TCEQ PERMIT BY RULE REGISTRATION

MP Magnetics LLC > Fort Worth, TX

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1. EXECUTIVE SUMMARY

MP Magnetics LLC (MP Magnetics) is proposing to construct and operate greenfield metal, alloy, and neodymium-iron-boron (NdFeB) magnet manufacturing facility in Fort Worth, TX (Fort Worth Facility). This facility will also serve as the business and engineering headquarters for MP Magnetics. MP Magnetics has not been assigned Texas Commission on Environmental Quality (TCEQ) Customer Reference Number (CN) or the Regulated Entity Number (RN). Therefore, with this submittal, MP Magnetics requests the assignment of a CN for MP Magnetics and an RN for the Fort Worth Facility. The details are submitted via State of Texas Environmental Electronic Reporting System (STEERS) as part of this registration.

This facility will be located at 13840 Independence Pkwy., Fort Worth, TX 75901, Tarrant County. Tarrant County is currently designated as a serious nonattainment area for the 2008 8-hour ozone assessment, a marginal ozone nonattainment area under the 2015 8-hour ozone assessment, and an attainment or unclassified area for all other criteria pollutants.[1] The Fort Worth Facility is a minor source with respect to Prevention of Significant Deterioration (PSD), Nonattainment New Source Review (NNSR), and the federal operating permits (Title V) programs.

The main operations include electrowinning, casting, milling, pressing, sintering and finishing. Supporting operations and facilities include cooling towers, storage tanks for industrial gases, laboratory, and vacuum cleaning systems. With this PBR registration, MP Magnetics proposes to authorize the sources and emissions from the Fort Worth Facility under the following Permit by Rules (PBRs):

Table 1: Proposed Processes/Equipment and PBR Authorization

Process/Equipment Description	Emission Control System	PBR Authorization
Electrowinning (Molten Salt Electrolysis) and Milling (Powder Making,)	Cyclone/Baghouse and Multi-stage Scrubber	30 TAC §106.261 – Facilities (Emission Limitations) 30 TAC §106.262 – Facilities (Emission and Distance Limitations)
Casting/Alloy Making (crucible, melting furnace and tundish) and Sintering Furnace	None	30 TAC §106.321 – Metal Melting or Holding Furnace
Pressing	None	30 TAC §106.317 – Miscellaneous Metal Equipment
Finishing	None	30 TAC §106.375 – Aqueous Solutions for Electrolytic and Electroless
Metal Inspection	None	30 TAC §106.316 – Metal Inspection
Cooling Towers (2)	Drift Eliminators (inherent to the system)	30 TAC §106.371 – Cooling Water Units
Inert Gas Storage (Argon,	None	30 TAC §106.372 – Industrial Gases

[1] The United States Environmental Protection Agency (U.S. EPA) Green Book. https://www3.epa.gov/airquality/greenbook/ancl.html#TX. Accessed March 2022.

Process/Equipment Description	Emission Control System	PBR Authorization
Nitrogen, and Hydrogen)		
Laboratory Equipment	None	30 TAC §106.122 – Bench-Scale Laboratory Equipment
Soldering, Brazing, and Welding	None	30 TAC §106.227 – Soldering, Brazing, and Welding
Portable Vacuum Cleaning Systems for housekeeping purposes	Vacuum filters (inherent to the units)	30 TAC §106.266 – Vacuum Cleaning Systems

Except for PBRs 30 TAC §106.261 – *Facilities (Emission Limitations)* and 30 TAC §106.262 – *Facilities (Emission and Distance Limitations)*, other PBRs do not require a registration with the TCEQ. However, MP Magnetics is submitting the registration to include all relevant PBRs for completeness purposes through the TCEQ STEERS. The TCEQ PI-7 CERT form, TCEQ checklists, and supporting documentation are included herein. The emissions calculation methodology is presented in Section 5 (Emissions Data and Calculations) of this registration, which includes detailed emissions calculations with example calculations. The enclosed documentation demonstrates that the applicable requirements of 30 TAC Chapter 106 will be met.

2. TCEQ FORMS AND APPLICABILITY CHECKLISTS

FORM PI-7 CERT

PBR 106.4 CHECKLIST

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

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

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

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

1. 30 TAC § 106.4(a)(1) and (4): Emission Limits	**Answer**
List emissions in tpy for **each** facility (add additional pages or table if needed): **See Section 5 of the PBR Registration**	
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.*	

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

2. 30 TAC § 106.4(a)(2): Nonattainment Check	Answer
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.	
(Moderate) - Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller counties:	☐ HGB
(Moderate) - Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise counties:	☒ DFW
If "Yes," to any of the above, continue to the next question. If "No," continue to Section 3.	
Does this project trigger a nonattainment review?	☐ YES ☒ NO
Is the project's potential to emit (PTE) for emissions of VOC or NO_x increasing by 100 tpy or more?	☐ YES ☒ NO
PTE is the maximum capacity of a stationary source to emit any air pollutant under its worst-case physical and operational design unless limited by a permit, rules, or made federally enforceable by a certification.	
Is the site an existing major nonattainment site and are the emissions of VOC or NO_x increasing by 40 tpy or more?	☐ YES ☒ NO
If needed, attach contemporaneous netting calculations per nonattainment guidance.	
Additional information can be found at: www.tceq.texas.gov/permitting/air/forms/newsourcereview/tables/nsr_table8.html and www.tceq.texas.gov/permitting/air/nav/air_docs_newsource.html	
*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.*	
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?	☐ YES ☒ NO
Are emissions of any criteria pollutant increasing by 250 tpy of any criteria pollutant at an unnamed source?	☐ YES ☒ NO
Are emissions increasing above significance levels at an existing major site?	☐ YES ☒ NO
PSD information can be found at: www.tceq.texas.gov/assets/public/permitting/air/Forms/NewSourceReview/Tables/10173tbl.pdf and www.tceq.texas.gov/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.	

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

4. 30 TAC § 106.4(a)(6): Federal Requirements	Answer
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)?	☐ YES ☐ NO ☒ NA
If "Yes," which Subparts are applicable? *(answer below.)*	
Will all facilities under this PBR meet applicable requirements of 40 CFR Part 63, Hazardous Air Pollutants Maximum Achievable Control Technology (MACT) standards?	☐ YES ☐ NO ☒ NA
If "Yes," which Subparts are applicable? *(answer below.)*	
Will all facilities under this PBR meet applicable requirements of 40 CFR Part 61, National Emissions Standards for Hazardous Air Pollutants (NESHAPs)?	☐ YES ☐ NO ☒ NA
If "Yes," which Subparts are applicable? *(answer below.)*	
If "Yes" to any of the above, please attach a discussion of how the facilities will meet any applicable standards.	
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?	☐ YES ☒ NO
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):	
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?	☐ YES ☒ NO
If "Yes," answer the question below.	
If "No," continue to Section 7.	
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

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

7. Highly Reactive Volatile Organic Compounds (HRVOC) check		
Is the facility located in Harris County?		☐ YES ☒ NO
If "Yes," answer the next question. If "No," skip to the box below.		
Will the project be constructed after June 1, 2006?		☐ YES ☐ NO
If "Yes," answer the next question.		
If "No," skip to the box below.		
Will one or more of the following HRVOC be emitted as a part of this project?		☐ YES ☐ NO
If "Yes," complete the information below:		
Information	**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?		☐ YES ☒ NO
If "Yes," answer the next question. If "No," the checklist is complete.		
Will the project be constructed after June 1, 2006?		☐ YES ☐ NO
If "Yes," answer the next question. If "No," the checklist is complete.		
Will one or more of the following HRVOC be emitted as a part of this project?		☐ YES ☐ NO
If "Yes," complete the information below:		
Information	**lb//hr**	**tpy**
► ethylene		
► propylene		

Texas Commission on Environmental Quality
Certification and Registration for Permits by Rule
Form PI-7-CERT
(Page 1)

