Bay Area Air Quality Management District

939 Ellis Street
San Francisco, CA 94109
(415) 771-6000

Statement of Basis
for
MAJOR FACILITY REVIEW PERMIT
MINOR REVISION

Waste Management of Alameda County
Facility #A2066

Facility Address:
10840 Altamont Pass Road
Livermore, CA 94550

Mailing Address:
10840 Altamont Pass Road
Livermore, CA 94550

Application Engineer: Carol Allen
Site Engineer: Carol Allen

Application: 16864

TABLE OF CONTENTS

STATEMENT OF BASIS

for

MFR Permit: Minor Revision

Waste Management of Alameda, Inc.; PLANT # 2066

APPLICATION # 16864

A. BACKGROUND

Site Description

Waste Management of Alameda, Inc. (Waste Management or WM) operates the Altamont Landfill and Resource Recovery Facility in Livermore, CA. This facility includes the Bay Area's largest active landfill (S-2 with more than 30 million tons of refuse in place), two 3 MW Gas Turbines (S-6 and S-7, landfill gas fired) equipped with Fogging Systems (A-6 and A-7), two 1877 bhp IC Engines (S-23 and S-24, landfill gas fired), and one 71 MM BTU/hour Landfill Gas Flare (A-15).

This facility also has wastewater treatment operations (permitted: S-19, S-140, and S-141; exempt: S-12, S-20, S-28, S-130, A-130, and S-180), a non-retail gasoline dispensing facility (S-99), and seven diesel engines that provide portable or standby power.

Current Project

Application # 16864 is for a Minor Revision of the MFR Permit that will incorporate the permit condition changes for the S-2 Altamont Landfill that were approved pursuant to NSR Applications #15498, #16863, and #16984. The proposed condition revisions concern the description and operating requirements for the landfill gas collection system associated with S-2.

As discussed in Appendices A, B, C, and E, the District has approved a number of gas collection system alterations that are intended to ensure that the landfill gas generated by S-2 is adequately controlled and that the landfill has no surface leaks above the 500 ppmv limit. These gas collection system alterations include expanding the gas collection system into recently filled areas as wells as on-going gas well relocations and replacements that are necessary to repair and balance the gas collection system for optimum performance. Since the last Title V permit revision, Waste Management has decommissioned 23 vertical wells and 12 horizontal collectors and has installed 37 new vertical wells. The gas collection system now consists of 84 vertical wells, 1 horizontal collector, and 1 leachate clean out riser. Pursuant to the Authority to Construct that the District issued for Application # 16863, Waste Management may install up to 38 vertical wells and up to 25 horizontal trench collectors and may decommissioned 19 vertical wells and 4 horizontal collectors. The revised gas collection system description is identified in Table II-A and in Condition #19235, Part 1a. The remaining authorized gas collection system modifications are identified in Condition # 19235, Part 1b.

As discussed in Appendix A, the District also approved condition revisions that (a) define component replacements that are not subject to the Authority to Construct requirement, (b) allow temporary shut down of a few wells pursuant to the Regulation 8-34-404 Less Than Continuous

Operating Provisions, and (c) clarify notification procedures and other applicable requirements related to gas system alterations. Waste Management requested to have the ability to shut down a limited number of individual gas wells on a temporary basis to allow more flexibility in managing their gas collection system. This type of flexibility has been granted to other Bay Area landfills. Condition # 19235, Part 1c contains the temporary well shut down allowance and the related monitoring and record keeping requirements.

As discussed in Appendix D, Waste Management requested an alternative wellhead temperature limit for several wells that have been exhibiting elevated temperature without any signs of subsurface fires. The District approved an alternative wellhead temperature limit of 145 ^{o}F pursuant to Application # 16984. Wells subject to this alternative limit are subject to additional monitoring for evidence of fire including CO monitoring if the well temperature is greater than 140 ^{o}F. Condition # 19235, Part 1d contains the alternative wellhead temperature limits and associated monitoring requirements.

The District is also proposing minor editorial revisions to Condition # 19235, Parts 2, 12, 15, 20, 21, and 22.

This Statement of Basis and the attached reports (Appendices A-E) identify and explain all proposed changes to the gas collection system description and operating requirements and all proposed revisions to Condition # 19235 for the S-2 Altamont Landfill. The condition revisions will require revisions to Tables II-A, IV-A, VII-A, and VIII and will be summarized in Section X of the Title V Permit. These proposed Title V permit modifications require a minor revision of the MFR Permit.

B. EMISSIONS

As discussed in the attached reports (Appendices A-E), the proposed condition changes for S-2 will not result in any emission increases for this site. The gas collection system description and operating requirements in Condition # 19235, Part 1 ensure that the site is operating the gas collection system at a sufficient rate and with adequate well density to prevent surface leaks above the 500 ppmv standard.

C. PROPOSED MFR PERMIT MODIFICATIONS

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act (40 CFR, Part 70) and BAAQMD Regulation 2, Rule 6, Major Facility Review (MFR), because it is a major facility for NO_x and CO emissions and also because it is a designated facility (since it is subject to the control requirements of the Emission Guidelines for MSW Landfills). Therefore, this facility is required to have an MFR Permit pursuant to Regulations 2-6-301 and 2-6-304.

The initial MFR Permit for this facility was issued on December 1, 2003 and was last revised on December 11, 2007. Pursuant to Application #16864, the District is proposing to revise the current MFR Permit for Site # A2066. Since Statements of Basis were prepared for the initial MFR Permit and for each subsequent revision of this permit that fully describe and explain the legal and factual basis for the current MFR Permit, this report will only address the proposed revisions to the current MFR Permit.

This application involves the incorporation of permit condition revisions for the S-2 Altamont Landfill that do not result in any emission increases and that are neither significant nor administrative in nature. Consequently, these proposed revisions will require a Minor Revision of the MFR Permit in accordance with Regulation 2-6-215.

The proposed changes to the MFR permit sections are described below in the order they appear in the permit. All proposed changes to the permit are identified by strikeout and underline formatting in the attached proposed MFR Permit for Site # A2066.

Section I

No changes are proposed for this section.

Section II

The District is proposing to update the gas collection system description in Table II-A.

Section III

No changes are proposed for this section.

Section IV

For Table IV-A, the District is proposing to add the less than continuous operating provisions (Regulation 8-34-404), to reference the alternative wellhead temperature limit, and to revise the description of Condition # 19235, Part 1.

The District is also proposing to update a number of regulatory amendment dates in Table IV-A. These regulatory amendments had no impacts on the applicable requirements described in this permit.

Section V

No changes are proposed for this section.

Section VI

The District is proposing to modify Condition # 19235, Part 1 by updating the current gas collection system description in subpart 1a, by correcting the remaining authorized gas collection system alterations in subpart 1b, by adding the less than continuous operation provisions for individual gas wells to subpart 1c, and by adding an alternative wellhead temperature standard and CO monitoring requirements to subpart 1d.

The District is making non-substantive editorial changes to Parts 2, 12, 15, 20, 21, and 22.

Section VII

In Table VII-A, the District is proposing to add the new alternative wellhead temperature limit the new wellhead CO limit. The District is clarifying that the wellhead pressure and temperature

requirements only apply to wells that are connect to the vacuum system. Wells that are temporarily disconnect pursuant to the less than continuous operating provisions do not need to meet these limits while they are disconnected.

The District is also proposing to add ≤ or ≥ symbols in Table VII-A to clarify several limits.

Section VIII

In Table VIII, the District is proposing to identify the devices and test methods that may be used to verify compliance with the BAAQMD wellhead temperature and wellhead CO limits.

Section IX

No changes are proposed for this section.

Section X

These proposed MFR permit revisions will be summarized in the revision history section.

Sections XI-XII

No changes are proposed for these sections.

D. SUMMARY OF PROPOSED ACTIONS

The District is proposing a minor revision of the MFR Permit for Site # A2066 that will:

- Update the gas collection system description and the remaining authorized collection system alterations.
- Add less than continuous operating provisions for individual gas wells that will allow temporary disconnection of a few wells from the vacuum system for short periods of time.
- Establish an alternative wellhead temperature limit and a new wellhead CO limit for a few specific wells.
- Clarify applicable requirements, limits, monitoring, record keeping, and notification requirements for the landfill gas collection system.
- Make editorial corrections to the regulatory amendment dates in Table IV-A and to the limits in Table VII-A.

APPENDIX A

ENGINEERING EVALUATION

APPLICATION # 15498

Engineering Evaluation

for

Landfill Gas Collections System Alterations at S-2 Altamont Landfill

Waste Management of Alameda County; PLANT # 2066

APPLICATION # 15498

A. BACKGROUND

Waste Management of Alameda County operates the Altamont Landfill and Resource Recovery Facility in Livermore, CA (Site # A2066). This facility includes an active landfill: S-2 Altamont Landfill with Landfill Gas Collection System.

As described in a May 10, 2007 letter to Waste Management (see Application # 10004), the landfill gas collection system for S-2 consisted of 72 vertical wells, 9 horizontal collectors, and 1 leachate collection riser. The remaining gas collection system alterations that are still authorized per Application # 10004 include:

- install up to 31 additional vertical wells,
- decommission up to 4 vertical wells,
- install up to 26 horizontal collectors, and
- decommission up to 8 horizontal collectors.

