



Region 6 Compliance Assurance and Enforcement Division
INSPECTION REPORT

Inspection Date(s):	03/14-15/2018		
Media:	Water		
Regulatory Program(s)	Clean Water Act / NPDES		
Company Name:	Exxon Mobil Corporation		
Facility Name:	Baytown Chemical Plant		
Facility Physical Location:	5000 Bayway Drive		
(city, state, zip code)	Baytown, Texas 77522-4004		
Mailing address:	P.O. Box 4004		
(city, state, zip code)	Baytown, Texas 77522-4004		
County/Parish:	Harris County		
Facility Contact:	Robert S. Catudal	BTCP Plant Manager	
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FRS Number:	110000463178		
Identification/Permit Number:	TX0007013		
Media Number:			
NAICS:	325199, 447110		
SIC:	2869, 2822, 2821, 2813		
Personnel participating in inspection:			
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Kevin Brewer	ExxonMobil Corp.	Environmental Section Supervisor	346-259-0101
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Lauren Schroeder	ExxonMobil Corp.	Wastewater Contact Engineer	346-259-0061
EPA Lead Inspector Signature/Date			
	Kenneth L. AuBuchon		Date
Supervisor Signature/Date			
	Carol Peters		Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

United States Environmental Protection Agency (U.S. EPA) Region 6 inspector Kenneth L. AuBuchon arrived at the ExxonMobil Baytown Chemical Plant, located in Baytown, Texas at approximately 9:00 am on March 14, 2018 for an unannounced Compliance Evaluation Inspection (CEI). I met with Kevin Brewer, ExxonMobil Chemical Company Environmental Section Supervisor, Snigdha Joshi Rege, ExxonMobil Chemical Company Environmental Advisor, and Lauren Schroeder, ExxonMobil Chemical Company Wastewater Contact, at the opening conference. I presented my credentials to all present at the opening conference and explained that this was an EPA inspection to determine compliance with the facility's National Pollutant Discharge Elimination System (NPDES) permit and the Clean Water Act (CWA). The inspection was conducted under the authority of the NPDES permit program, in accordance with the Federal CWA.

This report is based on information supplied by the ExxonMobil Chemical Company representatives (the permittee), observations made by the U.S. EPA inspector, and records and reports maintained by the permittee, the State of Texas, and the U.S. EPA.

FACILITY DESCRIPTION

The ExxonMobil Baytown Chemical Plant (BTCP) is located within the ExxonMobil Baytown Complex adjacent to the ExxonMobil Baytown Refinery (BTRF) and ExxonMobil Baytown Olefins Plant (BOP). Chemical feedstock and products are transferred between facilities, and certain utilities are shared including the water clarification system and the wastewater treatment plant, operated by the BTRF under a separate Texas Pollutant Discharge Elimination System (TPDES) Permit.

The BTCP is divided into three business functions identified as Butyl Polymers (BPB), Polypropylene (BTPP), and Olefins and Aromatics (O&A). The O&A units are operated under the Unicorn (UCO) and Northwest Chemicals (NWC) areas.

The BPB area consists of polymerization and finishing units that produce synthetic rubber. The NWC operating area consists of the Paraxylene Absorption Unit (PAU), Butenes Processing Unit (BPU), Dihydrogenation Unit (DHU), Propylene Concentration Unit (PCU), Synthesis Gas Unit (SGU)), and Metallocene Polyalphaolefin Unit (MPU), along with offsite utilities. The UCO and BTPP areas discharge all process wastewater and storm water to the BTRF wastewater treatment plant.

The BTCP plans to construct and operate two additional processing units, PPU and MPF, which will be co-located. The PPU will combine monomers and generate a pelletized resin. The MPF will be constructed to prepare monomers for use in polymerization. The shared facilities between the two units will include two hot oil heaters, a cooling tower, a thermal oxidizer and steam assisted flare to control vents from routine and maintenance, startup, and shutdown operations.

In addition to the shared facilities, process equipment for the PPU and MPF units will include distillation columns, storage tanks, and equipment for unloading/loading raw materials and products in transport vessels. Other new equipment will include pipe and piping components, valves, exchangers, compressors, pumps, separation equipment, instrumentation and analyzers.

