

## **Flare #8 Phase 1 Test Plan**

Operation of Flare #8 is required to purge refinery flare gases for complete decommissioning and lay-up of the Refinery Process Units. This Phase 1 Test Plan covers pre-start up checks, including mechanical, electrical, and control system tests, and concludes with lighting of the flare pilots. During this first phase the flare will be completely disconnected from the Refinery and will remain isolated from the Refinery Process Units with a metal blind. Limetree Bay expects to test each of the pilots at Flare #8 during the daytime hours of Saturday, July 31. Each of the ten pilots will be tested separately and each will operate for approximately twenty minutes as part of the test process. During testing, the pilot lights may be visible to the naked eye. Following the pilot testing, Limetree Bay will disassemble the scaffolding. The blind will not be removed before the Phase 2 decommissioning, which Limetree Bay intends to begin on August 12, 2021 pursuant to an approved Phase 2 plan. An overview of the Phase 1 Plan's supporting documentation is provided in Attachment 1. A detailed timeline setting forth all applicable Phase 1 activities is provided in Attachment 2.

## **Flare #8 Repairs**

In advance of operating Flare #8, Limetree Bay has committed substantial resources to repair Flare #8 to ensure it will operate safely and effectively in the future. All known damage at the Flare #8 tip was identified and addressed in a timely manner and inspections were thoroughly conducted by internal and external parties. In-house contractors have performed all repair activities. All welding was completed by certified welders. Attachment 3 sets forth the activities that Limetree Bay has undertaken to address its internal inspections and the recommendations in Section 3.1 of the Section 303 flare audit report. Repairs completed or currently in progress addressed inspection recommendations and included the following activities: (1) all mechanical flare tips have been repaired or replaced; (2) all pilot ignition rods, instrumentation, and electrical connections have been repaired or replaced (with work complete by July 30, 2021); (3) manifold piping, bolts, nuts, and washers have been replaced; (4) all cracks in heat shielding have been repaired (with work complete by July 30, 2021); (5) molecular seal nozzle has been repaired; (6) all cracks in steam piping have been repaired; and (7) the aviation light has been repaired. As indicated in Attachment 2, all such activities will be completed and checked before lighting of the pilot light for Flare #8.

## **Phase 1: Testing Activities**

Phase 1 testing will consist of five activities, which are discussed in turn below.

1. Mechanical Integrity Inspection. Visual inspection was performed on all welding of the tips/risers/heat shielding/drain nozzle. An overall visual will be performed by a Limetree Bay Engineer and Inspector when all work is complete. These activities are discussed further in Attachment 2.

2. Safety System tests. Proper function of the flare pilot detection system will be confirmed by heating field temperature sensors and confirming proper safety system response in the Distributed Control System (DCS) and local control panel. The refinery power outage response system will be tested by simulating input to the control system to confirm proper action of field control devices.
3. Functional test of flare measurement and control devices. Flare temperature, pressure, flow, and level devices will be loop checked from the field device to the DCS. Control valves will be stroked from the DCS to confirm operation in the field. Control system logic will then be checked by simulating inputs from the field measurement device and confirming proper automatic action in the field.
4. Pre-Startup Safety Review (PSSR). Limetree Bay will complete a PSSR as part of its test activities. A copy of the PSSR is provided in Attachment 13, which sets forth the scope of each PSR under consideration, including when each individual PSSR requirement will be completed, and documentation for each individual PSSR requirement. A completed PSSR will not be available until Phase 1 is completed and will be provided to EPA following the conclusion of Phase 1.
5. Test each pilot with purchased propane. Procedure “No. 8 Flare – Pilot Flame Out,” which provides step-by-step requirements with appropriate sign-off for restoring the pilot flame at Flare #8, is included as Attachment 8.

### **Phase 1: Operational Controls**

Limetree Bay will employ appropriate operational controls during Phase 1 testing to minimize the risk of upset conditions. Valves at the refinery process units are closed and locked. Visual surveys with documented sign-offs are available. Furthermore, a mechanical “blind” is installed in the pipeway between the refinery flare system and Flare #8. A simplified block diagram illustrating the general configuration of Flare #8, including the location of the blinds installed for Phase 1 as well as features like the fuel gas supply and supplemental gas, is included as Attachment 17. This blind is required to comply with Limetree Bay safety procedures to conduct weld repairs. Attachment 15 is Limetree Bay’s procedure for the installation and removal of general equipment blinds, which provides steps and information required for the installation and removal of equipment blinds. The flare pilot gas system is piped separately to the flare tips using commercial-grade propane. This propane is quality tested by an independent lab. An analysis of propane content is included as Attachment 6. A 25-page package of marked up piping and instrumentation diagrams with the flow path of propane to Flare #8 is included as Attachment 7. An estimate of commercial propane consumption of 500 SCFH, including the basis for the estimate and a reference diagram of the pilot, is included as Attachment 12. Finally, while there is no reason to believe that the H<sub>2</sub>S scavenger is necessary

during the Phase 1 testing of Flare #8, the Sulfix injection system is available and Limetree Bay has sufficient Sulfix scavenger available to operate the system. A description of the Sulfix injection system is included as Attachment 11.