I. Registrant Information		
A. Company or Other Legal Customer Name: **MP Magnetics LLC**		
B. Company Official Contact Information (☐ Mr. ☐ Mrs. ☒ Ms. ☐ Other _____)		
Name: **Kelly Trent**		
Title: **EHS Manager**		
Mailing Address: **6720 Via Austi Pkwy, Suite 450**		
City: **Las Vegas**	State: **NV**	ZIP Code: **89119**
Phone: **(725) 221-8227**	Fax	
E-mail Address: ktrent@mpmaterials.com		
All PBR registration responses will be sent via e-mail.		
C. Technical Contact Information (☐ Mr. ☐ Mrs. ☒Ms. ☐ Other _____)		
Name: **Kelly Trent**		
Title: **EHS Manager**		
Company Name: **MP Magnetics LLC**		
Mailing Address: **6720 Via Austi Pkwy, Suite 450**		
City: **Las Vegas**	State: **NV**	ZIP Code: **89119**
Phone: **(725) 221-8227**	Fax:	
E-mail: ktrent@mpmaterials.com		
II. Facility and Site Information		
A. Name and Type of Facility		
Facility Name: **MP Magnetics LLC.**		
Type of Facility:	☒ Permanent	☐ Temporary
For portable units, please provide the serial number of the equipment being authorized below.		
Serial No:	Serial No:	
B. Facility Location Information		
Street Address: **13840 Independence Parkway**		
If there is no street address, provide written driving directions to the site and provide the closest city or town, county, and ZIP code for the site (attach description if additional space is needed).		
City: **Fort Worth**	County: **Tarrant**	ZIP Code: **75901**

II. Facility and Site Information *(continued)*	
C. TCEQ Core Data Form	
Is the Core Data Form (TCEQ Form Number 10400) attached? **Submitted via STEERS**	☒ YES ☐ NO
If "NO," provide customer reference number (CN) and regulated entity number (RN) below.	
Customer Reference Number (CN): **TBA**	
Regulated Entity Number (RN): **TBA**	
D. TCEQ Account Identification Number (if known):	
E. Type of Action:	
☒ Initial Application ☐ Change to Registration	
For Change to Registration provide the Registration Number:	
F. PBR number(s) claimed under 30 TAC Chapter 106	
(List all the individual rule number(s) that are being claimed.)	
106.261	106.372
106.262	106.375
106.316	106.122
106.317	106.277
106.321	106.266
106.371	
G. Historical Standard Exemption or PBR	
Are you claiming a historical standard exemption or PBR?	☐ YES ☒ NO
If "YES," enter rule number(s) and associated effective date in the spaces provided below.	
Rule Number(s)	Effective Date
H. Previous Standard Exemption or PBR Registration Number	
Is this authorization for a change to an existing facility previously authorized under a standard exemption or PBR?	☐ YES ☒ NO
If "YES," enter previous standard exemption number(s) and PBR registration number(s), and associated effective dates in the spaces provided below.	
Standard Exemption and PBR Registration Number(s)	Effective Date

II. Facility and Site Information *(continued)*	
I. Other Facilities at this Site Authorized by Standard Exemption, PBR, or Standard Permit	
Are there any other facilities at this site that are authorized by an Air Standard Exemption, PBR, or Standard Permit?	☐ YES ☒ NO
If "YES," enter standard exemption number(s), PBR registration number(s), and Standard Permit registration number(s), and associated effective date in the spaces provided below.	
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s)	Effective Date
J. Other Air Preconstruction Permits	
Are there any other air preconstruction permits at this site?	☐ YES ☒ NO
If "YES," enter permit number(s) in the spaces provided below.	
K. Affected Air Preconstruction Permits	
Does the PBR being claimed directly affect any permitted facility?	☐ YES ☒ NO
If "YES," enter the permit number(s) in the spaces provided below.	
L. Federal Operating Permit (FOP) Requirements (30 TAC Chapter 122 Applicability)	
1. Is this facility located at a site that is required to obtain an FOP pursuant to 30 TAC Chapter 122?	☐ YES ☒ NO ☐ To Be Determined
If the site currently has an existing FOP, enter the permit number:	
Check the requirements of 30 TAC Chapter 122 that will be triggered if this certification is accepted. *(check all that apply)*	
☐ Initial Application for an FOP ☐ Significant Revision for an SOP ☐ Minor Revision for an SOP	
☐ Operational Flexibility/Off Permit Notification for an SOP ☐ Revision for a GOP	
☐ To be Determined ☒ None	
2. Identify the type(s) of FOP issued and/or FOP application(s) submitted/pending for the site. *(check all that apply)*	
☐ SOP ☐ GOP ☐ GOP application/revision (submitted or under APD review)	
☒ N/A ☐ SOP application/revision (submitted or under APD review)	

III.	**Fee Information (***See Section VII. for address to send fee or go to www.tceq.texas.gov/epay to pay online.)*	
A.	Fee Requirements	
Is a fee required per Title 30 TAC § 106.50?		☒ YES ☐ NO
If "NO," specify the exception. There are three exceptions to paying a PBR fee.		(*check all that apply*)
1.	Registration is solely to establish a federally enforceable emission limit.	☐
2.	Registration is within six months of an initial PBR review, and it is addressing deficiencies, administrative changes, or other allowed changes.	☐
3.	Registration is for a remediation project (30 TAC § 106.533).	☐
B.	Fee Amount	
1.	A $100 fee is required if *any* of the answers in III.B.1 are "YES."	
This business has less than 100 employees.		☐ YES ☒ NO
This business has less than $6 million dollars in annual gross receipts.		☐ YES ☒ NO
This registration is submitted by a governmental entity with a population of less than 10,000.		☐ YES ☒ NO
This registration is submitted by a non-profit organization.		☐ YES ☒ NO
2.	A $450 fee is required for all other registrations.	
C.	Payment Information	
Check/money order/transaction or voucher number: **Submitted via ePay**		
Individual or company name on check: **Submitted via ePay**		
Fee Amount: **$450.00**		
Was fee paid online?		☒ YES ☐ NO
IV.	**Technical Information Including State And Federal Regulatory Requirements** **Check the appropriate box to indicate what is included in your submittal.** **NOTE:** *Any technical or essential information needed to confirm that facilities are meeting the requirements of the PBR must be provided. Not providing key information could result in a deficiency of the project.*	
A.	PBR requirements (Checklists are optional; however, your review will go faster if you provide applicable checklists.)	
Did you demonstrate that the general requirements in 30 TAC § 106.4 are met?		☒ YES ☐ NO
Did you demonstrate that the individual requirements of the specific PBR are met?		☒ YES ☐ NO
B.	Confidential Information Included (If confidential information is submitted with this registration, all confidential pages must be properly marked "CONFIDENTIAL.")	☒ YES ☐ NO

IV. Technical Information Including State and Federal Regulatory Requirements *(continued)* **Check the appropriate box to indicate what is included in your submittal.** **Note:** Any technical or essential information needed to confirm that facilities are meeting the requirements of the PBR must be provided. Not providing key information could result in a deficiency of the project.		
C. Process Flow Diagram		☒ YES ☐ NO
D. Process Description		☒ YES ☐ NO
E. Maximum Emissions Data and Calculations		☒ YES ☐ NO
Note: *If the facilities listed in this 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.*		
F. Is this certification being submitted to certify the emissions for the entire site?		☒ YES ☐ NO
If "NO," include a summary of the specific facilities and emissions being certified.		
G. Table 1(a) (Form 10153) Emission Point Summary		☐ YES ☐ NO
H. Distances from Property Line and Nearest Off-Property Structure		
Distance from this facility's emission release point to the nearest property line:	**>100** feet	
Distance from this facility's emission release point to the nearest off-property structure:	**>200** feet	
I. Project Status		
Has the company implemented the project or waiting on a response from TCEQ?	☐ Implemented ☒ Waiting	
J. Projected Start of Construction and Projected Start of Operation Dates		
Projected Start of Construction (provide date):	**4/7/2022**	
Projected Start of Operation (provide date):	**3/1/2023**	
V. Delinquent Fees		
This form **will not be processed** until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ is paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ website at: www.tceq.texas.gov/agency/financial/fees/delin/index.html.		

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

VII. Submitting Copies of the Certification and Registration

Copies must be sent as listed below.
Processing delays may occur if copies are not sent as noted.