These remaining collection system alterations will be transferred to Application # 15498.

In addition, Waste Management is now requesting the following additional landfill gas collection system alterations:

- install up to 30 additional vertical wells,
- decommission up to 20 vertical wells,
- install up to 15 additional horizontal collectors, and
- decommission up to 5 horizontal collectors.

Adding the previously authorized collection system revisions to this new request results in the total requested changes below:

- install up to 61 additional vertical wells,
- permanently decommission up to 24 vertical wells,
- install up to 41 additional horizontal collectors, and
- permanently decommission up to 13 horizontal collectors.

On May 29, 2007, Waste Management submitted a notification letter indicating that three vertical wells and one horizontal trench collector had been decommissioned pursuant to the well changes originally authorized under Application # 10004 and transferred to Application # 15498. The collection system now consists of 69 vertical wells, 8 horizontal collectors, and 1 leachate collection riser. The remaining requested collection system alterations are:

- install up to 61 additional vertical wells,
- permanently decommission up to 21 vertical wells,
- install up to 41 additional horizontal collectors, and
- permanently decommission up to 12 horizontal collectors.

In addition to these requested collection system alterations, the District is proposing permit condition revisions that will (a) define component replacements that are not subject to the Authority to Construct

requirement, (b) allow temporary shut down of a few wells pursuant to the Regulation 8-34-404 Less Than Continuous Operation provisions, and (c) clarify notification procedures and other applicable requirements related to landfill gas collection system alterations.

B. COLLECTION SYSTEM DESCRIPTION

As of May 29, 2007, the landfill gas collection system for the S-2 Altamont Landfill consisted of the following collection system components: 69 vertical wells, 8 horizontal trench collectors, and 1 leachate collection system clean-out riser. Condition # 19235, Part 1a will reflect this current list of collection system components. Specific component identification numbers are listed in Table 1.

Table 1. Landfill Gas Collection System Components Installed as of 5-29-2007

Vertical Landfill Gas Extraction Wells								Horizontal Collectors	Other Components
VW-#	VW-#	VW-#	VW-#	VW-#	VW-#	VW-#	VW-#	HC-#	
2	24	54	74	403	433	452	463	106	LCRS-201
3	26	55	77	404	~~440~~	453	464	107	
8	29	56	80	405	~~442~~	454		302B	
11	33	59	84	~~406~~	443	455		311A	
15	37	64	85	424	444	456		311B	
16	40	67	86	426	445	457		312	
18	45	68	87	428	448	458		313	
19	50	69	88	430	449	460		~~314~~	
21	51	71	401	431	450	461		317	
23	53	73	402	432	451	462			

C. EMISSIONS

Maximum permitted emissions from landfills that are related to the waste decomposition process are determined using empirical equations and site specific factors including: the maximum permitted decomposable waste capacity for the site, historical and projected waste disposal rates, site specific landfill gas constituent data, an assumed landfill gas collection system capture efficiency, and maximum allowable emission rates from the authorized control devices. The District evaluates the efficacy of each site's landfill gas collection system design through the permit application process to ensure that the overall landfill gas collection system is adequate and will achieve the minimum landfill gas capture efficiency that was assumed for the site and will prevent surface leaks in excess of the Regulation 8-34-303 leak limit. Any alterations to the landfill gas collection system design that are authorized by the District are intended to ensure that the landfill gas collection system will continue to adequately control the landfill gas from a site and will not result in any emission increases for a site.

The potential emission impacts of the specific collection system alterations and permit condition revisions that are proposed for this site are discussed in more detail below.

Impacts of Collection System Alterations:

Waste Management has proposed collection system alterations that will result in a net increase of 37 vertical wells and a net increase of 28 horizontal collectors. These net changes in the number of gas collectors are expected to result in a sufficient density of collectors to capture the projected increases in landfill gas generation for this site. Therefore, these changes are expected to prevent surface leaks and will not result in landfill surface emission increases.

From the most recent Annual Update Report (for the 12-month period ending 10/31/06), Waste Management is currently collecting an average of 3444 cfm of landfill gas. The average landfill gas flow rate per gas collection component is about 44 cfm. The proposed collection system revisions (+40 vertical wells and +29 horizontal collectors) are expected to result in a total landfill gas collection rate increase of about 3036 cfm. Waste Management vents all of their collected landfill gas to the turbines, IC Engines, or flare. The combined capacity of all control equipment is about 7360 cfm of landfill gas (peak daily rate at 50% methane) and 6720 cfm (annual average rate at 50% methane). The existing control devices have sufficient capacity to handle the proposed landfill gas collection rate (annual average rate of 3444+3036 = 6480 cfm) with no permit alterations. Therefore, the proposed collection system alterations will not result in any emission increases at the control devices.

Impacts of Other Permit Condition Revisions:

Since the waste decomposition process generates landfill gas continuously, operators must collect this landfill gas continuously in order to prevent excessive surface leaks. Continuous landfill gas collection is accomplished by continuously operating a vacuum system, by balancing the amount of vacuum that is applied to each particular well, and by appropriately distributing the wells throughout all of the decomposable waste areas. Each particular well and vacuum level is expected to be capable of controlling the landfill gas that is generated by a particular volume of refuse. The type of waste, type of cover material, compaction practices, moisture content of the waste and cover materials, and many other physical factors can influence the size and shape of the volume of waste that can be controlled by any particular well and vacuum level combination. Since the factors affecting gas transport within the waste can change throughout the volume of the landfill, the gas collection system must be designed conservatively with overlapping areas of expected vacuum influence to ensure that a sufficient amount of landfill gas will be captured by each well. These gas transport factors and the gas generation rate in any particular waste area may also change over time (seasonally and from year to year). Consequently, the well density and vacuum system must be frequently evaluated and rebalanced to ensure adequate landfill gas capture rates for each well.

Occasionally, landfill operators will encounter problems with a well (wellhead limit excesses, damaged or improperly functioning wells, loss of gas generation near the well, etc.) that cannot be fixed by adjusting the well vacuum or conducting routine repairs around the well casing. Possible courses of action for resolving such problems include replacing the well with a new well located in essentially the same location, permanently decommissioning the well and installing a new well in a substantially different location, permanently decommissioning the well with no well replacement (due to having too many wells with overlapping areas of influence in one area), or operating the individual well on a less than continuous basis (for example, turning the vacuum on to this well during wet months and turning it off during dry months when gas production is very low). Determining which of these possible actions is the best course of action is often not easy to ascertain. Temporarily turning off the problem well and observing changes at neighboring wells and adjacent surface areas can often help the operator determine the best course of action. In addition, well problems can occur on short notice, and the problem well may need to be shut down immediately for safety concerns. Regulation 8-34-117 allows temporary well shutdowns that are necessary to repair wells or maintain compliance with Regulation 8, Rule 34, but it only allows a maximum shutdown time of five consecutive days. This time is often insufficient for replacing wells (if a drilling rig is not immediately available) or for determining the appropriate course of action (if it is unclear what the root cause of the well problem is).

The Regulation 8-34-404 Less Than Continuous Operation provisions allow the District to establish procedures for operating individual wells on a less than continuous basis. The proposed permit condition revisions in part 1c are intended to give operators the flexibility of turning off up to 5 wells (less than 10% of the total number of collection components) for up to 120 days to allow landfill operators to quickly isolate leaking wells or to further evaluate the best course of action for resolving wellhead limit compliance issues that may be the result of uncontrollable gas production fluctuations. As explained earlier, landfill gas collection systems that are designed to meet the Bay Area's stringent Regulation 8, Rule 34 standards must have gas collection wells with overlapping areas of influence. As a result of this conservative design feature, neighboring wells located near a problem well normally provide sufficient vacuum to a nearby

refuse volume long after a problem well has been disconnected from the vacuum system. Any landfill gas generated by that refuse volume will travel to one of these neighboring wells, but it will still be captured by the collection system. Therefore, shutting down these few landfill gas collection wells in different areas of the landfill will not result in any emission increases. Additional component monitoring will be required, to ensure that temporarily disconnected wells will not result in excess component leaks.

The other proposed changes to parts 1a and 1b are procedural in nature and are intended to clarify requirements and notification procedures. These procedural changes will have no impact on emissions.

D. STATEMENT OF COMPLIANCE

Regulation 2, Rule 1:

This application is for a change of permit conditions at the S-2 Landfill with Gas Collection System that involves some physical alterations of the gas collection system, but that will not involve any modifications to the source (S-2). The gas collection system is part of the landfill gas abatement systems for the landfill. The proposed alterations do not result in any emission increases. Therefore, this application is categorically exempt from CEQA review pursuant to Regulation 2-1-312.2. In addition, the Engineering Evaluation for this application uses fixed standards and objective measurements and does not involve any element of discretion. Consequently, no further CEQA review is required.

The project is over 1000 feet from the nearest school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

Regulation 2, Rule 2:

Since this application does not result in any emission increases, this project is not subject to New Source Review (NSR). No new BACT, Offset or PSD requirements will apply.

New Source Review for Toxic Air Contaminants:

This application does not result in any increases of Toxic Air Contaminants (TACs). Therefore, NSR for TACs is not triggered, and no new T-BACT requirements will apply.