**Phase 1: Operator Training and Staffing**

Limetree Bay has trained and will staff appropriately for the safe and timely completion of the Phase 1 process. Limetree Bay intends to employ a “four on, four off” shift schedule that should prevent any concerns associated with worker fatigue by ensuring that workers are performing day shift work and that employees have sufficient rest between working periods. Complex shift schedules detailing the shift schedule for work during the Phase 1 period are included as Attachments 4 and 5. Moreover, Limetree Bay certifies that it has conducted or will conduct additional operator training before Phase 1 operations begin. Attachment 16 describes the training that the personnel assigned to work the flare system during Phase 1 have undergone as well as refresher training that began on July 16, 2021, and that will conclude before completion of the PSSR.

**Phase 1: Subpart Ja and CC Compliance (Including Continuous Monitoring)**

Limetree Bay intends to comply with all applicable requirements of 40 C.F.R. Part 60 Subpart Ja and 40 C.F.R. Part 63 Subpart CC. Limetree Bay’s Flare Management Plan, which describes the Subpart Ja/CC monitors and instrumentation, the programming of the data acquisition system for Subpart Ja/CC compliance, and Subpart Ja/CC compliance generally, is included as Attachment 14(c). Information regarding the calibration of instrumentation and the operation of continuous monitors is included in Limetree Bay’s CEMS Quality Assurance Plan, Continuous Parameter Monitoring System Monitoring Plan, and CEMS/COMS Analyzer Maintenance procedures, which are provided in Attachments 14(a), 14(b), and 18. These plans explain how Limetree Bay will ensure that all instrumentation and controls necessary for compliance with the applicable NSPS Ja and MACT CC flare requirements are installed, maintained, and have been verified to be in working order prior to the start of Phase 1, as well as providing information relative to how Limetree Bay will comply with NSPS Ja and MACT CC flare requirements during Phase 1.

**Phase 1: Ambient Monitoring**

Phase 1 testing of the pilots will be conducted with certified propane on a separate pipe system to the flare tips. Purchased propane will not emit detectable H<sub>2</sub>S or SO<sub>2</sub>. Nevertheless, Limetree Bay intends to employ eight Radius BZ1 Monitors to monitor H<sub>2</sub>S and SO<sub>2</sub> during Phase 1 testing.

<b>Location of Measurement or Observation</b>	<b>Area Tested</b>	<b>Tube # or Instrument serial #</b>
NW Tank 7401 Latitude 17.715624 longitude - 64.755629	Downwind of Tank 7401 North West Area	Radius BZ1 Monitor - 190829F-008
SW Tank 7507 Latitude 17.708401 longitude - 64.766396	Southwest of Tank 7507	Radius BZ1 Monitor - 190829F-034-
SCPC Laydown Yard Latitude 17.713110 Longitude - 64.768327	SCPC Laydown yard west fence area	Radius BZ1- Monitor 200124R-011
Blessing Hill NE of Tank 1236 Latitude 17.717993 Longitude -64.767262	Blessing Hill NE of Tank 1236	Radius BZ1- Monitor 18021FY-017
SE Blessing Hill Latitude 17.718060 Longitude - 64.765105	SE of Blessing Hill gate entrance	Radius BZ1- Monitor 180846Y-012
NE QC LAB Latitude 17.714433 longitude - 64.755747	NE of QC Lab South East of Admin Bldg.	Radius BZ1 19013HL-002

South East of Diageo Bldg. entrance Latitude 17-714116 longitude - 64.775331	Diageo Bldg. South East entrance	Radius BZ1-Monitor 1901425-030 -
NW of Tank 7501 Latitude 17.701118 Longitude - 64.754861	North West of Tank 7501	Radius BZ1- Monitor 20012VE-059

Additionally, Limetree Bay understands that EPA will operate ambient Honeywell SPM monitors SO<sub>2</sub> and H<sub>2</sub>S monitors at the following locations during the Phase 1 testing: West Gate Martin Marietta (Latitude 17.706014, Longitude -64.781737); East Anguilla, The Ruins (Latitude 17.717197, Longitude -64.774590), Plot 25 Estate Clifton Hill (Latitude 17.718683, Longitude -64.776514), Plot 487 Estate Barren Spot (Latitude 17.732244, Longitude -64.765214), Plot 214 Estate Ruby (Latitude 17.736911, Longitude -64.751889). Limetree Bay intends to procure ambient Honeywell SPM monitors for use during purging activities and will seek bankruptcy court approval to do so at the next scheduled hearing. A map showing the locations of the monitors is provided in Attachment 9. Likewise, a visible emissions monitoring plan is included in Attachment 10.

**Phase 1: Summary of Test Results and Flare Condition**

Following completion of Phase I ambient monitoring, Limetree Bay will submit the completed PSSR to EPA as well as a short report summarizing Phase 1 testing and confirming that Flare #8 is in good repair, does not require further repairs, and is in operational condition to allow Phase 2 restart. Limetree Bay also will provide Management of Change (MOC) documentation associated with flare startup, if any. Limetree Bay will not proceed to Phase 2 of its Flare Plan before obtaining EPA approval.