37"	3/ 3	EC	COMPLETED 9600
		TOTAL	0:01'37"	3		

NOTE:
No. : OPERATION NUMBER 48 : 4800BPS SELECTED EC : ERROR CORRECT G2 : G2 COMMUNICATION
PD : POLLED BY REMOTE SF : STORE & FORWARD RI : RELAY INITIATE RS : RELAY STATION
MB : SEND TO MAILBOX PG : POLLING A REMOTE MP : MULTI-POLLING RM : RECEIVE TO MEMORY

12124 Park 35 Circle
Austin, Texas 78753

for Fax dial 512/908-1300



FAX COVER LETTER

Subject: Microwave Etching Lab - Std Exempt # 41

TO:

Name Ms Liz Messenger

Company Johnson Space Center

City Houston State TX

Fax # 713-483-3048

FROM: PERMITS PROGRAM

Name Dois Webb Extension 512-908-1575

Note: Attached Form provided per our phone con. Please return Completed form with MSDS Sheets for Compounds identified in our phone con.

Total no. of pages being sent, including this cover letter:

3

Please deliver this document as soon as possible to the person named above. If any problem occurs during the transmission, or if the pages received are illegible, please call 512/908-1250. Thank you.

STANDARD EXEMPTION SECTION 116.6 CHECKLIST

The following checklist will be used by you and the TACB staff to confirm that all the Rule 116.6 general requirements for using standard exemptions at a facility are met. You must meet all the general requirements as well as the specific ones stated in each standard exemption. Please answer all the questions.

If you do not meet all the requirements, you must obtain a construction permit in accordance with Regulation VI, Section 116.3 before you begin construction, or propose design or operation changes that will enable the facility to meet the requirements of 116.6 and the specific standard exemption.

1. Overall description of the facilities at this location:

   _____

   _____

2. Are any facilities at the location covered by a permit? Y N
   a. If so, do any preclude or prohibit the use of the claimed standard exemption? Y N Permit Nos._____
      If yes, the standard exemption may not be used. A permit or permit amendment will be required.
   b. If so, will the construction / installation / change allowed by standard exemption affect any of the permitted facilities? Y N If yes, the standard exemption may be used, but a permit amendment may also be required. See Rule 116.5.

3. Emissions Checks:
   a. Calculated Tons Per Year, This Registration Only:
      CO :_____ < 250 ? Y N
      NOx:_____ < 250 ? Y N
      SOx:_____ < 25 ? Y N
      PM :_____ < 25 ? Y N
      VOC:_____ < 25 ? Y N
      Other:____ < 25 ? Y N

   If any are answered "no", a standard exemption may not be used.
   b. Total Actual Emissions (TPY) From All Facilities Built Under Any Standard Exemption At This Property:
      CO :_____ < 250 ? Y N
      NOx:_____ < 250 ? Y N
      SOx:_____ < 25 ? Y N
      PM :_____ < 25 ? Y N
      VOC:_____ < 25 ? Y N
      Other:____ < 25 ? Y N

   If any are answered "no," determine whether or not at least one facility at the property has been subject to public notification and comment as required by Section 116.10 of Regulation VI . If public notice has been done, what permit or standard exemption required doing so? _____ If public notice has not been done for that compound, a permit is needed for the proposed facility.

4. Is the facility located in a Non-attainment area (see listing below)? Y N

5. PSD/Non-attainment Check: Use the PSD and Non-attainment Guidance Documents and Flow Diagrams to determine if netting is required.
   a. If netting must be done, attach the netting calculations to the specific exemption checklist.
   b. Is PSD/Non-Attainment review required? Y N
      If so, a permit is needed.

6. If all Section 116.6 requirements are met, we suggest completion of the individual standard exemption worksheet(s), where available, to ensure your PI-7 registration request is complete.

NAME:_____ COMPANY:_____
TITLE:_____ FACILITY NAME:_____
PHONE#_____ TACB ACCOUNT #:_____
FAX #:_____

SIGNATURE OF COMPANY OFFICER:

_____ DATE:_____

NON-ATTAINMENT AREAS

FOR OZONE (VOC OR NOx)
Brazoria, Chambers, Collin, Dallas, Denton, El Paso, Fort Bend, Galveston, Hardin, Harris, Jefferson, Liberty, Montgomery, Orange, Tarrant, Waller Counties for VOC and NOx as precursors. Victoria County for VOC only.

FOR LEAD
Section of Collin County

FOR PARTICULATE MATTER (PM 10)
El Paso County

FOR CARBON MONOXIDE
Section of El Paso County

FOR SULFUR DIOXIDE
Section of Harris County

revised 5/27/93

4. Is the facility located in a Non-attainment area (see listing below)? Y N

5. PSD/Non-attainment Check: Use the PSD and Non-attainment Guidance Documents and Flow Diagrams to determine if netting is required.
   a. If netting must be done, attach the netting calculations to the specific exemption checklist.
   b. Is PSD/Non-Attainment review required? Y N
      If so, a permit is needed.

6. If all Section 116.6 requirements are met, we suggest completion of the individual standard exemption worksheet(s), where available, to ensure your PI-7 registration request is complete.

NAME:_____ COMPANY:_____
TITLE:_____ FACILITY NAME:_____
PHONE#_____ TACB ACCOUNT #:_____
FAX #:_____

SIGNATURE OF COMPANY OFFICER:

_____ DATE:_____

NON-ATTAINMENT AREAS

FOR OZONE (VOC OR NOx)

Brazoria, Chambers, Collin, Dallas, Denton, El Paso, Fort Bend, Galveston, Hardin, Harris, Jefferson, Liberty, Montgomery, Orange, Tarrant, Waller Counties for VOC and NOx as precursors. Victoria County for VOC only.

FOR LEAD

Section of Collin County

FOR PARTICULATE MATTER (PM 10)

El Paso County

FOR CARBON MONOXIDE

Section of El Paso County

FOR SULFUR DIOXIDE

Section of Harris County

revised 5/27/93

STANDARD EXEMPTION SECTION 116.6 CHECKLIST

The following checklist will be used by you and the TACB staff to confirm that all the Rule 116.6 general requirements for using standard exemptions at a facility are met. You must meet all the general requirements as well as the specific ones stated in each standard exemption. Please answer all the questions.

If you do not meet all the requirements, you must obtain a construction permit in accordance with Regulation VI, Section 116.3 before you begin construction, or propose design or operation changes that will enable the facility to meet the requirements of 116.6 and the specific standard exemption.

1. Overall description of the facilities at this location:

   _____

   _____

2. Are any facilities at the location covered by a permit? Y N
   a. If so, do any preclude or prohibit the use of the claimed standard exemption? Y N Permit Nos._____
      If yes, the standard exemption may not be used. A permit or permit amendment will be required.
   b. If so, will the construction / installation / change allowed by standard exemption affect any of the permitted facilities? Y N If yes, the standard exemption may be used, but a permit amendment may also be required. See Rule 116.5.

3. Emissions Checks:
   a. Calculated Tons Per Year, This Registration Only:
      CO :_____ < 250 ? Y N
      NOx:_____ < 250 ? Y N
      SOx:_____ < 25 ? Y N
      PM :_____ < 25 ? Y N
      VOC:_____ < 25 ? Y N
      Other:____ < 25 ? Y N

   If any are answered "no", a standard exemption may not be used.

   b. Total Actual Emissions (TPY) From All Facilities Built Under Any Standard Exemption At This Property:
      CO :_____ < 250 ? Y N
      NOx:_____ < 250 ? Y N
      SOx:_____ < 25 ? Y N
      PM :_____ < 25 ? Y N
      VOC:_____ < 25 ? Y N
      Other:____ < 25 ? Y N

   If any are answered "no," determine whether or not at least one facility at the property has been subject to public notification and comment as required by Section 116.10 of Regulation VI . If public notice has been done, what permit or standard exemption required doing so? _____ If public notice has not been done for that compound, a permit is needed for the proposed facility.

RECORD OF TELEPHONE CALL

Date 7/8/93

Time 1:45 PM

Person making call Dois Webb Tel. 908-1575

Organization TACB Location

Person receiving call Ms Liz Messenger Tel. 713-483-3120

Organization Johnson Space Center Location Houston

Subject Request for Std Exemption

Summary: Explained to Ms Messenger that I will fax her a STD Exmp 116.6 Checklist to complete and return. I also gave her a list of Trade name Compounds identified in the application and ask that she identify them by Chemical Composition. i.e. provide MSDS sheets. She understood the request and agreed to comply.

DDW

Ms Messengers FAX # 713-483-3040

Copies to:

TEXAS AIR CONTROL BOARD

AUSTIN TEXAS

F A X

12124 Park 35 Circle
Austin, Texas 78753

for Fax dial 512/908-1300

FAX COVER LETTER

TO: Mr Larry York

Name City of Houston

Company Bureau of Air Quality Control

City Dept of Health + Human Services ~~State~~

Fax # 713 - 640 - 4343

FROM: PERMITS PROGRAM

Name Dois D. Webb **Extension** 1575

Note: Attached provided per our phone con 9/11/93. If questions please call. Also please return comments by FAX. I need to expedite this one. Thanks

Total no. of pages being sent, including this cover letter:

3

Please deliver this document as soon as possible to the person named above. If any problem occurs during the transmission, or if the pages received are illegible, please call 512/908-1250. Thank you.

8/11/93

Phone Con with David Fetterman
and ultimately Harry York.
City Houston has recd Application.
Won't provide Conts until rec. RFC. Treat
SE like Permits.

DDW 7

Request for Comments -- Site Review
TACB Permits Program
Phone: (512)908-1000
Fax: (512)908-1300

TO: ☐ Region ___ ☒ City Houston ☐ County _____

Date Request Submitted: 8/11/93
Comments Deadline: ASAP Date Application Received by Permits: 6/04/93

REGIONAL OFFICES: Please return comments ASAP, but no later than the comments deadline which is 45 days from the submittal date. Permit disposition will proceed after comments are received or after the comments deadline has past. Engineer may request faster response if needed.

CORE Engineer Name: Dois D. Webb Phone: (512) 908-1575

PERMIT TYPE:
☐ Construction ☐ Amendment ☐ Revision ☐ Renewal ☒ Other S.E. 41

PERMIT NO. NA TACB ACCOUNT NO. HG - 1601 - A

Company Name: NASA
Plant Name: _____ County: Harris
Location: 2101 NASA Road 1, Bldg 14, Houston, TX
Unit Name: Integrated Circuit LAB
Plant Contact: Liz Messenger Phone: (713) 483-3117

Operating Schedule: 8 Hours/Day 5 Days/Week 52 Weeks/Year ____ Continuous
Night Operation ☐ Yes ☐ No

Other Information: Per Our Conversation, S.E. 41 doesn't require a Site Review; however your comments are requested. Review of Application indicates Criteria of S.E. 41 is met.

Date Comments Returned to CORE/Permits: _____

Request for Comments -- Site Review
RESPONSE

FROM: ☐ Region ____ ☐ City _____ ☐ County _____

Copy of Application Received by your Office: ☐ Yes ☐ No Date Received:_____

PERMIT NO._____

TACB ACCOUNT NUMBER: _____ - _____ - _____

Investigator's Name (Please Print): _____
Phone: _____
Comments Deadline (from pg. 1):_____
Date of Last Site Visit: _____

SITE INFORMATION:

Nuisance/Odor Potential: ☐ Low ☐ Moderate ☐ High
Hazard Potential: ☐ Low ☐ Moderate ☐ High
Surrounding Land Use: _____

School within 3000 feet? ☐ Yes ☐ No
Distance to Nearest Off-Property Receptor: _____
Receptor Type: ☐ School ☐ Residence ☐ Other _____
Describe area surrounding nearest receptor: _____

Distance from unit to nearest property line: _____

NOV INFORMATION (concerning affected process unit):

NOV Issued? ☐ No ☐ Yes Date: _____
Type of Violation: ☐ 116.1 ☐ RCRA ☐ Other: _____
Please provide any information the permit engineer needs concerning the current NOV status:_____

Summarize Any Recent Complaints Related To This Facility:_____

SITE REVIEW:

In light of the proximity of sensitive receptors and the surrounding land use, please discuss any concerns you have concerning a facility of this type locating at the proposed site.

Request for Comments -- Site Review
RESPONSE

FROM: ☐ Region ___ ☐ City _____ ☐ County _____

Copy of Application Received by your Office: ☐ Yes ☐ No Date Received:_____

PERMIT NO._____

TACB ACCOUNT NUMBER: _____ - _____ - _____

Investigator's Name (Please Print): _____
Phone: _____
Comments Deadline (from pg. 1):_____
Date of Last Site Visit: _____

SITE INFORMATION:
Nuisance/Odor Potential: ☐ Low ☐ Moderate ☐ High
Hazard Potential: ☐ Low ☐ Moderate ☐ High
Surrounding Land Use: _____

School within 3000 feet? ☐ Yes ☐ No
Distance to Nearest Off-Property Receptor: _____
Receptor Type: ☐ School ☐ Residence ☐ Other _____
Describe area surrounding nearest receptor: _____

Distance from unit to nearest property line: _____

NOV INFORMATION (concerning affected process unit):
NOV Issued? ☐ No ☐ Yes Date: _____
Type of Violation: ☐ 116.1 ☐ RCRA ☐ Other: _____
Please provide any information the permit engineer needs concerning the current NOV status:_____

Summarize Any Recent Complaints Related To This Facility:_____

SITE REVIEW:
In light of the proximity of sensitive receptors and the surrounding land use, please discuss any concerns you have concerning a facility of this type locating at the proposed site.

Request for Comments -- Site Review
TACB Permits Program

Phone: (512)908-1000
Fax: (512)908-1300

TO: ☐ Region ___ ☐ City _____ ☐ County _____

Date Request Submitted: _____
Comments Deadline: _____ Date Application Received by Permits: _____

REGIONAL OFFICES: Please return comments ASAP, but no later than the comments deadline which is 45 days from the submittal date. Permit disposition will proceed after comments are received or after the comments deadline has past. Engineer may request faster response if needed.

CORE Engineer Name: _____ Phone: (___) _____

PERMIT TYPE:
☐ Construction ☐ Amendment ☐ Revision ☐ Renewal ☐ Other _____

PERMIT NO. _____ TACB ACCOUNT NO. _____ - _____ - _____

Company Name: _____
Plant Name: _____ County: _____
Location: _____
Unit Name: _____
Plant Contact: _____ Phone: (___) _____

Operating Schedule: _____ Hours/Day ____ Days/Week ____ Weeks/Year ____ Continuous
Night Operation ☐ Yes ☐ No

Other Information: _____
_____
_____
_____

Date Comments Returned to CORE/Permits: _____

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas
77058

NASA

Reply to Attn of: JJ12-93-212

JUL 2 8 1993

RECEIVED
JUL 30 1993
PERMITS PROGRAM

Mr. Dois Webb
Permits Program, Mechanical Section
Texas Air Control Board
12124 Park 35 Circle
Austin, Texas 78753

Dear Mr. Webb:

We have enclosed copies of the material safety data sheets you requested and a completed Section 116.6 Checklist needed to complete review of our request to operate a small printed circuit board etching facility in Building 14 at the Johnson Space Center. All of the questions on the checklist have been answered with the exception of No. 5. Ms. Liz Messenger of my staff indicated that you would advise her later if you required submittal of information regarding netting and/or PSD/nonattainment review.

You should be aware that the following substances will not be used in the processes once the operation is transferred to the new etching lab.

KTI 9000 Photo Resist,
KPR Negative Photo Resist,
EEP Solvent, and
NMP Solvent

If you have any questions, or if you need additional information, please call Ms. Messenger at (713) 483-3117.

Sincerely,

G. E. McCright
Director, Center Operations

14 Enclosures

cc:
Ms. Jodena Henneke
Regional Director
Texas Air Control Board
5555 West Loop South, Suite 300
Bellaire, Texas 77401

Mr. Gene McMullen
Director, Bureau of Air Quality Control
City of Houston
7411 Park Place
Houston, Texas 77087

KTI POSITIVE PHOTORESIST 809,809K
KTI CHEMICALS INC.

MATERIAL SAFETY DATA

EFFECTIVE DATE: October 15, 1985

Union Carbide Corporation urges the customer receiving this Material Safety Data Sheet to study it carefully to become aware of hazards, if any, of the product involved. In the interest of safety you should (1) notify your employees, agents, and contractors of the information on this sheet, (2) furnish a copy to each of your customers for the product, and (3) request your customers to inform their employees and customers as well.

I. IDENTIFICATION

PRODUCT NAME:	KTI Positive Photoresist 809, 809K		
CHEMICAL NAME:	Solvent Blend	CHEMICAL FAMILY:	N/A
FORMULA:	N/A	MOLECULAR WEIGHT:	N/A
SYNONYMS:	See Section X, item 1.		
DEPARTMENT OF TRANSPORTATION	HAZARD CLASSIFICATION	ORM-A	
	SHIPPING NAME	ORM-A N. O. S. NA 1693	

II. PHYSICAL DATA

BOILING POINT, 760 mm. Hg	270°F (132°C)	FREEZING POINT	N/A
SPECIFIC GRAVITY (H_2O = 1)	1.07	VAPOR PRESSURE	2 mm Hg
VAPOR DENSITY (air = 1)	4.6	SOLUBILITY IN WATER, % BY WT.	Slight
PER CENT VOLATILES BY VOLUME	Approx. 60	EVAPORATION RATE (Butyl Acetate = 1)	0.21
APPEARANCE AND ODOR	Viscous dark liquid; sweet ester-like odor		

III. INGREDIENTS

MATERIAL	%	PEL (units)	TLV (units)	CAS NUMBER
2-Ethoxyethyl Acetate*	60-72	200 ppm*	5 ppm	111-15-9
Phenol formaldehyde resin	28-40	N/A	N/A	N/A
* See Section X, item 2				

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT [test method(s)]	127°F TCC (53°C)				
FLAMMABLE LIMITS IN AIR, % by volume	LOWER	1.7	UPPER	6.7	
EXTINGUISHING MEDIA	Alcohol foam, carbon dioxide, dry chemical, water spray				
SPECIAL FIRE FIGHTING PROCEDURES	Use self contained breathing apparatus and protective clothing. Containers near fire may be cooled with water. May emit toxic fumes if burned.				
UNUSUAL FIRE AND EXPLOSION HAZARDS	Pressure builds up slowly in closed containers due to gradual decomposition. This is accelerated by heat and light with possible liberation of combustible solvent.				

EMERGENCY PHONE NUMBER Union Carbide H.E.L.P. (304) 744-3487 This number is available days, nights, weekends, and holidays.

HEALTH HAZARD DATA

EXPOSURE LIMITS 2-Ethoxyethyl acetate: 200 ppm (skin) OSHA 29 CFR para. 1910.1000, Table Z-1; 5 ppm (skin) ECGIH, 1984.
UNION CARBIDE RECOMMENDATIONS:
- o Personal exposure limit 5 ppm (8-hour time weighted average) (ACGIH, 1984-85)
- o Avoid skin contact

EFFECTS OF OVEREXPOSURE

SWALLOWING	May cause headache, nausea, vomiting, dizziness, weakness. Possible kidney damage may result from ingestion of large quantities of material.
SKIN CONTACT	Prolonged or widespread contact with skin may lead to absorption of harmful amounts of material with accompanying signs and symptoms of toxicity as described for swallowing. Prolonged contact may result in irritation or dermatitis.
INHALATION	Vapors are irritating to eyes, nose, and respiratory tract. Overexposure may result in headache, nausea, vomiting. Vapors have an objectionable odor.
EYE CONTACT	Causes irritation.

EFFECTS OF REPEATED OVEREXPOSURE

Repeated exposure at high concentrations (400 ppm or higher) may cause injury to bone marrow and blood cells, kidney, liver, and testes.

EMERGENCY AND FIRST AID PROCEDURES

See Section X, item 3.

FIRST AID PROCEDURES

SWALLOWING	Give 2 glasses of water, induce vomiting. Call a physician.
SKIN	Remove contaminated clothing and flush skin with water.
INHALATION	Remove to fresh air. If breathing is difficult, give oxygen and call a physician. If breathing has stopped, give artificial respiration and call a physician.
EYES	Immediately flush with water and continue for at least 15 minutes. Call a physician if discomfort persists.

NOTES TO PHYSICIAN

There is no specific antidote. Treatment of overexposure should be directed at the control of the symptoms and the clinical condition.

VI. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID	None
UNSTABLE	STABLE		
	X		

INCOMPATIBILITY (materials to avoid)	Avoid alkali metal hydroxides, such as sodium hydroxide.
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS	Burning can produce carbon dioxide and/or carbon monoxide.

HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID	None
May Occur	Will not Occur		
	X		

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	Avoid inhalation and skin contact. Wear protective equipment. Contain the spill and use absorbent to collect liquid for disposal. Place in impervious container. Wash contaminated area. Avoid discharge to natural waters. Toxic to fish.
WASTE DISPOSAL METHOD	Incinerate where permitted under appropriate Federal, State and Local regulations.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type)	Above recommended exposure levels, a NIOSH-approved respirator for organic vapors is recommended. Supplied air respirator in emergency or high concentrations.
VENTILATION	This product should be contained within closed equipment, in which case, general (mechanical) room ventilation is expected to be adequate.
PROTECTIVE GLOVES	Butyl rubber
EYE PROTECTION	Safety glasses with side shields, monogoggles, or face shield, dependent on volume of material to be handled.
OTHER PROTECTIVE EQUIPMENT	As necessary to prevent skin contact. Eye bath and safety showers.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Do not breathe vapor. Use with adequate ventilation. Do not get in eyes, on skin or on clothing. Accidental contact should be washed away immediately. Keep away from heat, sparks, and flame. Keep container closed. Eye bath and safety shower should be in area of use. (See also Section V)

FOR INDUSTRY USE ONLY

OTHER PRECAUTIONS

Store in a cool place.

1. Synonyms for 2-Ethoxyethyl Acetate are Ethylene Glycol Monoethyl Ether Acetate and Cellosolve Acetate.

2. PEL for various states may differ.

3. In laboratory inhalation studies, birth defects, increased fetal lethality, and delayed fetal development have been observed in offspring of female animals exposed to 2-Ethoxyethyl acetate during pregnancy, with an apparent threshold response level approaching 400 ppm concentration in air.

The opinions expressed herein are those of qualified experts within Union Carbide Corporation. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of the product are not within the control of Union Carbide Corporation, it is the user's obligation to determine the conditions of safe use of the product.

CuTech, Inc.
2280 Amber Drive
Hatfield, PA 19440
(215) 822-8900
(215) 822-5998, FAX

MATERIAL SAFETY DATA SHEET ST 225
Revision Date: 04/08/91

EMERGENCY PHONE NUMBER
CHEMTREC 800-424-9300

SECTION I - INFORMATION

PRODUCT NAME: ST 225 Electroless Tin Plating Solution
CHEMICAL FAMILY: Stannous Tin Acidic solution
CERCLA RATINGS (SCALE 0-3): HEALTH-2, FIRE-0, REACTIVITY-0, SPECIAL NOTICE

SECTION II - HAZARDOUS INGREDIENTS

MATERIAL	C.A.S.#	%	TLV & PEL
Hypophosphorous Acid	6303-21-5	<2	Not Established
Thiourea	62-56-6	2-6	Not Established

***OTHER COMPONENTS BEING WITHHELD AS A TRADE SECRET.

SECTION III - PHYSICAL DATA

BOILING POINT (F): 212
VAPOR PRESSURE (mm Hg): N/A
VAPOR DENSITY (AIR=1): N/A
SOLUBILITY IN WATER: Good
APPEARANCE AND ODOR: Colorless; slight sulfur odor
SPECIFIC GRAVITY (H2O=1): 1.2
PERCENT VOLATILE BY (%): N/A
EVAPORATION RATE (___=1): N/A
pH: 1 - 2

SECTION IV - FIRE & EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED):
FLAMMABLE LIMITS: Non-flammable
EXTINGUISHING MEDIA: Water fog, dry chemical, or carbon dioxide
SPECIAL FIRE FIGHTING PROCEDURES: Full respiratory protection
UNUSUAL FIRE & EXPLOSION HAZARDS: None

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: Not Established

-- EFFECTS OF OVEREXPOSURE --

EYES: Burns on contact.
SKIN: May cause irritation.
INHALATION: May irritate nasal and respiratory tracts.
INGESTION: May irritate mucous membranes and cause systematic poisoning.
OTHER: Thiourea is a suspected carcinogen, causing hepatic tumors and depressing bone marrow.

-- EMERGENCY & FIRST AID PROCEDURES --

EYES: Wash with copious amounts of clean, cool water. Consult physician for serious exposure.
SKIN: Wash with copious amounts of clean, cool water.
INHALATION: Remove victim to fresh air and consult a physician.
INGESTION: Give water, induce vomiting, and consult a physician.
OTHER:

Distributed by: Kepro Circuit Sytsems, Inc.
630 Axminister Drive
Fenton, MO 63026-2992
(800) 325-3878 / (314) 343-1630
FAX (314) 343-0668

CuTech, Inc.
2280 Amber Drive
Hatfield, PA 19440
(215) 822-8900
(215) 822-5998, FAX

MATERIAL SAFETY DATA SHEET ST 225
Revision Date: 04/08/91

EMERGENCY PHONE NUMBER
CHEMTREC 800-424-9300

SECTION VI - REACTIVITY DATA

STABILITY: UNSTABLE: _____ STABLE: XX
CONDITIONS TO AVOID: None
INCOMPATIBILITY (MATERIAL TO AVOID): Strong Oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen Sulfide
HAZARDOUS POLYMERIZATION: MAY OCCUR: _____ WILL NOT OCCUR: XX
CONDITIONS TO AVOID: None

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Rinse off with water; neutralize with mild alkali.
WASTE DISPOSAL METHOD: Neutralize with mild alkali solution to neutral pH. Dispose of in accordance with all applicable government regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE):
VENTILATION: Local Exhaust
PROTECTIVE GLOVES: Rubber gloves
EYE PROTECTION: Eye goggles or glasses
OTHER PROTECTIVE EQUIPMENT: Acid resistant clothing

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING & STORAGE: Store away from oxidizing materials
OTHER PRECAUTIONS: Do not inhale vapor for any length of time.

*** ADDENDUM ***

1. MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Irritation of eyes, nose and throat. May cause tumors and depress bone marrow.

2. POTENTIAL ENTRY THROUGH SKIN ABSORPTION: _____ YES XX NO

3. SUSPECTED CARCINOGEN: XX YES _____ NO

4. A. AN INGREDIENT IN THIS PRODUCT IS LISTED AS A POTENTIAL CARCINOGEN BY:
X OSHA _____ NTP X IARC
B. _____ NO INGREDIENTS ARE LISTED AS A CARCINOGEN BY ANY OF THE ABOVE ORGANIZATIONS.

5. PROTECTIVE MEASURES FOR REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT: Clean all equipment with water before repairing. If equipment must be worked on with the chemicals still intank, follow all special protection recommendations.