The process units will also utilize existing facilities located at the Baytown Complex. Internal Outfalls 103 and 203 are permitted to discharge storm water commingled with other wastewaters (commingled waters). There are no flow limits for these outfalls when discharges occur. Outfall 103 serves the Butyl Process Unit and Outfall 203 serves the Northwest Chemicals Process Unit. Both units route process water and commingled waters through an oil/water separator and then to the respective lift stations. Under normal circumstances, process water is pumped to Exxon Mobil Baytown Refinery for treatment. When the wet well reaches high capacity during periods of heavy rainfall, commingled waters are pumped to one of two retention ponds. Commingled water pumped to the retention ponds is held until it can be pumped to the Refinery for treatment. In circumstances in which the respective wet well and retention pond are inundated, a discharge is made through the respective internal outfall. See Appendices 1 (BTCP Wastewater System Flow Schematic).

Outfall 003 is permitted to discharge storm water commingled with other wastewaters, fire water control system test and flush water, other de minimis losses from the fire water control system, other de minimis losses from the decorative ponds, hydrostatic test water, potable water system flush water, irrigation water from the landscape sprinkler system, steam condensate and air conditioner condensate, other de minimis losses of potable water, and other de minimis losses of clarified water, and previously monitored effluents from Outfalls 103 and 203. There are no flow limits for Outfall 003. See Appendices 1 (BTCP Wastewater System Flow Schematic).

Section II – OBSERVATIONS

During the review of the facility's required paperwork it was noted that the facility's permit has Daily Maximum (mg/L) limits for the following parameters:

Acrylonitrile at 0.022 ppm (22 ppb)
Benzo(a)anthracene at 0.0031 ppm (3.1 ppb)
Benzo(a)pyrene at 0.0031 ppm (3.1 ppb)
Hexachlorobenzene at 0.0000260 ppm (.026 ppb)
Phenanthrene at 0.0077 ppm (7.7 ppb)

The facility is reporting ZERO values for the above parameters based on an established minimum analytical level (MAL) listed in the permit (refer to Appendix 2). Other Requirements #2 in the permit has listed established MALs, and states "Test methods utilized shall be sensitive enough to demonstrate compliance with the permit effluent limitations. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit with consideration given to the minimum analytical level (MAL) for the parameters specified". A review of the test results for the parameters listed above show that the test method used is not sensitive enough to demonstrate compliance with permit effluent limitations (see Section III for further discussion on MALs) but, due to consideration given to established MALs for parameters specified in the permit, ZERO values are used in calculations and reporting requirements.

A tour of the Outfalls and the process overview of succession of events for discharge was conducted on 3/15/2018. It was explained per the permit that: Process wastewater, sanitary sewage, and utility wastewater are typically routed to the ExxonMobil Baytown Refinery for treatment and discharge. *De minimus* quantities of these wastestreams (except for sanitary sewage) may commingle with storm water and discharge via Outfalls 103, 203, and/or 003 as a result of excessive storm events, or

succession of events. Discharges of these wastestreams from Outfalls 103, 203, and/or 003 are only authorized following an excessive storm event or successions of events which result in runoff volumes that exceed the capabilities of the lift station pumps and exceed the storage capacity of the storm water retention ponds for the Butyl Polymers plant and/or the Northwest Chemical facility, or the Syngas Unit's first flush sump. The permittee shall take all reasonable steps to minimize these discharges from Outfall 003. Process wastewater and utility wastewater are not authorized to be discharged under any other conditions than those storm events described above. Sanitary sewage is prohibited from discharge via any outfall of this permit.

The processes at outfalls 103, 003 and 203 were as described in the permit. Both oil/water separators were observed, the sumps and pumps for transfer to the refinery were operational, and the sumps and pumps to the retention ponds were operational. The retention ponds were observed and maintenance concerns were noted regarding the sediment build up in both ponds and the vegetation growth on the berms of the Butyl Polymers storm water retention pond.

The Northwest Chemicals storm water retention pond, pictured below, had noticeable sediment deposit built up. When asked if the sediment build up affected the capacity of the pond, it was explained that the permit did not require maintenance on the ponds. It was further explained, that if the ponds were modified (cleaned out) that additional requirements per the permit would be required. Refer to Areas of Concern.