Regulation 2, Rule 6:

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act (40 CFR, Part 70) and BAAQMD Regulation 2, Rule 6, Major Facility Review (MFR), because it is a major facility for NO_x and CO emissions and also because it is a designated facility (since it is subject to the control requirements of the Emission Guidelines for MSW Landfills). Therefore, this facility is required to have an MFR permit pursuant to Regulations 2-6-301 and 2-6-304.

The initial MFR Permit for this facility was issued on December 1, 2003 and was revised on February 5, 2004, December 21, 2004, April 5, 2005, October 4, 2005, and December 15, 2005. An administrative amendment and a minor revision have been proposed and will be issued later in 2007.

Since this application will result in permit condition modifications, a revision of the Title V permit will also be required. This Title V permit revision will be handled pursuant to Application # 14816, which also involves Title V permit revisions related to the S-2 Landfill.

Regulation 8, Rule 34:

Waste Management's Altamont Landfill (S-2) is subject to Regulation 8, Rule 34. S-2 is expected to comply with Regulation 8-34-301 by:

(a) continuously operating the gas collection system and continuously operating gas control systems (including S-5, S-6, S-23, S-24, and/or A-15),
(b) having no leaks (exceeding 1000 ppmv) from the gas collection system, and
(c) processing all collected gases in control devices achieving at least 98% NMOC destruction efficiency (or emitting less than 20 ppmv of NMOC from the IC engines and gas turbines).

The S-2 Altamont Landfill is also subject to Regulation 8-34-303, which limits leaks on the surface of the landfill to less than 500 ppmv as methane. This site has generally been complying with the surface leak requirements. However, surface leaks above the standard are occasionally discovered by the facility and are typically eliminated within a few days of discovery. The proposed collection system alterations will keep pace with the expected increases in gas production rate at this site and are expected to prevent excessive surface leaks at this landfill.

The proposed collection system alterations will, in part, assure compliance with the collection system installation dates specified in Regulation 8-34-304. This site is complying with all applicable monitoring requirements (8-34-505-510).

Federal Requirements:

EG for MSW Landfills: The landfill at this facility is subject to the 40 CFR Part 60, Subpart Cc Emission Guidelines (EG) for Municipal Solid Waste (MSW) Landfills. Effective November 19, 2001, the District's Regulation 8, Rule 34 was approved into the State Plan for MSW Landfills (40 CFR 62.1115). Regulation 8, Rule 34 is now the approved method for implementing this federal EG. Since the S-2 Altamont Landfill with Gas Collection System is expected to comply with Regulation 8, Rule 34, this landfill will also comply with 40 CFR, Part 60, Subpart Cc and 40 CFR 62.1115.

NESHAPs for MSW Landfills: Any landfills that are subject to the landfill gas collection and control requirements of either the NSPS for MSW Landfills or the EG for MSW Landfills are also subject to the NESHAPs for MSW Landfills (40 CFR, Part 63, Subpart AAAA). This NESHAP requires that subject facilities prepare and implement startup, shutdown, malfunction plans and additional reporting requirements. All applicable requirements are contained in the existing MFR permit, and this facility is expected to comply with these requirements.

E. PERMIT CONDITION REVISIONS

The District is proposing to revise Condition # 19235, Part 1, as shown below in strike through and underline formatting. The proposed revisions to Parts 1, 1a, and 1b(ii-vii) will clarify authority to construct requirements for collection system alterations and will update the notification and record keeping procedures for these alterations. The proposed revisions to Part 1b(i) identify the collection system alterations that are authorized pursuant to this Authority to Construct. The proposed revisions to Part 1c will authorize this site to operate up to five wells less than continuously (as allowed by Regulation 8-34-404) for up to 120 days.

Condition # 19235
FOR: S-2 ALTAMONT LANDFILL WITH LANDFILL GAS COLLECTION SYSTEM, AND A-15 LANDFILL GAS FLARE:

1. The S-2 Altamont Landfill shall be equipped with a landfill gas collection system, which shall be operated continuously as defined in Regulation 8-34-219, unless the Permit

Holder complies with all applicable provisions of Regulation 8, Rule 34, Section 113. Individual ~~W~~wells, collectors, and adjustment valves shall not be disconnected, removed, or completely closed, without prior written authorization from the District, unless the Permit Holder complies with all applicable provisions of Regulation 8, Rule 34, Sections 113, 116, 117~~, and 118~~ or with Part 1c below. (Basis: Regulations 8-34-301.1, 8-34-303, 8-34-304, 8-34-305, and 8-34-404)

a. The Permit Holder has been issued a Permit to Operate for the landfill gas collection system components listed below as of May 1, 2007. Well and collector locations~~, depths, and lengths~~ are ~~as~~ described in detail in Permit Application~~s~~ #10004 and #15498. ~~The Permit Holder shall apply for and receive an Authority to Construct before modifying the landfill gas collection system described below. Increasing or decreasing the number of vertical wells, changing the length of horizontal collectors, or moving the locations of vertical wells or horizontal collectors are considered modifications that are subject to the Authority to Construct requirement. Adding or modifying risers, laterals, or header pipes are not subject to this Authority to Construct requirement. The authorized number of landfill gas collection system components is the baseline count listed below plus any components added and minus any components decommissioned pursuant to Part 1b as evidenced by start up/shut down notification letters submitted to the District.~~

   i. The authorized number of landfill gas collection system components is the baseline count listed below plus any components installed and minus any components decommissioned pursuant to subpart 1b, as evidenced by start-up and decommissioning notification letters submitted to the District.
      - ~~72~~69 vertical wells
      - ~~9~~8 horizontal trench collectors (shredded tires may be used as fill material)
      - 1 leachate collection system clean-out riser

b. The Permit Holder has been issued an Authority to Construct to allow for the landfill gas collection system ~~modifications~~ alterations described below pursuant to Permit Application #15498. ~~Well and collector locations, depths, and lengths are as described in detail in Permit Application #10004.~~All collection system alterations shall comply with subparts 1b(i-vii) below.

   i. The authorized collection system alterations are:
      - Install up to ~~31~~61 additional vertical wells
      - Permanently ~~D~~decommission up to ~~4~~21 vertical wells
      - Install up to ~~26~~41 additional horizontal trench collectors
      - Permanently ~~D~~decommission up to ~~8~~12 horizontal trench collectors
      - ~~Install header valves, risers, and connections between existing horizontal collectors, as needed, to optimize gas collection and maintain compliance with Regulation 8, Rule 34.~~
      - Modify wellhead monitoring locations, as needed, provided that each landfill gas collection system component identified in Part 1a and each new collection system component installed per Part 1b is adequately represented by a wellhead monitoring location. The Permit Holder shall maintain documentation on site that identifies all landfill gas collection system components that are represented by each wellhead monitoring location.

   ii. The Permit Holder shall apply for and receive an Authority to Construct before altering the landfill gas collection components described subpart 1a. Installing, altering, or permanently decommissioning a vertical well, horizontal collector, or other gas collection component is subject to the Authority to Construct

requirement, unless this change constitutes a replacement as defined in subpart 1b(iii) below.

iii. Replacement of landfill gas collection system components with identical or functionally equivalent components will not be deemed an alteration and will not subject to the Authority to Construct requirement under the following circumstances. If a well or collector will be shut down and replaced by a new well or collector in essentially the same location as the old component and this decommission/installation will be accomplished in accordance with Regulations 8-34-117 and 8-34-118, then this activity shall be considered a component replacement that is not subject to the Authority to Construct requirement. For each individual well or collector replacement, this subpart authorizes a maximum vacuum disconnection time of five consecutive days for compliance with Regulation 8-34-117.5. The disconnected component and the new component shall not be counted toward the subpart 1b(i) limits; the numbers of replacement wells and replacement collectors are not limited. Alterations, repairs, or replacements of non-perforated piping sections (such as risers, laterals, or header pipes), piping connectors, or valves are not subject to the Authority to Construct requirement.

iv. At least three days prior to initiating operation of a well or collector installed pursuant to subpart 1b, the Permit Holder shall submit a start-up notice to the District that contains the component ID number for each new well or collector and the anticipated initial start-up date for each new component.

v. For each well or collector that is permanently decommissioned after [insert date of approval of this condition change], the Permit Holder shall submit a decommissioning notice to the District within no later than three working days after the component was disconnected from vacuum system. This decommissioning notice shall contain the component ID for each well or collector that was decommissioned, the date and time that each component was disconnected from the vacuum system, and the reason the component was decommissioned.

vi. Within six months of installing a new component or permanently decommissioning an existing component, the Permit Holder shall prepare an updated map of the landfill gas collection system that identifies the ID numbers and locations of all operable wells and collectors. On this map or in accompanying documentation, the Permit Holder shall summarize all component changes that were made since the last map was prepared. The previous collection system map, the updated collection system map, and the component change summary shall be provided to District staff upon request.

vii. If the Permit Holder has a net reduction (number of decommissioned components minus the number of installed components) of more than five components within a 120-day period, the Permit Holder shall submit a more comprehensive decommissioning notice to the District. In addition to the information required by subpart 1b(v), this comprehensive decommissioning notice shall include the maps and documentation required by subpart 1b(vi), shall identify all component changes that have occurred but that are not included on the most recently updated map, shall identify any components that are temporarily disconnected from vacuum pursuant to subpart 1c, shall provide estimated vacuum reconnection dates for these components, shall include a list of all well installations that are expected to occur within the next 120 days, and shall discuss the reasons why this

reduction in gas collection components is not expected to result in surface emission leaks. Upon request, the Permit Holder shall provide wellhead monitoring data, surface leak monitoring data, records of repair attempts made to date, and other information to support the need for a net collection component reduction of more than five wells. The District may require additional surface monitoring to verify that this net component reduction is not causing landfill surface leaks. The District will notify the Permit Holder in writing of any additional surface monitoring that is required pursuant to this subpart.

