2. SOURCE 1- LANDFILL WITH GAS COLLECTION SYSTEM

The collection and control system consists of operating landfill gas extraction wells installed at the East and North Parcels connected to landfill gas processing facilities located in the southwest corner of the site (see Figure 1). This report does not include the closed South Parcel because the total in-place tonnage of refuse in this Parcel is less than 450,000 tons. The South Parcel is not contiguous with the other Acme Landfill Parcels and has been excluded from any MFR Permit requirements. The landfill gas processing facilities consist of a flare (abatement device A-2), four microturbine generators operated by Bulldog Gas & Power as BAAQMD Plant 13782, and a gas compression plant used to deliver processed landfill gas to Central Contra Costa Sanitary District.

Acme operated the collection and control system at the site during the reporting period. The existing collection system consists of 20 extraction wells and three trenches at the East Parcel (see Figure 2) and 40 extraction wells and 25 horizontal collectors at the North Parcel (see Figure 3). Except as described in the following sections, all of the extraction wells were operated continuously. The horizontal collectors were operated less than continuously consistent with MFR Permit condition #19906, Part 5. As described above, The BAAQMD provided a three-year extension of the less than continuous petition to Acme in a March 19, 2012 letter. Acme's less than continuous petition expires on March 25, 2015. Testing and operation of the horizontal collectors is described below. Required operating records and data for the landfill gas collection and control system are also discussed.

2.1 Operating Records

Acme collection and emission control system daily operation records are included in Appendix A. The daily summaries include gas flow rates, scheduled shutdowns, and unscheduled shutdowns along with a description of the shutdown occurrence. The landfill gas flare and gas compression plant can be operated independently or in combination. The microturbines can only be operated when the gas compression plant is running. The microturbines were not operated during the reporting period. A planned shutdown of the gas plant for chiller repair occurred during October 2012. There were a total of 144.0 hours of scheduled shutdown during this month. The landfill gas flare was operated continuously while the chiller repair work was being conducted. There were no reported unscheduled shutdowns of the plant during the reporting period. The 8-34-113 requirements allow for up to 240 scheduled shutdown hours during any calendar year. Since the flare was operated continuously while the gas plant was shut down, there were no scheduled shutdowns of the emission control systems during the reporting period. The systems at Acme were therefore operated in compliance with the shutdown limitations during this 2012-2013 reporting period.

The flare was operated for a total of 144.0 hours during this reporting period. The heat input to the flare during these operating periods did not exceed the maximum daily MFR BTU permit limit. The heat input to the flare during this reporting period was approximately 2,361 million BTU which is well below the 412,650 million BTU per year limitation. Flare flow and strip chart recorder data will be retained in Acme files for review by the BAAQMD upon request. The

operation records provided for this reporting period therefore indicate that Acme Landfill is in compliance with MFR heat input limits and the 8-34-113 requirements.

The East Parcel accepted green waste, wood waste, construction and demolition debris, and other inert wastes during the reporting period. Daily summaries of waste acceptance from October 1, 2012 to March 31, 2013 are provided in Appendix B. There are no areas on the East or North Parcels at Acme Landfill that are excluded from the landfill gas collection system. Acme Landfill's calculated waste acceptance rate during the reporting period, approximately 104 tons per day, is well below the 1,500 tons per day MFR Permit limit.

2.2 Flare Source Testing Results

Flare source testing was not conducted during the reporting period. Acme plans to complete the annual source test during July 2013. Blue Sky Environmental will be contracted to perform compliance testing for the parameters listed in Condition #19906, Item 9 of the MFR Permit. Testing of the untreated landfill gas for the volatile organic compound parameters listed in Condition #19906, Item 10 of the MFR permit will be completed concurrent with the 2013 source test.

2.3 Collection and Emission Control System Leak Testing

Landfill gas wells and horizontal collectors are leak-tested quarterly to comply with the 8-34-303 requirements. Leak testing data are recorded in Appendix C. No leaks in excess of the 1,000 parts per million volume (ppmv) MFR Permit component limit were measured in North Parcel wells during the reporting period. PVC tape is routinely used to seal the annular space between North Parcel liner boots and the landfill gas wells to prevent leaks at these collectors. Leaks above and below the 1,000-ppmv limit were measured during the March 2013 monitoring at some of the East Parcel well. The leaks were corrected as they were measured by adding additional soil cover around the base of the well. No leaks in excess of the 1,000-ppmv limit were measured after corrective actions were taken. In addition, Acme plans to install additional bentonite around the base of the East Parcel wells at the well/ground surface interface during second quarter 2013. The components tested during this reporting period were operated in compliance with the 8-34-303 requirements during the reporting period.

2.4 Wellhead Monitoring

Acme completed monthly wellhead monitoring of the landfill gas wells during the reporting period for the parameters required by 8-34-305. A Landtec GEM 2000 instrument was used to measure the required wellhead monitoring parameters. This instrument is factory-calibrated at six-month intervals and field-calibrated each month before use. Operation of the horizontal collectors and vertical wells on the North and East Parcels is described below.

