FEDERAL OPERATING PERMIT - TECHNICAL REVIEW SUMMARY
SITE OPERATING PERMIT (SOP) RENEWAL

Permit #:	**O1756**	Company:	**LCY Elastomers LP**
Project #:	**34630**	Site:	**LCY Elastomers LP**
Regulated Entity #:	**RN102325974**	Application Area:	**LCY Elastomers LP**
Region:	**12**	Customer #:	**CN602579542**
NAICS Code:	**325212**	County:	**Harris**
Permit Reviewer:	**Christopher Crider**	NAICS Name:	**Synthetic Rubber Manufacturing**

SITE INFORMATION

Physical Location:	4803 Decker Dr
Nearest City:	Baytown
Major Pollutants:	NOx, VOC
Additional FOPs:	None

PROJECT SUMMARY

LCY Elastomers LP is a synthetic rubber manufacturing facility and is subject to the requirements of 30 TAC Chapter 122. FOP O1756 was last renewed on 07/03/2018. A timely renewal application was received on 12/29/2022. Significant emission sources at the site include boilers, process vents, fugitive units, loading operations, turbines, engines, storage vessels, water separators, solvent degreasing machines, flares, and surface coating operations which are all subject to State and/or Federal regulations. The FOP includes general and special terms and conditions and unit-specific applicable requirements which were identified using information provided in various forms (OP-REQ1, OP-REQ2, and UA forms).

PROCESS DESCRIPTION

LCY Elastomers produces two types of thermoplastic elastomers (TPE): Styrene-butadiene-styrene (SBS) and styrene-isoprene-styrene (SIS). A TPE is a rubbery plastic or a plastic rubber that exhibits the best properties of both families of polymers, but unlike natural rubber, does not require vulcanization to achieve physical strength. The main product applications are adhesives, roofing material, asphalt modification, and highly specialized molded and extruded products. Each of the component chemicals are listed in NSPS NNN, §60.667 list of affected chemicals, however the facility uses these as raw materials, which are stored off-site on property owned and operated by Texas Petrochemicals Corporation.

Physical plant

Steam is generated on-site in two natural gas-fired boilers and a heat recovery steam generator (HSRG). Process wastewater effluents go through preliminary treatment before being pumped to the local publicly owned treatment works (POTW). Non-process stormwater is collected in a pond and pumped into the city storm sewer system. Electricity is generated on-site using a Solar Taurus combustion turbine generating approximately 4.6 MW (1.3 MM Btu/hr) of electrical power. Backup power is produced by a natural gas fired generator and Houston Lighting & Power (HL&P). Two diesel-driven fire pumps supply power for the fire protection system.

Raw Materials

The co-monomers, styrene, butadiene, and isoprene are purified by removing water which is a contaminant to the process. Other raw materials are the reaction solvent, coupling agents, activators, initiators, surfactants, antioxidants, extenders, and release agents. The initiators are pyrophoric and react violently with water. Emissions from the initiators are vented through a seal pot to the atmosphere.

Reactor

In the initial reaction step, solvent, activator, and initiator are pumped into the reactor. Batch-wise addition of the co-monomers is the next reaction step. The concentrated initiator causes the co-monomers to polymerize very quickly. The final step in the reactor process is the addition of small amounts of coupling agent to partially cross-link the polymer chains.

Blending

When the desired molecular weight has been achieved, the polymer solution flows to the blend tanks. Each blend tank has the capacity to hold 8 reactor batches. Blending batches together enhances product uniformity and provides a surge interface between the reactors, which operate in batch mode, and the steam stripper, which operates in continuous mode.

Steam Stripping

Countercurrent steam strippers remove the solvent from the polymer solution leaving an aqueous solution of polymer crumb (TPE). Any residual initiator reacts with an overwhelming volume of water. At this point the slurry is essentially free of volatile organic materials, except for solvent in the hot water. The stripper overheads, consisting of stripped

solvent and steam, are condensed and decanted to recover solvent. The decanted water receives a final steam stripping to remove any recoverable solvent before being biotreated. The wet solvent is recycled back to the solvent drying column for re-use.

Finishing

In the finishing step a variety of mechanical and thermal devices dewater and dry the polymer crumb. These devices include shaker screens, settling tanks, dryer/expellers, heaters, and dryers. The heat for thermal sources is provided by steam sources. The dried polymer crumb is then milled, cooled, and packaged for shipment in bags or bulk containers. The product is shipped by truck or rail to end users.