ITP-8308
10/84

kepro

Kepro Circuit Systems, Inc.

INSTRUCTIONS FOR KEPRO IMMERSION TIN PLATING ITP-1QT, ITP-1G, & ITP-5G

CAUTION! ITP CONTAINS TIN SALTS, UREA, REDUCING AGENTS, ORGANIC BRIGHTENERS AND STABILIZING SALTS. MAY CAUSE SKIN OR EYE IRRITATION. AVOID CONTACT WITH EYES, SKIN OR CLOTHING. WASH THOROUGHLY AFTER USE. IN CASE OF EYE CONTACT, FLUSH THOROUGHLY WITH WATER. STORE IN A COOL, DRY PLACE AWAY FROM STRONG ALKALIES AND ACIDS. USE ONLY WITH ADEQUATE VENTILATION. KEEP OUT OF REACH OF CHILDREN.

Kepro Immersion Tin Plating provides a simple and inexpensive method of applying a thin coating of essentially pure tin to the surface of etched circuit boards. This thin layer of tin will effectively retard oxidation of copper surfaces. Electroless or immersion plating is a chemical process requiring no experience or expensive plating equipment. A five minute immersion in Kepro ITP will deposit a layer of pure tin (approximately 20 millionth in. thick). The tinned surface will retain solderability after exposure to 95% relative humidity at 96° F. for 96 hours. Plating will withstand 96 hours exposure to concentrated salt spray without breakthrough.

CONTAINERS

Use in GLASS or PLASTIC containers ONLY. Containers should be meticulously cleaned prior to use.

COVERAGE

One quart of Kepro Immersion Tin Plating solution will plate approximately 25 square feet of etched circuitry. This figure is based on a 50% removal of copper from a single sided panel, using the immersion time recommended by Kepro. This figure will vary according to the amount of copper remaining, the number of clad sides and the length of time the panel is immersed.

USE

1. During storage and during extremely cold weather, solids and liquid will separate. The solids will settle to the bottom of the container. To get the solids back into solution, pour into a container (see above) and SLOWLY warm solution to 100-110° F. Stir gently until all traces of solids vanish.

2. Copper surfaces must be free of contamination prior to plating. After the stripping of resists and photoresists, it is a good practice to immerse the panel in a acid cleaning solution, such as Kepro CU-3, before plating. NOTE: Insufficient removal of contamination will result in a spotty discoloration in the plated areas. This contamination will also render the tin plating useless and result in a surface that is virtually impossible to solder.

3. This solution is designed to be used at room temperature. Immerse the panel in the ITP solution, agitating the panel constantly by moving the panel both horizontally and vertically in the solution. After five minutes in the solution, at room temperature, you will deposit a dense plate film approxmiately .00002" thick. To shorten the plating time of a panel, the solution can be heated to 100-120° F. The required plating time will decrease to three minutes. Heating the solution will result in less coverage. NOTE: If you are heating the solution, it will be necessary to add distilled water to maintain the solution level. DO NOT add acid. The solution PH needs no adjustment during operational life.

4. Remove the panel from the ITP and rinse under HOT (140-160° F.) running water for three minutes. Rinse the panel a second time using COLD water for three additional minutes. Dry the panel thoroughly.

5. Tin will oxidize in time, but at a significantly slower rate than copper. If a tin plated panel will not solder, abraid with a non-metallic pad, Kepro FSB-500 or equivalent, and re-tin.

© Copyright Kepro Circuit Systems, Inc., 1984

630 Axminister Dr. • Fenton, MO 63026-2992 • 1-800-325-3878 out-of-state • 1-314-343-1630 in MO

MATERIAL SAFETY DATA SHEET

Effective Date: 12/01/88

MANUFACTURER:
KTI CHEMICALS INCORPORATED
(A Subsidary of UNION CARBIDE
CHEMICALS AND PLASTICS CO., INC.)
1170 Sonora Court
Sunnyvale CA 94086

INFORMATION TELEPHONE:
408-733-3500

EMERGENCY TELEPHONE:
800-UCC-HELP

Union Carbide urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology or fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe use and handling of this product, each customer or recipient should (1) notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information on this MSDS and any other information regarding hazards or safety, (2) furnish this same information to each of its customers for the product, and (3) request its customers to notify their employees, customers, and other users of the product of this information.

I. IDENTIFICATION

PRODUCT NAME: KTI POSITIVE PHOTORESIST DEVELOPER 809 100%

CHEMICAL NAME: N/A

CHEMICAL FAMILY: N/A

FORMULA: Aqueous mixture
SYNONYMS: See section X, item 1.

MOLECULAR WEIGHT: N/A

DOT SHIPPING NAME: NON REGULATED
DOT HAZARD CLASS: N/A

UN/NA: N/A

CAS #: See section III.

CAS NAME: See section X, item 1.

II. PHYSICAL DATA

BOILING POINT (760 mm Hg): > 210 (DEG F)	VAPOR PRESSURE (at 20C): 17.0 mm Hg
SPEC GRAVITY (Water = 1): 1.07	SOLUBILITY IN WATER, % by wt.: Complete
VAPOR DENSITY (Air = 1): .66	% VOLATILES (by Volume): 90 %
EVAPORATION RATE (Butyl acetate = 1): <1	PRODUCT APPEARANCE: Colorless liquid ODOR: Odorless

EMERGENCY 24 HOUR PHONE NUMBERS: 1-800-UCC-HELP
(U.S. CALLERS), OR 304-744-3478 (FROM ANYWHERE).

UNION CARBIDE Subsidiary Union Carbide Corporation

III. INGREDIENTS

INGREDIENT DESCRIPTION	CAS NUMBER	WGT %	TLV	PEL
Sodium phosphate, tribasic	7601-54-9	1-10	N/A	N/A
Water	7732-18-5	80-90	N/A	N/A
Sodium metasilicate	1344-09-8	1-10	N/A	N/A

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (DEG F): None

FLAMMABLE LIMITS IN AIR, % by volume: LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA: Non-flammable and will not react with extinguishing media.

SPECIAL FIRE FIGHTING PROCEDURES: Use self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

UNUSUAL FIRE AND EXPLOSION HAZARDS: At high temperatures, phosphates can emit highly toxic phosphorus oxide fumes.

V. HEALTH HAZARD INFORMATION

EXPOSURE LIMITS AND SOURCE:

For Sodium phosphate, tribasic: None established by ACGIH or OSHA.
For Sodium metasilicate: None established by ACGIH or OSHA.

EFFECTS OF ACUTE EXPOSURE:

SWALLOWING: May cause nausea, vomiting, and abdominal pain.

SKIN ABSORPTION: No evidence of adverse effects from available information.

INHALATION: No evidence of adverse effects from available information.

UNION CARBIDE Subsidiary Union Carbide Corporation

V. HEALTH HAZARD INFORMATION CONT.

EFFECTS OF ACUTE EXPOSURE CONT.

SKIN CONTACT: May cause temporary reddening of skin.

EYE CONTACT: Causes irritation, experienced as discomfort and pain, with blinking and excess tear production, and seen as marked excess redness and swelling of the conjunctiva and chemical burns of the eye.

EFFECTS OF REPEATED OVEREXPOSURE:
Prolonged or repeated skin contact may cause irritation.

OTHER POTENTIAL HEALTH EFFECTS:
None currently known.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY OVEREXPOSURE:
May aggravate an existing dermatitis.

EMERGENCY FIRST AID PROCEDURES

SWALLOWING: If the patient is conscious, give two glasses of water. Do not induce vomiting. Obtain medical attention.

SKIN: Remove contaminated clothing and flush skin with water. Wash clothing before wearing again.

INHALATION: No emergency care anticipated.

EYES: Immediately flush eyes thoroughly with water and continue flushing for at least 15 minutes. Obtain medical attention, preferably from an ophthalmologist, urgently.

NOTES TO PHYSICIANS:

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition.

UNION CARBIDE Subsidiary Union Carbide Corporation

VI. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID:	None
UNSTABLE	STABLE		
	X		

INCOMPATIBILITY (MATERIALS TO AVOID): Avoid contact with acids.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: At high temperatures, phosphates can emit highly toxic phosphorus oxide fumes.

HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID:	None
MAY OCCUR	WILL NOT OCCUR		
	X		

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Avoid inhalation and skin contact. Wear suitable protective equipment. Contain the spill and use absorbent to collect liquid. Dispose of residue in accordance with government regulations. Avoid discharge to natural waters.

WASTE DISPOSAL METHOD: Dispose of alkaline materials in accordance with Federal, State, and Local regulations.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Above recommended exposure levels, a NIOSH-approved respirator for organic vapors is recommended. Supplied air respirator in emergency or high concentrations.

VENTILATION: Handling of this product should be done in a closed ventilated system, such as an exhaust hood.

PROTECTIVE GLOVES: Gloves impervious to alkaline solutions.

EYE PROTECTION: Safety glasses with side shields, monogoggles, or face shield, dependent on volume of material to be handled.

OTHER PROTECTIVE EQUIPMENT: As necessary to prevent skin contact.

UNION CARBIDE Subsidiary Union Carbide Corporation

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Warning! Causes eye irritation * Wash thoroughly after handling.

=======FOR INDUSTRY USE ONLY=======

OTHER PRECAUTIONS:
WARNING: Hot organic chemical vapors or mists are susceptible to sudden spontaneous combustion when mixed with air. Ignition may occur at temperatures below those published in the literature as "autoignition" or "ignition" temperatures. Ignition temperatures decrease with increasing vapor volume and vapor/air contact time and are influenced by pressure changes.

Ignition may occur at typical elevated-temperature process conditions, especially in processes operating under vacuum if subjected to sudden ingress of air, or outside process equipment operating under elevated pressure if sudden escape of vapors or mists to the atmosphere occurs. Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

X. OTHER INFORMATION

1. SYNONYMS
   * For Sodium phosphate, tribasic: Trisodium phosphate. CAS NAME: Phosphoric acid, trisodium salt
   * For Sodium metasilicate: Sodium siliconate and Silicon sodium oxide. CAS NAME: Silicic acid, sodium salt

REGULATORY INFORMATION - FEDERAL EPA -

STATUS ON SUBSTANCE LISTS:
Refer to Section III. for the ingredient concentrations to be used for calculations for regulations. Trade Secrets are indicated by "TS".

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980. (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQ's) in 40 CFR 302.4.
Components present in this product at a level which could require reporting under the statute are:

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
Sodium phosphate, tribasic/7601-54-9	* See Sec III

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA).
Requires emergency planning based on Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQ's) in 40 CFR 355 (used for SARA 302, 311 and 312).
Components present in this product at a level which could require reporting under the statute are: (=> 1% or 0.1% carcinogen)

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
- NONE -	

UNION CARBIDE Subsidiary Union Carbide Corporation

(X. REGULATORY INFORMATION CONT.)

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA).
Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313).
Components present in this product at a level which could require reporting under the statute are:

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
- NONE -	

TSCA INVENTORY STATUS:
The ingredients of this product are on the TSCA inventory.

- STATE RIGHT-TO-KNOW -

CALIFORNIA PROPOSITION 65.
- NONE -

MASSACHUSETTS 105 CMR 670.000 RIGHT-TO-KNOW, SUBSTANCE LIST (MSL).
Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.
Components present in this product at a level which could require reporting under the statute are:

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
- NONE -	

PENNSYLVANIA RIGHT-TO-KNOW, HAZARDOUS SUBSTANCE LIST.
Hazardous Substances and Special Hazardous Substances on the list must be identified when present in products.
Components present in this product at a level which could require reporting under the statute are:

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
Sodium phosphate, tribasic/7601-54-9	* See Sec III

N/D = Not Determined N/A = Not Applicable

UNION CARBIDE is a trademark of Union Carbide Corporation * KTI is a trademark of Union Carbide Chemicals & Plastics Technology Corporation.

==========

The opinions expressed herein are those of qualified experts within Union Carbide Chemicals and Plastics. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and of these opinions and the conditions of use of the product are not within the control of Union Carbide, it is the user's obligation to determine the conditions of safe use of the product.

Copyright 1987,1989 Union Carbide Chemicals & Plastics Technology Corporation.

UNION CARBIDE Subsidiary, Union Carbide Corporation

MATERIAL SAFETY DATA SHEET

Effective Date: 12/01/88

MANUFACTURER:
KTI CHEMICALS INCORPORATED
(A Subsidiary of UNION CARBIDE
CHEMICALS AND PLASTICS CO., INC.)
1170 Sonora Court
Sunnyvale CA 94086

INFORMATION TELEPHONE:
408-738-8500

EMERGENCY TELEPHONE:
800-UCC-HELP

Union Carbide urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology or fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe use and handling of this product, each customer or recipient should (1) notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information on this MSDS and any other information regarding hazards or safety, (2) furnish this same information to each of its customers for the product, and (3) request its customers to notify their employees, customers, and other users of the product of this information.

I. IDENTIFICATION

PRODUCT NAME: KTI EGMEA 100% (CELLOSOLVE ACETATE)

CHEMICAL NAME: 2-Ethoxyethyl acetate CHEMICAL FAMILY: Esters

FORMULA: CH3COOCH2CH2OC2H5
SYNONYMS: See section X, item 1. MOLECULAR WEIGHT: 132.16

DOT SHIPPING NAME: NON REGULATED UN/NA: N/A
DOT HAZARD CLASS: N/A

CAS #: 111-15-9 CAS NAME: Ethanol, 2-ethoxy-, acetate

II. PHYSICAL DATA

BOILING POINT (760 mm Hg):	313 (DEG F)	VAPOR PRESSURE (at 20C):	4.0 mm Hg
SPEC GRAVITY (Water = 1):	0.9748	SOLUBILITY IN WATER, % by wt.:	22.9%
VAPOR DENSITY (Air = 1):	4.60	% VOLATILES (by Volume):	100 %
EVAPORATION RATE (Butyl acetate = 1):	<1	PRODUCT APPEARANCE: Colorless liquid ODOR: Mild odor	

EMERGENCY 24 HOUR PHONE NUMBERS: 1-800-UCC-HELP
(U.S. CALLERS), OR 304-744-3478 (FROM ANYWHERE).

III. INGREDIENTS

INGREDIENT DESCRIPTION	CAS NUMBER	WT. %	TLV	PEL
2-Ethoxyethyl acetate	111-15-9	100 %	5.00 ppm	100.00 ppm

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (TCC F): 126 TCC

FLAMMABLE LIMITS IN AIR, % by volume: LOWER: 1.7 UPPER: 8.

EXTINGUISHING MEDIA: Alcohol foam, carbon dioxide, dry chemical, water spray.

SPECIAL FIRE FIGHTING PROCEDURES: Use self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Containers near fire may be cooled with water.

UNUSUAL FIRE OR EXPLOSION HAZARDS: Fire or excessive heat may cause production of hazardous decomposition products.

V. HEALTH HAZARD INFORMATION

EXPOSURE LIMITS AND SOURCE.

For 2-Ethoxyethyl acetate: 5 ppm TWA-S - skin (ACGIH 1987-88), 100 ppm - skin (OSHA). See section X, item 2.

EFFECTS OF ACUTE EXPOSURE:

SWALLOWING: May cause headache, nausea, vomiting, dizziness, drowsiness, and diarrhea. Possible kidney damage may result from ingestion of large quantities of material.

SKIN ABSORPTION: Prolonged or widespread contact with skin may lead to absorption of harmful amounts of material with accompanying signs and symptoms of toxicity as described for swallowing.

INHALATION: Vapors are irritating to eyes, nose, and respiratory tract. Overexposure may result in headache, nausea, and vomiting.

HEALTH HAZARD INFORMATION CONT.

EFFECTS OF ACUTE EXPOSURE CONT.

SKIN CONTACT: May cause slight irritation with prolonged contact.

EYE CONTACT: Causes irritation, seen as local redness and possible swelling of the conjunctiva.

EFFECTS OF REPEATED OVEREXPOSURE:
Prolonged repeated skin contact may result in dermatitis. Repeated exposure at high concentrations (400 ppm or higher) of vapor may cause injury to the marrow, blood cells, kidney, liver, and testes.

OTHER HEALTH HAZARDS:
In laboratory inhalation studies of 2-Ethoxyethyl acetate, birth defects, increased fetal lethality, and delayed fetal development have been observed in offspring of female animals exposed during pregnancy, with an apparent threshold response level approaching 400 ppm concentration in the air.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY OVEREXPOSURE:
A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

EMERGENCY FIRST AID PROCEDURES

SWALLOWING: Give two glasses of water and induce vomiting. Call a physician.

SKIN: Remove contaminated clothing and wash skin with soap and water. Wash clothing before reuse.

INHALATION: Remove to fresh air. Give artificial respiration if not breathing. Qualified personnel may give oxygen if breathing is difficult. Call a physician.

EYES: Immediately flush eyes thoroughly with water and continue flushing for at least 15 minutes. Seek medical attention.

NOTES TO PHYSICIANS:

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

VI. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID:
UNSTABLE	STABLE	None
	X	

INCOMPATIBILITY (MATERIALS TO AVOID): Avoid contact with strong oxidizers.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Burning can produce carbon dioxide and/or carbon monoxide

HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID:
MAY OCCUR	WILL NOT OCCUR	None
	X	

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Avoid inhalation and skin contact. Wear suitable protective equipment. Contain the spill and use absorbent to collect liquid for disposal. Dispose of residue in accordance with government regulations. Avoid discharge to natural waters.

WASTE DISPOSAL METHOD: Incinerate where permitted under appropriate federal, State, and Local regulations.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Above recommended exposure levels, a NIOSH-approved respirator for organic vapors is recommended. Supplied air respirator in emergency or high concentrations.

VENTILATION: Handling of this product should be done in a closed ventilated system, such as an exhaust hood.

PROTECTIVE GLOVES: Butyl rubber.

EYE PROTECTION: Safety glasses with side shields, monogoggles, or face shield, dependent on volume of material to be handled.

OTHER PROTECTIVE EQUIPMENT: As necessary to prevent skin contact. Eye bath and safety shower.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Warning: Harmful if inhaled or absorbed through skin.
Causes eye irritation.
Combustible liquid and vapor.
May cause dizziness and drowsiness.
May cause kidney and liver, red blood cell, and testes damage.
In laboratory animal studies of 2-Methoxyethyl acetate, birth defects and adverse effects on pregnancy have been observed.
* Maximum personal skin exposure limit in air 5 ppm (ACGIH, 1987-88), 8-hour time weighted average.
* Avoid all skin contact.
Wash thoroughly after handling.

=======FOR INDUSTRY USE ONLY========

OTHER PRECAUTIONS:

WARNING: Hot organic chemical vapors or mists are susceptible to sudden spontaneous combustion when mixed with air. Ignition may occur at temperatures below those published in the literature as "autoignition" or "ignition temperatures. Ignition temperatures decrease with increasing vapor volume and vapor/air contact time and are influenced by pressure changes.

Ignition may occur at typical elevated-temperature process conditions, especially in processes operating under vacuum if subjected to sudden ingress of air, or outside process equipment operating under elevated pressure if sudden escape of vapors or mists to the atmosphere occurs. Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

X. OTHER INFORMATION

1. SYNONYMS
   * For 2-Ethoxyethyl acetate: CELLOSOLVE ACETATE, Ethylene glycol monoethyl ether acetate. CAS NAME: Ethanol, 2-ethoxy-, acetate.

2. UNION CARBIDE RECOMMENDATIONS for 2- Ethoxyethyl acetate:
   * Personal exposure limit - 5 ppm (8-hour time weighted average).
   * Avoid all skin contact.

REGULATORY INFORMATION - FEDERAL EPA -

STATUS ON SUBSTANCE LISTS:
Refer to Section III. for the ingredient concentrations to be used for calculations for regulations. Trade Secrets are indicated by 'TS'.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980. (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQ's) in 40 CFR 302.4.
Components present in this product at a level which could require reporting:

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
- NONE -	

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA).
Requires emergency planning based on Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQ's) in 40 CFR 355 (used for SARA 302, 311 and 312).
Components present in this product at a level which could require reporting under the statute are: (=> 1% or 0.1% carcinogen)

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
- NONE -	

(X. REGULATORY INFORMATION CONT.)

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA).
Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313).
Components present in this product at a level which could require reporting under the statute are:

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
2-Ethoxyethyl acetate/111-15-9	* See Sec III

TSCA INVENTORY STATUS:
The ingredients of this product are on the TSCA inventory.

- STATE RIGHT-TO-KNOW -

CALIFORNIA PROPOSITION 65.
- NONE -

MASSACHUSETTS 105 CMR 670.000 RIGHT-TO-KNOW, SUBSTANCE LIST (MSL).
Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.
Components present in this product at a level which could require reporting under the statute are:

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
2-Ethoxyethyl acetate/111-15-9	* See Sec III

PENNSYLVANIA RIGHT-TO-KNOW, HAZARDOUS SUBSTANCE LIST.
Hazardous Substances and Special Hazardous Substances on the list must be identified when present in products.
Components present in this product at a level which could require reporting under the statute are:

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
2-Ethoxyethyl acetate/111-15-9	* See Sec III

N/D = Not Determined N/A = Not Applicable

UNION CARBIDE is a trademark of Union Carbide Corporation * KTI is a trademark of Union Carbide Chemicals & Plastics Technology Corporation * CELLOSOLVE is a trademark of Union Carbide Chemicals & Plastics Technology Corporation.

The opinions expressed herein are those of qualified experts within Union Carbide Chemicals and Plastics. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and of these opinions and the conditions of use of the product are not within the control of Union Carbide, it is the user's obligation to determine the conditions of safe use of the product.

Copyright 1987,1989 Union Carbide Chemicals & Plastics Technology Corporation.

DoD Hazardous Materials Information System
DoD 6050.5-LR
AS OF JUNE 15, 1989
For U.S. Government Use Only

Stock Number: 793000F000689
Manufacturers CAGE: 33333
Part No. Indicator: A
Part Number/Trade Name: **BRANSON ULTRASONIC IND. STRENGTH CLEANER**
Safety Focal Point: F
Record No. for this Safety Entry: 001
Total Safety Entries, This No.: 001
Date MSDS Prepared: PRE-HCS
Safety Data Review Date: 28JAN85

Manufacturer Name: U.S. FLOOR SYSTEMS, INC.
Emergency Phone No.: (919) 782-0101

MSDS Serial Number: BBHCW

Proprietary: YES
Ingredient Focal Point: F
Ingredient Sequence Number: 01
NIOSH (RTECS) No.: KJ9100000
Ingredient: BUTYL CARBITOL
Percent: 6.7%
Appearance and Odor: TAN, CLEAR LIQUID
Boiling Point: 212F
Pressure(MM Hg/70 F): N/A
Vapor Density (Air=1): N/A
Specific Gravity: 1.06
Evap. Rate & Reference: N/A
Solubility in Water: COMPLETE
% Volatiles by Volume: N/A
Flash Point: NONE
Extinguishing Media: NONE
Special Fire Fgting Proc: NONE
Unusual Fire & Expl. Hzrds: NONE
Stability: YES
Materials to Avoid: NONE
Hazardous Decomp. Products: NONE
Hazardous Poly. Occur: NO
Sgns and Sym of Oexposure: CONCENTRAATE COULD CAUSE SKIN IRRITATION.
Emerg. and FirstAid Procs: IF SPLASHED IN EYES, FLUSH REPEATEDLY WITH COOL WATER. INGESTION: IF SWALLOWED, DO NOT INDUCE VOMITING. GIVE LARGE QUANTITIES OF MILK OR WATER. GIVE TWO TABLESPOONS OF VINEGAR DILUTED WITH WATER. CALL A PHYSICIAN.
if Matl. Relsd or Sped: FLUSH INTO SEWER WITH WATER.

??????

Waste Disposal Method: AS ABOVE.
Handg and Strg Precautions: OBSERVE STANDARD PRECAUTIONS AS WITH ANY CHEMICAL PRODUCT.

??

Other Precautions: KEEP OUT OF REACH OF CHILDREN.

??

Protective Gloves: W/CONCENTRATE.
Eye Protection: WITH CONCENTRATE.
Sup. Safe and Health Data: HWY. 70 WEST/RALEIGH, N.C. 27619.

EPA
==========

Disposal
==========

EFFECTIVE DATE: May 1, 1985 Bob/Ralph -

Fixed 214-245-5541 →

Before Eastman Kodak Company ships the material listed in this Data Sheet to satisfy a customer's requirements, it is the responsibility of Eastman Kodak Company to provide the customer with information concerning the safe handling of the material. To meet this responsibility, Eastman Kodak Company (1) advises its employees, agents, and customers of the information on this sheet, (2) furnishes a copy to each of its customers for the product, and (3) requests that its customers inform their employees and customers as well.

I. IDENTIFICATION

PRODUCT NAME:	KTI Positive Photoresist 9000
CHEMICAL NAME:	N/A
CHEMICAL FAMILY:	N/A
FORMULA:	Solvent blend
MOLECULAR WEIGHT:	N/A
SYNONYMS:	See Section X, item 1
DEPARTMENT OF TRANSPORTATION	HAZARD CLASSIFICATION: ORM-A
	SHIPPING NAME: ORM-A N.O.S. NA 1693

II. PHYSICAL DATA

BOILING POINT, 760 mm. Hg	315°F (157°C)	FREEZING POINT	-76°F (60°C)
SPECIFIC GRAVITY (H_2O = 1)	1.06 at 20/20°C	VAPOR PRESSURE	1.6 mm Hg
VAPOR DENSITY (air = 1)	4.6	SOLUBILITY IN WATER, % BY WT.	slight
PER CENT VOLATILES BY VOLUME	Approx. 70	EVAPORATION RATE (Butyl Acetate = 1)	0.21
APPEARANCE AND ODOR	Viscous, dark red liquid, sweet ester-like odor		

III. INGREDIENTS

MATERIAL	%	PEL (units)	TLV (units)	CAS NUMBER
2-Ethoxyethyl Acetate	60-90	200 ppm*	5ppm	111-15-9
Bis (2-methoxyethyl) ether	0-5	---	----	111-96-6
Phenol formaldehyde resin	5-40	---	----	------
* See section X, item 2				

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (test method[s])	129°F (54°C), closed cup				
FLAMMABLE LIMITS IN AIR, % by volume	LOWER	1.7	UPPER	6.7	
EXTINGUISHING MEDIA	Alcohol foam, carbon dioxide, dry chemical, water spray				
SPECIAL FIRE FIGHTING PROCEDURES	Use self contained breathing apparatus and protective clothing. Containers near fire may be cooled with water. May emit toxic fumes if burned.				
UNUSUAL FIRE AND EXPLOSION HAZARDS	Pressure builds up slowly in closed containers due to gradual decomposition. This is accelerated by heat and light with possible liberation of combustible solvent.				