The Butyl Polymers storm water retention pond, pictured below, also had noticeable sediment deposit built up with excessive vegetation growth on the berms. When asked if the sediment build up affected the capacity of the pond or the vegetation was controlled, it was again explained that the permit did not require maintenance on the ponds. It was further explained, that if the ponds were modified (cleaned out) that additional requirements per the permit would be required. Refer to Areas of Concern.



Section III – AREAS OF CONCERN

Requirement A: TPDES Permit No. TX0007013 has Daily Maximum Limits based on Water Quality Criteria for the following parameters:

Acrylonitrile at 0.022 ppm (22 ppb)
Benzo(a)anthracene at 0.0031 ppm (3.1 ppb)
Benzo(a)pyrene at 0.0031 ppm (3.1 ppb)
Hexachlorobenzene at 0.0000260 ppm (.026 ppb)
Phenanthrene at 0.0077 ppm (7.7 ppb)

Concern A: The facility's permit compliance/noncompliance determinations are based on a minimum analytical level (MAL), as listed in their permit. The following MALs are higher than the Daily Maximum Limits based on Water Quality Criteria.

Acrylonitrile	0.05mg/L	2.3 times greater than Water Quality Based limit 0.022mg/L
Benzo(a)anthracene	0.01mg/L	3.2 times greater than Water Quality Based limit 0.0031mg/L
Benzo(a)pyrene	0.01mg/L	3.2 times greater than Water Quality Based limit 0.0031mg/L
Hexachlorobenzene	0.01mg/L	385 times greater than Water Quality Based limit 0.0000260mg/L
Phenanthrene	0.01mg/L	1.3 times greater than Water Quality Based limit 0.0077mg/L

At the time of the inspection, the ExxonMobil Baytown Chemical Plant was in compliance with the above permitted reporting requirements.

Requirement B: TPDES Permit No. TX0007013 Other Requirements 3. ...Discharges of these wastestreams from Outfalls 103, 203, and/or 003 are only authorized following an excessive storm event or successions of events which result in runoff volumes that exceed the capabilities of the lift station pumps and exceed the storage capacity of the storm water retention ponds for the Butyl Polymers plant and/or the Northwest Chemical facility, or the Syngas Unit's first flush sump. **The permittee shall take all reasonable steps to minimize these discharges from Outfall 003...**

Concern B: Sediment build up in the Northwest Chemicals storm water retention pond reduces the pond's storage capacity.





Requirement C: TPDES Permit No. TX0007013 Other Requirements 3. ...Discharges of these wastestreams from Outfalls 103, 203, and/or 003 are only authorized following an excessive storm event or successions of events which result in runoff volumes that exceed the capabilities of the lift station pumps and exceed the storage capacity of the storm water retention ponds for the Butyl Polymers plant and/or the Northwest Chemical facility, or the Syngas Unit's first flush sump. **The permittee shall take all reasonable steps to minimize these discharges from Outfall 003...**

Concern C: Sediment build up in the Butyl Polymers storm water retention pond reduces the pond's storage capacity. Excessive vegetation growth on the berms weakens the berms integrity and may weaken the ponds liner system.





Section IV – FOLLOW UP

6/25-26/2018 – E-mail exchange in reference to final report clarifications.