TECHNICAL REVIEW

Permit Content Summary

1. Was Periodic Monitoring (PM) required and included in the permit? ..... Yes
2. Was Compliance Assurance Monitoring (CAM) required and included in the permit? ..... Yes
3. Was case-by-case PM or CAM included in the permit? ..... Yes
4. Was a permit shield requested? ..... Yes
5. If a permit shield was requested, was any permit shield request denied? ..... Yes
6. Identify if the following are applicable for this project:
   - (a) Manually-built applicable requirements ..... No
   - (b) Customized Special Terms and Conditions ..... Yes
   - (c) Manual changes to the IMS-generated applicable requirements ..... Yes
   - (d) Alternate means of compliance for any emission unit/source at the site ..... No
7. Is the site subject to the requirements of 40 CFR Part 72 (Acid Rain Permit)? ..... No
8. Did the applicant's review/comments on the working draft permit result in changes to the permit content? ..... Yes
9. Will the draft permit be sent to public notice with unresolved issues (i.e., disagreements with applicant)? ..... No

Permit reviewer notes:

- Special Terms & Conditions have been updated.
- NSR Authorization References have been updated.
- The following Special Term & Condition has been customized and manually added to the FOP:
  - *Emission units subject to 40 CFR Part 63, Subpart ZZZZ, as identified in the attached Applicable Requirements Summary table, are subject to 30 TAC Chapter 113, Subchapter C, §113.1090, which incorporates the 40 CFR Part 63 Subpart by reference.*
- IMS term B.142 *[NSR Requirements Intro (PBRSUP)]* has been customized to add the date and project# for the most recent submitted OP-PBRSUP form.
- Per the applicant's request, IMS term A.021.A.ii *[Storage Tank Degassing Emission Specifications FLR Tanks]* has been removed in the IMS due to the applicant stating there are no floating roof storage tanks at this site.
- Decanter E-7404 has been re-named V-7405.
- Applicable requirements to 30 TAC Chapter 115 (HRVOC Vent Gas) have been updated for process PRO-POLY.
- Applicable requirements to 30 TAC Chapter 117, Subchapter B have been updated for GRP-BOILER1, VE-11
- Applicable requirements to 30 TAC Chapter 115, Subchapter E have been updated for process PRO-PAINT.
- A permit shield under 40 CFR 63 Subpart Q has been removed from cooling tower H-7624. This site is not a major source of HAPs, therefore this regulation is not even *"potentially applicable".*
- Case-by-case periodic monitoring continues to be added to DEGREASER. The periodic monitoring is nearly identical to pre-approved monitoring option PM-V-052 except that the consultant has indicated that the pre-approved periodic monitoring text pertaining to compliance with §115.412(1)(A)-(F) is not accurate since this unit is exempt from §115.412(1)(B) & (E). Therefore, PM-V-052 could not be used and the case-by-case text has been altered to reflect the two exempt citations.
- Case-by-case periodic monitoring continues to be added to turbine VE-11, per §60.332(a)(2). This existing case-by-case monitoring of NOx concentration is nearly identical to pre-approved monitoring option PM-N-040 except that the consultant has altered the pre-approved periodic monitoring text to be consistent with monitoring contained in NSR permit 42213.

- Periodic Monitoring (for CO), per §117.310(c)(1) has been revised for GRP-BOILER1 and vent VE-11 from pre-

approved monitoring option PM-C-001 to now being case-by-case. The case-by-case monitoring is almost identical to PM-C-001 but the frequency was revised from once per week to once per quarter due to safety concerns and stack testing being performed quarterly. This frequency is still more frequent than once per year and satisfies periodic monitoring requirements. The option of using EPA Reference Method/Test Method 10 was also added to the periodic monitoring text for flexibility. This case-by-case monitoring was approved by PM/CAM specialist John Walker.

- <u>For historical reference from renewal project 25284:</u>
  - Case-by-case periodic monitoring, per §111.111(a)(1)(B), has replaced the previous pre-approved monitoring option PM-P-032 for units/groups GRP-VENTS2, VE-11 STACK, and also replaced pre-approved monitoring option PM-P-033 for unit VE-8. The (3) case-by-case PM tables are almost identical to those two pre-approved monitoring options except for the addition of the following Test Method 9 language into the Periodic Monitoring text.
    - *If Test Method 9 is utilized, 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.*
  - This added Test Method 9 language is identical to the Special Term & Condition that would normally be automatically generated by checking *'YES'* to OP-REQ1 question I.A.5. However, the consultant refuses to answer that question *'YES'* based on the belief that by checking that question *'YES'* it could be legally construed that the site would be mandated to always use Test Method 9; which the site does not. The consultant wants to keep that OP-REQ1 question checked *'NO'*; so in order to keep this Test Method 9 language in the permit, a previous team leader has approved adding the language into the already existing PM tables. Therefore, pre-approved monitoring options PM-P-032 & PM-P-033 can no longer be used.
- Vent VE-4 has been removed from the FOP altogether. Therefore, GRP-VENTS3 does not exist any longer, and vent VE-5 is now a stand-alone unit with applicability to 30 TAC Chapter 111 and a permit shield under 30 TAC Chapter 115. In addition, case-by-case periodic monitoring remains and is identical to the previously described case-by-case monitoring for GRP-VENTS2, VE-11 STACK, and VE-8.