~~(Basis: Regulations 8-34-301.1, 8-34-303, 8-34-304, and 8-34-305)~~

c. The Permit Holder may temporarily disconnect individual wells or collectors from the vacuum system, provided that all requirements of this subpart are satisfied. (Basis: Regulation 8-34-404)

i. No more than five (5) landfill gas collection system components (wells or collectors) may be temporarily disconnected from the vacuum system at any one time pursuant to subpart 1c.

ii. For each individual well or collector that is disconnected from the vacuum system pursuant to subpart 1c, the total vacuum system disconnection time shall not exceed 120 days during any 12-month period.

iii. Collection system components that are disconnected from the vacuum system are not subject to wellhead limits (Regulation 8-34-305) or monthly wellhead monitoring requirements (Regulation 8-34-505) during this vacuum disconnection time.

iv. Wells or collectors that are temporarily disconnected from the vacuum system continue to be subject to the component leak limit (Regulation 8-34-301.2) and the quarterly leak testing requirement (Regulation 8-34-503) at all times. In addition, the Permit Holder shall conduct the following component leak monitoring at each component that has been disconnected from the vacuum system pursuant to subpart 1c: test for component leaks using the procedures identified in Regulation 8-34-602 within 10 calendar days of disconnection from vacuum and again within 1 month of disconnection from vacuum. If a component leak is detected at the well, the Permit Holder shall take all steps necessary to reduce the leak below the applicable limit, including reconnecting the well to the vacuum system, if no other corrective action measures are successful within the time frames allowed by Rule 34.

v. For each well disconnection event, the Permit Holder shall record each affected well ID number, all well disconnection dates and times, all well reconnection dates and times, all related monitoring dates and monitoring results in a District approved log. This log shall also include an explanation of why the temporary well shut down was necessary and shall describe all adjustments or repairs that were made in order to allow this well to operate continuously, to reduce leaks, or to achieve compliance with an applicable limit. All records shall be retained for a minimum of five years and shall be made available to District staff upon request.

F. RECOMMENDATION

Issue an Authority to Construct for the landfill gas collection system alterations described below and concurrently issue a Change of Conditions for Condition # 19235.

S-2 Altamont Landfill with Landfill Gas Collection System

- Install up to 61 additional vertical wells
- Permanently decommission up to 21 vertical wells
- Install up to 41 additional horizontal trench collectors
- Permanently decommission up to 12 horizontal trench collectors

signed by Carol S. Allen — June 20, 2007

By: Carol S. Allen — Date

Senior Air Quality Engineer

APPENDIX B

FINAL PERMIT TO OPERATE REPORT

APPLICATION # 15498

Final Permit to Operate Report

for

Landfill Gas Collections System Alterations at S-2 Altamont Landfill

Waste Management of Alameda County; PLANT # 2066

APPLICATION # 15498

A. BACKGROUND

Waste Management of Alameda County operates the Altamont Landfill and Resource Recovery Facility in Livermore, CA (Site # A2066). This facility includes an active landfill: S-2 Altamont Landfill with Landfill Gas Collection System.

As described in the District's June 20, 2007 letter to Waste Management (see revised Condition # 19235, Part 1), the landfill gas collection system for the S-2 Altamont Landfill consisted of 69 vertical wells, 8 horizontal collectors, and 1 leachate collection riser. The additional gas collection system alterations that were authorized pursuant to the Authority to Construct for Application # 15498 include:

- install up to 61 additional vertical wells,
- decommission up to 21 vertical wells,
- install up to 41 horizontal collectors, and
- decommission up to 12 horizontal collectors.

Pursuant to an October 4, 2007 letter from Waste Management's new consultant, Cornerstone Environmental Group, LLC, Waste Management planned to decommission 1 well (GW 313) on October 8, 2007. Although, Cornerstone described this well as a vertical well, the previous application materials described this well as a horizontal tire trench collector. Therefore, the District is making adjustments to the well counts assuming that GW 313 is a horizontal collector. The gas collection system for S-2 now consists of: 69 vertical wells, 7 horizontal collectors, and 1 leachate collection riser. The remaining gas collection system alterations authorized by Authority to Construct # 15498 are:

- install up to 61 additional vertical wells,
- decommission up to 21 vertical wells,
- install up to 41 horizontal collectors, and
- decommission up to 11 horizontal collectors.

This change completes the collection system alterations that will be made pursuant to Application #15498. All future gas collection system alterations will be transferred to Application # 16863.

B. STATEMENT OF COMPLIANCE

As discussed in the Engineering Evaluation for Application # 15498, this project does not result in any emission increases. Therefore, NSR is not triggered for this alteration, and BACT and Offsets are not required.

The most recent collection system alterations discussed in this report are expected to ensure that this facility complies with the Regulation 8-34-303 surface leak limits and the Regulation 8-34-305 wellhead standards.

Gas collection system alterations completed between June 20, 2007 and October 31, 2007 are summarized in Table 1. The current gas collection system (as of November 1, 2007) is described in Table 2.

Table 1. Summary of Gas Collection System Alterations (6-20-07 to 10-31-07)

Notification Letter Date	Action Taken	Number and Type of Components
10-4-2007	Decommissioned	1 horizontal collector
Summary	Net Change Net Change	-0 vertical wells -1 horizontal collectors

Table 2. Landfill Gas Collection System Components Installed as of 11-1-2007

Vertical Landfill Gas Extraction Wells							Horizontal Collectors	Other Components
VW-#	VW-#	VW-#	VW-#	VW-#	VW-#	VW-#	HC-#	
2	24	54	74	403	443	455	106	LCRS-201
3	26	55	77	404	444	456	107	
8	29	56	80	405	445	457	302B	
11	33	59	84	424	448	458	311A	
15	37	64	85	426	449	460	311B	
16	40	67	86	428	450	461	312	
18	45	68	87	430	451	462	~~313~~	
19	50	69	88	431	452	463	317	
21	51	71	401	432	453	464		
23	53	73	402	433	454			

C. PERMIT CONDITION REVISIONS

The District is proposing to administratively modify Condition # 19235, Parts 1a and 1b, as shown below in strike through and underline formatting. The proposed revisions to Part 1a are necessary to make the collection system description consistent with the current in-place configuration. The proposed revisions to Part 1b will update the remaining authorized revisions to the collection system.

Condition # 19235
FOR: S-2 ALTAMONT LANDFILL WITH LANDFILL GAS COLLECTION SYSTEM, AND A-15 LANDFILL GAS FLARE:

1. The S-2 Altamont Landfill shall be equipped with a landfill gas collection system, which shall be operated continuously as defined in Regulation 8-34-219, unless the Permit Holder complies with all applicable provisions of Regulation 8, Rule 34, Section 113. Individual wells, collectors, and adjustment valves shall not be disconnected, removed, or completely closed, without prior written authorization from the District, unless the Permit Holder complies with all applicable provisions of Regulation 8, Rule 34, Sections 113, 116, 117 or with Part 1c below. (Basis: Regulations 8-34-301.1, 8-34-303, 8-34-304, 8-34-305, and 8-34-404)
    a. The Permit Holder has been issued a Permit to Operate for the landfill gas collection system components listed below as of ~~May~~ November 1, 2007. Well and collector locations are described in detail in Permit Application~~s #10004 and~~ #15498.
        i. The authorized number of landfill gas collection system components is the baseline count listed below plus any components installed and minus any components decommissioned pursuant to subpart 1b, as

evidenced by start-up and decommissioning notification letters submitted to the District.
- 69 vertical wells
- ~~8~~7 horizontal trench collectors (shredded tires may be used as fill material)
- 1 leachate collection system clean-out riser

b. The Permit Holder has been issued an Authority to Construct to allow for the landfill gas collection system alterations described below pursuant to Permit Application #15498. All collection system alterations shall comply with subparts 1b(i-vii) below.

i. The authorized collection system alterations are:
- Install up to 61 additional vertical wells
- Permanently decommission up to 21 vertical wells
- Install up to 41 additional horizontal trench collectors
- Permanently decommission up to ~~12~~11 horizontal trench collectors
- Modify wellhead monitoring locations, as needed, provided that each landfill gas collection system component identified in Part 1a and each new collection system component installed per Part 1b is adequately represented by a wellhead monitoring location. The Permit Holder shall maintain documentation on site that identifies all landfill gas collection system components that are represented by each wellhead monitoring location.

ii. The Permit Holder shall apply for and receive an Authority to Construct before altering the landfill gas collection components described subpart 1a. Installing, altering, or permanently decommissioning a vertical well, horizontal collector, or other gas collection component is subject to the Authority to Construct requirement, unless this change constitutes a replacement as defined in subpart 1b(iii) below.