EMERGENCY PHONE NUMBER Union Carbide H.E.L.P. (800) 744-6997 This number is available 24 hrs, 7 days/week, all holidays

EXPOSURE LIMITS

2-Ethoxyethyl acetate: 200 [redacted] (skin) OSHA 29 CFR para. 19[redacted] 1000, Table Z-1; 5 ppm (skin) ACGIH, 1984. [redacted] Section X, item 3.
Bis (2-methoxyethyl) ether - No TLV established.

[redacted] May cause headaches, nausea, vomiting, dizziness, weakness. Possible kidney damage may result from ingestion of large quantities of material.

SWALLOWING	
SKIN CONTACT	Prolonged or widespread contact with skin may lead to absorption of harmful amounts of material with accompanying signs and symptoms of toxicity as described for swallowing.
INHALATION	Vapors are irritating to eyes, nose, and respiratory tract. Over-exposure may result in headaches, nausea, vomiting. Vapors have an objectionable odor.
EYE CONTACT	Causes irritation.

Air flow 100 CFM per linear FT

[redacted]

Repeated exposure at high concentrations (400 ppm or higher) may cause injury to bone marrow and blood cells, kidney, liver and testes.

[redacted]

See Section X, item 4.

[redacted]

SWALLOWING	Give 2 glasses of water, induce vomiting. Call a physician.
SKIN	Remove contaminated clothing and flush skin with water.
INHALATION	Remove to fresh air. If breathing is difficult, give oxygen and call a physician. If breathing has stopped, give artifical respiration and call a physician.
EYES	Immediately flush with water and continue for at least 15 minutes. Call a physician if discomfort presists.

NOTES TO PHYSICIAN

There is no specific antidote. Treatment of overexposure should be directed at the control of the symptoms and the clinical condition.

STABILITY			
UNSTABLE	STABLE	CONDITIONS TO AVOID	None
	X		

INCOMPATIBILITY (materials to avoid)	Avoid alkali metal hydroxides, such as sodium hydroxide.
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS	Burning can produce carbon dioxide and/or carbon monoxide.

HAZARDOUS POLYMERIZATION			
May Occur	Will not Occur	CONDITIONS TO AVOID	None
	X		

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	Avoid inhalation and skin contact. Wear protective equipment. Extinguish and do not turn on any ignition source until the area is determined to be free from fire and explosion hazards Contain the spill and use absorbent to collect liquid for disposal. Place in impervious container. Wash contaminated area. Avoid discharge to natural waters.
WASTE DISPOSAL METHOD	Incinerate where permitted under appropriate Federal, State, and Local regulations.

RESPIRATORY PROTECTION (specify type)	Above recommended exposure levels, a NIOSH-approved respirato for organic vapors is recommended. Supplied air respirator in emergency or high concentrations.
VENTILATION	This product should be contained within closed equipment, in which case, general (mechanical) room ventilation is expected to be adequate.
PROTECTIVE GLOVES	Butyl rubber
EYE PROTECTION	Safety glasses with side shields, monogoggles, or face shield, dependent on volume of material to be handled.
OTHER PROTECTIVE EQUIPMENT	As necessary to prevent skin contact.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Do not breathe vapor. Use with adequate ventilation. Do not get in eyes, on skin, or on clothing. Accidental contact should be washed away immediately. Keep away from heat, sparks, and flame. Keep container closed. Eye bath and safety shower should be in area of use.

FOR INDUSTRY USE ONLY

OTHER PRECAUTIONS

Store in cool place.

1. Synonyms for 2-Ethoxyethyl Acetate are Ethylene Glycol Monoethyl Acetate; Cellosolve Acetate.

   Synonyms for bis (2-methoxyethyl) ether are diglyme, 2-methoxyethyl ether, diethylene glycol dimethyl ether.

2. PEL for various state may differ.

3. UNION CARBIDE RECOMMENDATIONS for 2-Ethoxyethyl Acetate
   For women of childbearing potential
   - o Personal exposure limit 10 ppm (8-hour time-weighted average)
   - o Short-term exposure limit 25 ppm (15-minute time-weighted average excursion, to be tolerated no more than four times daily with a minimum separation of one hour)
   - o Avoid all skin contact

   For other persons

   - o Personal exposure limit 35 ppm (8-hour time-weighted average)
   - o Avoid all skin contact

4. In laboratory inhalation studies, birth defects, increased fetal lethality, and delayed fetal development have been observed in offspring of female animals exposed to 2-Ethoxyethyl acetate during pregnancy, with an apparent threshold response level approaching 400 ppm concentration of air.

The opinions expressed herein are those of qualified experts within Union Carbide Corporation. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of the product are not within the control of Union Carbide Corporation, it is the user's obligation to determine the conditions of safe use of the product.

U.S. Gov't

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
IMAGE TECHNOLOGY CORPORATION	(602)966-9922
ADDRESS (Number, Street, City, State and ZIP Code) 947 SOUTH 48TH STREET; UNIT 121; TEMPE, ARIZONA 85281	
CHEMICAL NAME AND SYNONYMS CORROSIVE LIQUID, N.O.S. UN1760	TRADE NAME AND SYNONYMS CHROME ETCH
CHEMICAL FAMILY INORGANIC ACID	FORMULA SEE SECTION II

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES			%	TLV (Units)
Nitric Acid	(By Weight)	less than	12	4ppm
Water, Deionized	(By Weight)	approx.	78	n/a
Ceric Ammonium Nitrate	(By Weight)	less than	11	n/a

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	approx.	212°F	SPECIFIC GRAVITY (H_2O=1)	approx.	1.20
VAPOR PRESSURE (mm Hg.)	less than	water	PERCENT, VOLATILE BY VOLUME (%)	approx.	90
VAPOR DENSITY (AIR=1)	greater than	1	EVAPORATION RATE (_____=1)	greater than	1
SOLUBILITY IN WATER		very			
APPEARANCE AND ODOR	Medium orange, no detectible odor.				

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	n/a	FLAMMABLE LIMITS	n/a	Lel	Uel
EXTINGUISHING MEDIA	Water fog.				
SPECIAL FIRE FIGHTING PROCEDURES	Water may be used to keep fire exposed containers cool until fire is out. Self-contained breathing apparatus as required.				
UNUSUAL FIRE AND EXPLOSION HAZARDS	n/a				

(Continued on reverse side)

EFFECTS OF OVEREXPOSURE

Can be harmful if inhaled or swallowed - get immediate medical attention

EMERGENCY AND FIRST AID PROCEDURES

If contacted on skin, wash with copious amounts of water for 15 minutes; if swallowed, get immediate medical attention.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATABILITY (Materials to avoid)

HAZARDOUS DECOMPOSITION PRODUCTS

None known

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Mop up spill area into bucket of water.

WASTE DISPOSAL METHOD

Comply with state and local ordinances.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

VENTILATION	LOCAL EXHAUST Required	SPECIAL
	MECHANICAL (General)	OTHER

PROTECTIVE GLOVES Required

EYE PROTECTION Required (Goggles or face mask)

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store at near room temperatures. Wear gloves when handling containers.

OTHER PRECAUTIONS

U.S. G.P.O. 1983-381-371/7388

The information on this form was compiled from several sources and is believed to be true and accurate.

IMAGE
TECHNOLOGY CORPORATION

PRODUCT

CHROME ETCH

FUNCTION

Used as chromium etchant for substrates and photomasks.

SPECIFICATION

Assay Value:	Nitric Acid	8.04 %
	Ceric Ammonium Nitrate	10.44 %

Refer to Product Analysis Specification for analytical methodology.

Specific Gravity: Calculated to 1.204 @ 24°C

Atomic Absorption: (Maximum limits) Copper (Cu)--1ppm Sodium (Na)--1ppm Iron (Fe)--5ppm Potassium (K)--1ppm

Filtration Level: .2 micrometer nominal

PROCEDURE

1. Immerse substrates into etch solution.
2. Etch for predetermined time.
3. Remove from etchant and quench rinse.
4. Transfer to final rinse. Rinse 5 minutes minimum or to specified resistivity.
5. Remove from water and dry.

SAFETY

Refer to Form OSHA-20, Material Safety Data Sheet, for handling safety and storage information.

MATERIAL SAFETY DATA SHEET

Effective Date: 12/01/88

KTI Sold to OGC microelectronics

MANUFACTURER:
KTI CHEMICALS INCORPORATED
(A Subsidiary of
UNION CARBIDE CORPORATION)
1170 Sonora Court
Sunnyvale CA 94086

INFORMATION TELEPHONE:
408-733-3000

EMERGENCY TELEPHONE:
800-UCC-HELP

Union Carbide urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology or fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe use and handling of this product, each customer or recipient should (1) notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information on this MSDS and any other information regarding hazards or safety, (2) furnish this same information to each of its customers for the product, and (3) request its customers to notify their employees, customers, and other users of the product of this information.

U.S. EMERGENCY PHONE NUMBER: 1-800-UCC-HELP. OUTSIDE THE U.S., CALL CHEMTREC: 202-483-7616. THESE PHONE NUMBERS ARE AVAILABLE DAYS, NIGHTS, WEEKENDS, AND HOLIDAYS. UNION CARBIDE CORPORATION, 39 OLD RIDGEBURY RD., DANBURY, CT 06817-0001.

I. IDENTIFICATION

PRODUCT NAME: KTI KPR RESIST - 50 Gl Drum Negative Photo Resist

CHEMICAL NAME: N/A

CHEMICAL FAMILY: N/A

FORMULA: Solvent mixture
SYNONYMS: See section X, item 1.

MOLECULAR WEIGHT: N/A

DOT SHIPPING NAME: NON REGULATED
DOT HAZARD CLASS: NON REGULATED

UN/NA: N/A

CAS #: See section III.

CAS NAME: See section X, item 1.

II. PHYSICAL DATA

BOILING POINT (760 mm Hg):	293 (DEG F)	VAPOR PRESSURE (at 20C):	2.0 mm Hg
SPEC GRAVITY (Water = 1):	1.006	SOLUBILITY IN WATER, % by wt.:	Complete
VAPOR DENSITY (Air = 1):	4.07	% VOLATILES (by Volume):	50 %
EVAPORATION RATE (Butyl acetate = 1):	<1	PRODUCT APPEARANCE: ODOR:	Light yellow liquid Solvent odor

L-787

III. INGREDIENTS

INGREDIENT DESCRIPTION	CAS NUMBER	WEIGHT PERCENT	TLV	PEL
Polyvinyl cinnamate	N/A	10-20	N/A	N/A
2-Methoxyethyl acetate	110-49-6	80-90	5.00 ppm	25.00 ppm

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (DEG F): 111 TCC

FLAMMABLE LIMITS IN AIR, % by volume: LOWER: 1.7 UPPER: 8.2

EXTINGUISHING MEDIA: Alcohol foam, carbon dioxide, dry chemical, water spray.

SPECIAL FIRE FIGHTING PROCEDURES: Use self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Containers near fire may be cooled with water. May emit toxic fumes if burned.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Fire or excessive heat may cause production of hazardous decomposition products.

V. HEALTH HAZARD INFORMATION

EXPOSURE LIMITS AND SOURCE:

For 2-Methoxyethyl acetate: 5 ppm TWA-8 - skin (ACGIH 1987-88), and 25 ppm - skin (OSHA). See section X, item 2.

EFFECTS OF ACUTE EXPOSURE:

SWALLOWING: Headache, dizziness, drowsiness, lack of appetite, nausea, vomiting, apathy. Swallowing large quantities may result in kidney damage.

SKIN ABSORPTION: Prolonged or widespread contact with skin may lead to the absorption of harmful amounts of material resulting in signs and symptoms of toxicity as described in effects of swallowing.

INHALATION: Vapors may be irritating to eyes, nose and respiratory tract, and cause dizziness, headache, nausea, vomiting, chest discomfort, and apathy.

Subsidiary Union Carbide Corporation

V. HEALTH HAZARD INFORMATION CONT.

B. EFFECTS OF ACUTE EXPOSURE CONT.

SKIN CONTACT: Prolonged or repeated contact may cause defatting and drying of skin.

EYE CONTACT: Liquid may cause moderate irritation, seen as excess reddening and swelling of the conjunctiva, iritis, and minor corneal injury.

EFFECTS OF REPEATED OVEREXPOSURE:
Repeated overexposure may cause injury to bone marrow and blood cells, kidney, liver, and testes.

OTHER POTENTIAL HEALTH EFFECTS:
In laboratory inhalation studies with a closely related chemical, 2-methoxy-ethanol, birth defects, increased fetal lethality, and delayed fetal development have been observed in offspring of female animals exposed to concentrations in air of 50 ppm and higher.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY OVEREXPOSURE:
A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

VI. EMERGENCY FIRST AID PROCEDURES

SWALLOWING: If the patient is conscious and retains the gag reflex, give two glasses of water. Induce vomiting. Obtain medical attention.

SKIN: Remove contaminated clothing and wash skin with soap and water. Wash clothing before reuse.

INHALATION: Remove to fresh air. Give artificial respiration if not breathing. Qualified personnel may give oxygen if breathing is difficult. Call a physician.

EYES: Immediately flush eyes thoroughly with water and continue flushing for at least 15 minutes. Seek medical attention.

NOTES TO PHYSICIANS:

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Recovery from recurrent overexposure may be prolonged.

Subsidiary Union Carbide Corporation

VI. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID:	None
UNSTABLE	STABLE		
	X		

INCOMPATIBILITY (MATERIALS TO AVOID): Avoid contact with strong oxidizers, oxides of nitrogen may be produced.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Burning can produce carbon dioxide and/or carbon monoxide.

HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID:	None
MAY OCCUR	WILL NOT OCCUR		
	X		

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Avoid inhalation and skin contact. Wear suitable protective equipment. Contain the spill and use absorbent to collect liquid for disposal. Dispose of residue in accordance with government regulations. Avoid discharge to natural waters.

WASTE DISPOSAL METHOD: Incinerate where permitted under appropriate Federal, State, and Local regulations.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Above recommended exposure levels, a NIOSH-approved respirator for organic vapors is recommended. Supplied air respirator in emergency or high concentrations.

VENTILATION: Handling of this product should be done in a closed ventilated system, such as an exhaust hood.

PROTECTIVE GLOVES: Butyl rubber.

EYE PROTECTION: Safety glasses with side shields, monogoggles, or face shield, dependent on volume of material to be handled.

OTHER PROTECTIVE EQUIPMENT: As necessary to prevent skin contact. Eye bath and safety shower.

Subsidiary, Union Carbide Corporation

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Warning! Harmful if inhaled or absorbed through skin. Causes eye irritation. Combustible liquid and vapor. May cause dizziness and drowsiness. May cause liver, kidney, red blood cell, and testes damage. In laboratory animal studies, birth defects and adverse effects on pregnancy have been observed with a closely related chemical, 2-methoxyethanol.

For women of childbearing potential:

* Maximum personal exposure limit in air 2 ppm (8-hour time weighted average).
* Maximum 15 minute excursion level 5 ppm (no more than four such excursions daily with a minimum separation of 1 hour).
* Avoid all skin contact.

In laboratory animals, prolonged and repeated exposure to a closely related chemical, 2-methoxyethanol, has caused damage to male reproductive organs.

For persons other than women of childbearing potential:

* Maximum personal exposure limit in air 5 ppm (ACGIH 1987-88), 8-hour time weighted average.
* Avoid all skin contact.

======FOR INDUSTRY USE ONLY======

OTHER PRECAUTIONS: Not for use in consumer products.

X. OTHER INFORMATION

1. SYNONYMS
   * For 2-Methoxyethyl acetate: Ethylene glycol monomethyl ether acetate. CAS NAME: Ethanol, 2-methoxy-, acetate

2. UNION CARBIDE RECOMMENDATIONS for 2-Methoxyethyl acetate:
   For women of childbearing potential:
   * Personal exposure limit - 2 ppm (8-hour time weighted average).
   * Short term exposure limit - 5 ppm (15-minute time weighted average excursion, no more than four times daily, with a minimum separation of 1 hour).
   * Avoid all skin contact.

   For other persons:
   * Personal exposure limit - 5 ppm (8-hour time-weighted average).
   * Avoid all skin contact.

REGULATORY INFORMATION - FEDERAL EPA -

STATUS ON SUBSTANCE LISTS:
Refer to Section III. for the ingredient concentrations to be used for calculations for regulations. Trade Secrets are indicated by "TS".

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980. (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQ's) in 40 CFR 302.4.

omponents present in this product at a level which could require reporting:

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
- NONE -	

Subsidiary, Union Carbide Corporation

(X. REGULATORY INFORMATION CONT.)

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA).
Requires emergency planning based on Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQ's) in 40 CFR 355 (used for SARA 302, 311 and 312).
Components present in this product at a level which could require reporting under the statute are: (e.g. 1% or 0.1% carcinogen)

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
- NONE -	

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA).
Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313).
Components present in this product at a level which could require reporting under the statute are:

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
2-Methoxyethyl acetate/110-49-6	* See Sec III

TSCA INVENTORY STATUS:
The ingredients of this product are on the TSCA inventory.

- STATE RIGHT-TO-KNOW -

CALIFORNIA PROPOSITION 65.
- NONE -

MASSACHUSETTS 105 CMR 670.000 RIGHT-TO-KNOW, SUBSTANCE LIST (MSL).
Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.
Components present in this product at a level which could require reporting under the statute are:

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
2-Methoxyethyl acetate/110-49-6	* See Sec III

PENNSYLVANIA RIGHT-TO-KNOW, HAZARDOUS SUBSTANCE LIST.
Hazardous Substances and Special Hazardous Substances on the list must be identified when present in products.
Components present in this product at a level which could require reporting under the statute are:

CHEMICAL NAME/CAS NUMBER	UPPER BOUND CONCENTRATION
2-Methoxyethyl acetate/110-49-6	* See Sec III

N/D = Not Determined N/A = Not Applicable

==========

The opinions expressed herein are those of qualified experts within Union Carbide Corporation. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and of these opinions and the conditions of use of the product are not within the control of Union Carbide Corporation, it is the user's obligation to determine the conditions of safe use of the product.

Copyright 1987, 1988 Union Carbide Corporation printed in U.S.A.

Subsidiary, Union Carbide Corporation

NMP Solvent This is the "NMP Solvent"

GAF

NO. 0445

* * * * * * * * * * * * * * * * * * *
* GAF CORPORATION *
* MATERIAL SAFETY DATA SHEET *
* * * * * * * * * * * * * * * * * * *

DATE 4/83

SECTION I

ADDRESS	EMERGENCY TELEPHONE NO.
140 West 51st Street, New York, NY 10020	(201) 628-3869

CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS
N-Methylpyrrolidone	M-Pyrol®

CHEMICAL FAMILY	FORMULA
Cyclic Amide	CAS # 872-50-4

DOT SHIPPING NAME	HAZARD CLASS	UN/NA
Combustible Liquid, NOS	Combustible Liquid	NA-1993

SECTION II - HAZARDOUS INGREDIENTS

	%	TLV (UNITS)		%	TLV (UNITS)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	395°F	SPECIFIC GRAVITY (H_2O = 1)	1.027
VAPOR PRESSURE (mm Hg.)	@ 20°C = 0.29mm	PERCENT VOLATILES BY VOLUME (%)	100%
VAPOR DENSITY (AIR=1)	-	EVAPORATION RATE (Bu. Acet.=1)	0.06
SOLUBILITY IN WATER	Miscible		

APPEARANCE AND ODOR

Water-like; slight amine odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)	FLAMMABLE LIMITS	Lel	Uel
199°F (PM/CC) / 204°F(OC)	360-370°F	2.18%	12.24%

EXTINGUISHING MEDIA

Use media proper to the primary cause of the fire.

SPECIAL FIRE FIGHTING PROCEDURES

None

UNUSUAL FIRE AND EXPLOSION HAZARDS

None known

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

None established (200ppm estimated)

EFFECTS OF OVEREXPOSURE

Causes eye irritation or burns. Continued or repeated skin contact may cause skin irritation.

EMERGENCY AND FIRST AID PROCEDURES

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. For skin contact, wash with soap and water.

Revised 6/87K

No. 0445

Trade Name M-Pyrol®

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID None known
	STABLE	X	

INCOMPATABILITY (Materials to avoid)
No specific incompatibility

HAZARDOUS DECOMPOSITION PRODUCTS
None known

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID None
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Eliminate sources of ignition; shut off leak if possible.
Absorb with earth, sand, or similar material and dispose of with solid waste according to local, state, and federal regulations. Flush spill area with water.

WASTE DISPOSAL METHOD
Dispose of with liquid waste according to local, state, and federal regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specific type)
None required

VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General) Satisfactory	OTHER

PROTECTIVE GLOVES Rubber or neoprene	EYE PROTECTION Chemical goggles

OTHER PROTECTIVE EQUIPMENT
None

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Keep away from heat, sparks, and open flame.
Avoid contact with eyes.
Wash thoroughly after handling.

GAF Corporation makes no warranty, expressed or implied, as to the accuracy, completeness or reliability of information contained here, except that such information is, to the best of GAF's knowledge and belief, accurate as of the date indicated. It is for the purchaser to decide whether said information is suitable for the purchaser's purposes.

MATERIAL SAFETY DATA SHEET

Shipley Company Inc.
2300 Washington Street
Newton, Massachusetts 02162
Emergency Phone: (617) 969-5500

EFFECTIVE DATE: 15 November 1985

PRODUCT NAME: SHIPLEY® SCRUB CLEANER 70

PRODUCT CLASS: Cleaning Compound

SECTION I - HAZARDOUS COMPONENTS

COMPONENT	CAS NO.	WEIGHT PERCENT	ACGIH TLV ppm(mg/m3)	CARCINOGEN STATUS
Silica, crystalline	60676-86-0	55	(10)	N.A.
Proprietary ingredients, not deemed hazardous per OSHA Hazard Communication Standard.		45		

SECTION II - PHYSICAL DATA

BOILING POINT: > 212oF
VAPOR PRESSURE (mmHg): N.A.
% VOLATILE BY VOL: N.A.
EVAPORATION RATE: N.A.
VAPOR DENSITY(AIR=1): N.A.
SPECIFIC GRAVITY: N.A.
SOLUBILITY IN WATER: Appreciable
pH:(of 2% slurry) <3
APPEARANCE AND ODOR: A light gray powder with no appreciable odor.

SECTION III - PHYSICAL HAZARDS

DOT HAZARD CLASSIFICATION: Not Regulated

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: Non-flammable
METHOD USED: N.A.
EXTINGUISHING MEDIA: Water, carbon dioxide, dry chemicals
SPECIAL FIRE FIGHTING PROCEDURES: N.A.
UNUSUAL FIRE AND EXPLOSION HAZARDS: N.A.

REACTIVITY DATA

STABILITY: Stable
CONDITIONS TO AVOID: Do not store near oxidizing agents.
INCOMPATIBILTY: Strong oxidizing agents
DECOMPOSITION PRODUCTS: N.A.
HAZARDOUS POLYMERIZATION: Will not occur.

L-793

MATERIAL SAFETY DATA SHEET

Shipley Company Inc, Newton, Massachusetts 02162
Emergency Phone: (617) 969-5500
SHIPLEY® SCRUB CLEANER 70

SECTION V - HEALTH HAZARDS

EXPOSURE LIMITS: Not established. Avoid exposure to dusts above component TLV.
ROUTES OF ENTRY: Inhalation, ingestion
ACUTE EFFECTS: Contact with eyes, skin or mucous membranes may cause irritation.
CHRONIC EFFECTS: None known.
EMERGENCY FIRST AID PROCEDURES:
INGESTION: Contact physician immediately.
EYE CONTACT: Flush with water immediately for at least 15 minutes, then contact a physician.
SKIN CONTACT: Flush skin with plenty of water. Contact a physician if irritation persists.
INHALATION: Move to fresh air.

SECTION VI - SPILL, LEAK AND DISPOSAL PROCEDURES

ACTION TO TAKE FOR SPILLS: Spills may be scooped up and placed in container for disposal. Flush area with cold water into waste treatment system.
DISPOSAL METHOD: Dispose of in accordance with all federal, state and local regulations. Contact Shipley Technical Service Representative if further assistance is needed.

SECTION VII - PRECAUTIONS FOR SAFE USE AND HANDLING

VENTILATION: Provide adequate general or local exhaust ventilation.
RESPIRATORY PROTECTION: None normally required if adequate exhaust ventilations is provided. In situations where dusts may form, use a NIOSH/MSHA approved respirator.
EYE PROTECTION: Chemical goggles.
PROTECTIVE CLOTHING: Chemical gloves and suitable protective clothing to prevent skin contact.
WORK PRACTICES: Avoid skin contact. Practice good personal hygiene to prevent accidental exposure.

SECTION VIII - SPECIAL PRECAUTIONS AND ADDITIONAL INFORMATION

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: CAUTION! Treat as an acidic, abrasive cleaner. Store in closed original container in a cool, dry area at 50-90°F. Do not store in direct sunlight. Keep container closed when not in use.

N.A. Denotes no applicable information was found.

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BELIEVED TO BE URATE. HOWEVER, NO GUARANTEE OR WARRANTY, EXPRESSED OR IMPLIED IS /EN.

PREPARED BY: Angela Bogge
Corporate Environmental Health and Safety

118501

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
IMAGE TECHNOLOGY CORPORATION	(602)966-9922

ADDRESS (Number, Street, City, State, and ZIP Code)
947 S. 48th Street, Unit 121, Tempe, AZ 85281

CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS
ETHYL 3-ETHOXYPROPIONATE	EEP SOLVENT
CHEMICAL FAMILY: ETHER ESTERS	FORMULA: $CH_3-CH_2-O-CH_2-CH_2-C(=O)-O-CH_2-CH_3$

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
ETHYL 3-ETHOXYPROPIONATE	100	Not Established

SECTION III - PHYSICAL DATA

BOILING POINT (°F) (169.7°C)	337.5	SPECIFIC GRAVITY (H_2O=1) @20/20°C	.9496
VAPOR PRESSURE (mm Hg.)	.67	PERCENT, VOLATILE BY VOLUME (%)	100
VAPOR DENSITY (AIR=1)	5.0	EVAPORATION RATE (Ether ____ =1)	0.10
SOLUBILITY IN WATER	Slight		
APPEARANCE AND ODOR	Clear liquid, esteric odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
136°, SETAFLASH CLOSED CUP	1.05 @88°C	X	

EXTINGUISHING MEDIA: WATER SPRAY, CO_2, FOAM, DRY CHEMICALS

SPECIAL FIRE FIGHTING PROCEDURES: WEAR SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE KNOWN

(Continued on reverse side)

Form OSHA-20
Rev. May 72

L-129

THRESHOLD LIMIT VALUE
NONE ESTABLISHED BY ACGIH OR OSHA

EFFECTS OF OVEREXPOSURE
MODERATELY TOXIC BY SWALLOWING: MAY CAUSE NAUSEA, VOMITING OR NARCOSIS. SLIGHT IRRITATION FROM SKIN OR EYE CONTACT, NO EVIDENCE OF INHALATION ADVERSE EFFECTS

EMERGENCY AND FIRST AID PROCEDURES
IF SWALLOWED, GIVE 2 GLASSES OF WATER AND INDUCE VOMITING IF PATIENT CONSCIOUS.
IF CONTACTED ON SKIN OR EYES, WASH FOR 15 MINUTES WITH WATER

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	HIGH TEMPERATURES, STRONG OXIDIZING AGENTS OR BASIC CONDITIONS

INCOMPATABILITY (Materials to avoid)
STRONG OXIDIZING AGENTS OR BASES

HAZARDOUS DECOMPOSITION PRODUCTS
BURNING MAY PRODUCE CARBON DIOXIDE AND/OR CARBON MONOXIDE

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
WEAR SUITABLE PROTECTIVE EQUIPMENT. FLUSH SMALL SPILLS WITH WATER.
LARGE SPILLS SHOULD BE COLLECTED FOR DISPOSAL.