Who	Where	What
Air Permits Initial Review Team (APIRT)	Regular, Certified, Priority Mail MC 161, P.O. Box 13087 Austin, Texas 78711-3087 Hand Delivery, Overnight Mail MC 161, 12100 Park 35 Circle, Building C, Third Floor Austin, Texas 78753	Originals Form PI-7-CERT, Core Data Form, and all attachments. Not required if using ePermits[1].
Revenue Section, TCEQ	Regular, Certified, Priority Mail MC 214, P.O. Box 13088 Austin, Texas 78711-3088 Hand Delivery, Overnight Mail MC 214, 12100 Park 35 Circle, Building A, Third Floor Austin, Texas 78753	Original Money Order or Check, Copy of Form PI-7-CERT, and Core Data Form. Not required if fee was paid using ePay[2].
Appropriate TCEQ Regional Office	To find your Regional Office address, go to the TCEQ website at www.tceq.texas.gov/agency/directory/region, or call (512) 239-1250.	Copy of Form PI-7-CERT, Core Data Form, and all attachments. Not required if using ePermits
Appropriate Local Air Pollution Control Program(s)	To Find your local or Regional Air Pollution Control Programs go to the TCEQ, APD website at www.tceq.texas.gov/permitting/air/local_programs.html, or call (512)-239-1250	Copy of Form PI-7-CERT, Core Data Form, and all attachments.

[1] ePermits located at www3.tceq.texas.gov/steers/
[2] ePay located at www.tceq.texas.gov/epay

3. PERMIT BY RULE FEE

Per 30 TAC §106.50 – Registration Fees for Permits By Rule, a $450 fee is required to be submitted for this registration. This fee has been submitted to TCEQ via STEERS. In addition, MP Magnetics requested expedited review of the registration and therefore submitted a $500 fee for this request.

5. EMISSIONS DATA AND CALCULATIONS

The following sections contain detailed descriptions of the methodologies used to calculate emissions from the proposed project at the Fort Worth Facility. Emissions result from the following operations:

- Electrowinning and Milling
- Cooling Towers (2 units)

For other operations, based on the nature of the process (e.g., enclosed operations) no air emissions are expected, except for argon, which is an inert gas and does not require authorization per 30 TAC 101.1(108). Any loss of material is collected as scrap. Detailed emissions calculation spreadsheets, including example calculations are provided at the end of this section. A confidential document with the material balance calculations is provided as a separate attachment in Appendix A.

5.1 ELECTROWINNING AND MILLING

Potential emissions from electrowinning and milling operations are calculated based on the raw material inputs and engineering calculations. Air contaminants released from this process include particulate matter, sulfur dioxide (SO_2), nitrogen oxides (NO_X), hydrogen fluoride (HF), and perfluorocarbonates. Carbon monoxide (CO) formed during the process is thermally converted to carbon dioxide (CO_2).

A cyclone/baghouse system will be used to collect particulate matter emissions after thermal decomposition of CO to CO_2, to capture the rare earth fluorides. Exhaust from the baghouse is sent to dry scrubber (lime injection) to capture HF emissions and then followed by a wet scrubber to capture any remaining HF and PM emissions.

5.2 COOLING TOWERS

Potential PM emissions from the cooling towers are calculated based on the water circulation rate (in gallons per minute [gpm]), drift rate (in %), and the maximum hourly total dissolved solids (TDS) concentration within the cooling water (in ppm on a wet basis [ppmw]). In order to estimate PM_{10} and $PM_{2.5}$ emissions, the particle size distribution is calculated based on the methodology outlined in Reisman, J. and G. Frisbie "*Calculating Realistic PM_{10} Emissions from Cooling Towers*", Greystone Environmental Consultants, Inc., 650 University Avenue, Suite 100, Sacramento, CA 95825.

For the purposes of potential emissions calculations, it is assumed that the cooling towers would operate continuously.

Permit By Rule (PBR) 106.4 Sitewide Emissions Summary

Proposed Hourly and Annual Emissions

FIN	EPN	Emission Source	VOC		NO_X		CO		PM		PM_{10}		$PM_{2.5}$		SO_2		HF	
			lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
EWIN	EWIN	Electrowinning	--	--	0.06	0.21	0.38	1.39	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.19	0.69	<0.01	<0.01
CT-1	CT-1	Cooling Tower 1	--	--	--	--	--	--	0.20	0.87	0.10	0.43	<0.01	<0.01	--	--	--	--
CT-2	CT-2	Cooling Tower 2	--	--	--	--	--	--	0.20	0.87	0.10	0.43	<0.01	<0.01	--	--	--	--
TOTAL EMISSIONS:			**--**	**--**	**0.06**	**0.21**	**0.38**	**1.39**	**0.40**	**1.74**	**0.20**	**0.87**	**<0.01**	**<0.01**	**0.19**	**0.69**	**<0.01**	**<0.01**
Annual Emission Limits per 106.4 (a)(4) (tpy)				**25**		**250**		**250**		**25**		**15**		**10**		**25**		**25**
Annual Emissions < Limits				**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**

Potential Emissions from Electrowinning (EPN: EWIN)

Pollutant	Control Method	Control Efficiency (%)	Controlled Emissions [1] Hourly (lb/hr) [2]	Controlled Emissions [1] Annual (tpy)
NdF3 Particulate	Cyclone/Baghouse and Dry/Wet Scrubber Systems	99.9%	6.56E-04	2.36E-03
PrF3 Particulate		99.9%	2.92E-05	1.05E-04
Total Particulate	Cyclone/Baghouse	99.9%	6.85E-04	2.47E-03
CO	thermal combusition	99.0%	0.38	1.39
HF	Dry and wet scrubbers	99.9%	2.99E-04	1.08E-03
SO_2			0.19	0.69
NOx			0.06	0.21
CF4	None	0.0%	0.01	0.02
C2F6	None	0.0%	1.14E-03	4.10E-03
C3F8	None	0.0%	3.84E-05	1.38E-04

[1] Controlled annual emissions based on the process inputs and engineering calculations, included as Confidential Information.
[2] Hourly emissions calculated based on the annual hours of operation of 7,200 hrs/yr.

PBR 106.261 and 106.262 Limits and Compliance Evaluation

Pollutant	Chemical Name	Cas No	Applicable Paragraph of 106.261 / 106.262	L Value [1]	30 TAC §106.261 (a)(2) Emission Limit	30 TAC §106.261 (a)(3) Emission Limit	30 TAC §106.262(a)(2) Emission Limit [2, 3]	Hourly Emission Limit	Annual Emission Limit[3]	Proposed Hourly Emissions	Proposed Annual Emissions	Hourly Emissions < Emission Limit?	Annual Emissions < Emission Limit?
NdF3 Particulate	Neodymium(III) fluoride	13709-42-7	106.261(a)(3)	--	--	1.0	--	1.00	3.60	6.56E-04	2.36E-03	Yes	Yes
PrF3 Particulate	Praseodymium(III) fluoride	13709-46-1	106.261(a)(3)	--	--	1.0	--	1.00	3.60	2.92E-05	1.05E-04	Yes	Yes
CO	Carbon monoxide		106.261(a)(2)	--	6	-	--	6.00	10.00	0.38	1.39	Yes	Yes
HF	Hydrogen fluoride	7664-39-3	106.262(a)(2)	0.5	--	-	0.004	0.004	0.013	2.99E-04	1.08E-03	Yes	Yes
SO2	Sulfur dioxide		106.261(a)(2)	--	6	-	--	6.00	10.00	0.19	0.69	Yes	Yes
NOx	Nitrogen oxides		106.261(a)(2)	--	6	-	--	6.00	10.00	0.06	0.21	Yes	Yes
CF4	Carbon tetrafluoride	75-73-0	106.261(a)(3)	--	--	1.0	--	1.00	3.60	0.01	0.02	Yes	Yes
C2F6	Hexafluoroethane	76-16-4	106.261(a)(3)	--	--	1.0	--	1.00	3.60	1.14E-03	4.10E-03	Yes	Yes
C3F8	Perfluoropropane	76-19-7	106.261(a)(3)	--	--	1.0	--	1.00	3.60	3.84E-05	1.38E-04	Yes	Yes

[1] Limit values listed or referenced in 30 TAC 106.262(a)(2), Table 262. As referenced in Table 262, for limit values obtained per the American Conference of Governmental Industrial Hygienists (ACGIH) TLVs and BEIs Guide, 1997 edition, the time weighted average (TWA) is used. Only chemicals impacted by this PBR revision are included in this table.