Section V – LIST OF APPENDICES

Appendices 1 - BTCP Wastewater System Flow Schematic

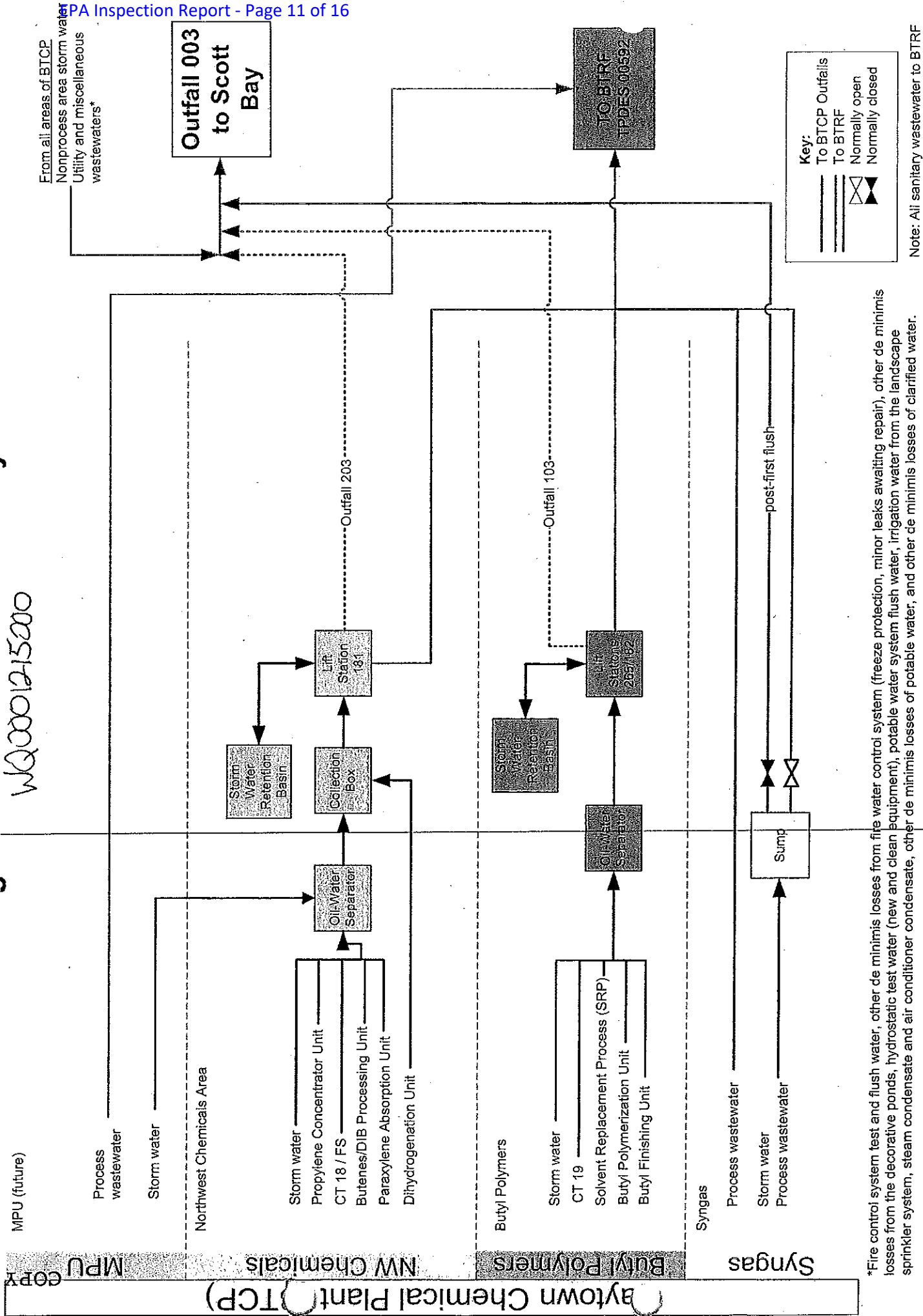
Appendices 2 – TPDES Permit TX0007013 Other Requirements pages 14-17

Appendix 1

BTCP Wastewater System Flow Schematic

Figure 1 – BTCP Wastewater System

WQ0001215200



*Fire control system test and flush water, other de minimis losses from fire water control system (freeze protection, minor leaks awaiting repair), other de minimis losses from the decorative ponds, hydrostatic test water (new and clean equipment), potable water system flush water, irrigation water from the landscape sprinkler system, steam condensate and air conditioner condensate, other de minimis losses of potable water, and other de minimis losses of clarified water.