WASTE DISPOSAL METHOD
INCINERATE IN A FURNACE WHERE PERMITTED BY FEDERAL, STATE & LOCAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)
NIOSH-APPROVED RESPERATOR OR AIR-SUPPLIED MASK FOR HIGH VAPOR CONCENTRATIONS

VENTILATION	LOCAL EXHAUST IN HIGH VAPOR CONCENTRATIONS	SPECIAL
	MECHANICAL (General) REQUIRED	OTHER

PROTECTIVE GLOVES PLASTIC	EYE PROTECTION SAFETY GLASSES

OTHER PROTECTIVE EQUIPMENT
EYE BATH, SAFETY SHOWER

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
KEEP AWAY FROM HEAT, FLAME, AND STRONG OXIDIZING AGENTS. KEEP CONTAINER CLOSED.
USE WITH ADEQUATE VENTILATION.

OTHER PRECAUTIONS
PREVENT RUN OFF FROM ENTERING DRAINS, SEWERS, OR STREAMS. MAY CAUSE SOME OXYGEN DEPLETION IN AQUATIC SYSTEMS.

U.S. G.P.O. 1983-381-371/2300

KTI CHEMICALS INCORPORATED

R-10

EFFECTIVE DATE: February 8, 1985

Union Carbide Corporation urges the customer receiving this Material Safety Data Sheet to study it carefully to become aware of hazards, if any, of the product involved. In the interest of safety you should (1) notify your employees, agents, and contractors of the information on this sheet, (2) furnish a copy to each of your customers for the product, and (3) request your customers to inform their employees and customers as well.

PRODUCT NAME:	KTI Positive Photoresist Stripper R-10, R-10D
CHEMICAL NAME:	N/A
CHEMICAL FAMILY:	N/A
FORMULA:	Solvent blend
MOLECULAR WEIGHT:	N/A
SYNONYMS:	See Section X, item 1
DEPARTMENT OF TRANSPORTATION — HAZARD CLASSIFICATION	Corrosive Material
DEPARTMENT OF TRANSPORTATION — SHIPPING NAME	Monoethanolamine UN 2491

BOILING POINT, 760 mm. Hg	>340°F (171°C)	FREEZING POINT	N/A
SPECIFIC GRAVITY (H_2O = 1)	0.974	VAPOR PRESSURE	<0.2 mmHg
VAPOR DENSITY (air = 1)	~3	SOLUBILITY IN WATER, % BY WT.	Miscible with water
PER CENT VOLATILES BY VOLUME	Nil	EVAPORATION RATE (Butyl Acetate = 1)	<0.1
APPEARANCE AND ODOR	Colorless liquid, mildly ammoniacal		

MATERIAL	%	PEL (units)	TLV (units)	CAS NUMBER
Monoethanolamine*	30	3 ppm	3 ppm	141-43-5
Butyl Carbitol	70	—	—	112-34-5
Notes: * means see Section X, item 1				

FLASH POINT (test method[s])	195°F (Tag Closed Cup)			
FLAMMABLE LIMITS IN AIR, % by volume	LOWER	Not determined (nonvolatile fluid)	UPPER	
EXTINGUISHING MEDIA	Use water spray, carbon dioxide, dry chemical, or alcohol-type foams.			
SPECIAL FIRE FIGHTING PROCEDURES	Use self-contained breathing apparatus and protective clothing.			
UNUSUAL FIRE AND EXPLOSION HAZARDS	None			

EXPOSURE LIMITS

Values from ACGIH (1981) and OSHA CFR 29 para. 1910.1000, Table Z-1

SWALLOWING	May cause nausea, vomiting, and abdominal pain.
SKIN CONTACT	Contact with uncovered skin causes irritation. Covered contact, as from clothing wet with the chemical, may cause burns. Prolonged or widespread exposure may result in the absorption of potentially harmful amounts of material.
INHALATION	Vapors may be irritating and cause coughing and discomfort in nose, throat, and chest.
EYE CONTACT	Causes burns.

Repeated overexposure to Butyl Carbitol may result in delayed kidney injury.

None currently known.

SWALLOWING	Give two glasses of water, or preferably milk, and induce vomiting by putting finger down throat. Do not attempt to make an unconcious person vomit. Get medical attention immediately.
SKIN	Remove contaminated clothing and flush skin with plenty of water.
INHALATION	Remove to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
EYES	Immediately flush with water for at least 15 minutes. Get medical attention immediately.

NOTES TO PHYSICIAN

The main hazard with monoethanolamine is due to its severe irritant properties. There is no specific antidote. Treatment should be directed at the control of symptoms and the clinical condition of the patient.

STABILITY			
UNSTABLE	STABLE	CONDITIONS TO AVOID	See Section X, item 4.
	X		

INCOMPATIBILITY (materials to avoid)	Strong acids, strong oxidizing agents.
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS	Burning can produce nitrogen oxides, carbon monoxide and/or carbon dioxide.

HAZARDOUS POLYMERIZATION			
May Occur	Will not Occur	CONDITIONS TO AVOID	None
	X		

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	Avoid inhalation and skin contact. Wear protective equipment. Contain the spill and use absorbent to collect liquid for disposal. Place in impervious container. Wash contaminated area. Avoid discharge to natural waters.
WASTE DISPOSAL METHOD	Incinerate in a furnace where permitted under appropriate Federal, State, and Local regulations. See Section IX.

RESPIRATORY PROTECTION (specify type)	Above recommended exposure levels, a NIOSH-approved respirator for organic vapors is recommended. Use supplied air respirator in emergency or high concentrations.
VENTILATION	This product should be contained within closed equipment, in which case general (mechanical) room ventilation is expected to be adequate.
PROTECTIVE GLOVES	Butyl rubber.
EYE PROTECTION	Safety glasses with side shields, monogoggles, or face shield, dependent on volume of material to be handled.
OTHER PROTECTIVE EQUIPMENT	As necessary to prevent skin contact.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Do not breathe vapor. Use with adequate ventilation. Do not get in eyes, on skin, or on clothing. Accidental contact should be washed away immediately. Keep away from heat, sparks, and open flame. Keep container closed. Eyebath and safety shower should be in area of use.

FOR INDUSTRY USE ONLY

OTHER PRECAUTIONS

See Section X, item 4.

1. Synonyms for monoethanolamine are ethanolamine, beta-aminoethyl alcohol, 2-aminoethanol, 2-hydroxyethylamine.

2. Synonym for butyl carbitol is diethylene glycol monobutyl ether.

3. Ethanolamine vapor is a skin, eye, and respiratory irritant, and has significant narcotic properties. In animals exposed repeatedly to 66 to 100 ppm, some animals died during 24 to 30 days of exposure, and all animals were lethargic.

4. OTHER PRECAUTIONS

Stability

Monoethanolamine and iron form a complex molecule, trisethanol-amino-iron. This material can spontaneously decompose at temperatures between 130 and 160°C, and has been suspected of causing a fire in a nearly empty storage tank containing a "heel" of MEA in contact with carbon steel steam coils. If steam coil heating is used, low pressure steam in stainless steel coils is preferred.

Disposal

Monoethanolamine is toxic to aquatic life at relatively low concentrations in water. Incineration is the preferred method of disposal. Laboratory tests indicate that monoethanolamine is rapidly biodegraded at very low concentration (~10 ppm) in water. However, a large spill might be detrimental. If spilled material cannot be collected, it may be possible to neutralize with dilute hydrochloric acid and, then, landfill the neutral salt.

The opinions expressed herein are those of qualified experts within Union Carbide Corporation. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of the product are not within the control of Union Carbide Corporation, it is the user's obligation to determine the conditions of safe use of the product.

EFFECTIVE DATE: January 8, 1985

Union Carbide Corporation urges the customer receiving this Material Safety Data Sheet to study it carefully to become aware of hazards, if any, of the product involved. In the interest of safety you should (1) notify your employees, agents, and contractors of the information on this sheet, (2) furnish a copy to each of your customers for this product, and (3) request your customers to inform their employees and customers as well.

PRODUCT NAME:	KTI Positive Photoresist Developer 351		
CHEMICAL NAME:	N/A	CHEMICAL FAMILY:	N/A
FORMULA:	Alkaline Mixture	MOLECULAR WEIGHT:	N/A
SYNONYMS:	See Section X		
DEPARTMENT OF TRANSPORTATION	HAZARD CLASSIFICATION	Corrosive Material	
	SHIPPING NAME	Alkaline Liquid, N.O.S. NA 1719	

BOILING POINT, 760 mm. Hg	>212°F (>100°C)	FREEZING POINT	N/A
SPECIFIC GRAVITY (H_2O = 1)	Approx 1.08	VAPOR PRESSURE	N/A
VAPOR DENSITY (air = 1)	>1	SOLUBILITY IN WATER, % BY WT.	100%
PER CENT VOLATILES BY VOLUME	90%	EVAPORATION RATE (Butyl Acetate = 1)	<1
APPEARANCE AND ODOR	Colorless and odorless liquid.		

MATERIAL	%	PEL (units)	TLV (units)	CAS NUMBER
Sodium Hydroxide *	4	C 2mg/m^3	2mg/m^3	1310-73-2
Borates	8	C 5mg/m^3	5mg/m^3	1303-96-4
*See Section X				

FLASH POINT (Test method[s])	Non-flammable				
FLAMMABLE LIMITS IN AIR, % by volume	LOWER	None	UPPER	None	
EXTINGUISHING MEDIA	Non-flammable and will not react with extinguishing media.				
SPECIAL FIRE FIGHTING PROCEDURES	None				
UNUSUAL FIRE AND EXPLOSION HAZARDS	None				

EMERGENCY TELEPHONE NUMBER

Union Carbide H.E.L.P. (304) 744-3487

This number is available days, nights, weekends, and holidays.

A-127

EXPOSURE LIMITS

TLV and source: see Section III. C denotes ceiling limit. This material is a dilute alkaline solution. The Threshold Limit Value is set at a level to prevent the acute irritant effects.

SWALLOWING	May cause severe pain in the esophagus and stomach, corrosion of the lips, mouth, tongue, and pharynx.
SKIN CONTACT	Prolonged or repeated contact with the skin may cause irritation and redness. If not promptly removed, may cause burns.
INHALATION	Inhalation of the mist is irritating to the mucous membranes.
EYE CONTACT	Contact with the liquid causes burns.

Contact with the liquid should be avoided. Mild to severe irritation of the eyes and skin are of greatest concern.

None

SWALLOWING	Give plenty of water. Do not induce vomiting. Call a physician.
SKIN	Remove contaminated clothing and wash skin with plenty of water.
INHALATION	Remove to fresh air. If breathing is difficult, give oxygen and call a physician. If breathing has stopped, give artificial respiration and call a physician.
EYES	Immediately flush with water for at least 15 minutes and get medical attention.

NOTES TO PHYSICIAN

Caustic solution. Treat accordingly.

STABILITY		CONDITIONS TO AVOID	None
UNSTABLE	STABLE		
	X		

INCOMPATIBILITY (materials to avoid)	Avoid contact with acids.
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS	None

HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID	None
May Occur	Will not Occur		
	X		

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	Avoid inhalation and skin contact. Wear suitable protective equipment. Contain the spill and use absorbent to collect liquid for disposal. Place in impervious container. Wash contaminated area. Avoid discharge to natural waters.
WASTE DISPOSAL METHOD	Dispose of as alkaline materials in accordance with local regulations.

SPECIAL PROTECTION

RESPIRATORY PROTECTION (specify type)	Supplied air respirator with full facepiece should be worn in emergency or high concentrations.
VENTILATION	This product should be used with adequate general (mechanical) room ventilation.
PROTECTIVE GLOVES	Gloves impervious to alkaline solutions should be worn.
EYE PROTECTION	Safety glasses with side shields, monogoggles, or face shield, dependent on volume of material to be handled.
OTHER PROTECTIVE EQUIPMENT	As necessary to prevent skin contact.

PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Do not breathe mist. Do not get in eyes, on skin, or on clothing. Accidental contact should be washed away immediately. Eye bath and safety should be in area of use.

FOR INDUSTRY USE ONLY

OTHER PRECAUTIONS

Do not expose to temperatures below 32°F (0°C).

351

Synonyms for sodium [redacted]roxide are caustic soda and l[redacted]

Material Safety Data Sheet No. 30-40-000-2

The opinions expressed herein are those of qualified experts within Union Carbide Corporation. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of the product are not within the control of Union Carbide Corporation, it is the user's obligation to determine the conditions of safe use of the product.

U.S. Gov't

National Aeronautics and
Space Administration

NASA

Lyndon B. Johnson Space Center
Houston, Texas
77058

NOV 2 2 1992

eply to Attn of: JJ12-92-265

RECEIVED

JUN 0 4 1993

Region 7
Texas Air Control Board

Ms. Jodena Henneke
Regional Director
Texas Air Control Board
5555 West Loop South
Suite 300
Bellaire, Texas 77401

Dear Ms. Henneke:

The NASA Johnson Space Center is planning to install a microwave etching laboratory in Building 14 for small scale production of circuit boards for use in antenna and tracking systems. At the same time, we are planning to move an existing microwave-integrated circuit lab to another location in Building 14. We believe that the construction and modification of these facilities is exempt according to Standard Exemption No. 41. Both labs will be operated by Lockheed Engineering and Sciences Company.

The microwave etching lab will be used to produce about 20 to 60 2- by 2-inch or less circuit boards per week, depending on customer demand and NASA program requirements. The types of processes used to produce these boards are resist coating (both positive and negative), photomask development, positive and negative development, copper etching, resist removal and stripping, and tin plating. Descriptions and flow diagrams for each process are included as enclosures. The microwave etching lab is currently in operation in an off-site location. Emissions estimates were based on chemical usage rates as described in Enclosure 3. The current emissions estimates for the existing lab were multiplied by three since this is the projected level of usage for the planned microwave etching lab.

The microwave-integrated circuit lab is used to fabricate very small integrated circuits. Small amounts of 111-trichloroethane (less than 1 gallon per year) and freons are used for cleaning, but once the new lab is completed an aqueous detergent and a pressure nitrogen system will be used in place of these chemicals. Since use of these chemicals will be phased out, no emissions data is being submitted for this laboratory.

U.S. Gov't

The following enclosures are included with this letter:

Enclosure 1: Form PI-7
Enclosure 2: Emissions Data
Enclosure 3: Chemical Usage Rates and Process Descriptions
Enclosure 4: Process Flow Diagrams
Enclosure 5: Area Map
Enclosure 6: Site Map
Enclosure 7: Architectural Plan

Please contact Mr. John P. Herrmann, Chief, Environmental Services Office, at (713) 483-3120 if you have questions or if you require additional information.

Sincerely,

Original Signed By
K. B. GILBREATH

K. B. Gilbreath
Director, Center Operations

7 Enclosures

cc:
Mr. Gene McMullen
Director, Bureau of Air Quality Control
City of Houston
7411 Park Place
Houston, Texas 77087

U.S. Gov't

RECEIVED
JUN 0 4 1993
Region 7
Texas Air Control Board

December 9,1991

TO: Liz Messenger

From: Wayne Cope

The etching laboratory in Plaza 4 conducted a series of experiments to determine the current amounts of chemicals used in the laboratory. Every chemical presently being used was weighed before and after normal procedures to determine the typical quantities loss through processing,evaporation and clean-up of the hardware used. Those compounds which required pre-heating were allowed stabilize for a minimum of one half hour before testing. The data references to "drain loss" mean the combined yearly amounts of chemicals remaining on the circuit boards and glassware. These quantities reflect the expected waste levels entering into the water treatment system. Like wise the "Air Evaporation" is the expected yearly totals of compounds being exhausted above the building.

There are a number of chemicals which are not currently being used. Items like EEP and NMP solvents have never been opened in the lab's six years of operation. It appears that unless some reasonable use can be determined before the lab moves on site they should be deleted from storage.

Due to the small physical size of the laboratory and equipment it is my opinion that **if the laboratory were to produce full time** (a single person for 8 hours) **every day, the amounts of chemicals being used could be increase by a factor of 3.** Therefore you may wish to factor up the absolute values on the data sheets for the air quality control board. If you have any questions concerning the data please call me at 333-6295.

U.S. Gov't

Enclosure 2

EMISSIONS DATA

Compound	gr/hr	lb/hr	tons/yr
KTI photoresist developer	0.8077	1.78×10^{-3}	3.92×10^{-6}
Ferric chloride (Copper etchant)		0.036	1.8×10^{-5}
KTI R-10 photoresist stripper	0.1298	2.86×10^{-4}	6.31×10^{-7}
Hydrogen peroxide (Tin etchant)	0.1586	3.5×10^{-4}	7.72×10^{-7}
Acetone	4.9327	0.0108	2.38×10^{-5}
Alcohol		9.535×10^{-4}	4.77×10^{-7}
Gold etchant (KI) (In-house mixture)	0.0779	1.72×10^{-4}	3.79×10^{-7}
Chrome etchant	0.0361	7.96×10^{-5}	1.76×10^{-7}
Smut remover	0.101	2.23×10^{-4}	4.92×10^{-7}
Hydrochic acid 37 percent (Aluminum & gold etchant)	0.0072	1.59×10^{-5}	3.51×10^{-8}
Nitric acid 70 percent (Gold etchant)	0.0072	1.59×10^{-5}	3.51×10^{-8}
Sodium persulfate	0.0144	3.18×10^{-5}	7.01×10^{-8}
KTI 809 photoresist	0.1154	1.19 x 10-5	2.62×10^{-8}
KTI 809 photoresist developer	0.0808	1.78×10^{-4}	8.9×10^{-8}
Cold immersion tin plating solution	0.07221	1.59×10^{-4}	7.95×10^{-8}
TOTAL		0.051	4.9×10^{-5}

U.S. Gov't

CHEMICAL USAGE AND WASTE OF MICROWAVE ETCHING LABORATORY

SHIPLEY SCRUB CLEANER (copper cleaner, dry powder)
- Annual usage..... 45 grams per yr.
- Air Evaporation..... None known
- Drain loss (cleaner + water) ..... 18.6 grams per yr.

KTI 9000 PHOTORESIST (obsolete product) This item not used in new lab.
- Annual usage..... 810 ml per yr.
- Air evaporation..... 80 grams per yr.
- Drain loss..... See 351 developer

KTI 351 PHOTORESIST DEVELOPER
- Annual usage..... 17 Liters per yr.
- Air evaporation..... 560 grams per yr.
- Drain loss..... 25.5 grams per yr.

FERRIC CHLORIDE (copper) ETCHANT 38%
- Annual usage..... 25 gal closed tank
- Air evaporation.....(estimate).. 3 gal per yr.
- Drain loss..... 340 grams per yr.

KTI R-10 PHOTORESIST STRIPPER
- Annual usage..... 2268 ml per yr.
- Air evaporation..... 90 grams per yr.
- Drain loss..... 70 grams per yr.

HYDROGEN PEROXIDE 30% (TIW etchant)
- Annual usage..... 2478 ml per yr.
- Air evaporation..... 110 grams per yr.
- Drain loss..... 2368 ml per yr.

GOLD ETCHANT (NAI) (obsolete product) This item not used in new lab
- Annual usage..... 3780 ml per yr.
- Air evaporation..... 159 grams/yr.
- Drain loss..... 4.15 grams/yr.

KPR NEGATIVE PHOTORESIST This will not be used in New lab.
- Annual usage..... 1.5 liter per yr.
- Air evaporation..... 480 gram per yr.
- Drain loss..... None

TRICHLOROETHYLENE (KPR developer)
- Annual usage..... 7.5 Liters per yr.
- Air evaporation..... 3,105 grams/yr.
- Drain loss..... None

ACETONE (lab cleaning solvent)
- Annual usage..... 7.5 Liters per yr.
- Air evaporation..... 3,420 grams /yr.
- Drain loss..... None

U.S. GOVT

ALCOHOL ISO (lab cleaning solvent)
Annual usage..... 600 ml per yr.
Air evaporation..... 300 ml per yr.
Drain loss..... None

GOLD ETCHANT (KI) (IN HOUSE MIXTURE)
Annual usage..... 1 liter
Air evaporation..... 54 grams per yr.
Drain loss...(Waste water being stored).. none

CHROME ETCHANT
Annual usage..... 1 liter
Air evaporation..... 25 grams per yr.
Drain loss..... 5 grams per yr.

SMUTT REMOVER (NAOH + KMNO4 in house chrome etchant)
Annual usage..... 500 ml per yr.
Air evaporation..... 70 grams per yr.
Drain loss..... 5 grams per yr.

HYDROCHLORIC ACID 37% (aluminum and gold etchant)
Annual usage.....(estimate)..... 100 ml per yr.
Air evaporation.....(estimate)..... 5 grams per yr.
Drain loss..... none

NITRIC ACID 70 % (gold etchant)
Annual usage.....(estimate)..... 100 ml per yr.
Air evaporation.....(estimate)..... 5 grams per yr.
Drain loss..... none

SODIUM PERSULFATE (copper etchant for aluminum backed boards)
Annual usage..... 1000 ml per yr.
Air evaporation..... 10 grams per yr.
Drain loss..... 1 gram per yr.

KTI 809 PHOTORESIST (Replacement for KTI 9000)
Annual usage.....(estimate).. 800 ml/yr.
Air evaporation.....(estimate).. 80 grams per yr.
Drain loss..... See 809 developer

KTI 809 PHOTORESIST DEVELOPER
Annual usage.....(estimate).. 17 liters
Air evaporation.....(estimate).. 56.0 grams/yr.
Drain loss.....(estimate).. 25.5 grams/yr.

SODIUM HYDROXIDE (DRY) (part of Smutt mix)
Annual usage..... 100 grams per yr.
Air evaporation..... none
Drain loss..... none

IODINE (DRY CRYSTALS) (part of gold mix)
Annual usage..... 200 grams per yr.
Air evaporation..... none
Drain loss..... none

U.S. Gov't

POTASSIUM PERMANGANATE (part of smutt mix)
Annual usage..... 8.4 grams per yr.
Air evaporation..... (see Gold Etch KI)
Drain loss..... (see Gold Etch KI)

BRANSON ULTRASONIC CLEANER
Annual usage..... no current usage
Air evaporation..... none
Drain loss..... none

EEP SOLVENT *This item not to be used IN new Lab*
Annual usage..... no current usage
Air evaporation..... none
Drain loss..... none

EGMEA SOLVENT (thinner for KTI 9000)
Annual usage..... 270 ml/yr.
Air evaporation..... (see KTI 9000)
Drain loss..... (see KTI 9000)

NMP SOLVENT *This item not to be used IN new Lab*
Annual usage..... no current usage
Air evaporation..... none
Drain loss..... none

POTASSIUM IODIDE (part of gold mix)
Annual usage..... 50 grams per yr.
Air evaporation..... (see Gold Etch KI)
Drain loss..... (see Gold Etch KI)

FREON TMS *This item not to be used IN new Lab*
Annual usage..... no current usage
Air evaporation..... none
Drain loss..... none

COLD IMERSION TIN PLATING SOLUTION (KEPRO) *(usage is About Double now)*
Annual usage..... 2 quarts per yr.
Air evaporation.....(estimate)... 50 grams per yr.
Drain loss.....(estimate)... 25 grams per yr.

U.S. Gov't

Enclosure 2

EMISSIONS DATA

Compound	gr/hr	lb/hr	tons/yr
KTI photoresist developer	0.8077	1.78×10^{-3}	3.92×10^{-6}
Ferric chloride (Copper etchant)		0.036	1.8×10^{-5}
KTI R-10 photoresist stripper	0.1298	2.86×10^{-4}	6.31×10^{-7}
Hydrogen peroxide (Tin etchant)	0.1586	3.5×10^{-4}	7.72×10^{-7}
Acetone	4.9327	0.0108	2.38×10^{-5}
Alcohol		9.535×10^{-4}	4.77×10^{-7}
Gold etchant (KI) (In-house mixture)	0.0779	1.72×10^{-4}	3.79×10^{-7}
Chrome etchant	0.0361	7.96×10^{-5}	1.76×10^{-7}
Smut remover	0.101	2.23×10^{-4}	4.92×10^{-7}
Hydrochic acid 37 percent (Aluminum & gold etchant)	0.0072	1.59×10^{-5}	3.51×10^{-8}
Nitric acid 70 percent (Gold etchant)	0.0072	1.59×10^{-5}	3.51×10^{-8}
Sodium persulfate	0.0144	3.18×10^{-5}	7.01×10^{-8}
KTI 809 photoresist	0.1154	1.19 x 10-5	2.62×10^{-8}
KTI 809 photoresist developer	0.0808	1.78×10^{-4}	8.9×10^{-8}
Cold immersion tin plating solution	0.07221	1.59×10^{-4}	7.95×10^{-8}
TOTAL		0.051	4.9×10^{-5}

U.S. Gov't

COPPER ETCHING PROCESS WITH POSITIVE RESIST

1. Inspection of copper laminates. Oxides are removed when necessary with mixture of Scrub cleaner 70 and water. Agitate in tray do not scrub.

2. Secure copper board to the vacuum chuck inside the resist spinner. Apply KTI 9000 30% resist, two eyedroppers full (1.4 g/ 2ml) per 2 sq. inches of material. Spin at 1500 RPM for 60 seconds. Results in 2 micron thickness of resist.

3. Prebake in oven at 30 minutes at 90 C +/- 5 degrees.

4 Expose under UV light for six minutes. Time varies with resist thickness. Resist radiation range is 365 to 436 nm with its peak at 405 nm.

5. Develop board in KTI 351 developer. Use a mixture of 50 ml 100% 351 to 150 ml water (deionized for gold). Development time varies from 30 seconds to 90 seconds max. A 200 ml mixture of developer will process 4 two inch square boards. KTI recommends use of a two bath process.

6. Rinse boards in running water for 1 minute.

7. Remove excess water from boards with nitrogen gas. (this step deleted due to problems keeping K-bottles in Plaza 2.) Canned Freon ~~type 12 gas~~ is ~~still~~ used in the gold process.
Compressed Air NOW

8. Post bake boards in oven at 115 C for 30 minutes.

9. Etch boards in solution of ferric chloride at 85 F. Process time varies up to 5 minutes max. Normal time is less than 2 minutes for .5 oz. copper.