Vacuum and pressure gauges installed on the North Parcel horizontal collectors were monitored monthly consistent with MFR Permit condition #19906, Part 5. Negative or static pressures were observed in the collectors during each of the monthly monitoring events. The isolation valves to

each of the collector legs were therefore off during the reporting period. Gauge readings and gas quality results for the horizontal collectors are included in Appendix D. Malfunctioning gauges were replaced as they were identified. All of the North and East Parcel gas well measurements were in compliance with the 8-34-305 requirements during the monthly testing programs for this reporting period.

Some of the North Parcel wells (AW-03, AW-04, AW-08, AW-25, and EW-108) had oxygen concentrations above the 5 percent criteria during the initial monthly testing in November and December 2012. Adjusting the wellhead valves at these wells reduced the oxygen concentrations in these wellheads. The wells were then retested within one day with the retest results in compliance with the 8-34-305 requirements for all parameters, including oxygen. The initial and retest results are included in Appendix D. The remaining North Parcel gas well measurements were in compliance with the 8-34-305 requirements during the routine monthly testing during the reporting period. These results are also included in Appendix D. Please note that the data logging function on the Landtec instrument was not working during the January 2011 testing. Wellhead results for this month were therefore manually recording on the data sheets.

All of the vertical East Parcel gas wells were in compliance with the 8-34-305 requirements during the routine monthly monitoring events. Four East Parcel wells, EW-10, EW-15, EW-17 and EW-18, were not monitored during a portion of the reporting period because they were located in an active fill area and were being raised. Gas quality in East Parcel horizontal collectors T-2 and T-3 varied during this reporting period. Valves were turned on or off depending on the gas quality and oxygen concentrations measured during a given month. East Parcel collector T-1 had good gas quality and low oxygen and was operated during the reporting period. Tabular summaries of the East Parcel wellhead data are also included in Appendix D.

2.5 Landfill Surface Emission Monitoring

Integrated and instantaneous surface emission monitoring (SEM) was implemented at the East Parcel during 2012 on a quarterly basis as required by CCR Title 17 §95460 through 95476. Annual monitoring of the closed North Parcel as allowed by CCR Title 17 §95471 was completed during July 2012 and the results were reported in the previous Title V Monitoring Report. The East Parcel was monitored within 3 inches of the Parcel surface along approximately 25-foot intervals in 50,000 square feet grids using AB-32 compliant Trimble SiteFID™ Landfill Gas Monitors. These instruments incorporate flame ionization detectors that are linked by wireless technology to GPS-enabled hand-held computers. The results were downloaded from the Trimble landfill gas monitors into Excel files that included calibration records, background monitoring records, and individual files for each of the grids that were monitored. East Parcel SEM was conducted during December 2012 and March 2013. Due to weather delays, the fourth quarter 2012 monitoring was initiated during December 2012 and completed during early January 2013. The results from the SEM monitoring at the East Parcel are described below. Monitoring results are included in Appendix E.

There were no exceedences of the 25 ppmv integrated criteria during fourth quarter 2012 and first quarter 2013 monitoring at the East Parcel. Confirmed measurements above the 500 ppmv instantaneous criteria were reported during the SEM work. Six confirmed exceedences were measured during fourth quarter 2012 and 17 exceedences were confirmed during first quarter 2013 monitoring. These instantaneous confirmed emissions were addressed by applying additional soil cover using Acme loaders. All of these locations were re-monitored after the additional soil cover was placed and within eight days of recording the initial results. The re-monitoring results were below the 500 ppmv criteria. Consistent with BAAQMD 8-34-415, each of the locations were monitored again within 30 days of the initial monitoring to confirm that the emissions were below 500 ppmv. Monitoring results for each of the quarterly monitoring programs are summarized in Appendix E along with figures showing the locations where instantaneous measurements above 200 ppmv were recorded.

Site wind speed data was collected on the days that East Parcel SEM was performed using a portable data-logging anemometer. Wind speed monitoring data did not exceed either the regulatory criteria or the alternative compliance option (ACO) criteria that Acme has requested. The ACO proposes termination of monitoring only when the average wind speed exceeds 10 miles per hour or the instantaneous wind speed exceeds 20 miles per hour. Wind speed monitoring data for each of the grids monitored is also summarized in Appendix E. The wind speed data is being maintained in Acme files and can be submitted to the BAAQMD upon request.

Based on the results obtained during these two SEM events, the East Parcel is in compliance with methane surface emission standards specified in CCR Title 17 § 95465 and therefore no corrective action is necessary. Complete monitoring data for these two events will be maintained in the engineering office at the Acme office Landfill.