iii. Replacement of landfill gas collection system components with identical or functionally equivalent components will not be deemed an alteration and will not subject to the Authority to Construct requirement under the following circumstances. If a well or collector will be shut down and replaced by a new well or collector in essentially the same location as the old component and this decommission/installation will be accomplished in accordance with Regulations 8-34-117 and 8-34-118, then this activity shall be considered a component replacement that is not subject to the Authority to Construct requirement. For each individual well or collector replacement, this subpart authorizes a maximum vacuum disconnection time of five consecutive days for compliance with Regulation 8-34-117.5. The disconnected component and the new component shall not be counted toward the subpart 1b(i) limits; the numbers of replacement wells and replacement collectors are not limited. Alterations, repairs, or replacements of non-perforated piping sections (such as risers, laterals, or header pipes), piping connectors, or valves are not subject to the Authority to Construct requirement.

iv. At least three days prior to initiating operation of a well or collector installed pursuant to subpart 1b, the Permit Holder shall submit a start-up notice to the District that contains the component ID number for each new well or collector and the anticipated initial start-up date for each new component.

v. For each well or collector that is permanently decommissioned after June 20, 2007, the Permit Holder shall submit a decommissioning

notice to the District within no later than three working days after the component was disconnected from vacuum system. This decommissioning notice shall contain the component ID for each well or collector that was decommissioned, the date and time that each component was disconnected from the vacuum system, and the reason the component was decommissioned.

vi. Within six months of installing a new component or permanently decommissioning an existing component, the Permit Holder shall prepare an updated map of the landfill gas collection system that identifies the ID numbers and locations of all operable wells and collectors. On this map or in accompanying documentation, the Permit Holder shall summarize all component changes that were made since the last map was prepared. The previous collection system map, the updated collection system map, and the component change summary shall be provided to District staff upon request.

vii. If the Permit Holder has a net reduction (number of decommissioned components minus the number of installed components) of more than five components within a 120-day period, the Permit Holder shall submit a more comprehensive decommissioning notice to the District. In addition to the information required by subpart 1b(v), this comprehensive decommissioning notice shall include the maps and documentation required by subpart 1b(vi), shall identify all component changes that have occurred but that are not included on the most recently updated map, shall identify any components that are temporarily disconnected from vacuum pursuant to subpart 1c, shall provide estimated vacuum reconnection dates for these components, shall include a list of all well installations that are expected to occur within the next 120 days, and shall discuss the reasons why this reduction in gas collection components is not expected to result in surface emission leaks. Upon request, the Permit Holder shall provide wellhead monitoring data, surface leak monitoring data, records of repair attempts made to date, and other information to support the need for a net collection component reduction of more than five wells. The District may require additional surface monitoring to verify that this net component reduction is not causing landfill surface leaks. The District will notify the Permit Holder in writing of any additional surface monitoring that is required pursuant to this subpart.

c. The Permit Holder may temporarily disconnect individual wells or collectors from the vacuum system, provided that all requirements of this subpart are satisfied. (Basis: Regulation 8-34-404)

i. No more than five (5) landfill gas collection system components (wells or collectors) may be temporarily disconnected from the vacuum system at any one time pursuant to subpart 1c.

ii. For each individual well or collector that is disconnected from the vacuum system pursuant to subpart 1c, the total vacuum system disconnection time shall not exceed 120 days during any 12-month period.

iii. Collection system components that are disconnected from the vacuum system are not subject to wellhead limits (Regulation 8-34-305) or monthly wellhead monitoring requirements (Regulation 8-34-505) during this vacuum disconnection time.

iv. Wells or collectors that are temporarily disconnected from the vacuum system continue to be subject to the component leak limit (Regulation 8-34-301.2) and the quarterly leak testing requirement (Regulation 8-34-503) at all times. In addition, the Permit Holder shall conduct the following

component leak monitoring at each component that has been disconnected from the vacuum system pursuant to subpart 1c: test for component leaks using the procedures identified in Regulation 8-34-602 within 10 calendar days of disconnection from vacuum and again within 1 month of disconnection from vacuum. If a component leak is detected at the well, the Permit Holder shall take all steps necessary to reduce the leak below the applicable limit, including reconnecting the well to the vacuum system, if no other corrective action measures are successful within the time frames allowed by Rule 34.

v. For each well disconnection event, the Permit Holder shall record each affected well ID number, all well disconnection dates and times, all well reconnection dates and times, all related monitoring dates and monitoring results in a District approved log. This log shall also include an explanation of why the temporary well shut down was necessary and shall describe all adjustments or repairs that were made in order to allow this well to operate continuously, to reduce leaks, or to achieve compliance with an applicable limit. All records shall be retained for a minimum of five years and shall be made available to District staff upon request.

D. RECOMMENDATION

Issue the final Permit to Operate for S-2 pursuant to Application # 15498 with a Change of Conditions for Condition # 19235. This completes Application # 15498. All remaining collection system alterations will be transferred to Application # 16863.

S-2 Altamont Landfill with Landfill Gas Collection System

signed by Carol S. Allen — November 14, 2007

By: Carol S. Allen — Date

Senior Air Quality Engineer

APPENDIX C

ENGINEERING EVALUATION

APPLICATION # 16863

Engineering Evaluation

for

Landfill Gas Collections System Alterations at S-2 Altamont Landfill

Waste Management of Alameda County; PLANT # 2066

APPLICATION # 16863

A. BACKGROUND

Waste Management of Alameda County operates the Altamont Landfill and Resource Recovery Facility in Livermore, CA (Site # A2066). This facility includes an active landfill: S-2 Altamont Landfill with Landfill Gas Collection System.

As described in the District's November 15, 2007 letter to Waste Management (see Application # 15498, Condition # 19235, Part 1, as amended on 12/5/07), the landfill gas collection system for the S-2 Altamont Landfill consists of 68 vertical wells, 7 horizontal collectors, and 1 leachate collection riser as of November 1, 2007. The remaining gas collection system alterations that were authorized per Application # 15498 include:

- install up to 61 additional vertical wells,
- decommission up to 20 vertical wells,
- install up to 41 horizontal collectors, and
- decommission up to 11 horizontal collectors.

If all authorized alterations were completed, these changes would result in a net increase of 40 vertical wells and a net increase of 30 horizontal collectors.

The remaining collection system alterations that were authorized pursuant to Application # 15498 will be transferred to Application # 16863. In addition, Waste Management's new consultant, Cornerstone, has requested changes to the currently authorized gas collection system alterations. Pursuant to the accelerated permit program, Cornerstone is requesting that the following gas collection system alterations replace the previously authorized alterations:

- install up to 75 additional vertical wells,
- decommission up to 40 vertical wells,
- install up to 25 additional horizontal collectors, and
- decommission up to 10 horizontal collectors.

These proposed changes will result in a net increase of 35 vertical wells and a net increase of 15 horizontal collectors.

B. COLLECTION SYSTEM DESCRIPTION

As of November 1, 2007, the landfill gas collection system for the S-2 Altamont Landfill consisted of the following collection system components: 68 vertical wells, 7 horizontal trench collectors, and 1 leachate collection system clean-out riser. Condition # 19235, Part 1a reflects this current list of collection system components. Specific component identification numbers are listed in Table 1.

Table 1. Landfill Gas Collection System Components Installed as of 11-1-2007

Vertical Landfill Gas Extraction Wells							Horizontal Collectors	Other Components
VW-#	VW-#	VW-#	VW-#	VW-#	VW-#	VW-#	HC-#	
2	24	54	77	404	444	456	106	LCRS-201
3	26	55	80	405	445	457	107	
8	29	56	84	424	448	458	302B	
11	33	59	85	426	449	460	311A	
15	37	64	86	428	450	461	311B	
16	40	67	87	430	451	462	312	
18	45	69	88	431	452	463	317	
19	50	71	401	432	453	464		
21	51	73	402	433	454			
23	53	74	403	443	455			

C. EMISSIONS

Maximum permitted emissions from landfills, and in particular, the emissions arising from the waste decomposition process, are determined using empirical equations and site specific factors including: the maximum permitted decomposable waste capacity for the site, historical and projected waste disposal rates, site specific landfill gas constituent data, an assumed landfill gas collection system capture efficiency, and maximum allowable emission rates from the authorized control devices. The District evaluates the efficacy of each site's landfill gas collection system design through the permit application process to ensure that the overall landfill gas collection system is adequate and will achieve the minimum landfill gas capture efficiency that was assumed for the site and will prevent surface leaks in excess of the Regulation 8-34-303 leak limit. Any alterations to the landfill gas collection system design that are authorized by the District are intended to ensure that the landfill gas collection system will continue to adequately control the landfill gas from a site and will not result in any emission increases for a site.

The potential emission impacts of the specific collection system alterations that are proposed for this site are discussed in more detail below.

Impacts of Collection System Alterations:

Waste Management has proposed collection system alterations that will result in a net increase of 35 vertical wells and a net increase of 15 horizontal collectors. These net increases in the number of gas collectors are expected to result in a sufficient density of collectors in newly filled waste areas to capture the projected increases in landfill gas generation for this site. These alterations are also intended to repair deteriorating collection system components. These collection system component alterations are expected to prevent surface leaks and will not result in landfill surface emission increases.