10. Rinse boards in water to remove Ferric chloride droplets.

11. Strip KTI 9000 by immersion of boards in solution of KTI R-10 Stripper. Use 250 ml in beaker heated to 80 C. DO NOT OVER HEAT THE SOLUTION! Typical solution will become saturated after about 20 boards are stripped.

12. Rinse boards in running water for 5 minutes max. to remove stripper residue.

Fid #3

U.S. Gov't

COPPER ETCHING PROCESS USING NEGATIVE RESIST

1. Inspect copper laminates and remove oxides with Scrub cleaner 70 if required. Agitate only in a tray. Do not scrub. Dry board.

2. Hand coat the boards by applying 2ml of KPR per 2 sq. inches of board material. Rock board in circular motion to coat entire surface. Tilt board vertical and allow resist to drain into a waste container.

3. Prebake board in oven for 30 minutes at 90 C +/- 5 degrees.

4. Expose under UV light for 6 minutes.

5. Develop board in tray filled with 250 ml of Trichloroethylene. Development time is about 3 minutes.

6. Post bake board in oven for 30 minutes at 90 C +/- 5 degrees.

7. Etch boards in Ferric Chloride solution heated to 85 F. Process varies with time, usually less than 5 minutes.

8. Rinse boards in running water to remove Ferric chloride droplets.

9. Boards are not normally stripped. This may be accomplished by returning to the trichloroethylene and lightly brushing the resist after it softens.

U.S. Gov't

GOLD OVER TITANIUM TUNGSTEN POSITIVE RESIST

1. Remove gold 1x1 substrates from plastic holders.

2. Center boards on spinner's vacuum chuck. Apply 1ml of KTI 9000 30% resist. Spin board at 2000 rpm for 1 minute.

3. Prebake in oven for 30 minutes at 90 C +/- 5 degrees.

4. Expose under UV light for 2 minutes minimum, 3 minutes maximum.

5. Develop in KTI 351 solution. Mix 50 ml of 100% 351 solution to 150 ml of double deionized water. Use two step process with 50 ml beakers, 45 seconds in each beaker.

6. Preferred rinse is in 50 ml of deionized water for purity. Tap water will do well for most application over 4 ml lines. Remove all excess water by blowing freon 112 across the surface.

7. Post bake board at 115 C for 30 minutes.

8. Mask ground plane side if required and immerse in a 250 ml heated (40 C) solution of Gold etch. Etching time varies but normally will take between 5 and 10 minutes. (Return etchant to master bottle)

9. Rinse board and inspect.

10 Immerse the board in 100 ml of heated (40 C) 30% hydrogen peroxide. The titanium tungsten will etch away in about a minute. Do not save the solution discard with copious amounts of water.

11. Strip boards with KTI R-10. Use 250 ml in a beaker heated to 80 C. DO NOT OVER HEAT THE SOLUTION! Immerse and agitate for one minute.

12. Rinse with running water for 5 minutes. Allow board to drip dry or force water off with freon.

NOTE: Quartz boards contain a layer of chrome instead of titanium tungsten. substitute in step 10 a beaker with 100 ml of chrome etch (nitric acid) will remove the chrome at room temperature in about 15 seconds. Over etching will undercut pattern from board.

U.S. Gov't

SPECIAL CHEMICAL MIXTURES

1. KTI 9000. The lab requires a 30 % solution. This is generated by mixing 30 ml of 100 % 9000 with 10-15 ml of KTI EGMEA.

2. KTI 351. The lab requires the use of 351 in a mixture of 3 to 1. This is made by mixing 50 ml of 100% 351 to 150 ml of water.

3. HCL. A special mix of 50% volume to volume of concentrated HCL to water is required to remove a protective aluminum coating from 1/4 and 1/8 oz. copper boards.

U.S. Gov't

CHEMICAL USAGE AND WASTE OF MICROWAVE ETCHING LABORATORY

SHIPLEY SCRUB CLEANER (copper cleaner, dry powder)
- Annual usage..... 45 grams per yr.
- Air Evaporation..... None known
- Drain loss (cleaner + water) ..... 18.6 grams per yr.

KTI 9000 PHOTORESIST (obsolete product) This item not used in new lab.
- Annual usage..... 810 ml per yr.
- Air evaporation..... 80 grams per yr.
- Drain loss..... See 351 developer

KTI 351 PHOTORESIST DEVELOPER
- Annual usage..... 17 Liters per yr.
- Air evaporation..... 560 grams per yr.
- Drain loss..... 25.5 grams per yr.

FERRIC CHLORIDE (copper) ETCHANT 38%
- Annual usage..... 25 gal closed tank
- Air evaporation.....(estimate).. 3 gal per yr.
- Drain loss..... 340 grams per yr.

KTI R-10 PHOTORESIST STRIPPER
- Annual usage..... 2268 ml per yr.
- Air evaporation..... 90 grams per yr.
- Drain loss..... 70 grams per yr.

HYDROGEN PEROXIDE 30% (TIW etchant)
- Annual usage..... 2478 ml per yr.
- Air evaporation..... 110 grams per yr.
- Drain loss..... 2368 ml per yr.

GOLD ETCHANT (NAI) (obsolete product) This item not used in new lab
- Annual usage..... 3780 ml per yr.
- Air evaporation..... 159 grams/yr.
- Drain loss..... 4.15 grams/yr.

also KPR NEGATIVE PHOTORESIST This will not be used in new lab.
- Annual usage..... 1.5 liter per yr.
- Air evaporation..... 480 gram per yr.
- Drain loss..... None

TRICHLOROETHYLENE (KPR developer)
- Annual usage..... 7.5 Liters per yr.
- Air evaporation..... 3,105 grams/yr.
- Drain loss..... None

ACETONE (lab cleaning solvent)
- Annual usage..... 7.5 Liters per yr.
- Air evaporation..... 3,420 grams /yr.
- Drain loss..... None

U.S. Gov't

ALCOHOL ISO (lab cleaning solvent)

Annual usage	600 ml per yr.
Air evaporation	300 ml per yr.
Drain loss	None

GOLD ETCHANT (KI) (IN HOUSE MIXTURE)

Annual usage	1 liter
Air evaporation	54 grams per yr.
Drain loss...(Waste water being stored)	none

CHROME ETCHANT

Annual usage	1 liter
Air evaporation	25 grams per yr.
Drain loss	5 grams per yr.

SMUTT REMOVER (NAOH + KMNO4 in house chrome etchant)

Annual usage	500 ml per yr.
Air evaporation	70 grams per yr.
Drain loss	5 grams per yr.

HYDROCHLORIC ACID 37% (aluminum and gold etchant)

Annual usage.....(estimate)	100 ml per yr.
Air evaporation.....(estimate)	5 grams per yr.
Drain loss	none

NITRIC ACID 70 % (gold etchant)

Annual usage.....(estimate)	100 ml per yr.
Air evaporation.....(estimate)	5 grams per yr.
Drain loss	none

SODIUM PERSULFATE (copper etchant for aluminum backed boards)

Annual usage	1000 ml per yr.
Air evaporation	10 grams per yr.
Drain loss	1 gram per yr.

KTI 809 PHOTORESIST (Replacement for KTI 9000)

Annual usage.....(estimate)	800 ml/yr.
Air evaporation.....(estimate)	80 grams per yr.
Drain loss	See 809 developer

KTI 809 PHOTORESIST DEVELOPER

Annual usage.....(estimate)	17 liters
Air evaporation.....(estimate)	56.0 grams/yr.
Drain loss.....(estimate)	25.5 grams/yr.

SODIUM HYDROXIDE (DRY) (part of Smutt mix)

Annual usage	100 grams per yr.
Air evaporation	none
Drain loss	none

IODINE (DRY CRYSTALS) (part of gold mix)

Annual usage	200 grams per yr.
Air evaporation	none
Drain loss	none

U.S. Gov't

POTASSIUM PERMANGANATE (part of smutt mix)
Annual usage..... 8.4 grams per yr.
Air evaporation..... (see Gold Etch KI)
Drain loss..... (see Gold Etch KI)

BRANSON ULTRASONIC CLEANER
Annual usage..... no current usage
Air evaporation..... none
Drain loss..... none

EEP SOLVENT This item not to be used IN new Lab
Annual usage..... no current usage
Air evaporation..... none
Drain loss..... none

EGMEA SOLVENT (thinner for KTI 9000)
Annual usage..... 270 ml/yr.
Air evaporation..... (see KTI 9000)
Drain loss..... (see KTI 9000)

NMP SOLVENT This item not to be used IN new Lab
Annual usage..... no current usage
Air evaporation..... none
Drain loss..... none

POTASSIUM IODIDE (part of gold mix)
Annual usage..... 50 grams per yr.
Air evaporation..... (see Gold Etch KI)
Drain loss..... (see Gold Etch KI)

FREON TMS This item not to be used IN new Lab
Annual usage..... no current usage
Air evaporation..... none
Drain loss..... none

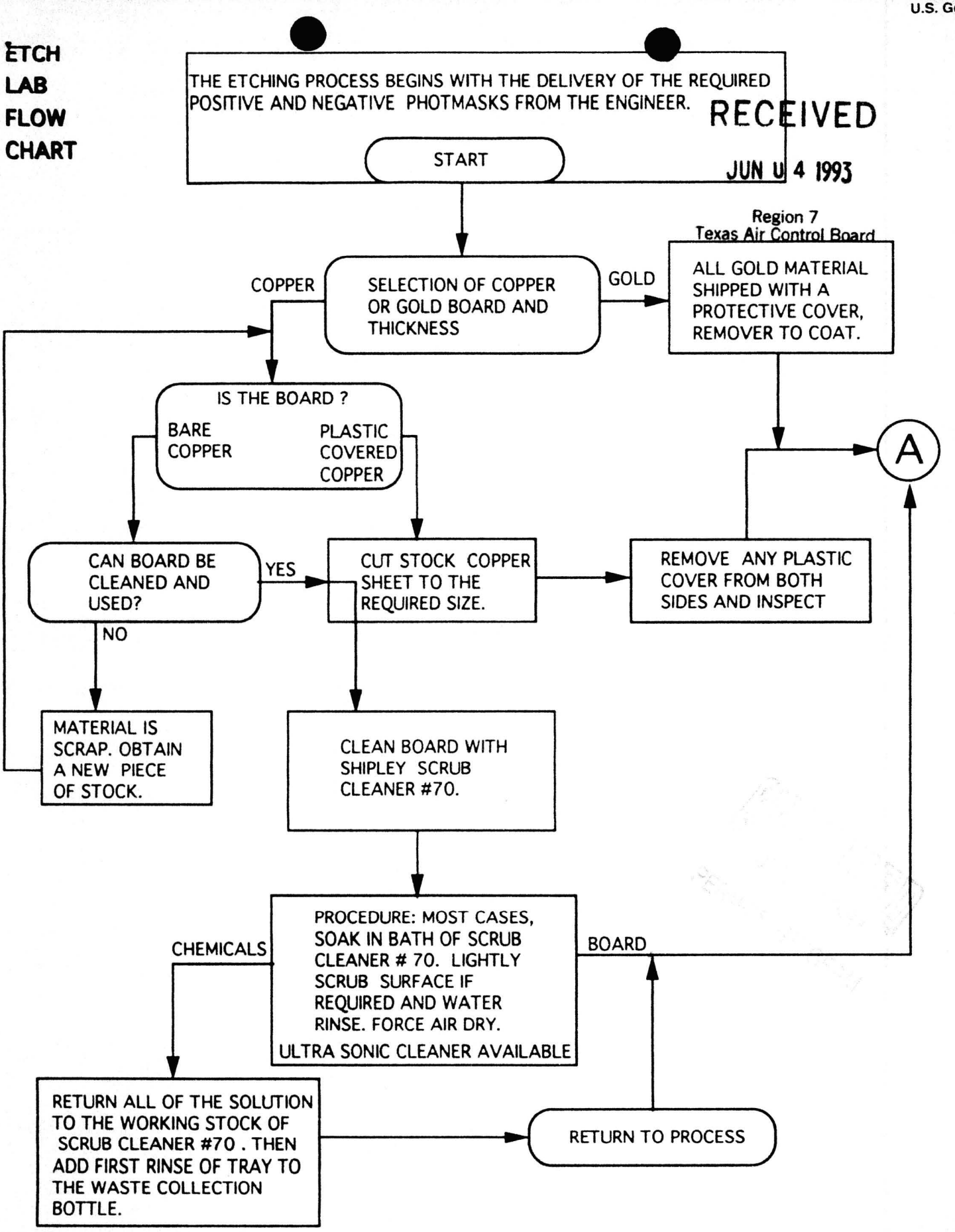
COLD IMERSION TIN PLATING SOLUTION (KEPRO) (usage is About Double now)

Annual usage..... 2 quarts per yr.
Air evaporation.....(estimate)... 50 grams per yr.
Drain loss.....(estimate)... 25 grams per yr.