[2] Minimum distance from the exhaust stack to the nearest off-plant receptor is used for emission limit determination.

Per Figure 1 of 30 TAC 106.262(a)(2), this corresponds to a K value of:

D (minimum) (feet)	K
310	135.50

[3] Per 30 TAC 106.262(a)(2), E = L / K; where, E is the emission limit and L is the limit value listed or referenced in Table 262 of 30 TAC 106.262(a)(2). If E > 6, then the emission limit is 6 lb/hr.
[4] Based on annual hours of operation.

Cooling Tower Emissions (EPN: CT-1 and CT-2)

Design Specifications

Parameter	Value (for each unit)	Units
Water Circulation Rate	7,950	gpm
Operating Hours per Year[2]	8,760	hrs/yr
Drift Rate[2]	0.001	%
Minimum TDS[2]	190	ppmw
Maximum TDS[2]	5,000	ppmw

[1] Per vendor design specifications provided on 03/09/2022.
[2] Conservative assumption based on engineering estimates and industry knowledge.

Particle Size Distribution of PM Emissions from Cooling Towers

Cooling Tower : Particle Size Distribution Based on TDS [1]

TDS (ppm)	190	2,595	5,000	
EPRI Droplet Diameter[2] (µm)	Solid Particle Diameter[3] (um)			EPRI % Mass Smaller[2]
10	0.44	1.06	1.31	0.000
20	0.88	2.11	2.63	0.196
30	1.33	3.17	3.94	0.226
40	1.77	4.23	5.26	0.514
50	2.21	5.28	6.57	1.816
60	2.65	6.34	7.89	5.702
70	3.09	7.40	9.20	21.348
90	3.98	9.51	11.83	49.812
110	4.86	11.62	14.46	70.509
130	5.75	13.74	17.09	82.023
150	6.63	15.85	19.72	88.012
180	7.96	19.02	23.67	91.032
210	9.28	22.19	27.61	92.468
240	10.61	25.36	31.55	94.091
270	11.93	28.53	35.50	94.689
300	13.26	31.70	39.44	96.288
350	15.47	36.98	46.02	97.011
400	17.68	42.26	52.59	98.340
450	19.89	47.55	59.16	99.071
500	22.10	52.83	65.74	99.071
600	26.52	63.40	78.89	100.000

[1] Particle size distribution calculated based on emission calculations outlined in *Reisman, J. and G. Frisbie "Calculating Realistic PM $_{10}$ Emissions from Cooling Towers", Greystone Environmental Consultants, Inc., 650 University Avenue, Suite 100, Sacramento, CA 95825.*
[2] The EPRI Droplet Diameter and the EPRI % Mass Smaller obtained from Table 1. Reisman, J. and G. Frisbie "Calculating Realistic PM_{10} Emissions from Cooling Towers", Greystone Environmental Consultants, Inc., 650 University Avenue, Suite 100, Sacramento, CA 95825.
[3] Solid particle diameter is calculated from EPRI droplet diameter assuming that each water droplet evaporates shortly after being emitted into a single, solid, spherical particle using the equation below.

$$D_p = D_d\,[(TDS)(\rho_w / \rho_{TDS})]^{1/3}$$

Where,
TDS is in units of ppmw
D_p = diameter of solid particle, micrometers (μm)
D_d = diameter of drift droplet, μm

Other assumptions include:

$\rho_{droplet}$	1	g/cm^3
ρ_{solid}	2.2	g/cm^3

Cooling Tower Emissions (EPN: CT-1 and CT-2)

Particle Size Distribution and Emission Rates

TDS (ppm)	Solid Particle Diameter used for PM_{10} (mm)	% of Particles where diameter < 10 mm	Solid Particle Diameter used for $PM_{2.5}$ (mm)	% of Particles where diameter < 2.5 mm	Hourly Emission Rate [1, 2, 3]			Annual Emissions (tpy) [4]		
					PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
190	10.61	94.091	2.65	5.702	7.56E-03	7.11E-03	4.31E-04	3.31E-02	3.12E-02	1.89E-03
2595	11.62	70.509	3.17	0.226	1.03E-01	7.28E-02	2.33E-04	4.52E-01	3.19E-01	1.02E-03
5000	11.83	49.812	2.63	0.196	1.99E-01	9.91E-02	3.90E-04	8.71E-01	4.34E-01	1.71E-03
				Maximum Emissions:	**1.99E-01**	**9.91E-02**	**4.31E-04**	**8.71E-01**	**4.34E-01**	**1.89E-03**

[1] Hourly Emissions of PM (lb/hr) = Water Circulation Rate (gpm) x Drift Rate (%) / 100 x TDS (ppmw) x 8.34 (lb water/gal) x 60 (min/hr)

Hourly Emissions of PM (lb/hr) @ 5,000 ppmw = 7,950 gal / min × 0.001 / 100 × 5000 parts solids / 1,000,000 part water × 8.34 lb water / gal × 60 min / hr = 1.99E-01 lb/hr

[2] Hourly Emissions of PM_{10} (lb/hr) = Hourly Emissions of PM (lb/hr) x PM_{10} Portion of PM (%) / 100

Hourly Emissions of PM_{10} (lb/hr) @ 5,000 ppm = 1.99E-01 lb / hr × 49.812 / 100 = 9.91E-02 lb/hr

[3] Hourly Emissions of $PM_{2.5}$ (lb/hr) = Hourly Emissions of PM (lb/hr) x $PM_{2.5}$ Portion of PM (%) / 100

Hourly Emissions of $PM_{2.5}$ (lb/hr) @ 5,000 ppm = 1.99E-01 lb / hr × 0.196 / 100 = 3.90E-04 lb/hr

[4] Annual Emissions (tpy) = Hourly Emissions * Annual Operating Hours (hrs/yr) * 1/2,000 (ton/lb)

Annual Emissions of PM (tpy) = 7.56E-03 lb / hr × 8,760 hr / yr × 1 ton / 2,000 lb = 3.31E-02 tpy

6. GENERAL REQUIREMENTS

This section lists the general requirements for authorization under a PBR with a description of how the Fort Worth Facility will continue to comply with each requirement. Requirements of the specific PBR claimed in this revision are identified and discussed in Section 7 of this registration.

6.1 REQUIREMENTS FOR PERMITTING BY RULE (30 TAC §106.4) EFFECTIVE APRIL 14, 2014

a. *In order to be granted a permit, amendment, or special permit amendment, the application must qualify for a permit by rule, the following general requirements must be met.*

i. *Total actual emissions authorized under permit by rule from the facility shall not exceed the following limits, as applicable:*

(A) 250 tons per year (tpy) of carbon monoxide (CO) or nitrogen oxides (NO_X);

(B) 25 tpy of volatile organic compounds (VOC), sulfur dioxide (SO2), or inhalable particulate matter (PM);

(C) 15 tpy of particulate matter with diameters of 10 microns or less (PM_{10});

(D) 10 tpy of particulate matter with diameters of 2.5 microns or less ($PM_{2.5}$); or

(E) 25 tpy of any other air contaminant except:

a) *water, nitrogen, ethane, hydrogen, and oxygen; and*

b) *notwithstanding any provision in any specific permit by rule to the contrary, greenhouse gases as defined in §101.1 of this title (relating to Definitions).*

As presented in the Section 5 of this PBR registration, the total emissions from the Fort Worth Facility will not exceed 250 tpy of CO or NO_X; 25 tpy of VOC or SO_2 or PM; 15 tpy of PM_{10} or 10 tpy of $PM_{2.5}$; or 25 tpy of any other air contaminant except carbon dioxide, water, nitrogen, methane, ethane, hydrogen, and oxygen.

ii. *Any facility or group of facilities, which constitutes a new major stationary source, as defined in §116.12 of this title (relating to Nonattainment and Prevention of Significant Deterioration Review Definitions), or any modification which constitutes a major modification, as defined in §116.12 of this title, under the new source review requirements of the Federal Clean Air Act (FCAA), Part D (Nonattainment) as amended by the FCAA Amendments of 1990, and regulations promulgated thereunder, must meet the permitting requirements of Chapter 116, Subchapter B of this title (relating to New Source Review Permits) and cannot qualify for a permit by rule under this chapter. Persons claiming a permit by rule under this chapter should see the requirements of §116.150 of this title (relating to New Major Source or Major Modification in Ozone Nonattainment Areas) to ensure that any applicable netting requirements have been satisfied.*