Using the LANDGEM empirical model, site-specific waste disposal history, and default methane generation rate parameters for dry areas, the District estimated that the landfill gas generation from the Altamont Landfill was 8011 scfm (50% methane) in 2006. Using the reported landfill gas collection rates for each control device and average methane concentrations at each device (measured during source tests), the District determined that the total landfill gas collection rate for 2006 was 5362 scfm (50% methane). Comparing this actual collection rate to the projected generation rate, the District estimates that the Altamont Landfill's gas collection system is achieving a capture efficiency of approximately 67%. Although this actual capture efficiency falls below the target capture efficiency of 75%, it is within the expected accuracy range (-20% to +10%) for the LANDGEM model as it has been applied to this site. In

other words, a projected capture efficiency between 60% and 82% is acceptable in this case, considering the expected accuracy of the projected gas generation rate.

Based on the 2006 actual collection rate of 5362 scfm of landfill gas, Waste Management is currently collecting an average of 70 cfm of landfill gas per component. The proposed collection system revisions (+35 vertical wells and +15 horizontal collectors) are expected to result in a total landfill gas collection rate increase of at least 25 scfm per component or a total increase of at least 1250 cfm. If this collection rate increase is realized, the total gas collection rate in 2009 will be 6612 scfm compared to the projected gas generation rate of 8970 scfm. The projected capture efficiency is 74% for the proposed gas collection system, after implementation of the requested alterations. Therefore, the installation of these additional components should be able to capture all of the gas that is expected to be generated over the next two years and should improve the overall capture efficiency of the gas collection system. Therefore, these changes will not result in any additional fugitive landfill gas emissions.

Currently, Waste Management vents all of their collected landfill gas to 2 turbines, 2 IC engines, or a flare. The combined capacity of all control equipment is about 6720 cfm (annual average rate at 50% methane). The existing control devices have sufficient capacity to handle the projected landfill gas collection rate of 6612 scfm for the proposed collection system configuration. Therefore, the proposed collection system alterations will not result in any emission increases at the control devices.

D. STATEMENT OF COMPLIANCE

Regulation 2, Rule 1:

This application is for a change of permit conditions at the S-2 Landfill with Gas Collection System that involves some physical alterations of the gas collection system, but that will not involve any modifications to the source (S-2). The gas collection system is part of the landfill gas abatement systems for the landfill. The proposed alterations do not result in any emission increases. Therefore, this application is categorically exempt from CEQA review pursuant to Regulation 2-1-312.2. In addition, the Engineering Evaluation for this application uses fixed standards and objective measurements and does not involve any element of discretion. Consequently, no further CEQA review is required.

The project is over 1000 feet from the nearest school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

Regulation 2, Rule 2:

Since this application does not result in any emission increases, this project is not subject to New Source Review (NSR). No new BACT, Offset or PSD requirements will apply.

New Source Review for Toxic Air Contaminants:

This application does not result in any increases of Toxic Air Contaminants (TACs). Therefore, NSR for TACs is not triggered, and no new T-BACT requirements will apply.

Regulation 2, Rule 6:

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act (40 CFR, Part 70) and BAAQMD Regulation 2, Rule 6, Major Facility Review (MFR), because it is a major facility for NO_x and CO emissions and also because it is a designated facility (since it is subject to the control requirements of the Emission Guidelines for MSW Landfills). Therefore, this facility is required to have an MFR permit pursuant to Regulations 2-6-301 and 2-6-304.

The initial MFR Permit for this facility was issued on December 1, 2003 and was revised on February 5, 2004, December 21, 2004, April 5, 2005, October 4, 2005, December 15, 2005, May 17, 2007, and July 17, 2007. Another minor revision is expected to be issued in December 2007.

Since this application will result in permit condition modifications, a revision of the Title V permit will also be required. This Title V permit revision will be handled pursuant to Application # 16864.

Regulation 8, Rule 34:

Waste Management's Altamont Landfill (S-2) is subject to Regulation 8, Rule 34. S-2 is expected to comply with Regulation 8-34-301 by:

(a) continuously operating the gas collection system and continuously operating gas control systems (including S-6, S-7, S-23, S-24, and/or A-15),
(b) having no leaks (exceeding 1000 ppmv) from the gas collection system, and
(c) processing all collected gases in control devices achieving at least 98% NMOC destruction efficiency (or emitting less than 20 ppmv of NMOC from the IC engines and gas turbines).

The S-2 Altamont Landfill is also subject to Regulation 8-34-303, which limits leaks on the surface of the landfill to less than 500 ppmv as methane. This site has generally been complying with the surface leak requirements. However, surface leaks above the standard are occasionally discovered by the facility and are typically eliminated within a few days of discovery. The proposed collection system alterations will keep pace with the expected increases in gas production rate at this site and are expected to prevent excessive surface leaks at this landfill.

The proposed collection system alterations will, in part, assure compliance with the collection system installation dates specified in Regulation 8-34-304. This site is complying with all applicable monitoring requirements (8-34-505-510).

Federal Requirements:

EG for MSW Landfills: The landfill at this facility is subject to the 40 CFR Part 60, Subpart Cc Emission Guidelines (EG) for Municipal Solid Waste (MSW) Landfills. Effective November 19, 2001, the District's Regulation 8, Rule 34 was approved into the State Plan for MSW Landfills (40 CFR 62.1115). Regulation 8, Rule 34 is now the approved method for implementing this federal EG. Since the S-2 Altamont Landfill with Gas Collection System is expected to comply with Regulation 8, Rule 34, this landfill will also comply with 40 CFR, Part 60, Subpart Cc and 40 CFR 62.1115.

NESHAPs for MSW Landfills: Any landfills that are subject to the landfill gas collection and control requirements of either the NSPS for MSW Landfills or the EG for MSW Landfills are also subject to the NESHAPs for MSW Landfills (40 CFR, Part 63, Subpart AAAA). This NESHAP requires that subject facilities prepare and implement startup, shutdown, malfunction plans and additional reporting requirements. All applicable requirements are contained in the existing MFR permit, and this facility is expected to comply with these requirements.

E. PERMIT CONDITION REVISIONS

The District is proposing to revise Condition # 19235, Part 1, as shown below in strike through and underline formatting. The proposed revisions to Part 1b(i) identify the collection system alterations that are being authorized pursuant to this Authority to Construct. No other condition changes are proposed.

Condition # 19235

FOR: S-2 ALTAMONT LANDFILL WITH LANDFILL GAS COLLECTION SYSTEM, AND A-15 LANDFILL GAS FLARE:

1. The S-2 Altamont Landfill shall be equipped with a landfill gas collection system, which shall be operated continuously as defined in Regulation 8-34-219, unless the Permit Holder complies with all applicable provisions of Regulation 8, Rule 34, Section 113. Individual wells, collectors, and adjustment valves shall not be disconnected, removed, or completely closed, without prior written authorization from the District, unless the Permit Holder complies with all applicable provisions of Regulation 8, Rule 34, Sections 113, 116, 117 or with Part 1c below. (Basis: Regulations 8-34-301.1, 8-34-303, 8-34-304, 8-34-305, and 8-34-404)
   a. The Permit Holder has been issued a Permit to Operate for the landfill gas collection system components listed below as of November 1, 2007. Well and collector locations are described in detail in Permit Application #15498.
      i. The authorized number of landfill gas collection system components is the baseline count listed below plus any components installed and minus any components decommissioned pursuant to subpart 1b, as evidenced by start-up and decommissioning notification letters submitted to the District.
         - 68 vertical wells
         - 7 horizontal trench collectors (shredded tires may be used as fill material)
         - 1 leachate collection system clean-out riser
   b. The Permit Holder has been issued an Authority to Construct to allow for the landfill gas collection system alterations described below pursuant to Permit Application #~~15498~~16863. All collection system alterations shall comply with subparts 1b(i-vii) below.
      i. The authorized collection system alterations are:
         - Install up to ~~61~~75 additional vertical wells
         - Permanently decommission up to ~~20~~40 vertical wells
         - Install up to ~~41~~25 additional horizontal trench collectors
         - Permanently decommission up to ~~11~~10 horizontal trench collectors
         - Modify wellhead monitoring locations, as needed, provided that each landfill gas collection system component identified in Part 1a and each new collection system component installed per Part 1b is adequately represented by a wellhead monitoring location. The Permit Holder shall maintain documentation on site that identifies all landfill gas collection system components that are represented by each wellhead monitoring location.
      ii. The Permit Holder shall apply for and receive an Authority to Construct before altering the landfill gas collection components described subpart 1a. Installing, altering, or permanently decommissioning a vertical well, horizontal collector, or other gas collection component is subject to the Authority to Construct requirement, unless this change constitutes a replacement as defined in subpart 1b(iii) below.
      iii. Replacement of landfill gas collection system components with identical or functionally equivalent components will not be deemed an alteration and will not subject to the Authority to Construct requirement under the following circumstances. If a well or collector will be shut down and replaced by a new well or collector in essentially the same location as the old component and this decommission/installation will be accomplished in accordance with