U.S. Gov't

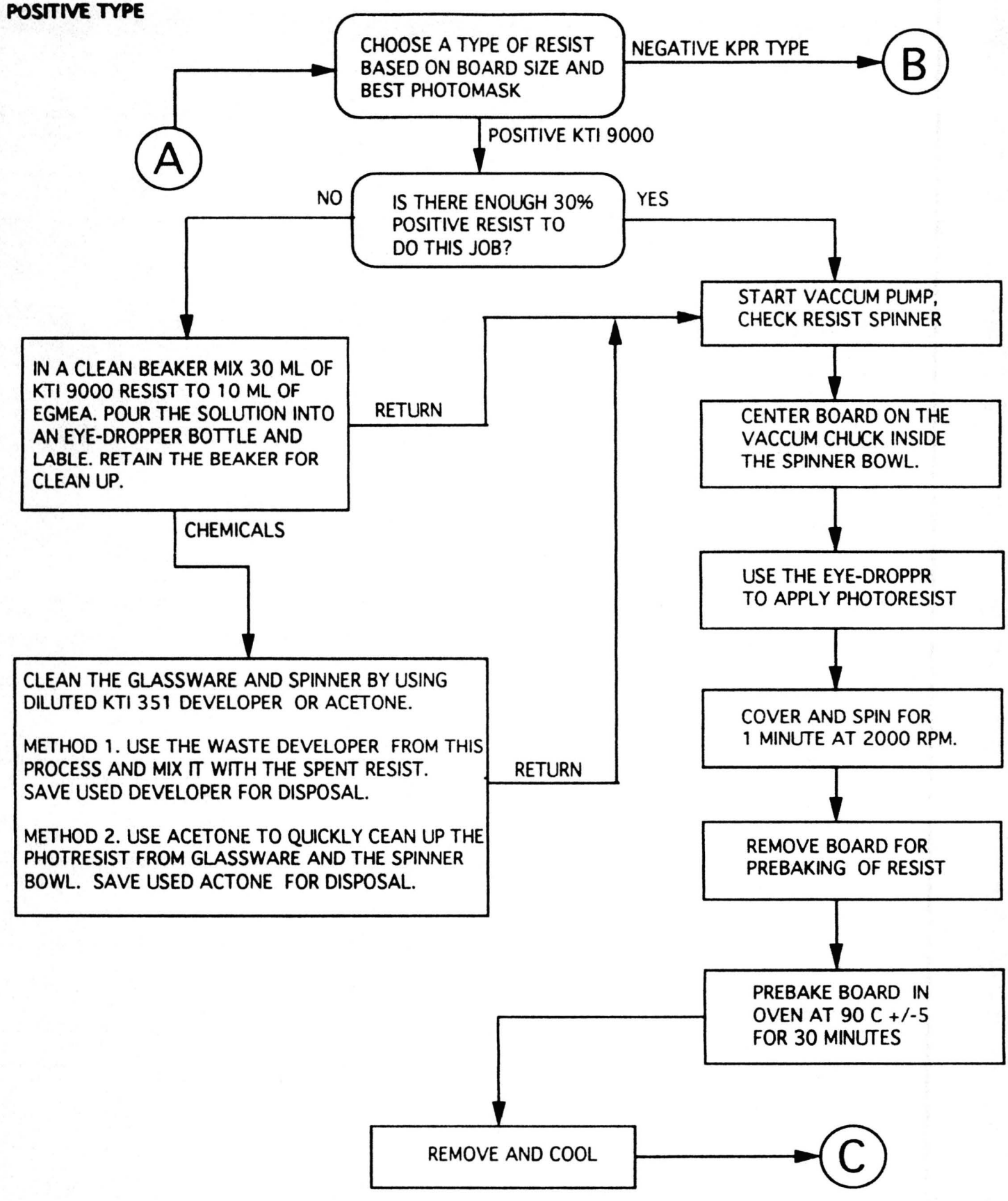
ETCH LAB FLOW CHART

RECEIVED
JUN U 4 1993
Region 7
Texas Air Control Board

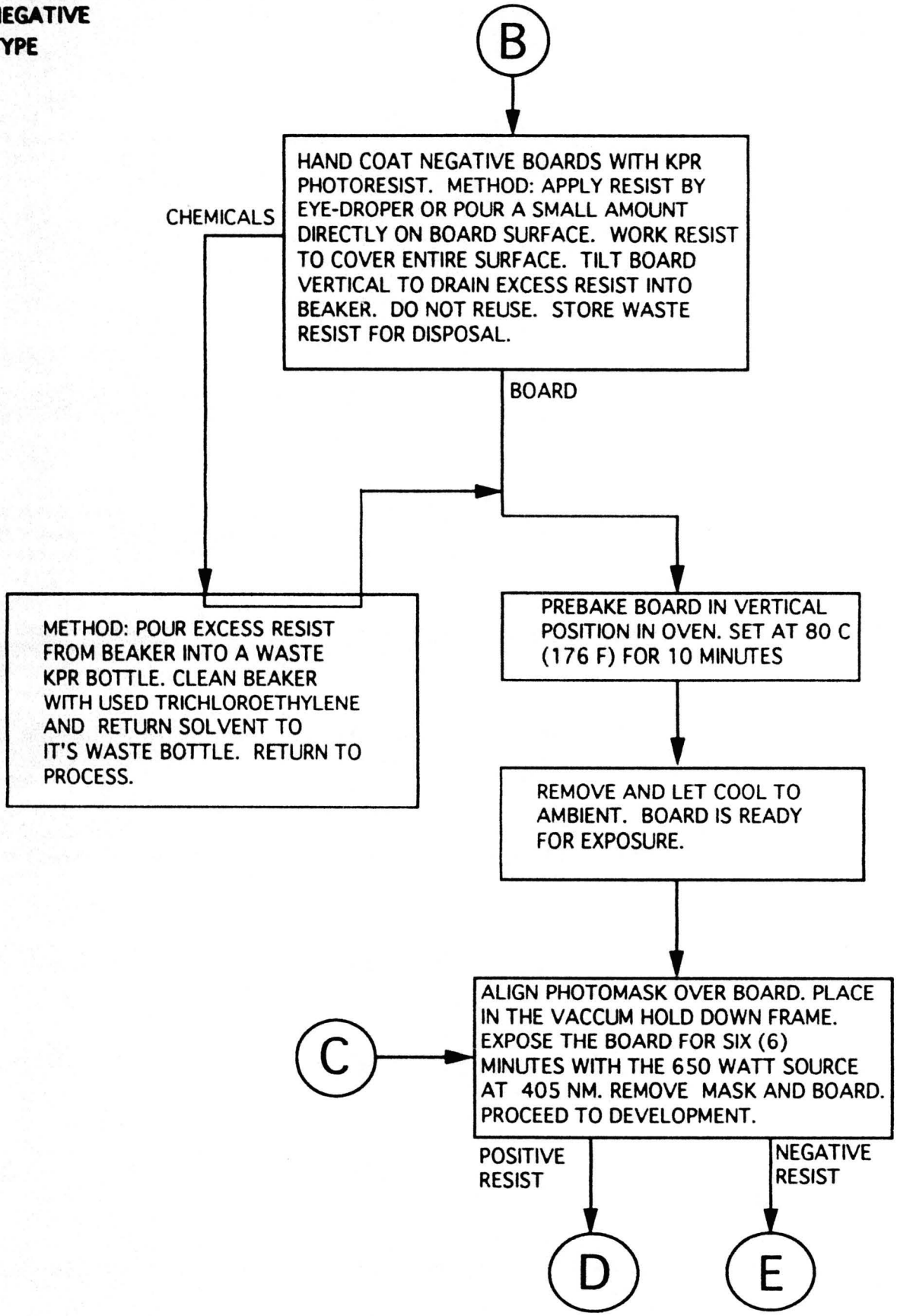


Encl # 4

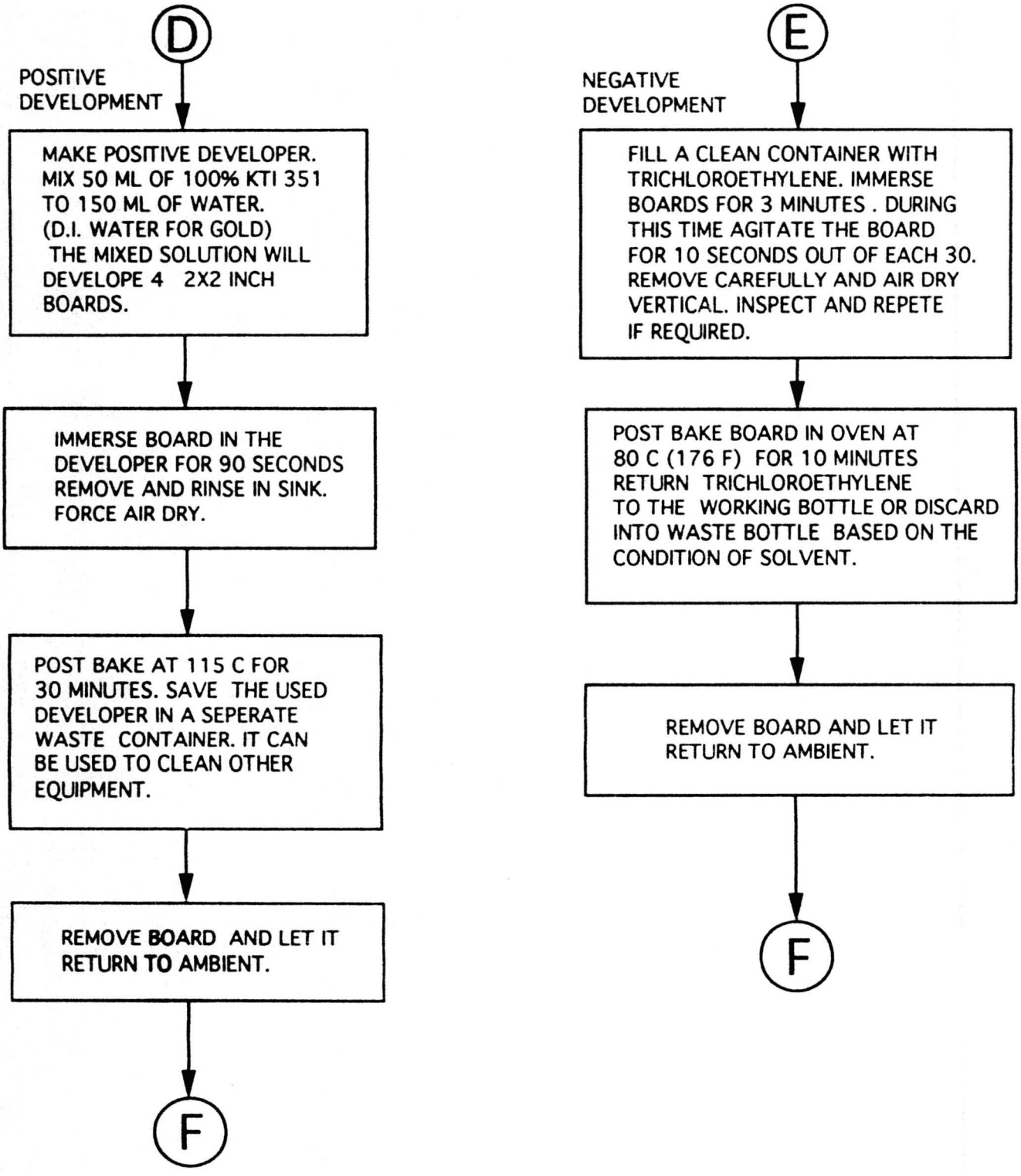
RESIST COATING
POSITIVE TYPE



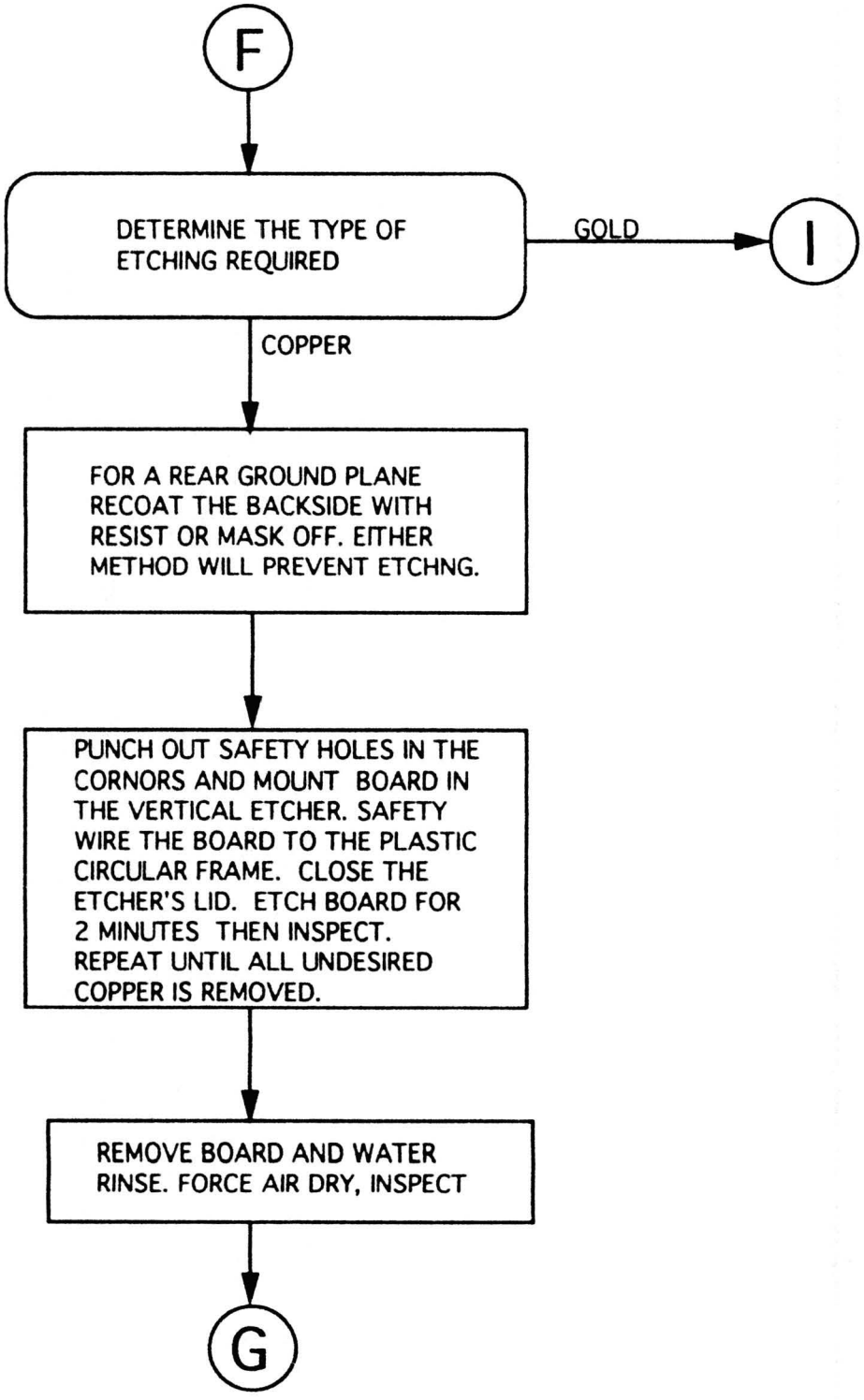
RESIST
COATING
NEGATIVE
TYPE

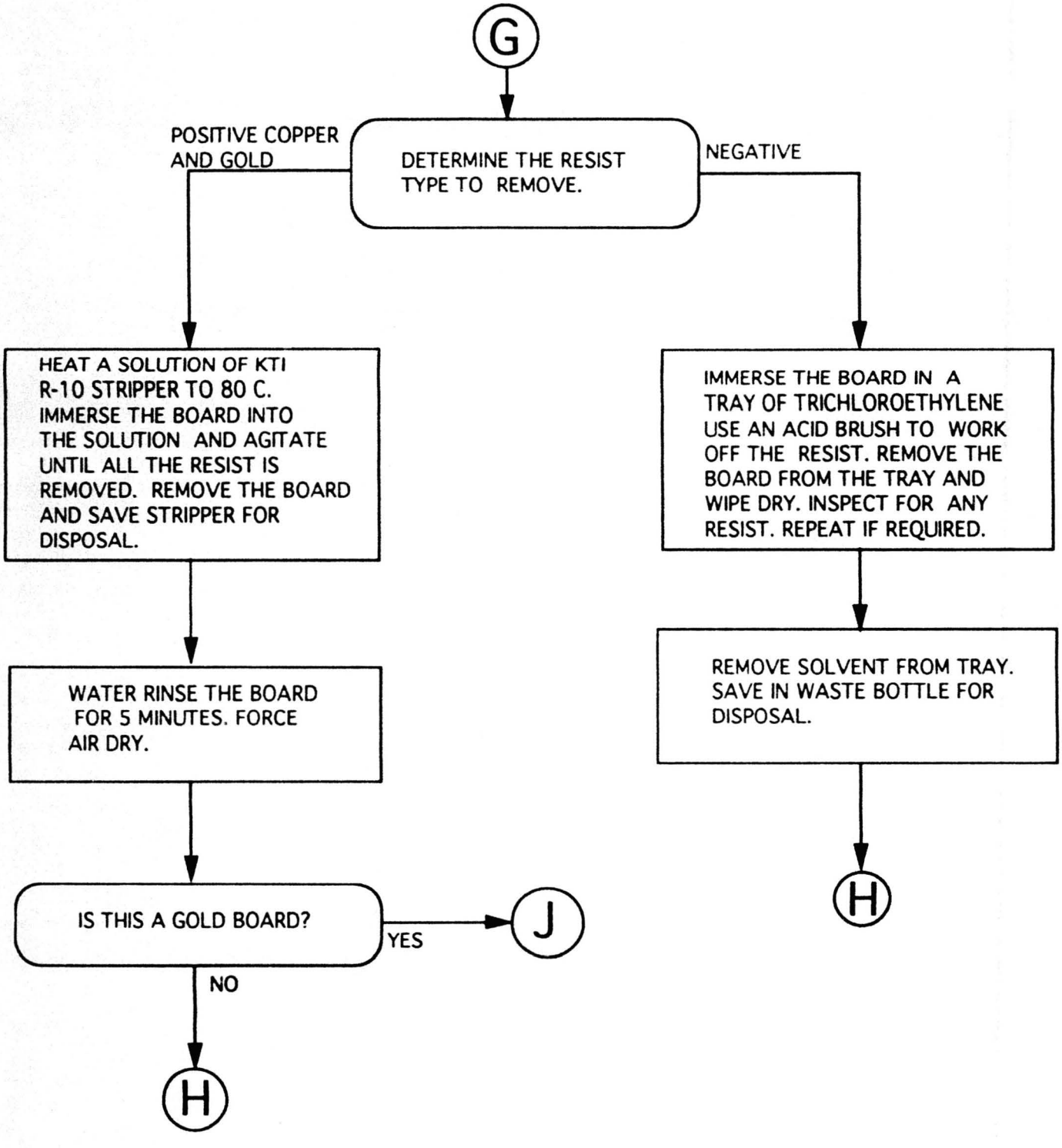


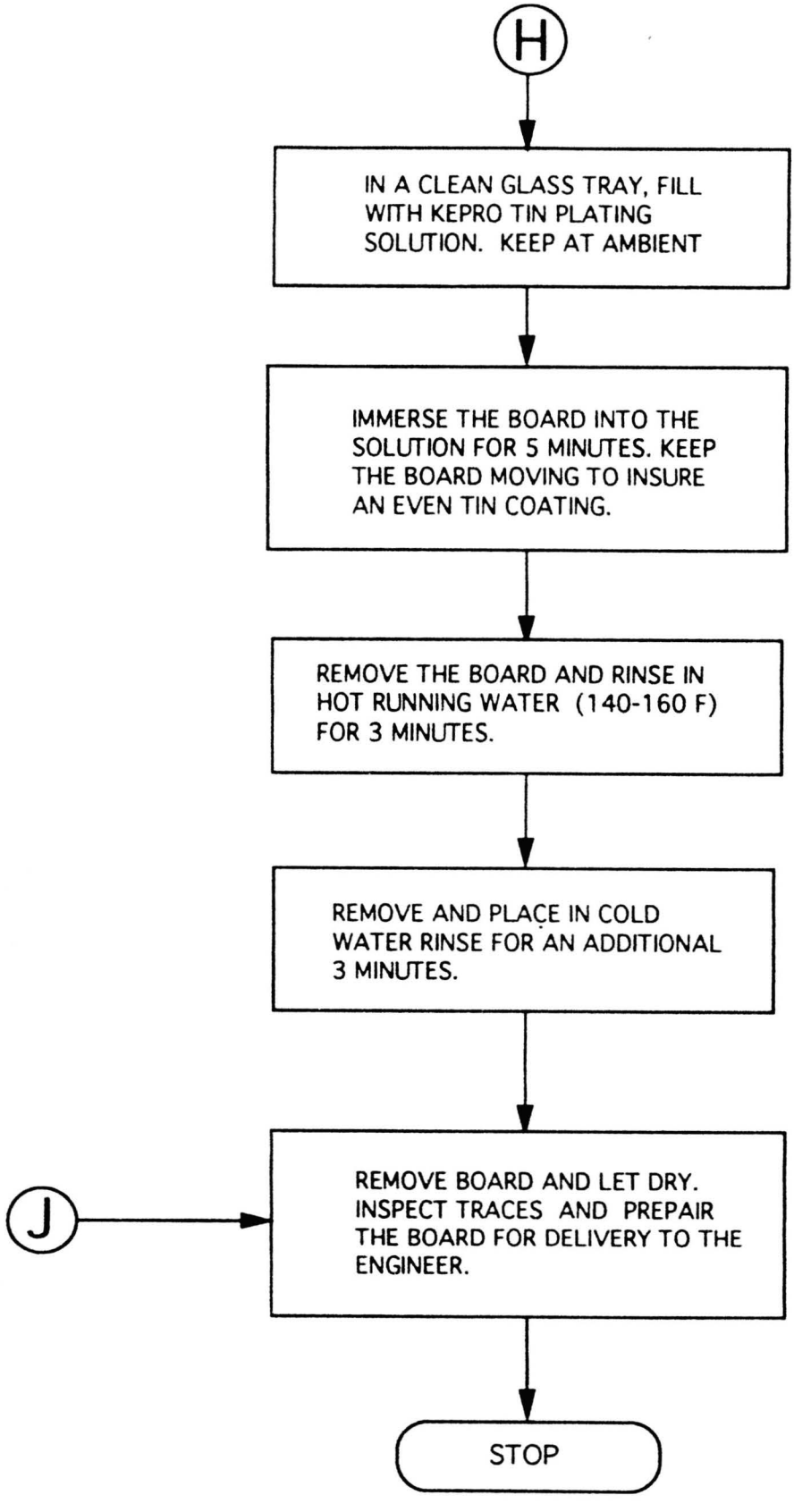
RESIST
DEVELOPMENT



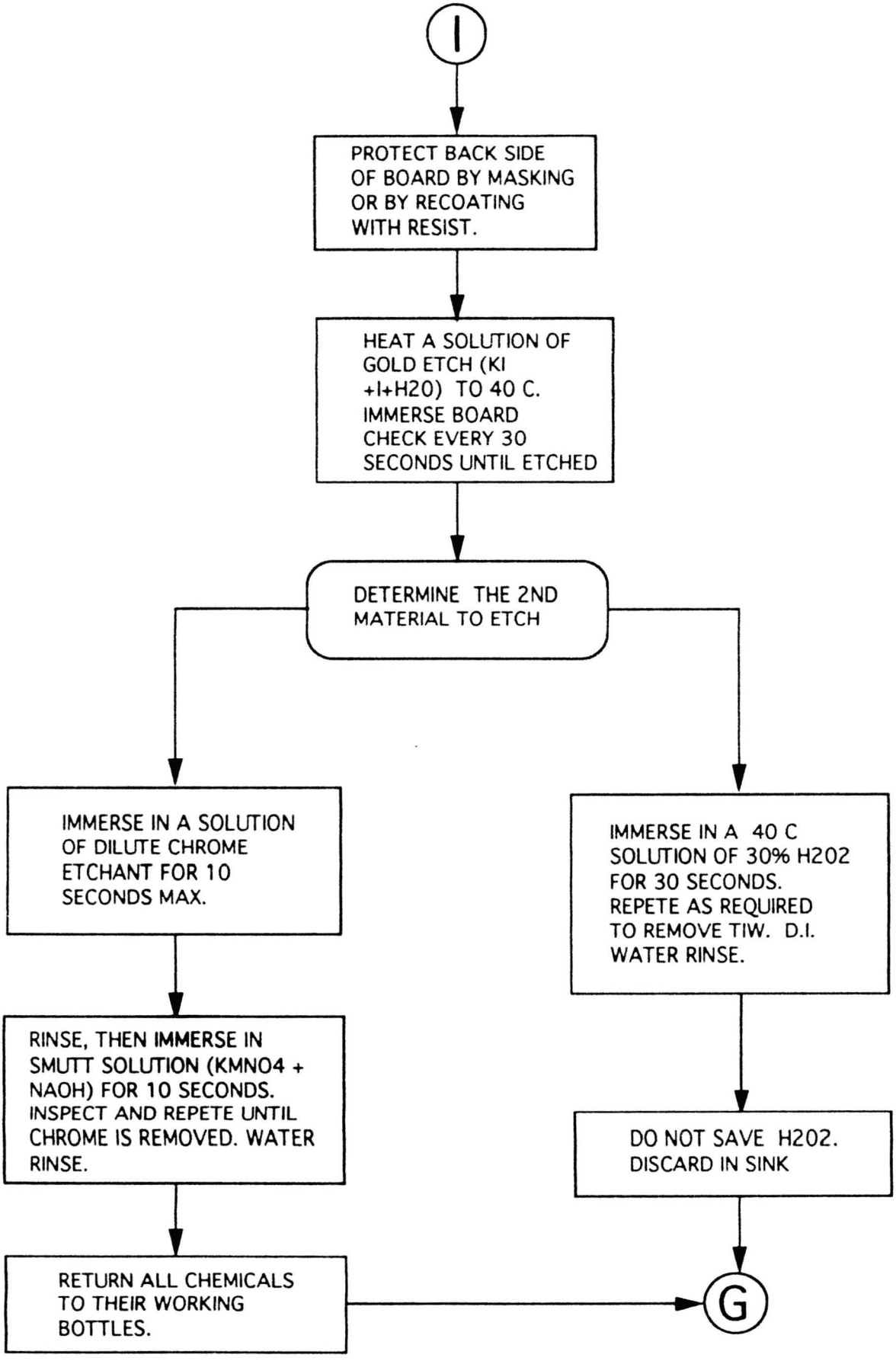
COPPER ETCHING




G
DETERMINE THE RESIST TYPE TO REMOVE.
POSITIVE COPPER AND GOLD
NEGATIVE
HEAT A SOLUTION OF KTI R-10 STRIPPER TO 80 C. IMMERSE THE BOARD INTO THE SOLUTION AND AGITATE UNTIL ALL THE RESIST IS REMOVED. REMOVE THE BOARD AND SAVE STRIPPER FOR DISPOSAL.
WATER RINSE THE BOARD FOR 5 MINUTES. FORCE AIR DRY.
IS THIS A GOLD BOARD?
YES
J
NO
H
IMMERSE THE BOARD IN A TRAY OF TRICHLOROETHYLENE USE AN ACID BRUSH TO WORK OFF THE RESIST. REMOVE THE BOARD FROM THE TRAY AND WIPE DRY. INSPECT FOR ANY RESIST. REPEAT IF REQUIRED.
REMOVE SOLVENT FROM TRAY. SAVE IN WASTE BOTTLE FOR DISPOSAL.
H


H
IN A CLEAN GLASS TRAY, FILL WITH KEPRO TIN PLATING SOLUTION. KEEP AT AMBIENT
IMMERSE THE BOARD INTO THE SOLUTION FOR 5 MINUTES. KEEP THE BOARD MOVING TO INSURE AN EVEN TIN COATING.
REMOVE THE BOARD AND RINSE IN HOT RUNNING WATER (140-160 F) FOR 3 MINUTES.
REMOVE AND PLACE IN COLD WATER RINSE FOR AN ADDITIONAL 3 MINUTES.
J
REMOVE BOARD AND LET DRY. INSPECT TRACES AND PREPAIR THE BOARD FOR DELIVERY TO THE ENGINEER.
STOP

ETCHING OF GOLD CERAMIC BOARDS



OVERSIZE DOCUMENTS, MAPS, & PHOTOS

Record Series: Air
File #: HG1601A-22527-E vol #1
93/95

The below listed documents, from the above referenced file, that belong in this location in the file were not microfilmed because of their size and/or media format. See the Records staff for the location of the following oversize documents and/or photographs:

DATE ON DOCUMENT	DESCRIPTION OF DOCUMENT
	Nasa Johnson Space Center
6/7/93	Master Site Plan
↓	Area map of League City TX
↓	Antenna and tracking Development
↓	Laboratory Floor Plans & Elevation

Ryan Glaze

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Friday, October 18, 2024 2:48 PM
To: John Walker
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Project 36233

John: I apologize for not having this package to you earlier. Thank you for the extension. The PBR (PBRSUP) and associated cross-referencing to affected forms proved a bit more challenging than originally anticipated. I have it ready to go; it is in our official correspondence review/concurrence process. Our response will definitely be to you Monday via electronic transmittal, including our uploading the application revisions into STEERS.

From: John Walker <John.Walker@tceq.texas.gov>
Sent: Friday, October 18, 2024 1:43 PM
To: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Project 36233

Good Afternoon,

Please provide a response to my request for information dated 09/20/2024 by the close of business on **10/21/2024.**

Application updates may now be submitted through Title V STEERS. Any application updates that are submitted by the RO/DAR through STEERS are certified and do not require the submittal of an original signature OP-CRO1. Application updates that are provided through email or physical mail require certification using an original signature OP-CRO1.

Please notify me when these updates have been submitted.

As required on Form OP-1, question IV.D, please remember the FOP application and all application updates must be submitted to EPA Region 6 at R6AirPermitsTX@epa.gov and to the TCEQ regional office having jurisdiction. This submittal information can be found on our website at Where to Submit FOP Applications and Permit-Related Documents.

Contact me if you have any questions regarding the guidelines, the project schedule, or any other details regarding your application or permit.

Thank you for your cooperation.

Sincerely,

John Walker
Permit Reviewer
OA/Air Permits Division/OP Section
Texas Commission on Environmental Quality
MC-163, P.O. Box 13087
Austin, TX 78711-3087
John.Walker@tceq.texas.gov

Phone: (512) 239-1277

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

---

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Tuesday, October 15, 2024 9:03 AM
To: John Walker <John.Walker@tceq.texas.gov>
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Project 36233

John: Thank you for your response; I was awaiting clarification regarding my DAR status. Although yesterday was a federal holiday, we should be able to complete the update in STEERS by COB tomorrow, along with a hard copy of the update to the USEPA and TCEQ regional office.

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
2101 NASA Parkway
Houston, Texas 77058-3696

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Reply to Attn of: JE-24-066

SEP 26 2024

Mr. John Walker
Title V Air Permit Writer, MC 163
Texas Commission on Environmental Quality (TCEQ)
P.O. Box 13087
Austin, Texas 78711-3087

Subject: Designation of Title V Permit O-1552 Duly Authorized Representative (DAR)
NASA-JSC; Houston, Harris County, Texas
Air Account No. HG-1601-A; RN100665579; CN601572878

Dear Mr. Walker:

As requested, I am transmitting the OP-DEL form, reassuring you that it was NASA's intent to designate Mr. John P. Herrmann, P.E. as a Title V Permit Duly Authorized Representative (DAR) on December 5, 2023, in our anticipation of transmitting to you the Title V Permit Modification that we subsequently submitted to the TCEQ on January 22, 2024. My understanding is that the originally signed OP-DEL of December 5, 2023 cannot be located, and although we have the scanned copy in our reading file, your administrative procedures require a form with an original signature.

I certify that I am the Responsible Official (RO) designated for NASA-JSC, and that, based on reasonable inquiry, the statements and information enclosed are true, accurate, and complete to the best of my knowledge and belief.

If you have any questions regarding this transmittal, please contact Mr. John Herrmann, P.E. at (832) 693-6394 or by e-mail at john.p.herrmann@nasa.gov.

Sincerely,

Joel B. Walker
Director, Center Operations

Enclosure

AIR PERMITS DIVISION
OCT 01 2024
RECEIVED

cc (w/ encl):

Air Permits Section (6PD-R)
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733
(Electronic copy sent to R6AirPermitsTX@epa.gov)

cc (w/o encl):

Mr. Joe Doby; Air Section Manager,
Houston Regional Office; TCEQ Region 12
5425 Polk St. Ste. H
Houston, TX 77023-1452

Form OP-DEL
Delegation of Responsible Official Information
Federal Operating Permit Program
Texas Commission on Environmental Quality

I. Identifying Information
Account Number: HG-1601-A
Regulated Entity Number: RN100665579
Customer Reference Number: CN601572878
Permit Number:O-1552
Area Name: Lyndon B. Johnson Space Center
Company Name: National Aeronautics and Space Administration
II. Duly Authorized Representative Information
Action Type: ☒ New DAR Identification ☐ Administrative Information Change
Conventional Title: ☒ Mr. John P. Herrmann ☐ Mrs. ☐ Ms. ☐ Dr.
Name (Driver License/STEERS): TDL14006740 / ER008559
Title: Environmental Engineer
Delegation Effective Date: 12/05/2023
Telephone Number: (832) 693-6394
Fax Number: (281) 483-3048
Company Name: NASA – Lyndon B. Johnson Space Center
Mailing Address: 2101 NASA Parkway (MC: JE111)
City: Houston
State: Texas
ZIP Code: 77058
Email Address: john.p.herrmann@nasa.gov

Form OP-DEL
Delegation of Responsible Official Information
Federal Operating Permit Program
Texas Commission on Environmental Quality

III. Certification of Truth, Accuracy, and Completeness

I, Joel B. Walker

(Name printed or typed: RO for New DAR Identification; RO or DAR for Administrative Information Change)

Certify that, based on information and belief formed after reasonable inquiry, the statements, and information stated above are true, accurate, and complete. *(RO signature required for New DAR Identification only; DAR signature required for any Action Type)*

Responsible Official Signature: Joel Walker

Date: Retroactive to 12/05/2023

Duly Authorized Representative Signature: _____

(Name(s) printed or typed)

Date: Retroactive to 12/05/2023

IV. Removal of Duly Authorized Representative(s)

The following should be removed as Duly Authorized Representative(s):

Stephen P. Campbell

(Name(s) printed or typed)

Effective Date: 09/23/2024

Responsible Official Signature: Joel Walker

Date: 09/23/2024

CERTIFIED MAIL®

CERTIFIED MAIL®

9414 8118 9956 1848 8230 41

MR. JOHN WALKER, MC163
TITLE V AIR PERMIT WRITER
TX COMMISSION ON ENVIRONMENTAL QUALITY
AUSTIN TX 78711

$8.97⁰
US POSTAGE
FIRST-CLASS
FROM 77058
09/27/2024
stamps
endicia

0628000154400

Mr. John Walker
Title V Air Permit Writer, MC 163
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

EIVED
01 2024
MAIL CENTER
AJ

Ryan Glaze

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Friday, September 20, 2024 2:21 PM
To: John Walker
Subject: FW: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Project 36233
Attachments: JPH ADR Delegation (STEERS Title V Submittals).pdf

John: Once again, I apologize for the apparent confusion on my part regarding Title V permit signatory authority. As you can see from the attached, it was NASA's intent to provide me with signatory authority as a DAR on Mr. Joel Walker's behalf, as of his signature on the OP-DEL form dated 12/5/2023, which was well in advance of the application date.

Mr. Stephen Campbell who is apparently listed on the spreadsheet as a "previous" DAR has long since retired, and I was unaware of that delegation.
Would it help if we rescind that previous delegation?

Is it sufficient to upload the previously signed DAR so that there is no confusion regarding my authority to submit on NASA-JSC's behalf?
Or would you rather I complete a new OP-DEL form, with a retroactive effective date of 12/5/2023 (or alternatively the date of the application submitted into STEERS) so as to avoid confusion. Please advise.

From: Herrmann, John P. (JSC-JP111)
Sent: Thursday, February 8, 2024 5:41 PM
To: Richard Suniga <richard.suniga@tceq.texas.gov>
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Streamline Revision

Richard: I apologize for my confusion. Thanks for sending me the guide.
Hopefully this signed form is what you need to proceed with processing the permit mod.
If you need the form with original signatures as opposed to a scanned copy, let me know.
I appreciate your patience.

From: Richard Suniga <richard.suniga@tceq.texas.gov>
Sent: Thursday, February 1, 2024 12:15 PM
To: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Streamline Revision

John,

The form provided appoints Mr. Walker as a Designated Representative (DR) he's already an RO. We'll need an OP-DEL form to appoint you as the Duly Authorized Representative (DAR). Please see highlighted areas pages 19 and 38.

Thank you,

Richard Suniga, License & Permit Specialist
Texas Commission on Environmental Quality | Office of Air
Air Permits Division | Air Permits Initial Review Team
12100 Park 35 Circle, Bldg. C, Austin, TX 78753

Mail: MC-161, P.O. Box 13087, Austin TX 78711-3087
(512) 239-5325 | Richard.Suniga@tceq.texas.gov
Web Site: www.tceq.texas.com
Please consider whether it is necessary to print this e-mail
How are we doing? www.tceq.texas.gov/customersurvey

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Thursday, February 1, 2024 11:09 AM
To: Richard Suniga <richard.suniga@tceq.texas.gov>
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Streamline Revision

Richard: I had Mr. Walker designate me as a Duly Authorized Representative, with the effective date corresponding to his approval of my SPA - for allowing me to submit Title V permit documents into STEERS on his behalf. Please let me know whether that sufficiently satisfies your concerns.

From: Richard Suniga <richard.suniga@tceq.texas.gov>
Sent: Monday, January 22, 2024 3:49 PM
To: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Subject: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Streamline Revision

Mr. Hermann,

I'm administratively processing the permit application for the above mentioned and require additional information. After reviewing the STEERS copy of record the Responsible Official (RO) or Duly Authorized Representative (DAR) is required to sign and submit the STEERS application. Please provide me Form OP-CRO1 with signature listing you as the Responsible Official (RO) or Duly Authorized Representative (DAR). Should you have any questions or concerns regarding this information please don't hesitate to contact me.

Sincerely,

Richard Suniga, License & Permit Specialist
Texas Commission on Environmental Quality | Office of Air
Air Permits Division | Air Permits Initial Review Team
12100 Park 35 Circle, Bldg. C, Austin, TX 78753
Mail: MC-161, P.O. Box 13087, Austin TX 78711-3087
(512) 239-5325 | Richard.Suniga@tceq.texas.gov
Web Site: www.tceq.texas.com
Please consider whether it is necessary to print this e-mail
How are we doing? www.tceq.texas.gov/customersurvey

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

Ryan Glaze

From: John Walker
Sent: Friday, September 20, 2024 6:07 PM
To: Herrmann, John P. (JSC-JP111)
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Project 36233

Good Afternoon,

Yes that will work.

The specific date being certified on Form OP-CRO1 should be 01/22/2024 to certify the initial application submittal date and Form OP-CRO1 should be marked “Update to Permit Application” in Section III.

If you have any questions on how to submit the forms in STEERS as an application update please contact me or refer to our Title V STEERS guidance on the following webpage: Where to Submit FOP Applications and Permit-Related Documents - Texas Commission on Environmental Quality - www.tceq.texas.gov. Essentially you must start the process over of creating a STEERS application for an existing permit. On the Title V General Information page in the application you will identify the application as an update to an existing project and then select the project number 36233. You will then proceed with the STEERS application as normal and attach the documents at the end of the process before signing and submitting the application.

Please let me know if you have any other questions.

Thank you for your cooperation.

Sincerely,

John Walker
Permit Reviewer
OA/Air Permits Division/OP Section
Texas Commission on Environmental Quality
MC-163, P.O. Box 13087
Austin, TX 78711-3087
John.Walker@tceq.texas.gov

Phone: (512) 239-1277

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

---

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Friday, September 20, 2024 5:44 PM
To: John Walker <John.Walker@tceq.texas.gov>
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Project 36233

I think the best approach for us will be for me to prepare the OP-DEL for Joel to sign using the new form (with a wet original signature), and make the effective date 12/5/23, and then I can prepare the CRO1 and submit it with the signed copy of the OP-DEL into STEERS with me designated as the DAR with the application submittal date of 01/22/23 to correct the erroneous RO designation. Would that do it?