The Fort Worth Facility is located in Tarrant County, which is designated as a serious nonattainment area for the 2008 8-hour ozone assessment, a marginal nonattainment area for the 2015 8-hour ozone assessment, as well as an attainment area for all other criteria pollutants. The Fort Worth Facility is a minor source with respect to the PSD and NNSR programs; therefore, the facility is not subject to the nonattainment new source review requirements of the FCAA.

iii. *Any facility or group of facilities, which constitutes a new major stationary source, as defined in 40 Code of Federal Regulations (CFR) §52.21, or any change which constitutes a major modification, as defined in 40 CFR §52.21, under the new source review requirements of the FCAA, Part C (Prevention of Significant Deterioration) as amended by the FCAA Amendments of 1990, and regulations promulgated thereunder because of emissions of air contaminants other than greenhouse gases, must meet the permitting requirements of Chapter 116, Subchapter B of this title and cannot qualify for a permit by rule under this chapter. Notwithstanding any provision in any specific permit by rule to the contrary, a new major stationary source or major modification which is subject to Chapter 116, Subchapter B, Division 6 of this title due solely to emissions of greenhouse gases may use a permit by rule under this chapter for air contaminants that are not greenhouse gases. However, facilities or projects which require a prevention of significant deterioration permit due to emissions of greenhouse gases may not commence construction or operation until the prevention of significant deterioration permit is issued.*

The Fort Worth Facility is a minor source with respect to PSD review. Therefore, the proposed project is not subject to PSD review.

iv. *Unless at least one facility at an account has been subject to public notification and comment as required in Chapter 116, Subchapter B or Subchapter D of this title (relating to New Source Review Permits or Permit Renewals), total actual emissions from all facilities permitted by rule at an account shall not exceed 250 tpy of CO or NOX ; or 25 tpy of VOC or SO2 or PM; or 15 tpy of PM10 ; or 10 tpy of PM2.5 ; or 25 tpy of any other air contaminant except water, nitrogen, ethane, hydrogen, oxygen, and GHGs (as specified in §106.2 of this title (relating to Applicability)).*

As presented in Section 5 of this PBR registration, the total emissions from the Fort Worth Facility will not exceed 250 tpy of CO or NO_X; 25 tpy of VOC or SO_2 or PM; 15 tpy of PM_{10} or 10 tpy of $PM_{2.5}$; or 25 tpy of any other air contaminant except carbon dioxide, water, nitrogen, methane, ethane, hydrogen, and oxygen since the site has not gone through public notice.

v. *Construction or modification of a facility commenced on or after the effective date of a revision of this section or the effective date of a revision to a specific permit by rule in this chapter must meet the revised requirements to qualify for a permit by rule.*

The Fort Worth Facility will meet the requirements under the PBR. In the event that the facilities are modified, the Fort Worth Facility will re-evaluate the applicability of the PBR in effect at the time of modification.

vi. *A facility shall comply with all applicable provisions of the FCAA, §111 (Federal New Source Performance Standards) and §112 (Hazardous Air Pollutants), and the new source review requirements of the FCAA, Part C and Part D and regulations promulgated thereunder.*

The Fort Worth Facility does not include any process or operations that are subject to the Federal Regulations.

vii. *There are no permits under the same commission account number that contain a condition or conditions precluding the use of a permit by rule under this chapter.*

The Fort Worth Facility has no TCEQ permits that preclude the use of a PBR under 30 TAC Chapter 106.

viii. *The proposed facility or group of facilities shall obtain allowances for NOX if they are subject to Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program).*

The requirements of 30 TAC Chapter 101, Subchapter H, Division 3 of this title applies to facilities located in the Houston/Galveston nonattainment area. The Fort Worth Facility is located in Tarrant County, Texas; therefore, 30 TAC Chapter 101, Subchapter H, Division 3 does not apply to the Fort Worth Facility.

b. *No person shall circumvent by artificial limitations the requirements of §116.110 of this title (relating to Applicability).*

The proposed operations at the Fort Worth Facility will meet all the requirements of 30 TAC Chapter 106. Therefore, a state permit is not required for the proposed emissions, and the requirements of 30 TAC §116.110 will not be circumvented.

c. *The emissions from the facility shall comply with all rules and regulations of the commission and with the intent of the Texas Clean Air Act (TCAA), including protection of health and property of the public, and all emissions control equipment shall be maintained in good condition and operated properly during operation of the facility.*

The Fort Worth Facility will be in compliance with the rules and regulations of the TCAA. In addition, compliance with the requirements of 30 TAC Chapter 106 ensures protection of health and property of the public.

d. *Facilities permitted by rule under this chapter are not exempted from any permits or registrations required by local air pollution control agencies. Any such requirements must be in accordance with TCAA, §382.113 and any other applicable law.*

The Fort Worth Facility is under the jurisdiction of City of Fort Worth's Environmental Quality Division and there are no addition requirements that apply to the proposed facility.

7. SPECIFIC REQUIREMENTS

MP Magnetics is proposing to authorize the operations at the Fort Worth Facility under various PBRs. The following subsections identify the applicable requirements of the PBRs and document how the Fort Worth Facility will comply with each requirement. General requirements for authorization under a PBR are discussed in Section 6 of this report.

7.1 REQUIREMENTS FOR FACILITIES (EMISSION LIMITATIONS) (30 TAC § 106.261) EFFECTIVE NOVEMBER 1, 2003

a. *Except as specified under subsection (b) of this section, facilities, or physical or operational changes to a facility, are permitted by rule provided that all of the following conditions of this section are satisfied.*

i. *The facilities or changes shall be located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located.*

The location of the emitting operations at the Fort Worth Facility are located at least 100 feet from any off-property recreational area, residence, or other structure not occupied or used solely by MP Magnetics.

ii. *Total new or increased emissions, including fugitives, shall not exceed 6.0 pounds per hour (lb/hr) and ten tons per year of the following materials: acetylene, argon, butane, crude oil, refinery petroleum fractions (except for pyrolysis naphthas and pyrolysis gasoline) containing less than ten volume percent benzene, carbon monoxide, cyclohexane, cyclohexene, cyclopentane, ethyl acetate, ethanol, ethyl ether, ethylene, fluorocarbons Numbers 11, 12, 13, 14, 21, 22, 23, 113, 114, 115, and 116, helium, isohexane, isopropyl alcohol, methyl acetylene, methyl chloroform, methyl cyclohexane, neon, nonane, oxides of nitrogen, propane, propyl alcohol, propylene, propyl ether, sulfur dioxide, alumina, calcium carbonate, calcium silicate, cellulose fiber, cement dust, emery dust, glycerin mist, gypsum, iron oxide dust, kaolin, limestone, magnesite, marble, pentaerythritol, plaster of paris, silicon, silicon carbide, starch, sucrose, zinc stearate, or zinc oxide.*

The emissions of the following chemicals proposed as part of this project will meet the emission limits of this condition:

- Carbon monoxide
- Oxides of Nitrogen
- Sulfur dioxide

Although argon is listed in this section and is used by the Fort Worth Facility, the emissions of argon do not require authorization under 106.261. Pure argon emissions are not considered unauthorized emissions per 30 TAC 101.1(108).[2]

[2] Confirmed via email communication between Ms. Latha Kambham (Trinity Consultants) and Ms. Kristyn Campbell (TCEQ) on March 7, 2022. The email communication is included in Appendix 2.

iii. *Total new or increased emissions, including fugitives, shall not exceed 1.0 lb/hr of any chemical having a limit value (L) greater than 200 milligrams per cubic meter (mg/m3) as listed and referenced in Table 262 of §106.262 of this title (relating to Facilities (Emission and Distance Limitations)) or of any other chemical not listed or referenced in Table 262. Emissions of a chemical with a limit value of less than 200 mg/m3 are not allowed under this section.*

The emissions of the following chemicals proposed as part of this project will meet the emission limits of this condition:

