

# **MALFUNCTION ABATEMENT PLAN**

## **MARATHON PETROLEUM COMPANY LP ROUGE ASPHALT TERMINAL, DETROIT, MICHIGAN PERMIT TO INSTALL NO. 197-10**

### **1.0 INTRODUCTION**

This Malfunction Abatement Plan (“MAP”) is developed pursuant to the requirement set forth in the Permit to Install No. 197-10, Special Condition III.1 and Rule 336.1911(2) of Michigan’s Administrative Rules for Air Pollution Control. The purpose of this MAP is to describe the standard operating procedures that will be used to prevent, detect, and correct malfunctions of the carbon adsorption emissions control system associated with the asphalt truck load rack at the Marathon Petroleum Company LP (“Marathon”) asphalt terminal located in Detroit, Michigan (the “Rouge Asphalt Terminal”).

Marathon operates the carbon adsorption system at all times during the loading of asphalt into trucks, with the following exceptions:

- During periods of preventative maintenance when it is either not technically feasible to operate the carbon adsorption system or when operating the system will create a safety hazard for on-site personnel.
- During periods of malfunction when it is not technically feasible to operate the carbon adsorption system.

The MAP consists of two parts: 1) the preventive maintenance program; and 2) the malfunction abatement and equipment monitoring program. The on-duty shift supervisor is responsible for implementing the MAP.

The preventive maintenance program includes the following elements:

- Items or equipment that are to be inspected
- Frequency of inspection
- Method of inspection
- Personnel responsible for overseeing the inspection
- Major replacement parts that are to be kept in inventory

The malfunction abatement and equipment monitoring program includes the following elements:

- Equipment operating variables that are to be monitored to detect any malfunction or failure
- Normal operating range of these variables
- Description of the method of monitoring
- Personnel responsible for monitoring
- Frequency of monitoring

- Description of the corrective procedures or operational changes aimed at abating a malfunction or equipment failure situation

## **1.1 FACILITY BACKGROUND**

Marathon owns and operates an asphalt storage and marketing terminal at 100 South Fort Street in Detroit, Michigan. The Rouge Asphalt Terminal, which operates under the authority of Marathon's Terminal, Transport and Rail Division, is part of the stationary source that includes a light products terminal and an adjacent petroleum refinery. Operation of the stationary source is covered under Renewable Operating Permit No. 199700013c.

The loading of liquid asphalt into tanker trucks at the Rouge Asphalt Terminal occurs at an eight lane truck load rack that operates within a partial enclosure. During the loading of liquid asphalt, a vacuum hose is lowered into the manway opening of the tanker truck where emissions have the potential to vent to the atmosphere. Captured emissions are subsequently transferred to a carbon adsorption control device. The control device consists of mesh and coarse media filters and carbon canisters in series. Operation of this emission unit, EU\_Aspphalt, is covered under Permit to Install No. 197-10.

## **2.0 PREVENTATIVE MAINTENANCE PROGRAM**

This program is designed to minimize the potential for equipment malfunctions by establishing an inspection schedule for all equipment and accessories associated with the carbon adsorption emissions control system. Components of the carbon adsorption system that will be inspected, the frequency of inspection, the person responsible for overseeing inspection activities, as well as replacement parts that will be maintained on-site, are listed in **Table 1**. By implementing this program, Marathon will be better equipped to identify the potential for an imminent malfunction of the carbon adsorption system prior to its occurrence.

Marathon will maintain a record of equipment inspection activities conducted in accordance with this preventative maintenance program. The records, which will be maintained for up to two years, will include the following information:

- Date of inspection
- Operator's name
- List of checks made
- Comments and additional information, as necessary

## **3.0 MALFUNCTION ABATEMENT AND EQUIPMENT MONITORING PROGRAM**

This program is intended to identify any abnormal conditions or equipment malfunctions. **Table 2** lists the equipment for which a malfunctioned could cause a possible interruption in the operation of the control device. **Table 2** also lists the operating variables to be monitored: the normal operating range, the method of monitoring, the frequency of monitoring, the person monitoring the equipment, and the corrective actions to be taken during a malfunction or failure of the equipment. This program will help to detect any malfunctions and will be utilized to

initiate the required corrective actions to achieve continued operation in a timely manner. During a malfunction event, the following information will be recorded:

- Equipment identification
- The date the malfunction was detected
- A description of the malfunction
- A description of the required repair
- The initials of the person conducting the repair

**TABLE 1**  
**PREVENTIVE MAINTENANCE PROGRAM**

MARATHON PETROLEUM COMPANY LP  
ROUGE ASPHALT TERMINAL, DETROIT, MICHIGAN

Items Inspected	Frequency of Inspection	Responsibility	Recordkeeping
Carbon Adsorption System	<b>Weekly Inspection:</b> Visually inspect the system for obvious structural problems	Operator	Weekly electronic documentation
Electrical Systems	<b>Annual Inspection:</b> Verify all electronics	Electronic Specialist	Preventative Maintenance Report
Tank Vacuum Draw Fans	<b>Weekly Inspection:</b> Verify the fans pulling the vacuum on the polymer tanks are operating.	Operator	Weekly electronic documentation
VFD Fans	<b>Weekly Inspection:</b> Verify the fans on the VFD fans are running.	Operator	Weekly electronic documentation

**TABLE 2**  
**MALFUNCTION ABATEMENT AND EQUIPMENT MONITORING PROGRAM**

MARATHON PETROLEUM COMPANY LP  
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Equipment ID	Operating Variables Monitored	Normal Operating Range	Method of Monitoring	Frequency of Monitoring	Person Monitoring	Corrective Procedure or Operational change in the Event of Equipment Malfunction or Failure
Carbon Adsorption Canisters	Differential Pressure	<15 in water	Screen Display	Daily	Technician	When $\Delta P > 15$ in H <sub>2</sub> O, check the carbon. If $\Delta P$ is due to a removable blockage, then remove the blockage and continue normal operation. If $\Delta P$ is not due to a removable blockage, then replace the carbon in the adsorption vessel.
Filter Beds	Differential Pressure	<15 in water	Screen Display	Daily	Technician	When $\Delta P > 15$ in H <sub>2</sub> O, replace the filter bed.
Tank Vacuum Draw Fans	Tank Pressure	-0.3 $\pm$ 0.25 in water	Manual	Weekly	Technician	When fan is no longer operating, replace the fan.
VFD Fans	Motor Operation	Not Applicable	Manual	Weekly	Technician	When fan is no longer operating, replace the fan.

**ATTACHMENT A**  
**MALFUNCTION ABATEMENT CONTINGENCY PLAN**

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Condition	Decision	Response	Condition to response	Action
1. Malfunction discovered	Can floor personnel repair the malfunction?	Yes	Repairs can be completed within one hour	Complete repairs; notify supervisor;
			Repairs cannot be completed within one hour	Inform maintenance and supervisor of malfunction immediately. Proceed to condition #2.
		No		Inform maintenance and supervisor of malfunction immediately. Proceed to condition #2.
2. Maintenance informed of malfunction	Can maintenance repair the malfunction?	Yes	Repairs can be completed before the end of the shift	Complete repairs; notify maintenance supervisor;
			Repairs cannot be completed before the end of the shift	Inform management personnel immediately. Proceed to condition #3.
		No		Inform management personnel immediately. Proceed to condition #3.
3. Management informed of malfunction		Yes		Complete repair.