- <u>For historical reference concerning fugitive emission unit FE-1:</u>
  - Applicability under 30 TAC Chapter 115, Subchapter H (HRVOC Fugitive Emissions) was not included in the FOP initial issuance in 2003 (project 1757). However, applicability under Subchapter H was added during the renewal in 2012 (project 12261). Lengthy negotiations with the consultant were made during the renewal projects 12261 & 25284 with respect to many manual additions/deletions of IMS-generated applicable requirements. In addition, a determination from tech. specialists in the Office of Air Quality was requested to settle disagreements about "delay of repair" citations. The draft permit during project 25284 was approved by the applicant in which applicability under Subchapter H was still included.
  - However, at that time, mgmt. had concerns with the applicability under Subchapter H. Those concerns were expressed to LCY Elastomers, and LCY Elastomers then requested the removal of applicability under Subchapter H. The applicant and consultant have now stated that Subchapter H **<u>does not</u>** apply and should have never been in the FOP. That confirmation is contained in the permit file for renewal project 25284.
  - This explanation concerning previously approved manual additions/deletions for FE-1, only to have all of it removed, is to ensure that this issue of Subchapter H being applicable or not is never raised again in any future applications.
  - Fugitive emission unit FE-1 only exists in the FOP with permit shields under NSPS VV, 30 TAC Chapter 115, Subchapter D, Division 3 and 30 TAC Chapter 115, Subchapter H, Division 3.

- The following table lists the applicant requested manual additions & deletions from the IMS-generated applicable

requirements. The Basis of Determination explanations are also listed in the Statement of Basis.

Unit or Group ID	SS Id #s	Citation	Type	Added (A) or Deleted (D)	Consultant Justification
DEGREASER	3-144	§115.411(2)(A)	RS	A	Clarifies which units are exempt.
GRP-BOILER1	333-1061 & 333-4803	§117.335(a)(1)	MT	A	Only fuel in (a)(1) is used.
		[G]§117.335(a)(1)	MT	D	Citation ungrouped since unit does not fire fuels listed in (A) or (B).
		§117.8000(a)	MT	A	Specifies testing requirements.
	16-110 & 16-505 & 16-1506	§60.48c(a)	RP	A	Citation ungrouped and listed individually since §60.48c(a)(2) does not apply.
		§60.48c(a)(1)	RP	A	
		§60.48c(a)(3)	RP	A	
		§60.48c(g)(3)	RK	D	Alternative is not utilized.
		[G]§60.48c(a)	RP	D	Citation ungrouped since §60.48c(a)(2) does not apply.
		§60.48c(j)	RP	D	NG boilers are not required to have a CEMS nor required to conduct performance testing.
GRP-ENGINE1	220-4120	§63.6625(e)(3)	RS	A	Utilized for completeness of the regulatory applicability.
		§63.6655(e)(2)	RK	A	
		§63.6655(f)(2)	RK	A	
		§63.6640(f)	RS	A	Provides guidance to comply with requirements.
		§63.6640(f)(4)(i)	RS	D	Engines do not supply electricity.
	333-64	§117.8140(a)	MT	D	Emergency engines are not “required” to test.
		§117.8140(a)(3)	MT	D	
EMERGEN	333-63	§117.8140(a)	MT	D	Emergency engines are not “required” to test.
		§117.8140(a)(3)	MT	D	
H-7624	271-19	§115.761(b)	RS	A	Added site-wide term to unit.
		§115.761(d)	RS	A	Specifies ERCs/DERCS cannot be used to comply with HRVOC rules.
		§115.764(a)	RS	A	Utilized for completeness of the regulatory applicability.
		§115.764(g)	MT	A	Utilized for completeness of the regulatory applicability.
H-7901 and H-7902	207-1067	§115.725(d)	RS, MT	A	Utilized for completeness of the regulatory applicability.
		§115.725(m)	MT	A	Citation adds clarity to sub-citations.
		§115.725(m)(2)	RS, MT	A	Citation adds clarity to sub-citations.
		§115.725(k)	MT	A	Utilized for completeness of the regulatory applicability.
		[G]§115.725(l)	MT	A	Utilized for completeness of the regulatory applicability.
		§115.726(j)	RK	A	Citation adds clarity to sub-citations.
VE-11	333-1440 & 333-6254	[G]§117.335(a)(1)	MT	D	Citation ungrouped since unit does not fire fuels listed in (A) or (B).
		§117.335(a)	MT	A	Only fuel in (a)(1) is used.
		§117.335(a)(1)	MT	A	
		§117.8000(a)	MT	A	Specifies testing requirements.
	17-202 & 17-447	§60.332(c)	RS	A	Added to specify must comply with §60.332(a)(2) based on firing rate.
		[G]§60.334(h)(3)	MT	D	Citation ungrouped since (h)(3)(ii) does not apply.
		§60.334(h)(3)	MT	A	
		§60.334(h)(3)(i)	MT	A	
PRO-POLY	207-109 & 207-116	§115.722(e)	RS	A	Specifies ERCs/DERCS cannot be used to comply with HRVOC rules.
		§115.722(d)	RS	D	Specific to flares, see unit ID H-7901 & H-7902.
		§115.722(d)(1)	RS	D	Specific to flares, see unit ID H-7901 & H-7902.
		§115.722(d)(2)	RS	D	Specific to flares, see unit ID H-7901 & H-7902.
		§115.725(a)(2)	RS	A	Citation adds clarity to sub-citations.
		§115.726(j)	RK	A	Citation adds clarity to sub-citations.