- Neodymium(III) fluoride (Cas No. 13709-42-7)
- Praseodymium(III) fluoride (Cas No. 13709-46-1)
- Carbon tetrafluoride (Cas No. 75-73-0)
- Hexafluoroethane (Cas No. 76-16-4)
- Perfluoropropane (Cas No. 76-19-7)

iv. *For physical changes or modifications to existing facilities, there shall be no changes to or additions of any air pollution abatement equipment.*

This PBR registration does not authorize modifications or physical changes to existing facilities. Therefore, this condition does not apply to the proposed operations at the Fort Worth Facility.

v. *Visible emissions, except uncombined water, to the atmosphere from any point or fugitive source shall not exceed 5.0% opacity in any six-minute period.*

Visible emissions from the facilities affected by this PBR registration will not exceed five percent opacity in any six-minute period.

vi. *For emission increases of five tons per year or greater, notification must be provided using Form PI-7 within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any.*

The total emissions authorized under this section are less than five tons per year.

vii. For emission increases of less than five tons per year, notification must be provided using either:

1) Form PI-7 within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any; or

The total emissions authorized under this section are less than five tons per year; However, this PBR registration is being submitted within ten days of the installation to authorize emissions described in PBR 106.261(a)(7)(A) and (B). This registration includes:

- TCEQ Form PI-7 CERT (Section 2 of this registration)
- Project Description (Section 1 of this registration)
- Process Description (Section 4 of this registration)

- Emissions Calculations (Section 5 of this registration)
- Identification of the emitted compounds (Section 5 of this registration)
- Applicable limit values (Section 5 of this registration)

2) Form PI-7 by March 31 of the following year summarizing all uses of this permit by rule in the previous calendar year. This annual notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any.

This PBR registration is being submitted within ten days of the installation.

b. *The following are not authorized under this section:*

i. *construction of a facility authorized in another section of this chapter or for which a standard permit is in effect; and*

ii. *any change to any facility authorized under another section of this chapter or authorized under a standard permit.*

None of the facilities associated with this PBR are authorized under another section of Chapter 106 or standard permit.

7.2 REQUIREMENTS FOR FACILITIES (EMISSION AND DISTANCE LIMITATIONS) (30 TAC § 106.262) EFFECTIVE NOVEMBER 1, 2003

a. *Facilities, or physical or operational changes to a facility, are permitted by rule provided that all of the following conditions of this section are satisfied.*

i. *Emission points associated with the facilities or changes shall be located at least 100 feet from any off-plant receptor. Off-plant receptor means any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located.*

The location of the emission sources authorized under 106.262 is at least 100 feet from the nearest off-plant receptor, including any off-property recreational area, residence, or other structure not occupied or used solely by MP Magnetics.

ii. *New or increased emissions, including fugitives, of chemicals shall not be emitted in a quantity greater than five tons per year nor in a quantity greater than E as determined using the equation E = L/K and the following table.*

D, Feet	K	
100	326	E = maximum allowable hourly emission,
200	200	and never to exceed 6 pounds per
300	139	hour.
400	104	
500	81	L = value as listed or referenced in Table 262
600	65	
700	54	
800	46	K = value from the table on this page.
900	39	(interpolate intermediate values)
1,000	34	
2,000	14	D = distance to the nearest off-plant receptor.
3,000 or more	8	

TABLE 262

LIMIT VALUES (L) FOR USE WITH EXEMPTIONS FROM PERMITTING §106.262

The values are not to be interpreted as acceptable health effects values relative to the issuance of any permits under Chapter 116 of this title (relating to Control of Air Pollution by Permits for New Construction or Modification).

Compound	Limit (L) Milligrams Per Cubic Meter
Acetone	590
Acetaldehyde	9
Acetone Cyanohydrin	4
Acetonitrile	34
Acetylene	2662
N-Amyl Acetate	2.7
Sec-Amyl Acetate	1.1
Benzene	3
Beryllium and Compounds	0.0005
Boron Trifluoride, as HF	0.5
Butyl Alcohol, -	76
Butyl Acrylate	19
Butyl Chromate	0.01
Butyl Glycidyl Ether	30
Butyl Mercaptan	0.3
Butyraldehyde	1.4
Butyric Acid	1.8
Butyronitrile	22
Carbon Tetrachloride	12
Chloroform	10
Chlorophenol	0.2
Chloroprene	3.6
Chromic Acid	0.01
Chromium Metal, Chromium II and III Compounds	0.1
Chromium VI Compounds	0.01
Coal Tar Pitch Volatiles	0.1
Creosote	0.1

Compound	Limit (L) Milligrams Per Cubic Meter
Cresol	*0.5*
Cumene	*50*
Dicyclopentadiene	*3.1*
Diethylaminoethanol	*5.5*
Diisobutyl Ketone	*63.9*
Dimethyl Aniline	*6.4*
Dioxane	*3.6*
Dipropylamine	*8.4*
Ethyl Acrylate	*0.5*
Ethylene Dibromide	*0.38*
Ethylene Glycol	*26*
Ethylene Glycol Dinitrate	*0.1*
Ethylidene-2-norbornene, 5-	*7*
Ethyl Mercaptan	*0.08*
Ethyl Sulfide	*1.6*
Glycolonitrile	*5*
Halothane	*16*
Heptane	*350*
Hexanediamine, 1,6-	*0.32*
Hydrogen Chloride	*1*
Hydrogen Fluoride	*0.5*
Hydrogen Sulfide	*1.1*
Isoamyl Acetate	*133*
Isoamyl Alcohol	*15*
Isobutyronitrile	*22*
Kepone	*0.001*
Kerosene	*100*
Malononitrile	*8*
Mesityl Oxide	*40*
Methyl Acrylate	*5.8*
Methyl Amyl Ketone	*9.4*
Methyl-t-butyl ether	*45*
Methyl Butyl Ketone	*4*
Methyl Disulfide	*2.2*
Methylenebis (2-chloroaniline) (MOCA)	*0.003*
Methylene Chloride	*26*
Methyl Isoamyl Ketone	*5.6*
Methyl Mercaptan	*0.2*
Methyl Methacrylate	*34*
Methyl Propyl Ketone	*530*
Methyl Sulfide	*0.3*
Mineral Spirits	*350*
Naphtha	*350*
Nickel, Inorganic Compounds	*0.015*
Nitroglycerine	*0.1*
Nitropropane	*5*
Octane	*350*
Parathion	*0.05*

Compound	Limit (L) Milligrams Per Cubic Meter
Pentane	*350*
Perchloroethylene	*33.5*
Petroleum Ether	*350*
Phenyl Mercaptan	*0.4*
Propionitrile	*14*
Propyl Acetate	*62.6*
Propylene Oxide	*20*
Propyl Mercaptan	*0.23*
Silica-amorphous- precipitated, silica gel	*4*
Silicon Carbide	*4*
Stoddard Solvent	*350*
Styrene	*21*
Succinonitrile	*20*
Tolidine	*0.02*
Trichloroethylene	*135*
Trimethylamine	*0.1*
Valeric Acid	*0.34*
Vinyl Acetate	*15*
Vinyl Chloride	*2*

