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. Planned shutdowns of the gas plant for compressor maintenance or component replacement occurred during October 2011, November 2011, January 2012, February 2012, and March 2012. There were a total of 821.2 hours of scheduled shutdowns during these months. The landfill gas flare was operated continuously while the gas plant maintenance and component replacement 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 2011-2012 reporting period.

The flare was operated for a total of 821.2 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 15 million BTU which is well below the 412,650 million BTU per year limitation. 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, 2011 to March 31, 2012 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 87 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 2012. 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 2012 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 below the 1,000-ppmv limit were measured during the December 2011 and March 2012 monitoring at some of the East Parcel well. The bentonite seals around the base of the wells at the well/ground surface interface were reinstalled and hydrated during March 2012 before the wellfield monitoring was conducted. The components 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-23, AW-24, AW-25, AW-28 EW-108, EW-110, EW-111) had oxygen concentrations above the 5 percent criteria during the initial monthly testing in October 2011 and January 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. Two East Parcel wells, EW-11 and EW-17, 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

During third quarter 2011, integrated and instantaneous SEM was implemented at the North Parcel as required by CCR Title 17 §95460 through 95476. The North 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 monitors 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. The North Parcel SEM was completed during June and August 2011. Monitoring of the East Parcel was delayed due to the thick vegetation that was being cleared from this Parcel's surface. Monitoring of the East Parcel for third quarter compliance was conducted during October 2011 after the vegetation clearing work was completed. The East Parcel was also monitored during December 2011 for fourth quarter compliance and again during February 2012 for first quarter 2012 compliance. The results from the initial SEM monitoring at the North and East Parcels are described below. Monitoring results are included in Appendix E.

There were no instantaneous or integrated emissions detected during the June and August 2011 SEM of the North Parcel. All results were below the SiteHD™ detection limits. A figure showing the grids walked during the monitoring program is included in Appendix E. Based on these results, the North Parcel is in compliance with the methane emission standards specified in Title 17, CCR §95465. In addition, there have been no exceedences of the 500 ppmv criteria during quarterly monitoring of the North Parcel in 2010 and 2011. Consistent with Title 17, CCR §95471 and 8-34-506, the frequency of SEM at the North Parcel is being reduced to annual and the walking pattern spacing is being increased to 100-foot intervals. The closed North Parcel has a final cover consisting of three different liner materials that has effectively sealed the surface of the landfill preventing landfill gas emissions. The next SEM monitoring of the North Parcel will be completed during third quarter 2012.

There were no instantaneous results above 500 ppmv or integrated results exceeding the 25 ppmv criteria during third quarter 2011 SEM monitoring of the East Parcel. One momentary, non-repeatable measurement above 500 ppmv was obtained in grid 45. This reading could not be confirmed during immediate retesting of the area. Third quarter 2011 monitoring results are summarized in Appendix E. Figures showing the East Parcel grid layout and the four locations where instantaneous measurements above 200 ppmv were recorded are included in Appendix E. During fourth quarter 2011 SEM, there were six instantaneous results above the 500 ppmv criteria detected in monitoring grids 2, 5, 8, 9, 22, and 66. There were no integrated results exceeding the 25 ppmv criteria during fourth quarter monitoring. Instantaneous monitoring results above 500 ppmv were addressed by applying additional soil cover to the areas using onsite equipment on December 21, 2011. The locations were re-monitored after the additional soil cover was placed and within two days of recording the initial results. All of the re-monitoring results were below the 500 ppmv criteria. Consistent with BAAQMD 8-34-415, each of these six locations were monitored again on December 28, 2011 to confirm that the emissions were below 500 ppmv. All of the December 28, 2011 monitoring results were below 40 ppmv. Local wind speed data for the monitoring events were also recorded. Average wind speeds calculated on a 15-minute average did not exceed five miles per hour, and there were no instantaneous wind speeds in excess of 10 miles per hour during either of the monitoring events. Please note that Acme has applied for an alternative compliance option (ACO) with the CARB that 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 is also presented in Appendix E.

The East Parcel was monitored for first quarter 2012 compliance during February 2012. There was one sustainable instantaneous result above the 500 ppmv criteria in Grid 9 on February 6, 2012. No integrated results exceeded the 25 ppmv criteria during first quarter 2012. The Grid 9 instantaneous exceedence was addressed by applying additional cover and re-monitoring the location the same day the exceedence was measured. The re-monitoring result was below the 500 ppmv criteria. Additional re-monitoring of this location was completed on February 16, 2012. Results on this date were less than 20 ppmv. Wind speeds during monitoring did not exceed the regulatory criteria or the ACO criteria that Acme has requested. First quarter 2012 SEM monitoring results and wind speed data are included in Appendix E.

Based on the results obtained during the three 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 three 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 821.2 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 °F MFR Permit criteria were maintained while the flare was being operated. Strip chart recorder data documenting compliance with this 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 40 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 and new bentonite seals were installed around all of the East Parcel wells. 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 208.2 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 7.3 hours for maintenance during the reporting period. There was an additional run time of 7.1 hours during a short-term power outage in March 2012. 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 7.3 hours of maintenance run time during this reporting period is well below the 20-hour per year criteria.