Appendix 2

TPDES Permit TX0007013 Other Requirements pages 14-17

Exxon Mobil Corporation

TPDES Permit No. WQ0001215000

OTHER REQUIREMENTS

1. The Executive Director has reviewed this action for consistency with the goals and policies of the Texas Coastal Management Program (CMP) in accordance with the regulations of the General Land Office (GLO) and has determined that the action is consistent with the applicable CMP goals and policies.
2. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 12 within 24 hours from the time the permittee becomes aware of the violation, followed by a written report within five (5) working days to TCEQ Region 12 and the Enforcement Division (MC 224):

Acenaphthene	1,4-Dichlorobenzene	Hexachloroethane
Acenaphthylene	1,1-Dichloroethane	Methyl Chloride
Acrylonitrile	1,2-Dichloroethane	Methylene Chloride
Anthracene	1,1-Dichloroethylene	Naphthalene
Benzene	1,2-trans-Dichloroethylene	Nitrobenzene
Benzo(a)anthracene	1,2-Dichloropropane	2-Nitrophenol
Benzo(a)pyrene	1,3-Dichloropropylene	4-Nitrophenol
3,4-Benzofluoranthene	Diethyl Phthalate	Phenanthrene
(Benzo(b)fluoranthene)	2,4-Dimethylphenol	Phenol
Benzo(k)fluoranthene	Dimethyl Phthalate	Pyrene
Bis(2-Ethylhexyl) Phthalate	Di-n-Butyl Phthalate	Tetrachloroethylene
Carbon Tetrachloride	4,6-Dinitro-o-Cresol	Toluene
Chlorobenzene	2,4-Dinitrophenol	1,2,4-Trichlorobenzene
Chloroethane	Ethylbenzene	1,1,1-Trichloroethane
Chloroform	Fluoranthene	1,1,2-Trichloroethane
Chrysene	Fluorene	Trichloroethylene
1,2-Dichlorobenzene	Hexachlorobenzene	Vinyl Chloride
1,3-Dichlorobenzene	Hexachlorobutadiene	

Test methods utilized shall be sensitive enough to demonstrate compliance with the permit effluent limitations. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit with consideration given to the minimum analytical level (MAL) for the parameters specified below.

**CONVENTIONAL AND
NONCONVENTIONAL POLLUTANTS**

Pollutant	MAL (mg/L)
Oil and Grease	5.0
Xylene	0.010

METALS

Pollutant	MAL (mg/L)
Copper (Total)	0.010
Zinc (Total)	0.005

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ACID COMPOUNDS

Pollutant	MAL (mg/L)
2,4-Dimethylphenol	0.010
4,6-Dinitro-o-Cresol	0.050
2,4-Dinitrophenol	0.050
2-Nitrophenol	0.020
4-Nitrophenol	0.050
Phenol	0.010

BASE/NEUTRAL COMPOUNDS

Pollutant	MAL (mg/L)
Acenaphthene	0.010
Acenaphthylene	0.010
Anthracene	0.010
Benzo(a)anthracene	0.010
Benzo(a)pyrene	0.010
3,4-Benzofluoranthene	0.010
(Benzo(b)fluoranthene)	
Benzo(k)fluoranthene	0.010
Bis(2-Ethylhexyl) Phthalate	0.010
Chrysene	0.010
1,2-Dichlorobenzene	0.010
1,3-Dichlorobenzene	0.010
1,4-Dichlorobenzene	0.010
Diethyl Phthalate	0.010
Dimethyl Phthalate	0.010
Di-n-Butyl Phthalate	0.010
Fluoranthene	0.010
Fluorene	0.010
Hexachlorobenzene	0.010
Hexachlorobutadiene	0.010
Hexachloroethane	0.020
Naphthalene	0.010
Nitrobenzene	0.010
Phenanthrene	0.010
Pyrene	0.010
1,2,4-Trichlorobenzene	0.010

VOLATILE COMPOUNDS

Pollutant	MAL (mg/L)
Acrylonitrile	0.050
Benzene	0.010
Carbon Tetrachloride	0.010
Chlorobenzene	0.010
Chloroethane	0.010
Chloroform	0.010
1,1-Dichloroethane	0.010
1,2-Dichloroethane	0.010
1,1-Dichloroethylene	0.010
1,2-Dichloropropane	0.010

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VOLATILE COMPOUNDS

Pollutant	MAL (mg/L)
1,3-Dichloropropylene	0.010
Ethylbenzene	0.010
Methyl Chloride	0.020
Methylene Chloride	0.020
Tetrachloroethylene	0.010
Toluene	0.010
1,2-trans-Dichloroethylene	0.010
1,1,1-Trichloroethane	0.010
1,1,2-Trichloroethane	0.010
Trichloroethylene	0.010
Vinyl Chloride	0.010

When an analysis of an effluent sample for any of the parameters listed above indicates no detectable levels above the MAL and the test method detection level is as sensitive as the specified MAL, a value of zero (o) shall be used for that measurement when determining calculations and reporting requirements for the self-reporting form. This applies to determinations of daily maximum concentration, calculations of loading and daily averages, and other reportable results.