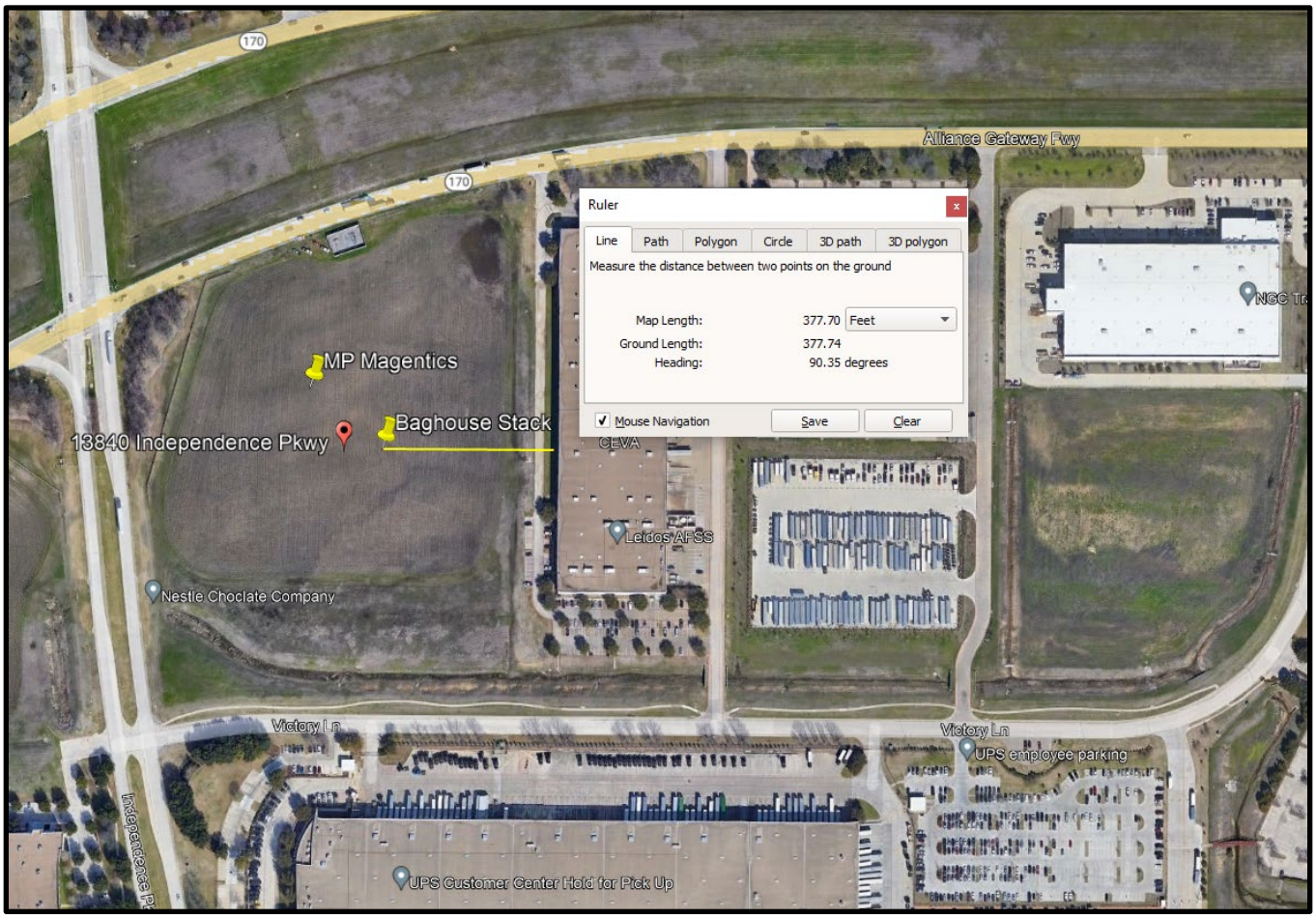
NOTE: The time weighted average (TWA) Threshold Limit Value (TLV) published by the American Conference of Governmental Industrial Hygienists (ACGIH), in its TLVs and BEIs guide (1997 Edition) shall be used for compounds not included in the table. The Short Term Exposure Level (STEL) or Ceiling Limit (annotated with a "C") published by the ACGIH shall be used for compounds that do not have a published TWA TLV. This section cannot be used if the compound is not listed in the table or does not have a published TWA TLV, STEL, or Ceiling Limit in the ACGIH TLVs and BEIs guide.

MP Magnetics has compared the emissions of the following chemicals proposed as part of this project and determined that they will not exceed the emissions limits, as shown in section 5:

- Hydrogen Fluoride (Cas No. 7664-39-3)

A map showing proposed location of the exhaust stack associated with the baghouse/scrubber system and distance to the nearest offsite receptor is provided in Figure 2 below.

Figure 2: Proposed Stack Location and Distance to Nearest Offsite Receptor



iii. *Notification must be provided using Form PI-7 within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, and data identifying specific chemical names, L values, D values, and a description of pollution control equipment, if any.*

This registration revision is being submitted to authorize the emissions of contaminants to be evaluated under PBR §106.262, and includes:

- TCEQ Form PI-7 CERT (Section 2 of this registration)
- Project Description (Section 1 of this registration)
- Process Description (Section 4 of this registration)
- Emissions Calculations (Section 5 of this registration)
- Identification of the emitted compounds (Section 5 of this registration)
- Applicable emission limit values (Section 5 of this registration)

iv. *The facilities in which the following chemicals will be handled shall be located at least 300 feet from the nearest property line and 600 feet from any off-plant receptor and the cumulative amount of any of the following chemicals resulting from one or more authorizations under this section (but not including permit authorizations) shall not exceed 500 pounds on the plant property and all listed chemicals shall be handled only in unheated containers operated in compliance with the United States Department of Transportation regulations (49 Code of Federal Regulations, Parts 171-178): acrolein, allyl chloride, ammonia (anhydrous), arsine, boron trifluoride, bromine, carbon disulfide, chlorine, chlorine dioxide, chlorine trifluoride, chloroacetaldehyde, chloropicrin, chloroprene, diazomethane, diborane, diglycidyl ether, dimethylhydrazine, ethyleneimine, ethyl mercaptan, fluorine, formaldehyde (anhydrous), hydrogen bromide, hydrogen chloride, hydrogen cyanide, hydrogen fluoride, hydrogen selenide, hydrogen sulfide, ketene, methylamine, methyl bromide, methyl hydrazine, methyl isocyanate, methyl mercaptan, nickel carbonyl, nitric acid, nitric oxide, nitrogen dioxide, oxygen difluoride, ozone, pentaborane, perchloromethyl mercaptan, perchloryl fluoride, phosgene, phosphine, phosphorus trichloride, selenium hexafluoride, stibine, liquified sulfur dioxide, sulfur pentafluoride, and tellurium hexafluoride. Containers of these chemicals may not be vented or opened directly to the atmosphere at any time.*

No facilities proposed to be authorized with this PBR registration handle any of the chemicals listed above.

v. For physical changes or modifications to existing facilities, there shall be no changes or additions of air pollution abatement equipment.

This PBR registration does not authorize modifications or physical changes to existing facilities. Therefore, this condition does not apply to the proposed Fort Worth Facility.

vi. *Visible emissions, except uncombined water, to the atmosphere from any point or fugitive source shall not exceed 5.0% opacity in any six-minute period.*

Visible emissions from the facilities authorized by this PBR will not exceed five percent opacity in any six-minute period.

b. *The following are not authorized under this section except as noted in subsection (c) of this section:*
   i. *construction of a facility authorized in another section of this chapter or for which a standard permit is in effect; and*

   ii. *any change to any facility authorized under another section of this chapter or authorized under a standard permit.*

None of the facilities associated with this PBR are authorized under another section of Chapter 106 or standard permit.

c. *If a facility has been authorized under another section of this chapter or under a standard permit, subsection (a)(2) and (3) of this section may be used to qualify the use of other chemicals at the facility.*

None of the facilities associated with this PBR are authorized under another section of Chapter 106 or standard permit.

7.3 REQUIREMENTS FOR METAL INSPECTION (30 TAC § 106.316) EFFECTIVE SEPTEMBER 4, 2000

Equipment used for inspection of metal products is permitted by rule.

The Fort Worth Facility will inspect products for quality purposes.

7.4 REQUIREMENTS FOR MISCELLANEOUS METAL EQUIPMENT (30 TAC § 106.317) EFFECTIVE SEPTEMBER 4, 2000

Equipment used exclusively for rolling, forging, pressing, drawing, spinning, or extruding either hot or cold metals by some mechanical means is permitted by rule.

The Fort Worth Facility will use isostatics pressing or die pressing to compact the NdPrFeB alloy powder.

7.5 REQUIREMENTS FOR METAL MELTING OR HOLDING FURNACE (30 TAC § 106.321) EFFECTIVE SEPTEMBER 4, 2000

Metal melting and holding furnaces as specified in this section are permitted by rule.