2.6 Continuous Temperature and Flow Recorders

As mentioned previously, the landfill gas flare was operated for 144.0 hours during the reporting period. Flare temperature graphs for the periods of operation have been recorded using a strip chart recorder. Temperatures above the 3-hour average 1,400 ^{o}F MFR Permit criteria were maintained while the flare was being operated. Strip chart recorder data documenting compliance with the MFR Permit criteria will be retained in Acme files for review by the BAAQMD upon request. Daily gas flow meter readings are summarized in Appendix A. The gas flow meters are regularly calibrated to ensure the accuracy of the measurements. The gas plant flow meter is calibrated at 6-month intervals. Flare and microturbine flow meters are calibrated annually. Gas flow meter calibration data is retained in Acme's files and can be submitted to the BAAQMD upon request.

2.7 Miscellaneous Landfill Operating Records

Acme maintains and operates a water truck to control dust emissions from the unpaved roadways at the site. A summary of the watering records for the reporting period containing the data required by the MFR Permit condition #19906, Part 11 is included in Appendix F. Note that

road watering is completed only when necessary during the wet season. There were several days during this reporting period when use of the water truck was not necessary because the rainy weather precluded dust emissions from the roads at the site. Acme also measured hydrogen sulfide concentrations in the raw landfill gas on a quarterly basis during the reporting period as required by MFR Permit condition #19906, Part 8. Hydrogen sulfide levels in the gas were measured using a GasTech GT Land Surveyor. The readings recorded during this reporting period, 34 and 35 ppmv, are significantly below the 1,300-ppm MFR Permit limit.

Acme performed routine maintenance on the landfill gas extraction well network during the reporting period including periodic taping of liner boot seals, draining condensate from header lines, replacing landfill gas sampling ports on the well heads, replacing well identification stickers, and replacing malfunctioning gauges on the North Parcel horizontal collectors. In addition, several East Parcel wells were raised during this reporting period. Temporary shutdowns of wells were completed consistent with the 8-34-117 requirements. Well disconnection times and activities completed on these existing gas collection and control system components have been documented and will be retained in Acme files for review by the BAAQMD upon request. Descriptions of the maintenance work completed at the landfill gas wellheads during routine monthly testing are included on the field data forms provided in Appendix D.

3. SOURCES 9 AND 10 – IC ENGINE POWERING WASTE RECYCLER

Acme used a diesel-fueled waste recycler manufactured by Peterson Pacific Corporation to chip wood and green wastes received at the landfill during the reporting period. An hour meter connected to the engine records waste recycler operating hours. The waste recycler was operated for a total of 100.4 hours during this reporting period. The waste recycler hour meter log and diesel fuel consumption records will be retained in Acme files and submitted upon request. Acme is permitted to operate the waste recycler for up to 1,200 hours during any consecutive 12-month period. The waste recycler operating hours during this reporting period indicate that the annual operating hours are below the permitted maximum. California-certified diesel was used to fuel the waste recycler during the reporting period. Vendor certifications of sulfur content were included on every invoice received and are being retained in Acme files for review by the BAAQMD upon request. Water was used to moisture condition wood and green waste before chipping. Acme has installed a dedicated water line at the green waste chipping area to facilitate moisture conditioning of the waste and preclude fugitive emissions. Excessive visible particulate emissions were not observed while the waste recycler was operated and no fallout of particulate on adjacent property occurred during the reporting period.

4. SOURCE 200 – LEACHATE TREATMENT FACILITY

Influent and effluent leachate samples are collected and analyzed quarterly for the volatile organic compounds (VOCs) specified by MFR Permit condition #19908, Part 2. The VOC results and daily flow rate data are used to calculate VOC and benzene emissions from the leachate treatment plant. A 75 percent biodegradation efficiency factor is included in the emission calculations. VOC and benzene emissions from the leachate treatment plant were well below the criteria included in the MFR Permit condition #19908, Part 1 during the reporting period. Daily leachate flow rates were also below the 72,000-gallon per day limit during the reporting period. Emission calculations and leachate treatment plant flow rate data are included in Appendix G. Airflow rates to the aeration tanks are being retained in Acme files for review by the BAAQMD upon request.

5. SOURCE 201 – EMERGENCY GENERATOR

Acme maintains an 80-horsepower, 25-kilowatt emergency generator at the leachate treatment plant to ensure maximum run time at the plant and enable compliance with other regulatory requirements at the site. Acme received a permit from the BAAQMD to operate the emergency generator in a December 5, 2003 letter. An hour meter is connected to the engine and is read and recorded monthly to comply with the permit conditions. The generator was operated for a total of 1.3 hours for maintenance during the reporting period. There was an additional run time of 8.0 hours during a short-term power outage in March 2013. The California Air Resources Board (CARB) requirements limit the inspection and maintenance run time of this engine to less than 20 hours per year. The 1.3 hours of maintenance run time during this reporting period is well below the 20-hour per year criteria.