When a reported value is zero (o) based on this MAL provision, the permittee shall submit the following statement with the self-reporting form either as a separate attachment to the form or as a statement in the comments section of the form.

"The reported value(s) of zero (o) for [list parameter(s)] on the self-reporting form for [monitoring period date range] is based on the following conditions: 1) the analytical method used had a method detection level as sensitive as the MAL specified in the permit, and 2) the analytical results contained no detectable levels above the specified MAL."

When an analysis of an effluent sample for a parameter indicates no detectable levels and the test method detection level is not as sensitive as the MAL specified in the permit, or an MAL is not specified in the permit for that parameter, the level of detection achieved shall be used for that measurement when determining calculations and reporting requirements for the self-reporting form. A zero (o) may not be used.

3. Process wastewater, sanitary sewage, and utility wastewater are typically routed to the ExxonMobil Baytown Refinery (TPDES Permit No. WQ000592000) for treatment and discharge. *De minimus* quantities of these wastestreams (except for sanitary sewage) may commingle with stormwater and discharge via Outfalls 103, 203, and/or 003 as a result of excessive storm events, or succession of events. Discharges of these wastestreams from Outfalls 103, 203, and/or 003 are only authorized following an excessive storm event or successions of events which result in runoff volumes that exceed the capabilities of the lift station pumps and exceed the storage capacity of the stormwater retention ponds for the Butyl Polymers plant and/or the Northwest Chemical facility, or the Syngas Unit's first flush sump. The permittee shall take all reasonable steps to minimize these discharges from Outfall 003.

Process wastewater and utility wastewater are not authorized to be discharged under any other conditions than those storm events described above. Sanitary sewage is prohibited from discharge via any outfall of this permit.

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Oral notification shall be provided to the TCEQ Region 12 Office prior to discharge or within 24-hours after a discharge of process wastewater or utility wastewater, as described above, occurs via Outfall 003. Within five (5) working days following such a discharge, the permittee shall notify the TCEQ Region 12 office in writing and include a description of the events and circumstances which resulted in the discharge.

Fire water control system test and flush water, other *de minimis* losses from fire water control system (freeze protection, minor leaks awaiting repair), other *de minimis* losses from the decorative ponds, hydrostatic test water (new or clean equipment), potable water system flush water, irrigation water from the landscape sprinkler system, steam condensate and air conditioner condensate, other *de minimis* losses of potable water, and other *de minimis* losses of clarified water may be discharged via Outfall 003 at any time.

4. STORMWATER-CONTRIBUTING SOURCES

For the purpose of this permit, the term "stormwater" is inclusive of the following defined contributing sources.

- A. Stormwater and stormwater runoff is defined as rainfall runoff, snow melt runoff, and surface runoff and drainage.
- B. Stormwater associated with industrial activity is defined as the discharge from any conveyance that is used for collecting and conveying stormwater and that is directly related to manufacturing, processing or raw materials storage areas at an industrial facility. For the purpose of this permit, the term includes, but is not limited to, stormwater discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling areas; refuse/waste disposal of process waste waters; sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and disposal areas; sites used for the application or receiving areas; manufacturing buildings; storage areas (including tank farms), intermediate products, and final products; similar areas where storm water can contact pollutants related to industrial activity; and areas where industrial activity have taken place in the past and significant materials remain and are exposed to stormwater. For the purposes of this definition, materials handling areas include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located at industrial sites that are separate from the facility's industrial activities, such as office buildings and accompanying parking lots, as long as the drainage from the excluded areas is not mixed with stormwater drained from areas of a facility that are covered by this permit.
- C. Miscellaneous non-stormwater flows include any of the non-stormwater waste streams that qualify for coverage under the *Multi-Sector General Permit for Industrial Stormwater* (TXR050000, Part II, Section A, Item 6) as follows:
 - 1) discharges from emergency firefighting activities and uncontaminated fire hydrant flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life);
 - 2) potable water sources (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life);