APPENDIX C

OPEN FLARE OPERATIONS AND MAINTENANCE PLAN

OPEN FLARE SYSTEM
OPERATIONS AND MAINTENANCE PLAN

CENTRAL SANITARY LANDFILL

Prepared For

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1. INTRODUCTION

The Central Sanitary Landfill (CSL), located in Pierson, Michigan, owns and operates an open flare system to combust the Landfill Gas (LFG) collected at the site. This open flare system operations and maintenance plan has been prepared as required by the Permit to Install (PTI) # 167-06 for the open flare system at the CSL in order to demonstrate compliance with the requirements of PTI Condition No. EUOPENFLARE III.4.

2. EQUIPMENT FUNCTION AND MONITORING

The following equipment is part of the open flare system at the CSL:

1. One 48" condensate knock out pot for dewatering purposes.
2. One 14" fail safe automatic pneumatic header valve.
3. Two American Fan or equal electric fan LFG blowers for compressing the LFG.
4. One propane pilot assembly with automatic igniter system.
5. One 14" Shand & Jurs model 94307 flame arrester.
6. One LFG Specialties flare model CFT1646I14 with capacity of 470 – 4700 SCFM.

Each piece of equipment provides a specific function in the flaring process and various parameters are monitored at each piece of equipment on a scheduled basis to determine that the equipment is performing its intended function. The following summarizes the function of each piece of equipment and what is monitored.

Condensate knock out pot – This vessel functions similarly to a manhole/pump station. Saturated LFG flows via headers pipes into the knock out pot. Due to the relatively larger diameter of the knock out pot compared to the size of the header pipe, the LFG velocity decreases and as a result condensate droplets in the LFG fall to the bottom of the knock out pot. Collected condensate in the knock out pot is pumped to the CSL leachate collection system. Condensate levels are frequently checked in the knock out pot and pumped as needed by site personnel to the leachate collection system.

Automatic pneumatic header valve – The fail safe automatic pneumatic header valve is a valve operated automatically with nitrogen. In the case that the flare malfunctions the valve is automatically shut in order to prevent the release of LFG to the atmosphere. On a weekly basis the nitrogen levels, supply pressure, and valve performance are confirmed to ensure that the valve closes completely.

American Fan or equal LFG blowers – The blowers apply a vacuum to the wellfield and thus move the LFG. Each blower is powered by an explosion proof electric motor. Each blower has a lubricating device which lubricates the blower vanes and the bearings. American Fan blowers (or equivalent) are used because they are mechanically simple and extremely reliable. If the electric motor is running and the lubricator is working the blower operates. On a monthly basis staff observes that the blower lubricator is pumping oil. On a monthly basis an operator observes the operation of the electric motors and blowers, listens for out of the ordinary sounds and feels bearings for significant changes in vibration or temperature (weekly).

Pilot assembly/igniter system – The purpose of the Pilot assembly/igniter system is for the automated startup of the open flare system. This assembly also ensures that there is a flame present at all times while LFG is being diverted to the open flare. Onsite staff observes the propane supply and propane pressure frequently to ensure the pilot flame is operating appropriately. On a semi-annual to annual basis the operations of the entire assembly are to be inspected to ensure the unit is properly functioning.

Shand & Jurs model 94307 flame arrester – The flame arrester is designed to prevent flame flash back in the event of high oxygen concentrations in the incoming LFG. On a monthly basis staff observes the back pressure and the build up of any carbon deposits in the bank assembly of the flame arrester.

LFG Specialties Open Flare model CFT1646I14 – The open flare combusts the LFG collected at the CSL. It is designed for flows ranging from 470 to 4,700 standard cubic feet per minute (SCFM) with a LFG quality of 30 – 50% methane. In order for the flare to operate properly it is important that all the previously stated components are functioning correctly. It is important to perform frequent inspections of the open flare to identify any possible maintenance items. On a weekly basis staff perform a visual inspection of all components of the flare to identify required maintenance items.