From: John Walker <John.Walker@tceq.texas.gov>
Sent: Friday, September 20, 2024 5:27 PM
To: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Project 36233

Good Afternoon,

The OP-CRO2 would be used to identify a new RO. If you were to be the RO, an OP-CRO1 would not be required as long as your appointment effective date was prior to the 01/22/2024 STEERS submittal. You could have the appointment/delegation effective date on Form OP-CRO2 be 12/5/2023 if that was the intent. (This would nullify the need for an OP-CRO1 since you signed/submitted the application in STEERS as the RO and OP-CRO2 makes you the RO prior to the submittal date).

The OP-CRO2 form was updated today as well. I do not believe it requires the signature of the previous RO. You would have to submit it in STEERS as the RO. All the forms may be found here: Responsible Official Forms - Texas Commission on Environmental Quality - www.tceq.texas.gov

If you are going to go with the new OP-DEL, yes you would want to check the box “New DAR” and the delegation effective date can be 12/5/2023 since that was the intent. Just remember the ROs signature is required on the form, but you can sign/submit it in STEERS as the DAR.

Also, if you would rather have the current RO sign the OP-CRO1, you could provide me the electronic copy followed by the hardcopy (or have him sign/submit it in STEERS), but I think it would be good to get you identified as the DAR since that was the original intent. You could then submit Form OP-CRO1 and certify the initial application submittal yourself, as intended. Also, you could sign and submit any future updates/applications in STEERS.

Please let me know if you have additional questions.

Sincerely,

John Walker
Permit Reviewer
OA/Air Permits Division/OP Section
Texas Commission on Environmental Quality
MC-163, P.O. Box 13087
Austin, TX 78711-3087
John.Walker@tceq.texas.gov

Phone: (512) 239-1277

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Friday, September 20, 2024 4:58 PM
To: John Walker <John.Walker@tceq.texas.gov>
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Project 36233

Is the OP-CRO2 a potential alternative to make the correction or is that no longer valid based upon these changes.

As for the OP-CR01, I believe I sent the original as instructed but if it didn't get there, who knows. So I can have Joel sign another one with the same info as on 12/5/23 and send that original. And then I can submit the new form with the effective date as retroactive to 12/5/2023. I just don't want there to be any doubt that at least I thought I had been authorized to sign as the DAR when I signed and submitted in STEERS, so I will have the effective date listed as 12/5/23. Should I check the block as "new DAR" or administrative information change?

From: John Walker <John.Walker@tceq.texas.gov>
Sent: Friday, September 20, 2024 4:41 PM
To: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Project 36233

Good Afternoon,

It's no problem. There has been quite a few applicants who have been confused about the STEERS process because it is new for Title V. If you have any questions about STEERS, please let me know as I am considered the subject matter expert for Title V STEERS submittals. Basically, the COR from the STEERS submittal replaces Form OP-CRO1. That is, when an RO/DAR signs and submits the STEERS application, it certifies the application and Form OP-CRO1 is not required. However, if the COR is inaccurate or someone who is not a RO/DAR signs and submits the application in STEERS, we have to correct it with an OP-CRO1 submittal.

I think that submitting a new OP-DEL may be the most appropriate course of action if you would like to remove Mr. Stephen Campbell as a DAR. In Section IV of Form OP-DEL, you can identify DARs you would like to remove. Form OP-DEL would still require the ROs signature to add and remove DARs. Additionally, as of today, a new Form OP-DEL was posted to our website.

There are really two options you can consider to move forward:

1. As of Today (09/20/2024), an updated version of the OP-DEL was posted on our website. TCEQ Form 10011 - OP-DEL Delegation of Responsible Official Information Federal Operating Permit Program (texas.gov). The form/instructions were updated to be more accommodating of STEERS. I believe submitting the new OP-DEL would be the easiest.

   With the new form, you and the RO would sign where instructed and then you could submit the form in STEERS as the DAR in an application update. This would get you appointed as a DAR. You would want to make sure your delegation effective date is before 01/22/2024 as this would all you to be able to certify the initial application submittal with an OP-CRO1.

   As far as certifying the initial application submittal, you would still need to fill out Form OP-CRO1 since the COR from the initial application submittal is stating you are the RO which is conflicting/incorrect. You could fill out the Form OP-CRO1 with the specific date of 01/22/2024 and attach it to the same STEERS application update that the OP-DEL is attached to. This would certify the initial application submittal.

2. If you have the hardcopy of the attached OP-DEL, I believe we could move forward with that to get you documented as the DAR. I never received a hardcopy and I am unsure if APIRT did. Did you mail it? If so, I could ask around if you would like. If they did not receive it, I believe you would have to mail in the original

hardcopy to me with a wet-ink signature. I believe this would get you documented as the DAR. I do not believe you could submit it in STEERS as of today since the form version is considered outdated due to the new form version. APIRT may also push back on this due to the new form.

You could then submit Form OP-CRO1 in STEERS (or mail it to me) as the DAR with the specific date of 01/22/2024 to certify the initial application submittal (since the COR from the application submittal is stating you are the RO which is conflicting/incorrect).

Please let me know which route you would like to go and if you have any questions.

Sincerely,

John Walker
Permit Reviewer
OA/Air Permits Division/OP Section
Texas Commission on Environmental Quality
MC-163, P.O. Box 13087
Austin, TX 78711-3087
John.Walker@tceq.texas.gov

Phone: (512) 239-1277

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

Ryan Glaze

From: John Walker
Sent: Friday, September 20, 2024 10:07 AM
To: Herrmann, John P. (JSC-JP111)
Subject: Working Draft Permit - FOP O1552/Project 36233 National Aeronautics and Space Administration

Good Morning

I have conducted a technical review of the revision application for National Aeronautics and Space Administration, Lyndon B. Johnson Space Center. An electronic copy of the Working Draft Permit (WDP) is attached for your review. This WDP contains the TCEQ determination of applicable requirements based on the information submitted in your application, and any updates provided.

Please review the WDP and submit to me any comments you have on the working draft permit by **10/04/2024**. Please submit a written response by this deadline, even if you are not making any comments on the content of the WDP. Additionally, please provide the following information:

1. The following requested changes were not made to the permit. If you would like these changes made, please provide the necessary updates on Form OP-UA2:

    a. Did not add Unit ID B220GEN01 to GRPGEN2. The provided unit attributes for B220GEN01 are different than the existing unit attributes for GRPGEN2. GRPGEN2 unit attributes would need to be added to Form OP-UA2 and B220GEN01 would need to be removed, if they have the same unit attributes. (GRPGEN2 does not currently have unit attributes for NSPS JJJJ in our database but you provided them for B220GEN01 in this application).

    Essentially, on the OP-UA forms, instead of providing individual Unit IDs for a group, you would provide only the Group ID since the units are supposed to have the same unit attributes. If GRPGEN2 has the same unit attributes as B220GEN01, please provide GRPGEN2 on Form OP-UA2 and remove B220GEN01. If they have different unit attributes, please update Form OP-SUMR Table 2 so that B220GEN01 is not being added to GRPGEN2.

    b. Did not add Unit ID B16GEN01 to GRPGEN8. The provided unit attributes for B16GEN01 are different than the existing unit attributes for B3GEN01A. GRPGEN8 unit attributes would need to be added to Form OP-UA2 and B16GEN01 would need to be removed, if they have the same unit attributes. (There are differing attributes for NSPS IIII applicability where on OP-UA2 Table 5b, Unit ID B16GEN01 has the code 2017+ for Model Year and B3GEN01A has the code 2015.) The unit attributes need to be identical for units in groups.

    If the units have different unit attributes, please update Form OP-SUMR Table 2 so that B16GEN01 and B3GEN01A are not being added to GRPGEN2.

    Please note I do see existing Groups with only one unit in them and this should be corrected in the next renewal project. Groups are required to have more than one unit in them.

2. Should OP-REQ1 Page 87 be provided to update the issuance dates of NSR permits to incorporate changes made during this Title V Minor Revision application?

    It seems in the revision of Standard Permit Registration 130148 issued on 07/22/2024, that is when the change

was made to monitor turbine exhaust emissions with the PEMS for Unit IDs T-1 and T-2, which was a requested change in this Title V application. I think that the issuance date should be updated for 130148 since we are incorporating changes based on the 07/22/2024 issuance.

3. Please provide Form OP-PBRSUP. As of August 1, 2022, Form OP-PBRSUP is required for all site operating permit (SOP) and general operating permit (GOP) applications for initial and renewal projects, and revisions with PBR updates. Changes requested in this application involved the addition and removal of units authorized by Permits By Rule (PBRs). Since Form OP-PBRSUP was not previously submitted, it must be submitted in this application. It is important that Form OP-PBRSUP is used to provide supplemental information for all Permits by Rule (PBRs) that authorize emission units for a site (or area) subject to the requirements of the Federal Operating Permit (FOP) Program. Please note that it is also meant to document any corresponding historical (pre-March 1197) Standard Exemptions (SEs).

   Please use the Working Draft Permit, all previous forms submitted, and the TCEQ site map as references in your determination of what should be provided on Form OP-PBRSUP. It is important than the Working Draft Permit, Form OP-PBRSUP, Form OP-SUMR, Form OP-REQ1 Page 88, and the TCEQ Site Map document consistent PBR information. Please note there may be information provided for units on Form OP-PBRSUP that do not appear in the Title V permit due to not having Title V requirements.

   Please note that all PBR Registrations provided on Table A and D of Form OP-PBRSUP need to be added to Form OP-SUMR for any units within the Title V permit (with an accompanying revision on Form OP-2 Table 2 stating you are adding PBR registrations as a PCA for units). This way I can add the Registered PBR as a PCA to units within the permit. There is a specific format in which PBR registrations should be documented on Form OP-SUMR which can be found in the Form OP-SUMR instructions (example: 106.XXX/MM/DD/YYYY[rrrrr]).

   Any units with claimed PBRs as a PCA within the permit should also appear on Tables B and D of Form OP-PBRSUP. In fact, mostly all PBRs documented throughout the permit should appear on Form OP-PBRSUP. Any PBRs identified in the table of PBRs that starts on Page 1 of the Form OP-PBRSUP – Instructions should appear in Tables A or B and D. PBRs for insignificant sources should be provided on Table C.

   If any PBRs need to be removed or added from the New Source Review Authorization References tables within the WDP, the changes should be provided on Form OP-REQ1 Page 88 and Form OP-SUMR for their respective units.

   You may use the TCEQ Site Map to determine what PBRs are registered for the site. The TCEQ Site Map can be found at the following link. Click on “New Source Review Air Permits” then enter your RN for “Regulated Entity”. Make sure “Status” is all ,“Sort Direction” is descending, and “Order By” is date received. This will allow you to see all NSR permits associated with your RN. TCEQ - NSR, TV and CapTrade Searchs (texas.gov) You may also use the Outdated Standard Exemption Index to verify the effective date of SEs (Outdated Standard Exemption Index - Texas Commission on Environmental Quality - www.tceq.texas.gov). The Numerical Index to Air Permits by Rule may also be used to verify the correct Version No./Date for PBRs (Numerical Index to Air Permits by Rule - Texas Commission on Environmental Quality - www.tceq.texas.gov).

4. The initial application submittal on 01/22/2024 was not correctly certified by an individual with signatory authority. The copy of record (COR) from the STEERS submittal states that application was signed and submitted by Mr. John P. Herrmann who was identified the Responsible Official on the COR. Currently, John P. Herrmann is documented as the technical contact within our database.

   Looking at emails that occurred between 01/22/2024 and 01/24/2022 between Mr. John P. Herrmann and Richard Suniga of APIRT, it seems that Mr. John P. Herrmann has had trouble in getting documented as a DAR. Richard Suniga had requested a copy of Form OP-DEL previously submitted for FOP O1552 so that Mr. John P. Herrmann could be documented as the DAR but it seems it was never received because Mr. John P. Herrmann is still identified as the Technical Contact in our database.

I have attached a document containing all individuals and their roles within our database for FOP O1552 for your reference. If Mr. John P. Herrmann would like to be identified as a DAR, please submit Form OP-DEL and I will provide it to APIRT. If the delegation effective date is prior to 01/22/2024, as a DAR, John. P. Herrmann could then submit Form OP-CRO1 with the specific date of 01/22/2024 in STEERS to certify the 01/22/2024 STEERS submittal. You may submit both Forms OP-DEL and OP-CRO1 in STEERS at the same time.

Or you may have the current RO or DAR sign and submit an application update in STEERS with a Form OP-CRO1 attached with the specific date of 01/22/2024.

Or you may have the current RO or DAR mail a hardcopy of Form OP-CRO1 with the specific date of 01/22/2024 and wet-ink signature to certify the 01/22/2024 application submittal. An electronic copy of the form should be emailed to me.

Please let me know how you wish to proceed. If you have any questions on how to submit an application update in STEERS please let me know. Please note that I will ask for another Form OP-CRO1 for any updates that are not provided in a STEERS application update or certified correctly.

Please review the second portion of the "SOP Technical Review Fact Sheet" located at http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/Title_V/sop_wdp_factsheet.pdf. This guidance contains important information regarding WDP review and comment procedures.

Note that a Certification by Responsible Official (Form OP-CRO1) for any uncertified application information, including application updates supporting the WDP comments, is required. After final review of the WDP, additional changes supported by application updates may require certification. I will advise you of these changes at a later date. Prior to transmittal of the Public Notice/Announcement Authorization Package, a duly signed OP-CRO1 form may be required which includes the specific dates or time-period of all submitted application documentation that was not previously certified. I will advise you of this requirement prior to sending the Public Notice/Announcement Authorization.

Application updates may now be submitted through Title V STEERS. Any application updates that are submitted by the RO/DAR through STEERS are certified and do not require the submittal of an original signature OP-CRO1. Application updates that are provided through email or physical mail require certification using an original signature OP-CRO1.

Please notify me when these updates have been submitted.

As required on Form OP-1, question IV.D, please remember the FOP application and all application updates must be submitted to EPA Region 6 at R6AirPermitsTX@epa.gov and to the TCEQ regional office having jurisdiction. This submittal information can be found on our website at Where to Submit FOP Applications and Permit-Related Documents.

Contact me if you have any questions regarding the guidelines, the project schedule, or any other details regarding your application or permit.

Thank you for your cooperation.

Sincerely,

John Walker
Permit Reviewer
OA/Air Permits Division/OP Section
Texas Commission on Environmental Quality
MC-163, P.O. Box 13087
Austin, TX 78711-3087

John.Walker@tceq.texas.gov

Phone: (512) 239-1277

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

Ryan Glaze

From: John Walker
Sent: Wednesday, February 21, 2024 5:02 PM
To: Herrmann, John P. (JSC-JP111)
Subject: Technical Review - FOP O1552/Project 36233 National Aeronautics and Space Administration

Good Afternoon,

I have been assigned to the Federal Operating Permit (FOP) revision application of Permit No. O1552 National Aeronautics and Space Administration, Lyndon B. Johnson Space Center. This application has been assigned Project No. 36233. Please address all correspondence pertaining to this permit application, including any updates, to me at the address below, and use both the Permit and Project reference numbers above to facilitate tracking.

In addition, I wanted to let you know that EPA has, on occasion, objected to Title V permits based on the following:

a. NSR permit and PBR monitoring sufficiency –please refer to our periodic monitoring guidance for reference of monitoring that EPA has, so far, considered sufficient.
b. Reference to confidential business information (CBI) in NSR permits and PBR submittals.
c. High level terms in the SOP Applicable Requirement Summary Table. The high level terms are sometimes used in SOPs when unit attribute forms have not yet been updated due to regulatory amendments.
d. Accuracy of PBR information provided on the supplemental table and in the permit – please refer to Forms OP-PBRSUP and OP-REQ1 Instructions.

If you have any questions or concerns on any of these items or think you need to do any additional updates, let me know and we can discuss further.

Application updates may now be submitted through Title V STEERS. Any application updates that are submitted by the RO/DAR through STEERS are certified and do not require the submittal of an original signature OP-CRO1. Application updates that are provided through email or physical mail require certification using an original signature OP-CRO1.

As required on Form OP-1, question IV.D, please remember the FOP application and all application updates must be submitted to EPA Region 6 at R6AirPermitsTX@epa.gov and to the TCEQ regional office having jurisdiction. This submittal information can be found on our website at Where to Submit FOP Applications and Permit-Related Documents.

Please review the "SOP Technical Review Fact Sheet" located at http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/Title_V/sop_wdp_factsheet.pdf. This guidance contains important information regarding the review process and application update procedures. Contact me if you have any questions regarding the guidelines, the project schedule, or any other details regarding your application or permit.

Thank you for your cooperation.

Sincerely,

John Walker
Permit Reviewer
OA/Air Permits Division/OP Section

Texas Commission on Environmental Quality
MC-163, P.O. Box 13087
Austin, TX 78711-3087
John.Walker@tceq.texas.gov

Phone: (512) 239-1277

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

From: Richard Suniga
To: Herrmann, John P. (JSC-JP111)
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Streamline Revision
Date: Wednesday, January 24, 2024 12:24:00 PM

John,

I stand corrected, I meant an OP-CRO2 which is not necessary unless you will sign and submit STEERS submittals as the RO/DAR. The OP-CRO1 is not need since permit certification will use the RO from the STEERS project record. Since you signed and submitted the current project and you have previously submitted signed OP-DEL form new appointment for permit O1552, please send a copy directly to me I'll make the appropriate entry.

My apologies for any inconvenience I may have caused.

Sincerely,

Richard Suniga, License & Permit Specialist
Texas Commission on Environmental Quality | Office of Air
Air Permits Division | Air Permits Initial Review Team
12100 Park 35 Circle, Bldg. C, Austin, TX 78753
Mail: MC-161, P.O. Box 13087, Austin TX 78711-3087
(512) 239-5325 | Richard.Suniga@tceq.texas.gov
Web Site: www.tceq.texas.com
Please consider whether it is necessary to print this e-mail
How are we doing? www.tceq.texas.gov/customersurvey

From: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Sent: Tuesday, January 23, 2024 1:58 PM
To: Richard Suniga <richard.suniga@tceq.texas.gov>
Subject: RE: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Streamline Revision

Richard: Thank you for your response.

As you know, STEERS was updated for Title V FOP permit application submittals. As a consequence, our internal procedure for processing Title V applications through senior management had to be modified.

If you look back over the past six months, I have really been struggling with how to represent myself

as a DAR.

I recently updated my SPA so that I would be able to submit the application on Mr. Walker's behalf, and Mr Walker approved and signed my SPA accordingly. So I thought that would allow me to submit.

We were explicitly told not to include an OP-CRO1 form because the update of the SPA effectively obviated the need for the form. However, since we need to submit a copy to EPA, I went ahead and had Mr. Walker sign the transmittal letter (electronically) and the cover letter included the Tile V certification statement, since the package no longer included the OP-CRO1.

So any guidance you can provide would be appreciated. If we can go back to including the OP-CRO1 with the transmittal into STEERS that would solve our predicament – if that's permissible.

I apologize for the miscommunications.

From: Richard Suniga <richard.suniga@tceq.texas.gov>
Sent: Monday, January 22, 2024 3:49 PM
To: Herrmann, John P. (JSC-JP111) <john.p.herrmann@nasa.gov>
Subject: [EXTERNAL] FOP, National Aeronautics and Space Administration, O1552, Streamline Revision

Mr. Hermann,

I'm administratively processing the permit application for the above mentioned and require additional information. After reviewing the STEERS copy of record the Responsible Official (RO) or Duly Authorized Representative (DAR) is required to sign and submit the STEERS application. Please provide me Form OP-CRO1 with signature listing you as the Responsible Official (RO) or Duly Authorized Representative (DAR). Should you have any questions or concerns regarding this information please don't hesitate to contact me.

Sincerely,

Richard Suniga, License & Permit Specialist
Texas Commission on Environmental Quality | Office of Air
Air Permits Division | Air Permits Initial Review Team
12100 Park 35 Circle, Bldg. C, Austin, TX 78753
Mail: MC-161, P.O. Box 13087, Austin TX 78711-3087
(512) 239-5325 | Richard.Suniga@tceq.texas.gov
Web Site: www.tceq.texas.com
Please consider whether it is necessary to print this e-mail
How are we doing? www.tceq.texas.gov/customersurvey

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

From: Johnny Bowers
To: Richard Suniga
Subject: FW: STEERS Title V Application Submittal (New Application)
Date: Monday, January 22, 2024 9:01:53 AM

Please process. Thanks!

-----Original Message-----
From: steers@tceq.texas.gov <steers@tceq.texas.gov>
Sent: Monday, January 22, 2024 7:28 AM
To: RFCAIR12 <RFCAIR12@tceq.texas.gov>; air_permits@pcs.hctx.net; donald.richner@houstontx.gov; TVAPPS <tvapps@tceq.texas.gov>
Subject: STEERS Title V Application Submittal (New Application)

The TV-E application has been successfully submitted by JOEL WALKER. The submittal was received at 01/22/2024 07:27 AM.

The Reference number for this submittal is 593289

The confirmation number for this submittal is 512001.
The Area ID for this submittal is 1552.
The Project ID for this submittal is 36233.
The hash code for this submittal is DD95621E779BC56EB684F99E56782A0C8ED0FB5A0EC323739D3E81A72AB961AC.

You may access the original application submittal and the notice of final action documents from the COR Viewer which is available at https://ida.tceq.texas.gov/steersstaff/index.cfm?fuseaction=openadmin.submitlog&newsearch=yes.

If you have any questions, please contact the STEERS Help Line at 512-239-6925 or by e-mail at steers@tceq.texas.gov.

From: Richard Suniga
To: john.p.herrmann@nasa.gov
Subject: FOP, National Aeronautics and Space Administration, O1552, Streamline Revision
Date: Monday, January 22, 2024 3:48:37 PM

Mr. Hermann,

I'm administratively processing the permit application for the above mentioned and require additional information. After reviewing the STEERS copy of record the Responsible Official (RO) or Duly Authorized Representative (DAR) is required to sign and submit the STEERS application. Please provide me Form OP-CRO1 with signature listing you as the Responsible Official (RO) or Duly Authorized Representative (DAR). Should you have any questions or concerns regarding this information please don't hesitate to contact me.

Sincerely,

Richard Suniga, License & Permit Specialist
Texas Commission on Environmental Quality | Office of Air
Air Permits Division | Air Permits Initial Review Team
12100 Park 35 Circle, Bldg. C, Austin, TX 78753
Mail: MC-161, P.O. Box 13087, Austin TX 78711-3087
(512) 239-5325 | Richard.Suniga@tceq.texas.gov
Web Site: www.tceq.texas.com
Please consider whether it is necessary to print this e-mail
How are we doing? www.tceq.texas.gov/customersurvey

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 1)
Federal Operating Permit Program
Table 1a: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Horsepower Rating	RACT Date Placed in Service	Functionally Identical Replacement	Type of Service	Fuel Fired	Engine Type	ESAD Date Placed in Service	Diesel HP Rating
B220GEN01	R7201-2				D2001+				
B25GEN02A	R7ICI-2				ENG	NG	Rich-burn		
B31GEN01	R7ICI-2				ENG	NG	Lean-Burn		
B16GEN01	R7201-2				D2001+				

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 2)
Federal Operating Permit Program
Table 1b: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	NO_x Emission Limitation	23-C Option	30 TAC Chapter 116 Limit	EGF System CAP Unit	NO_x Averaging Method	NO_x Reduction	NO_x Monitoring System
B220GEN01	R7201-2							
B25GEN02A	R7ICI-2				NO	1HR	NONE	MERT
B31GEN01	R7ICI-2				NO	1HR	NONE	MERT
B16GEN01	R7201-2							

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 3)
Federal Operating Permit Program
Table 1c: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Fuel Flow Monitoring	CO Emission Limitation	CO Averaging Method	CO Monitoring System	NH_3 Emission Limitation	NH_3 Monitoring
B220GEN01	R7201-2						
B25GEN02A	R7ICI-2	X40A	310C	1HR	OTHER		
B31GEN01	R7ICI-2	X40A	310C	1HR	OTHER		
B16GEN01	R7201-2						

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 4)
Federal Operating Permit Program
Table 2a: Title 40 Code of Federal Regulations Part 63 (40 CFR Part 63)
Subpart ZZZZ: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	HAP Source	Brake HP	Construction/ Reconstruction Date	Nonindustrial Emergency Engine	Service Type	Stationary RICE Type
B220GEN01	63ZZZZ	AREA	100-	06+			
B25GEN02A	63ZZZZ	AREA	300-500	06+			
B31GEN01	63ZZZZ	AREA	500+	06+			
B16GEN01	63ZZZZ	AREA	100-250	06+			

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 8)
Federal Operating Permit Program
Table 4a: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Construction/ Reconstruction/ Modification Date	Test Cell	Exemption	Temp Replacement	Horsepower	Fuel	AEL No.	Lean Burn	Commencing
B25GEN02A	63JJJJ	YES	NO	NONE	NO	130-500E	NATGAS			CON
B31GEN01	63JJJJ	YES	NO	NONE	NO	500+E	NATGAS			CON

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 9)
Federal Operating Permit Program
Table 4b: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Manufacture Date	Displacement	Certified	Operation	Certified Modification	Service	Severe Duty	Optional Compliance
B25GEN02A	63JJJJ	N0111+E		YES	YES		EMERG	NO	
B31GEN01	63JJJJ	N0710+E		YES	YES		EMERG	NO	

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 10)
Federal Operating Permit Program
Table 5a: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Applicability Date	Exemptions	Service	Commencing	Manufacture Date
B220GEN01	63IIII	2005+	NONE	EMERG	CON	0406+
B16GEN01	63IIII	2005+	NONE	EMERG	CON	0406+

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 11)
Federal Operating Permit Program
Table 5b: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Diesel	AES No.	Displacement	Generator Set	Model Year	Install Date
B220GEN01	63IIII	DIESEL		10-CS		2007	
B16GEN01	63IIII	DIESEL		10-CS		2017+	

Stationary Reciprocating Internal Combustion Engine Attributes
Form OP-UA2 (Page 12)
Federal Operating Permit Program
Table 5c: Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60)
Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-1552	RN100665579

Unit ID No.	SOP/GOP Index No.	Kilowatts	Filter	AECD	Standard	Compliance Option	PM Compliance	Options
B220GEN01	63IIII	E37-75	NO	NO	YES	MANU YES		
B16GEN01	63IIII	E75-130	NO	NO	YES	MANU YES		

Revision Application:
Title V Air Operating Permit

Environmental Office

Availability:

Available only with approval of issuing office: JE

December 30, 2023

National Aeronautics and
Space Administration
Lyndon B. Johnson Space Center
Houston, Texas

This page intentionally left blank.