Regulations 8-34-117 and 8-34-118, then this activity shall be considered a component replacement that is not subject to the Authority to Construct requirement. For each individual well or collector replacement, this subpart authorizes a maximum vacuum disconnection time of five consecutive days for compliance with Regulation 8-34-117.5. The disconnected component and the new component shall not be counted toward the subpart 1b(i) limits; the numbers of replacement wells and replacement collectors are not limited. Alterations, repairs, or replacements of non-perforated piping sections (such as risers, laterals, or header pipes), piping connectors, or valves are not subject to the Authority to Construct requirement.

iv. At least three days prior to initiating operation of a well or collector installed pursuant to subpart 1b, the Permit Holder shall submit a start-up notice to the District that contains the component ID number for each new well or collector and the anticipated initial start-up date for each new component.

v. For each well or collector that is permanently decommissioned after June 20, 2007, the Permit Holder shall submit a decommissioning notice to the District within no later than three working days after the component was disconnected from vacuum system. This decommissioning notice shall contain the component ID for each well or collector that was decommissioned, the date and time that each component was disconnected from the vacuum system, and the reason the component was decommissioned.

vi. Within six months of installing a new component or permanently decommissioning an existing component, the Permit Holder shall prepare an updated map of the landfill gas collection system that identifies the ID numbers and locations of all operable wells and collectors. On this map or in accompanying documentation, the Permit Holder shall summarize all component changes that were made since the last map was prepared. The previous collection system map, the updated collection system map, and the component change summary shall be provided to District staff upon request.

vii. If the Permit Holder has a net reduction (number of decommissioned components minus the number of installed components) of more than five components within a 120-day period, the Permit Holder shall submit a more comprehensive decommissioning notice to the District. In addition to the information required by subpart 1b(v), this comprehensive decommissioning notice shall include the maps and documentation required by subpart 1b(vi), shall identify all component changes that have occurred but that are not included on the most recently updated map, shall identify any components that are temporarily disconnected from vacuum pursuant to subpart 1c, shall provide estimated vacuum reconnection dates for these components, shall include a list of all well installations that are expected to occur within the next 120 days, and shall discuss the reasons why this reduction in gas collection components is not expected to result in surface emission leaks. Upon request, the Permit Holder shall provide wellhead monitoring data, surface leak monitoring data, records of repair attempts made to date, and other information to support the need for a net collection component reduction of more than five wells. The District may require additional surface monitoring to verify that this net component reduction is not causing landfill surface leaks. The District

will notify the Permit Holder in writing of any additional surface monitoring that is required pursuant to this subpart.

c. The Permit Holder may temporarily disconnect individual wells or collectors from the vacuum system, provided that all requirements of this subpart are satisfied. (Basis: Regulation 8-34-404)

i. No more than five (5) landfill gas collection system components (wells or collectors) may be temporarily disconnected from the vacuum system at any one time pursuant to subpart 1c.

ii. For each individual well or collector that is disconnected from the vacuum system pursuant to subpart 1c, the total vacuum system disconnection time shall not exceed 120 days during any 12-month period.

iii. Collection system components that are disconnected from the vacuum system are not subject to wellhead limits (Regulation 8-34-305) or monthly wellhead monitoring requirements (Regulation 8-34-505) during this vacuum disconnection time.

iv. Wells or collectors that are temporarily disconnected from the vacuum system continue to be subject to the component leak limit (Regulation 8-34-301.2) and the quarterly leak testing requirement (Regulation 8-34-503) at all times. In addition, the Permit Holder shall conduct the following component leak monitoring at each component that has been disconnected from the vacuum system pursuant to subpart 1c: test for component leaks using the procedures identified in Regulation 8-34-602 within 10 calendar days of disconnection from vacuum and again within 1 month of disconnection from vacuum. If a component leak is detected at the well, the Permit Holder shall take all steps necessary to reduce the leak below the applicable limit, including reconnecting the well to the vacuum system, if no other corrective action measures are successful within the time frames allowed by Rule 34.

v. For each well disconnection event, the Permit Holder shall record each affected well ID number, all well disconnection dates and times, all well reconnection dates and times, all related monitoring dates and monitoring results in a District approved log. This log shall also include an explanation of why the temporary well shut down was necessary and shall describe all adjustments or repairs that were made in order to allow this well to operate continuously, to reduce leaks, or to achieve compliance with an applicable limit. All records shall be retained for a minimum of five years and shall be made available to District staff upon request.

F. RECOMMENDATION

Issue an Authority to Construct for the landfill gas collection system alterations described below and concurrently issue a Change of Conditions for Condition # 19235.

S-2 Altamont Landfill with Landfill Gas Collection System

- Install up to 75 additional vertical wells
- Permanently decommission up to 40 vertical wells
- Install up to 25 additional horizontal trench collectors
- Permanently decommission up to 10 horizontal trench collectors

signed by Carol S. Allen — December 5, 2007

By: Carol S. Allen — Date

Senior Air Quality Engineer

APPENDIX D

ENGINEERING EVALUATION

APPLICATION # 16984

Engineering Evaluation

for

Alternative Wellhead Temperature Standard at S-2 Altamont Landfill

Waste Management of Alameda County; PLANT # 2066

APPLICATION # 16984

A. BACKGROUND

Waste Management of Alameda County operates the Altamont Landfill and Resource Recovery Facility in Livermore, CA (Site # A2066). This facility includes an active landfill: S-2 Altamont Landfill, which is equipped with an active landfill gas collection system. The individual wells in the landfill gas collection are currently subject to the Regulation 8-34-305 Wellhead Standards, including 305.2, which limits the wellhead temperature to 55 °C (131 °F). This wellhead temperature standard is not an emission limit. Instead, it is intended to alert landfill operators to well conditions that could lead to a subsurface fire or that indicate a subsurface fire is present. Regulation 8-34-305 allows the District to establish alternative site-specific temperature, nitrogen, or oxygen conditions, provided these alternative limits will not cause subsurface fires and will not inhibit anaerobic decomposition.

Waste Management has identified eight wells that have been operating at elevated well temperatures and sporadically exceeding the Regulation 8-34-305.2 temperature limit. Since these wells are not exhibiting evidence of malfunction, reduced methane generation, or subsurface fires, Waste Management has requested that the District establish an alternative wellhead temperature standard of 145 °F for these wells. Waste Management has also requested that the District establish monitoring protocols and reporting procedures that could be used to subject additional wells to this alternative temperature limit, if in the future Waste Management finds elevated well temperatures at other wells and no evidence of subsurface fires.

B. WELLHEAD DATA

Waste Management has been evaluating eight wells (Well # 40, 401, 403, 443, 444, 456, 457, and 458) that have been sporadically exceeding the Regulation 8-34-305.2 temperature limit of 131 °F. From April 2007 through September 2007, the measured well temperatures ranged from 65 °F to 140 °F with an average well temperature of 123 °F. Although Waste Management has had no sustained well temperatures above 131 °F, 25% of the measurements identified a well temperature greater than the limit, and more than 70% of the readings were within 5 °F of the limit. These wells have elevated temperatures and cannot comply with the Regulation 8-34-305.2 limit on a regular basis.

Waste Management also reported the major gas concentrations and wellhead pressures that were measured at these eight wells during April to September 2007. The average gas concentrations were: 53% methane, 40% carbon dioxide, 0.3% oxygen, and 7% balance gases. The average wellhead pressure was –30 inches of water. The wells are showing no evidence of reduced methane generation even though the well temperatures have been high. The wells appear to be functioning properly with adequate vacuum and without excessive air intrusion. Furthermore, the high well temperature events showed no correlation with wellhead pressure, methane concentration, oxygen concentration, or ambient temperature. Consequently, the District concludes that the elevated well temperatures are not interfering with anaerobic decomposition in the waste near these wells or with the proper functioning of these wells.

Carbon monoxide (CO) is not typically detected in landfill gas. EPA and California Integrated Waste Management Board documents state that a landfill gas CO concentration greater than 1000 ppmv, a gas temperature greater than 140 °F, and a waste mass temperature greater than 170 °F are some of the indicators that a subsurface fire exists. CO concentrations greater than 100 ppmv and rapid increases in gas temperature are suspicious and should be investigated further. Detectable CO concentrations of less than 100 ppmv CO may indicate that a subsurface fire has occurred but that the fire is not actively burning, but CO readings of less than 100 ppmv could also be due to monitoring inaccuracies. Portable CO monitors are sensitive to temperature, humidity, VOC, and H_2S concentrations and can produce artificially high CO readings, particularly in low concentration ranges.

Waste Management has tested the eight wells for carbon monoxide using portable monitors. For the 35 carbon monoxide measurements, the average CO concentration was 17 ppmv with a range of 5-100 ppmv. There was only one measurement of 100 ppmv CO with a concurrent temperature measurement of 134 °F on 9/21/07 at Well # 40. Well # 403 had two 50 ppmv CO measurements with concurrent temperatures of 135 °F and 137 °F on September 12th and 21st, respectively. All other readings found 20 ppmv CO or less. While it is likely that these higher CO readings at Wells #40 and #403 are simply reflecting the inaccuracies of portable CO monitors, additional CO monitoring will be conducted to confirm that CO concentrations are not increasing significantly at these wells. In any case, the CO concentrations found at these eight wells are far below the level that indicates a subsurface fire is actively smoldering (1000 ppmv CO) and do not exceed the level considered suspicious (>100 ppmv).