Statement of Basis

A Statement of Basis sets forth the legal and factual basis for the applicable requirements that are included in the FOP. A Statement of Basis was prepared for this project and is included in the permit file.

Compliance History Review

1. In accordance with 30 TAC Chapter 60, the compliance history was reviewed on 07/15/2024.
   Site rating: 3.64 / Satisfactory Company rating: 3.64 / Satisfactory
   (High < 0.10; Satisfactory ≥ 0.10 and ≤ 55; Unsatisfactory > 55)
2. Has the permit changed on the basis of the compliance history or site/company rating?..... No

Site/Permit Area Compliance Status Review

1. Were there any out-of-compliance units listed on Form OP-ACPS?..... No
2. Is a compliance plan and schedule included in the permit?..... No

Delinquent Fee Check

1. The delinquent fee check was performed on 07/15/2024.
2. Were there any delinquent fees owed? ..... No

Public Notice Information

1. Were comments received from the applicant after the draft permit was mailed and before Public Notice was published?..... No
2. Was a revised draft permit or public notice authorization package (PN-Errata) sent for any reason?..... No
3. Publication date: 08/15/2024 Newspaper name: *The Baytown Sun*
4. Was bilingual public notice published?..... Yes
   Publication date: 08/15/2024 Newspaper name: El Périco
5. Were comments received during Public Notice period?..... No
6. Was re-publication necessary?..... No

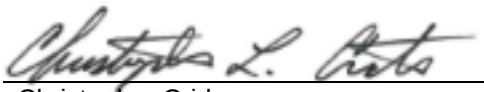
EPA Review

1. Did EPA comment on the draft permit?..... No
2. Was a separate NOPP - Notice of Proposed Permit sent to the EPA?..... No
3. Were any changes made to the permit after the EPA Review Period?..... No

IMPORTANT MILESTONES

Milestone (Standard)	Start Date	End Date
Date Application Received by TCEQ	12/29/2022	
Date Project Received by Engineer	01/18/2023	
Technical Review Period	05/30/2023	07/11/2024
Working Draft Permit Reviewed by Applicant	08/01/2023	07/12/2024
Date PNAP/Draft Permit Mailed	07/31/2024	
Public Notice Comment Period	08/15/2024	09/15/2024
EPA Review Period	08/20/2024	10/04/2024
Date Sign Posting Certification Received	09/23/2024	

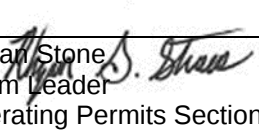
EFFECTIVE PERMIT ISSUANCE DATE: 10/18/2024



10/11/2024

Christopher Crider
Permit Reviewer
Operating Permits Section
Air Permits Division

Date



10/14/2024

Rhyan Stone
Team Leader
Operating Permits Section
Air Permit Division

Date

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