TABLE OF CONTENTS

1.0 Application for Permit Revision 1
1.1 Background 1
1.2 Proposed Activities 1
1.3 Additions 1
1.4 Deletions 1
1.5 Other Changes 2

LIST OF ACRONYMS

Acronym	Full Term
CEMS	Continuous Emissions Monitoring System
CI	Compression Ignition
FOP	Federal Operating Permit
HGB	Harris/Galveston/Brazoria Counties
ICE	Internal Combustion Engine
ISS	International Space Station
JE	Environmental Office Designation
JSC	Johnson Space Center
NAA	Non-attainment Area
NASA	National Aeronautics and Space Administration
NOx	Oxides of Nitrogen
PEMS	Predictive Emissions Monitoring Systems
R&D	Research and Development
SIC	Standard Industrial Classification
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
VOC	Volatile Organic Compound

1.0 APPLICATION FOR PERMIT REVISION

1.1 Background

From the early Gemini missions to today's International Space Station (ISS) programs, the National Aeronautics and Space Administration (NASA) has monitored America's human operations in space from its facilities at the Johnson Space Center (JSC). The JSC complex includes over 100 buildings situated on 1,620 acres in Harris County, which is in the Houston/Galveston/Brazoria (HGB) ozone non-attainment area (NAA). The major activities conducted at JSC include:

1. ISS mission control and operations planning;
2. Selection and training of the United States astronaut corps;
3. Applied medical and life sciences research;
4. Studies of samples returned by the Stardust programs; and
5. Manage Orion Crew Exploration Vehicle program.

JSC's four-digit Standard Industrial Classification (SIC) code is 9661, which corresponds to government establishments primarily engaged in programs for manned and unmanned space flights and space exploration. NASA's Research and Development (R&D) laboratories are classified as auxiliaries to this industry.

The Texas Commission on Environmental Quality (TCEQ) issued Permit Number 01552 to NASA JSC on November 17, 2004 and renewed it on December 22, 2021. From the date of issuance of this Federal Operating Permit (FOP), NASA has been required to operate JSC in accordance with the requirements of Title 30, Chapter 122 of the Texas Administrative Code (TAC). The terms and conditions included in Permit Number 01552 include recordkeeping requirements, reporting requirements (including deviation reporting), and compliance certification requirements.

1.2 Proposed Activities

NASA JSC is submitting this minor revision to add four (4) emergency engines, replace turbine 1 (T-1) and turbine 2 (T-2) the current Continuous Emissions Monitoring System (CEMS) with Predictive Emissions Monitoring System (PEMS). This revision will also remove two (2) sources which have been permanently shut down.

1.3 Additions

NASA JSC is adding four (4)) new emergency generators (B220GEN01, B25GEN02A, B31GEN01) and B16GEN01. Generator B220GEN01 is a diesel generator located at B220, Generator B25GEN02A is a natural gas generator located at B25 replacing Generator B25GEN02, Generator B31GEN01 is a natural gas generator located at B31 and B16GEN01 is a diesel generator located at B16.

1.4 Deletions

Two (2) sources are being deleted from the permit: One (1) diesel generator B25GEN02 which will be permanently shut down, and one (1) metal finishing operation B9PLAT which has been permanently shut down.

1.5 Other Changes

NASA JSC is replacing turbine 1 (T-1) and turbine 2 (T-2) current Continuous Emissions Monitoring System (CEMS) with Predictive Emissions Monitoring System (PEMS).

The following Title V permitting forms will be included in the revision application which is being submitted through STEERS.

A. OP-2

The most recent version of Form OP-2 (03/22) is provided to update facility information. The certification included on Table 1 of this form has not changed since the most recent permit renewal. Table 2 of this form reflects the addition of four (4) emergency generators B220GEN01, B25GEN02A, B31GEN01, and B16GEN01, and the removal of one (1) generator B25GEN02 and one (1) metal finishing operation B9PLAT.

B. OP-SUMR

Included in the OP-SUMR (05/20) form are the following changes:

1. Addition of four (4) generators/engines (B220GEN01, B25GEN02A, B31GEN01) and B16GEN01
2. Removal of two (2) sources: B25GEN02 and B9PLAT.

C OP-REQ3

An OP-REQ3 (06/15) Applicable Requirements Summary is provided to document the regulatory applicability of 30 TAC Chapter 117, 40 CFR Part 60, Subpart IIII, Subpart JJJJ, and 40 CFR Part 63, Subpart ZZZZ to these newly added generators.

D. OP-UA2

The most recent version of Form OP-UA2 (11/22) Stationary Reciprocating Internal Combustion Engine Attributes is provided to document the regulatory attributes for these four (4) generators/engine B220GEN01, B25GEN02A, B31GEN01 and B16GEN01.

E. OP-UA11

The most recent version of Form OP-UA11 (09/22) Stationary Turbines Attributes is provided to document the regulatory attributes for two (2) Turbines T-1 and T-2 whose current emissions monitoring system CEMS is being replaced with PEMS.

F. OP-CRO1

The most recent version of Form OP-CRO1 (08/18) is provided with updated facility information as required per 30 TAC 122.132(d)(8).

Stationary Turbine Attributes
Form OP-UA11 (Page 6)
Federal Operating Permit Program
Table 3a: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Area
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP/GOP Index No.	Megawatt Rating	RACT Date Placed in Service (ICI)	Functionally Identical Replacement (ICI)	Service Type (ICI)	NO_x Emission Limitation (ICI)	23C-Option
T-1	R-7201	1-10			TURB	310D	
T-2	R-7201	1-10			TURB	310D	

Stationary Turbine Attributes
Form OP-UA11 (Page 7)
Federal Operating Permit Program
Table 3b: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	30 TAC Chapter 116 Limit (ICI)	EGF System Cap Unit	Averaging Method	NO_x Reduction (ICI)	NO_x Monitoring System (ICI)
T-1	R-7201		NO	30D	POST1	PEMS
T-2	R-7201		NO	30D	POST1	PEMS

Stationary Turbine Attributes
Form OP-UA11 (Page 8)
Federal Operating Permit Program
Table 3c: Title 30 Texas Administrative Code Chapter 117 (30 TAC Chapter 117)
Subchapter B: Combustion Control at Major Industrial, Commercial, Institutional, and Industrial Sources in Ozone Nonattainment Areas
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Fuel Flow Monitoring	CO Emission Limitation	CO Monitoring System	NH3 Emission Limitation	NH3 Monitoring
T-1	R-7201	X40A	310C	PEMS	310C	PEMS
T-2	R-7201	X40A	310C	PEMS	310C	PEMS

Stationary Turbine Attributes
Stationary Turbine Attributes
Form OP-UA11 (Page 12)
Federal Operating Permit Program
Table 6a: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Unit Type	Construction/Modification Date	Heat Input	Subject to Da	Service Type	NO_x Standard	Fuel Type
T-1	60KKKK	CHPT	2005C	50-850	NO	NOTER	YES	NGO
T-2	60KKKK	CHPT	2005C	50-850	NO	NOTER	YES	NGO

Stationary Turbine Attributes
Form OP-UA11 (Page 13)
Federal Operating Permit Program
Table 6b: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	75% of Peak	30 MW	Turbine Use	NO_x Control	NO_x Monitoring	Common Steam Header	Duct Burner
T-1	60KKKK	NO		ELCT	NO	CPMS	CMN-	YES
T-2	60KKKK	NO		ELCT	NO	CPMS	CMN-	YES

Stationary Turbine Attributes
Form OP-UA11 (Page 14)
Federal Operating Permit Program
Table 6c: Title 40 Code of Federal Regulations (40 CFR Part 60)
Subpart KKKK: Stationary Combustion Turbines
Texas Commission on Environmental Quality

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit ID No.	SOP Index No.	Location	SO_2 Standard	Fuel Monitoring	Fuel Quality	Performance Test	Intermediate Storage	Fuel Schedules
T-1	60KKKK	NO	NO	YES	SAMP	SAMP		
T-2	60KKKK	NO	NO	YES	SAMP	SAMP		

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 1

Date	Permit No.	Regulated Entity No.
12/30/2023	O-01552	RN100665579

Unit/Process AI	Unit/Process Revision No.	Unit/Process ID No.	Unit/Process Applicable Form	Unit/Process Name/ Description	Unit/Process CAM	Preconstruction Authorizations 30 TAC Chapter 116/ 30 TAC Chapter 106	Preconstruction Authorizations Title I
A	1	B220GEN01	OP-UA2	B220 Emergency Diesel Generator		106.511/09/04/2000	
A	2	B25GEN02A	OP-UA2	B25 EOC Emergency Gas Generator		106.511/09/04/2000	
A	3	B31GEN01	OP-UA2	B31 Emergency Gas Generator		106.511/09/04/2000	
D	4	B9PLAT	OP-UA1	B9 Metal Finishing		106.375/03/14/1997	
D	5	B25GEN02	OP-UA2	B25 Emergency Diesel Generator		106.511/09/04/2000	
	6	T-1	OP-UA11	Natural Gas Combustion Turbine		#130148	
	7	T-2	OP-UA11	Natural Gas Combustion Turbine		#130148	
A	8	B16GEN01	OP-UA2	B16 Emergency Diesel Generator		106.511/09/04/2000	

Texas Commission on Environmental Quality
Federal Operating Permit Program
Individual Unit Summary for Revisions
Form OP-SUMR
Table 2

Date	Permit No.	Regulated Entity No.
12/30/2023	0-01552	RN100665579

Revision No.	ID No.	Applicable Form	Group AI	Group ID No.
1	B220GEN01	OP-UA2	A	GRPGEN2
2	B25GEN02A	OP-UA2	A	None
3	B31GEN01	OP-UA2	A	None
4	B9PLAT	OP-UA1	D	None
5	B25GEN02	OP-UA2	D	GRPGEN5
6	T-1	OP-UA11		GRPTBN
7	T-2	OP-UA11		GRPTBN
8	B16GEN01	OP-UA2	A	GRPGEN8

Applicable Requirements Summary
Form OP-REQ3 (Page 1)
Federal Operating Permit Program

Table 1a: Additions

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
1	GRPGEN2	OP-UA2	R7201-2	EXEMP	30 TAC Chapter 117, Subchapter B	[G]§117.303(a)(11) [G]§117.310(f)
2	B25GEN02A	OP-UA2	R7ICI-2	EXEMP	30 TAC Chapter 117, Subchapter B	117.303(a)(11)
3	B31GEN01	OP-UA2	R7ICI -2	EXEMP	30 TAC Chapter 117, Subchapter B	117.303(a)(6)(D)
8	GRPGEN8	OP-UA2	R7201-2	EXEMP	30 TAC Chapter 117, Subchapter B	[G]§117.303(a)(11) [G]§117.310(f)
1	GRPGEN2	OP-UA2	60IIII	CO	40 CFR Part 60, Subpart IIII	5.0 g/KW-hr § 60.4205(b) § 60.4202(a)(2) §1039-Appendix I § 60.4206 § 60.4207(b) [G]§ 60.4211(f) § 60.4218 §60.4211(c) [G]§60.4211(a)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
1	GRPGEN2	OP-UA2	60IIII	NMHC + NOX	40 CFR Part 60, Subpart IIII	7.5 g/KW-hr § 60.4205(b) § 60.4202(a)(2) §1039-Appendix I § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218
1	GRPGEN2	OP-UA2	60IIII	PM	40 CFR Part 60, Subpart IIII	0.40 g/KW-hr §60.4205(b)| §60.4202(a)(2) §60.4206 §1039-Appendix I §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)
1	GRPGEN2	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)
2	B25GEN02A	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)
3	B31GEN01	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
8	GRPGEN8	OP-UA2	63ZZZZ	HAPs	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)
2	B25GEN02A	OP-UA2	60JJJJ	NOx	40 CFR Part 60, Subpart JJJJ	2.0 g/HP-hr §60.4233(e)-Table 1|34 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)
2	B25GEN02A	OP-UA2	60JJJJ	CO	40 CFR Part 60, Subpart JJJJ	4.0 g/HP-hr §60.4233(e)-Table 1|36 §60.4234 §60.4243(b)(1)
2	B25GEN02A	OP-UA2	60JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	1.0 g/HP-hr §60.4233(e)-Table 1|37 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)
3	B31GEN01	OP-UA2	60JJJJ	NOx	40 CFR Part 60, Subpart JJJJ	2.0 g/HP-hr §60.4233(e)-Table 1|34 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
3	B31GEN01	OP-UA2	60JJJJ	CO	40 CFR Part 60, Subpart JJJJ	4.0 g/HP-hr §60.4233(e)-Table 1|36 §60.4234 §60.4243(b), [G](d), (g) §60.4246. §60.4243(b)(1)
3	B31GEN01	OP-UA2	60JJJJ	VOC	40 CFR Part 60, Subpart JJJJ	1.0 g/HP-hr §60.4233(e)-Table 1|37 §60.4234 §60.4243(b), [G](d), (g) §60.4246 §60.4243(b)(1)
8	GRPGEN8	OP-UA2	60IIII	NMHC+ NOx	40 CFR Part 60, Subpart IIII	4.0 g/KW-hr §60.4205(b)|14 §60.4202(a)(2) §1039-Appendix I §60.4206 §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	Unit/Group/Process Applicable Form	SOP/GOP Index No	Pollutant	Applicable Regulatory Requirement Name	Applicable Regulatory Requirement Standard(s)
8	GRPGEN8	OP-UA2	60IIII	CO	40 CFR Part 60, Subpart IIII	5.0 g/KW-hr §60.4205(b)| §60.4202(a)(2) §1039-Appendix I §60.4206 §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)
8	GRPGEN8	OP-UA2	60IIII	PM	40 CFR Part 60, Subpart IIII	0.30 g/KW-hr §60.4205(b)|21 §60.4202(a)(2) §1039-Appendix I §60.4206 §60.4207(b) [G]§60.4211(f) §60.4218 §60.4211(c) [G]§60.4211(a)

Applicable Requirements Summary
Form OP-REQ3 (Page 2)
Federal Operating Permit Program1

Table 1b: Additions

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	**Permit No.:** 0-01552
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	SOP/GOP Index No.	Pollutant	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
1	GRPGEN2	R7201-2	EXEMP	None	§117.340(j) §117.345(f) [G]§117.345(f)(6) [G]§117.345(f)(10)	None
2	B25GEN02A	R7ICI-2	EXEMP	None	§117.340(j) §117.345(f), [G](f)(6)	None
3	B31GEN01	R7ICI-2	EXEMP	None	§117.340(j) §117.345(f), [G](f)(6)	None
8	GRPGEN8	R7201-2	EXEMP	None	§117.340(j) §117.345(f) [G]§117.345(f)(6) [G]§117.345(f)(10)	None
2	B25GEN02A	60JJJJ	NOx	§60.4237(b)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	**Permit No.:** 0-01552
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	SOP/GOP Index No.	Pollutant	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
2	B25GEN02A	60JJJJ	CO	§60.4237(b)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
2	B25GEN02A	60JJJJ	VOC	§60.4237(b)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
3	B31GEN01	60JJJJ	NOx	§60.4237(a)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
3	B31GEN01	60JJJJ	CO	§60.4237(a)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
3	B31GEN01	60JJJJ	VOC	§60.4237(a)	§60.4245(a), (a)(1), (a)(2) §60.4245(a)(3) §60.4243(a)(1) §60.4245(b)	[G]§60.4245(e)
1	GRPGEN2	60IIII	NMHC + NOX	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Date: 12/30/2023	**Regulated Entity No.:** RN100665579	**Permit No.:** 0-01552
Company Name: National Aeronautics and Space Administration	**Area Name:** Johnson Space Center	

Revision No.	Unit/Group/Process ID No.	SOP/GOP Index No.	Pollutant	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
1	GRPGEN2	60IIII	CO	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
1	GRPGEN2	60IIII	PM	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
8	GRPGEN8	60IIII	NMHC+ NOx	§60.4209(a)	§60.4214(b)	[G]§60.4214(d)
8	GRPGEN8	60IIII	CO	§60.4209(a)	§60.4214(b)	[G]§60.4214(d)
8	GRPGEN8	60IIII	PM	§60.4209(a)	§60.4214(b)	[G]§60.4214(d)
1	GRPGEN2	63ZZZZ	HAPs	None	None	None
2	B25GEN02A	63ZZZZ	HAPs	None	None	None
3	B31GEN01	63ZZZZ	HAPs	None	None	None
8	GRPGEN8	63ZZZZ	HAPs	None	None	None

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 1
Texas Commission on Environmental Quality

Date: 12/30/2023	
Permit No.: 0-01552	
Regulated Entity No.: RN100665579	
Company Name: National Aeronautics and Space Administration	
For Submissions to EPA	
Has an electronic copy of this application been submitted (or is being submitted) to EPA?	☒ YES ☐ NO
I. Application Type	
Indicate the type of application:	
☐ Renewal	
☒ Streamlined Revision (Must include provisional terms and conditions as explained in the instructions.)	
☐ Significant Revision	
☐ Revision Requesting Prior Approval	
☐ Administrative Revision	
☐ Response to Reopening	
II. Qualification Statement	
For SOP Revisions Only	☒ YES ☐ NO
For GOP Revisions Only	☐ YES ☐ NO

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 1 *(continued)*
Texas Commission on Environmental Quality

III. Major Source Pollutants (Complete this section if the permit revision is due to a change at the site or change in regulations.)						
Indicate all pollutants for which the site is a major source based on the site's potential to emit: *(Check the appropriate box[es].)*						
☐ VOC	☒ NO_X	☐ SO_2	☐ PM_{10}	☐ CO	☐ Pb	☐ HAP
Other:						
IV. Reference Only Requirements *(For reference only)*						
Has the applicant paid emissions fees for the most recent agency fiscal year (September 1 - August 31)?					☒ YES ☐ NO ☐ N/A	
V. Delinquent Fees and Penalties						
Notice: 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 are paid in accordance with the Delinquent Fee and penalty protocol.						

Federal Operating Permit Program
Application for Permit Revision/Renewal
Form OP-2-Table 2
Texas Commission on Environmental Quality

Date: 12/30/2023
Permit No.: O-01552
Regulated Entity No.: RN100665579
Company Name: National Aeronautics and Space Administration

Using the table below, provide a description of the revision.

Revision No.	Revision Code		Unit/Group	Process	NSR Authorization	Description of Change and Provisional Terms and Conditions
		New Unit	ID No.	Applicable Form		
1	MS-A	YES	B220GEN01	OP-UA2	106.511	New emergency generator installed at Building 220
2	MS-A	YES	B25GEN02A	OP-UA2	106.511	New emergency generator installed at Building 25
3	MS-A	YES	B31GEN01	OP-UA2	106.511	New emergency generator installed at Building 31
4	MS-C	NO	B9PLAT	OP-UA1	106.375	Permanently shut down. Delete from permit.
5	MS-C	NO	B25GEN02	OP-UA2	106.511	Permanently shut down. Delete from permit.
6	MS-C	NO	T-1	OP-UA11	130148	Permanently replacing turbine CEMS with PEMS
7	MS-C	NO	T-2	OP-UA11	130148	Permanently replacing turbine CEMS with PEMS
8	MS-A	YES	B16GEN01	OP-UA2	106.511	New emergency generator installed at Building 16 and added to a new group, GRPGEN8
9	MS-C	NO	B3GEN01A	OP-UA2	106.511	Existing emergency generator added to a new group, GRPGEN8

Application for Permit Revision/Renewal
Form OP-2-Table 3
Texas Commission on Environmental Quality

Date:12/30/2023		
Permit No.: O-01552		
Regulated Entity No.: RN100665579		
Company Name: National Aeronautics and Space Administration		
I.	**Significant Revision** *(Complete this section if you are submitting a significant revision application or a renewal application that includes a significant revision.)*	
A.	Is the site subject to bilingual requirements pursuant to 30 TAC § 122.322?	☐ YES ☐ NO
B.	Indicate the alternate language(s) in which public notice is required: Spanish	
C.	Will, there be a change in air pollutant emissions as a result of the significant revision?	☐ YES ☐ NO

Texas Commission on Environmental Quality

Title V Existing

1552

Site Information (Regulated Entity)

What is the name of the permit area to be authorized?	LYNDON B JOHNSON SPACE CENTER
Does the site have a physical address?	Yes
Physical Address	
Number and Street	2101 NASA PKWY
City	HOUSTON
State	TX
ZIP	77058
County	HARRIS
Latitude (N) (##.######)	29.557777
Longitude (W) (-###.######)	95.086666
Primary SIC Code	9661
Secondary SIC Code	
Primary NAICS Code	927110
Secondary NAICS Code	
Regulated Entity Site Information	
What is the Regulated Entity's Number (RN)?	RN100665579
What is the name of the Regulated Entity (RE)?	LYNDON B JOHNSON SPACE CENTER
Does the RE site have a physical address?	Yes
Physical Address	
Number and Street	2101 NASA PKWY
City	HOUSTON
State	TX
ZIP	77058
County	HARRIS
Latitude (N) (##.######)	29.557777
Longitude (W) (-###.######)	-95.086666
Facility NAICS Code	
What is the primary business of this entity?	FLEET REFUELING

Customer (Applicant) Information

How is this applicant associated with this site?	Owner Operator
What is the applicant's Customer Number (CN)?	CN601572878
Type of Customer	Federal Government
Full legal name of the applicant:	
Legal Name	National Aeronautics And Space Administration
Texas SOS Filing Number	
Federal Tax ID	
State Franchise Tax ID	
State Sales Tax ID	

Local Tax ID	
DUNS Number	
Number of Employees	501+
Independently Owned and Operated?	

Responsible Official Contact

Person TCEQ should contact for questions about this application:	
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR.
First	JOEL
Middle	
Last	WALKER
Suffix	
Credentials	
Title	DIRECTOR, CENTER OPERATIONS
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	MC JE- 111
City	HOUSTON
State	TX
ZIP	77058
Phone (###-###-####)	2814830541
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	joel.b.walker@nasa.gov

Technical Contact

Person TCEQ should contact for questions about this application:	
Select existing TC contact or enter a new contact.	JOHN HERMANN(NATIONAL AERONA...)
Organization Name	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Prefix	MR
First	JOHN
Middle	
Last	HERMANN
Suffix	
Credentials	
Title	ENVIRONMENTAL ENGINEER
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic

Mailing Address (include Suite or Bldg. here, if applicable)	2101 NASA PKWY
Routing (such as Mail Code, Dept., or Attn:)	
City	HOUSTON
State	TX
ZIP	77058
Phone (###-###-####)	2814835213
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	2814837027
E-mail	john.p.herrmann@nasa.gov

Title V General Information - Existing

1) Permit Type:	SOP
2) Permit Latitude Coordinate:	29 Deg 33 Min 28 Sec
3) Permit Longitude Coordinate:	95 Deg 5 Min 12 Sec
4) Is this submittal a new application or an update to an existing application?	New Application
4.1. What type of permitting action are you applying for?	Streamlined Revision
4.1.1. Are there any permits that should be voided upon issuance of this permit application through permit conversion?	No
4.1.2. Are there any permits that should be voided upon issuance of this permit application through permit consolidation?	No
5) Does this application include Acid Rain Program or Cross-State Air Pollution Rule requirements?	No

Title V Attachments Existing

Attach OP-1 (Site Information Summary)

Attach OP-2 (Application for Permit Revision/Renewal)

[File Properties]

File Name	OP_2_FORM OP-2.pdf
Hash	5538E191C1A1091B5ACAC659BE04000A109D518D2584A08A7AA481EB75EED09E
MIME-Type	application/pdf

Attach OP-REQ1 (Application Area-Wide Applicability Determinations and General Information)

Attach OP-REQ2 (Negative Applicable Requirement Determinations)

Attach OP-REQ3 (Applicable Requirements Summary)

[File Properties]

File Name	OP_REQ3_Form OP-REQ3.pdf
Hash	D8DB090353706CFCC787F48AADB0FCE7650EE904FAF1D7097C79BFB28D733834
MIME-Type	application/pdf

Attach OP-PBRSUP (Permits by Rule Supplemental Table)

Attach OP-SUMR (Individual Unit Summary for Revisions)

[File Properties]

File Name	OP_SUMR_Form OP-SUMR.pdf
Hash	50CBD72AF4F72460134A48722238594431292C62D5E7B67DB0CA33CF3274FEA1
MIME-Type	application/pdf

Attach OP-MON (Monitoring Requirements)

Attach OP-UA (Unit Attribute) Forms

[File Properties]

File Name	Form OP-UA11.pdf
Hash	65CDF71C84013DB5AAB3AB667D796425C1BF2377FCB5C5D6E9B344BFF07C37B2
MIME-Type	application/pdf

[File Properties]

File Name	OP-UA2.pdf
Hash	AE623A2DFC852906E68A1205397315A4319E19BB2A7F44110AC8A14EAF1A8F58
MIME-Type	application/pdf

If applicable, attach OP-AR1 (Acid Rain Permit Application)

Attach OP-CRO2 (Change of Responsible Official Information)

Attach OP-DEL (Delegation of Responsible Official)

Attach any other necessary information needed to complete the permit.

[File Properties]

File Name	2023-12-30 JSC Title V Revision App.pdf
Hash	B0B4C8CA067BA8852FB0CD22E63DA60B7FADEA30A6737E65A70882ED9057890E
MIME-Type	application/pdf

An additional space to attach any other necessary information needed to complete the permit.

Expedite Title V

1) Per Texas Health and Safety Code, Section 382.05155, does the applicant want to expedite the processing of this application?	No

Certification

I certify that I am the Responsible Official for this application and that, based on information and belief formed after reasonable inquiry, the statements and information on this form are true, accurate, and complete.

1. I am John P Herrmann, the owner of the STEERS account ER008559.
2. I have the authority to sign this data on behalf of the applicant named above.
3. I have personally examined the foregoing and am familiar with its content and the content of any attachments, and based upon my personal knowledge and/or inquiry of any individual responsible for information contained herein, that this information is true, accurate, and complete.
4. I further certify that I have not violated any term in my TCEQ STEERS participation agreement and that I have no reason to believe that the confidentiality or use of my password has been compromised at any time.
5. I understand that use of my password constitutes an electronic signature legally equivalent to my written signature.
6. I also understand that the attestations of fact contained herein pertain to the implementation, oversight and enforcemer of a state and/or federal environmental program and must be true and complete to the best of my knowledge.
7. I am aware that criminal penalties may be imposed for statements or omissions that I know or have reason to believe are untrue or misleading.
8. I am knowingly and intentionally signing Title V Existing 1552.
9. My signature indicates that I am in agreement with the information on this form, and authorize its submittal to the TCEC

OWNER OPERATOR Signature: John P Herrmann OWNER OPERATOR

Account Number:	ER008559
Signature IP Address:	156.68.19.33
Signature Date:	2024-01-22
Signature Hash:	0FA25CCA5132FFDC3EE8575C6B6D867030F236F81761020C0A85E9983808674B
Form Hash Code at time of Signature:	DD95621E779BC56EB684F99E56782A0C8ED0FB5A0EC323739D3E81A72AB961AC

Submission

Reference Number:	The application reference number is 593289
Submitted by:	The application was submitted by ER008559/John P Herrmann
Submitted Timestamp:	The application was submitted on 2024-01-22 at 07:27:39 CST
Submitted From:	The application was submitted from IP address 156.68.19.33
Confirmation Number:	The confirmation number is 512001
Steers Version:	The STEERS version is 6.73
Permit Number:	The permit number is 1552

Additional Information

Application Creator: This account was created by Chis Ofondu