(1) crucible furnaces, pot furnaces, or induction furnaces with a holding capacity of 1,000 pounds or less, with the following limitations:
(A) no smelting, reduction, sweating, metal separation, or distilling is conducted;
(B) in ferrous melting furnaces where gray iron or steel is melted:
(i) ductile iron is produced only when emissions are captured by a vent hood and filtered or within a crucible with a lid which allows no visible emissions; and
(ii) the furnace charge is free of oil, grease, and paint;
(C) in nonferrous melting furnaces, only the following metals are melted, poured, or held in a molten state:
(i) aluminum or any alloy containing over 50% aluminum;
(ii) magnesium or any alloy containing over 50% magnesium;
(iii) tin or any alloy containing over 50% tin;
(iv) zinc or any alloy containing over 50% zinc;
(v) copper, brass, or bronze; or
(vi) precious metals;
(D) no lead, leaded brass, leaded bronze, or manganese bronze is melted, poured, or held in a molten state;

The crucible furnace, melting furnace and sintering furnace will have a holding capacity of 1,000 pounds or less and these are ferrous melting furnaces. The facility does not produce ductile iron and the furnace charge is free of oil, paint and grease.

The furnaces do not handle lead, leaded brass, leaded bronze, or manganese bronze.

(2) aluminum melting or holding furnaces with a holding capacity of 2,000 pounds or less that melt only clean aluminum ingots or pigs and in which no refining, smelting, metal separation, sweating, distilling, or fluxing with chlorine bearing gases is performed.

The Fort Worth Facility does not handle aluminum and therefore, this does not apply.

7.6 REQUIREMENTS FOR COOLING WATER UNITS (30 TAC § 106.371) EFFECTIVE SEPTEMBER 4, 2000

Water cooling towers, water treating systems for process cooling water or boiler feedwater, and water tanks, reservoirs, or other water containers designed to cool, store, or otherwise handle water (including rainwater) that have not been used in direct contact with gaseous or liquid process streams containing carbon compounds, sulfur compounds, halogens or halogen compounds, cyanide compounds, inorganic acids, or acid gases are permitted by rule.

The cooling towers at the proposed Fort Worth Facility do not come in contact with gaseous or liquid process streams containing carbon compounds, sulfur compounds, halogens or halogen compounds, cyanide compounds, inorganic acids, or acid gases.

7.7 REQUIREMENTS FOR INDUSTRIAL GASES (30 TAC § 106.372) EFFECTIVE SEPTEMBER 4, 2000

Any air separation, or other industrial gas production, storage, or packaging facility is permitted by rule. Industrial gases, for purposes of this section, include only oxygen, nitrogen, helium, neon, argon, krypton, and xenon.

The Fort Worth Facility will use hydrogen, nitrogen and argon during various phases of magnet manufacturing operations and store these gases on-site.

7.8 REQUIREMENTS FOR AQUEOUS SOLUTIONS FOR ELECTROLYTIC AND ELECTROLESS PROCESSES (30 TAC § 106.375) EFFECTIVE SEPTEMBER 4, 2000

Equipment using aqueous solutions is permitted by rule, providing the conditions of this section are met.

(1) This section authorizes the following operations:
(A) anodizing, chromate conversion coating processes, electroplating, electrodeposition, electroless plating, electrolytic polishing, and electrolytic stripping, as follows.
(i) For plating onto or stripping from any basis substrate, only brass, bronze, cadmium, copper, iron, lead, nickel, tin, zinc, and precious metals may be used.
(ii) Chromic acid shall not be used in any step of a process which involves electrical current, air agitation, or any other factor which causes the chromic acid to bubble or mist.

(B) cleaning, electroless stripping, etching, or other surface preparation and finishing, not including chemical milling or electrolytic metal recovery and reclaiming systems.

The Fort Worth Facility will use nickel plating to prevent corrosion using electroplating or electroless plating process, which typically include nickel and copper. Chromic acid will not be used.

(2) Operating conditions.
(A) Hydrochloric acid tank operating conditions shall not exceed:
(i) a temperature of 100 degrees Fahrenheit and a hydrochloric acid concentration of 19.0% by solution weight; or
(ii) a partial pressure of 0.5 millimeters of mercury.
(B) Hydrochloric acid in any state, and any aqueous solution which bubbles or mists due to electrical current, air agitation, or any other factor shall be used in an enclosed building. If the doors and windows of the building are open for any reason other than temporarily for access, emissions shall either be:
(i) captured and exhausted using forced air through a stack with an unobstructed minimum vertical discharge of four feet above the peak of the roofline; or
(ii) controlled with a fume suppressant.

The Fort Worth Facility will not use hydrochloric acid in these processes and therefore, this requirement does not apply.

(3) If a facility cannot comply with the hydrochloric acid temperature and concentration limits in paragraph (2)(A)(i) of this section, then to demonstrate compliance with paragraph (2)(A)(ii) of this section, the maximum hydrochloric acid temperature and concentration for each tank shall be recorded daily. At least once per month, the recorded data shall be converted to partial pressure. All data shall be maintained for the most recent 24-month period.

The Fort Worth Facility will not use hydrochloric acid in these processes and therefore, this requirement does not apply.

7.9 REQUIREMENTS FOR BENCH SCALE LABORATORY EQUIPMENT (30 TAC § 106.122) EFFECTIVE SEPTEMBER 4, 2000

Bench scale laboratory equipment and laboratory equipment used exclusively for chemical and physical analyses are permitted by rule.

The Fort Worth Facility will use bench scale laboratory equipment for chemical and physical analysis of the products.

7.10 REQUIREMENTS FOR SOLDERING, BRAZING, AND WELDING (30 TAC § 106.227) EFFECTIVE SEPTEMBER 4, 2000

Brazing, soldering, or welding equipment, except those which emit 0.6 ton per year or more of lead, are permitted by rule.

The Fort Worth Facility may conduct soldering, brazing and welding operations and will not emit 0.6 tons per year or more of lead.

7.11 REQUIREMENTS FOR VACUUM CLEANING SYSTEMS (30 TAC § 106.266) EFFECTIVE SEPTEMBER 4, 2000

Vacuum cleaning systems used exclusively for industrial, commercial, or residential housekeeping purposes are permitted by rule.

The Fort Worth Facility will use portable vacuum cleaning systems for housekeeping purposes.

APPENDIX B. EMAIL COMMUNICATION WITH TCEQ ON AUTHORIZATION OF ARGON EMISSIONS

From: Kristyn Campbell
To: Latha Kambham
Cc: Samuel Short
Subject: RE: Request Guidance - Argon Emissions under 106.261
Date: Monday, March 7, 2022 12:47:25 PM
Attachments: image001.png

Good afternoon Latha,

Hope you are doing well too. As you stated, pure argon would not be considered an unauthorized emission and does not need to be authorized under 106.261.
If you have any further questions or concerns, please feel free to reach out to me.

Thanks,

Kristyn Campbell, Section Manager
TCEQ Air Permits Division
Rule Registration Section
512-239-1359

From: Latha Kambham <LKambham@trinityconsultants.com>
Sent: Thursday, March 3, 2022 1:35 PM
To: Kristyn Campbell <Kristyn.Campbell@Tceq.Texas.Gov>
Subject: Request Guidance - Argon Emissions under 106.261
Importance: High

Hi Kristyn,

Hope you are doing well. I left a voicemail and wanted to follow up with an email. This is regarding Argon emissions. The process is being evaluated under 106.261 and 106.262, and we see that Argon is listed under 106.261(a)(2). However, per 30 TAC 101.1(108), noble gases are listed under emissions that do not need authorization. For another project (a long time ago) we were provided guidance that noble gases did not require authorization according to 30 TAC 101.1(108) and we would like to verify this again. If you can please confirm our understanding or call me to discuss further, that would be great! I can be reached at (504) 343-4593.

https://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=T&app=9&p_dir=F&p_rloc=179081&p_tloc=44377&p_ploc=29469&pg=4&p_tac=&ti=30&pt=1&ch=101&rl=1

(108) Unauthorized emissions--Emissions of any air contaminant except water, nitrogen, ethane, noble gases, hydrogen, and oxygen that exceed any air emission limitation in a permit, rule, or order of the commission or as authorized by Texas Health and Safety Code, §382.0518(g).

Thanks,
Latha

Latha Kambham, Ph.D.
Managing Consultant, Office Manager - Dallas
Email: lkambham@trinityconsultants.com
P 972.661.8100 M 504.343.4593 (preferred)

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