Since the CO and temperature evidence suggests that subsurface fires are not present, the District concludes that it is appropriate to establish an alternative wellhead temperature standard for these eight wells. Waste Management has proposed an alternative temperature limit of 145 °F for these eight wells. Three other Bay Area landfills have a limited number of wells that are subject to alternative wellhead temperature standards. Two sites have alternative limits of 145 °F, and one site has an alternative limit of 140 °F. The proposed alternative temperature limit of 145 °F is consistent with current practice. The District will propose additional CO monitoring requirements for wells operating at elevated temperatures to verify that the elevated temperatures are not due to a fire.

C. EMISSIONS

Maximum permitted emissions from landfills, and in particular, the emissions arising from the waste decomposition process, are determined using empirical equations and site specific factors including: the maximum permitted decomposable waste capacity for the site, historical and projected waste disposal rates, site specific landfill gas constituent data, an assumed landfill gas collection system capture efficiency, and maximum allowable emission rates from the authorized control devices. The District evaluates the efficacy of each site's landfill gas collection and control system designs through the permit application process to ensure that the overall landfill gas control system is adequate and will achieve the minimum landfill gas capture efficiency that was assumed for the site and will prevent surface leaks in excess of the Regulation 8-34-303 leak limit. Any alterations to the landfill gas collection system design or operating limits that are authorized by the District are intended to ensure that the landfill gas collection system will continue to adequately control the landfill gas from a site and will not result in any emission increases for a site.

In this case, the District is proposing to establish an alternative wellhead temperature limit. This wellhead temperature limit has no impact on the calculated fugitive emission rates arising from the waste decomposition process. Instead, wellhead temperature is monitored for the purposes of fire prevention. Conditions are ripe for subsurface fires if a well has sustained gas temperatures greater than 140 °F and excess air intrusion in the well. Rapid increases in wellhead temperature accompanied by high CO levels are indicators of smoldering subsurface fires. The proposed permit conditions that will allow a higher wellhead temperature limit will only allow the site to be at the higher temperature when there is no evidence of a subsurface fire. Therefore, increasing this wellhead temperature limit will not result in any additional emissions.

D. STATEMENT OF COMPLIANCE

Regulation 2, Rule 1:

This application is for a change of permit conditions at the S-2 Landfill with Gas Collection System that involves no physical alterations of the landfill or gas collection system and no emission increases for S-2. Therefore, this application is categorically exempt from CEQA review pursuant to Regulation 2-1-312.1, and no further CEQA review is required.

The project is over 1000 feet from the nearest school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

Regulation 2, Rule 2:

Since this application does not result in any emission increases, this project is not subject to New Source Review (NSR). No new BACT, Offset or PSD requirements will apply.

New Source Review for Toxic Air Contaminants:

This application does not result in any increases of Toxic Air Contaminants (TACs). Therefore, NSR for TACs is not triggered, and no new T-BACT requirements will apply.

Regulation 2, Rule 6:

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act (40 CFR, Part 70) and BAAQMD Regulation 2, Rule 6, Major Facility Review (MFR), because it is a major facility for NO_x and CO emissions and also because it is a designated facility (since it is subject to the control requirements of the Emission Guidelines for MSW Landfills). Therefore, this facility is required to have an MFR permit pursuant to Regulations 2-6-301 and 2-6-304.

The MFR Permit for this facility was initially issued on December 1, 2003 and was last revised on December 11, 2007. Since this application will result in permit condition modifications, a revision of the Title V permit will also be required. This Title V permit revision will be handled pursuant to Application # 16864.

Regulation 8, Rule 34:

Waste Management's Altamont Landfill (S-2) is subject to Regulation 8, Rule 34. S-2 is expected to comply with Regulation 8-34-301 by:

(a) continuously operating the gas collection system and continuously operating gas control systems (including S-6, S-7, S-23, S-24, and/or A-15),
(b) having no leaks (exceeding 1000 ppmv) from the gas collection system, and
(c) processing all collected gases in control devices achieving at least 98% NMOC destruction efficiency (or emitting less than 20 ppmv of NMOC from the IC engines and gas turbines).

The S-2 Altamont Landfill is also subject to Regulation 8-34-303, which limits leaks on the surface of the landfill to less than 500 ppmv as methane. This site has generally been complying with the surface leak requirements. However, surface leaks above the standard are occasionally discovered by the facility and are typically eliminated within a few days of discovery. This wellhead temperature limit change will have no impact on the site's compliance with the surface leak limit.

The S-2 Altamont Landfill is subject to Regulation 8-34-305, which states:

8-34-305 Wellhead Requirements: Effective July 1, 2002 and except as provided in Sections 8-34-119 or 120, each wellhead in the gas collection system shall meet the requirements of Sections 8-34-305.1 and 305.2 and either 305.3 or 305.4, unless the operator has discovered the excess and has satisfied all of the requirements of Section 8-34-414; or the operator has received permit conditions containing alternative operating levels:

305.1 Each wellhead shall operate under a vacuum (negative pressure); and

305.2 The landfill gas temperature in each wellhead shall be less than 55° C (131° F); and either

305.3 The nitrogen concentration in each wellhead shall be less than 20% by volume; or

305.4 The oxygen concentration in each wellhead shall be less than 5% by volume.

The proposed permit condition revisions discussed below will establish an alternative maximum temperature that will replace the Regulation 8-34-305.2 limit for 8 specific wells. The proposed alternative temperature limit is 145 °F. A statistical analysis of the wellhead temperature data indicates that these wells ought to be able to maintain compliance with this proposed limit.

Waste Management will continue to conduct the monthly temperature monitoring required by Regulation 8-34-505.2 to demonstrate compliance with the proposed alternative temperature limit. The Regulation 8-34-414 Wellhead Repair Schedule will still apply to wells that are subject to the alternative temperature limit.

To ensure that the proposed higher temperature limit will not lead to subsurface fires, the District will require the site to conduct CO monitoring at the well if suspicious circumstances occur. The District will establish an acceptable CO level and identify remedial actions for various elevated CO levels.

Federal Requirements:

EG for MSW Landfills: The landfill at this facility is subject to the 40 CFR Part 60, Subpart Cc Emission Guidelines (EG) for Municipal Solid Waste (MSW) Landfills. Effective November 19, 2001, the District's Regulation 8, Rule 34 was approved into the State Plan for MSW Landfills (40 CFR 62.1115). Regulation 8, Rule 34 is now the approved method for implementing this federal EG. Since the S-2 Altamont Landfill with Gas Collection System is expected to comply with Regulation 8, Rule 34, this landfill will also comply with 40 CFR, Part 60, Subpart Cc and 40 CFR 62.1115.

Concerning wellhead limits, the federal Emission Guidelines (40 CFR 60.753(c)) states: "The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens." As discussed in the Wellhead Data Section above, the wellhead data collected between April and September 2007 show no evidence of subsurface fires or reduced anaerobic decomposition. The proposed temperature limit is consistent with the alternative limits approved for other Bay Area landfill sites, and these alternative limits have not led to fires at these other sites. Therefore, the proposed limit of 145 °F is an acceptable operating level.

NESHAPs for MSW Landfills: Any landfills that are subject to the landfill gas collection and control requirements of either the NSPS for MSW Landfills or the EG for MSW Landfills are also subject to the NESHAPs for MSW Landfills (40 CFR, Part 63, Subpart AAAA). This NESHAP requires that subject facilities prepare and implement startup, shutdown, malfunction plans and additional reporting requirements. All applicable requirements are contained in the existing MFR permit. The specific alternative temperature limit, CO monitoring requirements, and remedial actions that are described in the permit conditions below will be incorporated into the Title V permit pursuant to Application # 16864. This

facility is expected to update their on-site SSM plan to incorporate these new requirements in a timely fashion and to comply with these new requirements immediately upon District approval.

E. PERMIT CONDITION REVISIONS

The District is proposing to revise Condition # 19235, Part 1, as shown below in strike through and underline formatting. The proposed revisions to Part 1b(i) identify the alternative wellhead temperature limit and the associated monitoring requirements and other actions that the District is proposing to require in order to establish an alternative wellhead temperature limit for the specifically identified wells.

Condition # 19235
FOR: S-2 ALTAMONT LANDFILL WITH LANDFILL GAS COLLECTION SYSTEM, AND A-15 LANDFILL GAS FLARE:

1. The S-2 Altamont Landfill shall be equipped with a landfill gas collection system, which shall be operated continuously as defined in Regulation 8-34-219, unless the Permit Holder complies with all applicable provisions of Regulation 8, Rule 34, Section 113. Individual wells, collectors, and adjustment valves shall not be disconnected, removed, or completely closed, without prior written authorization from the District, unless the Permit Holder complies with all applicable provisions of Regulation 8, Rule 34, Sections 113, 116, 117 or with Part 1c below. The gas collection system shall also be operated in accordance with the wellhead requirements described in Part 1d. (Basis: Regulations 8-34-301.1, 8-34-303, 8-34-304, 8-34-305, and 8-34-404)
    a. The Permit Holder has been issued a Permit to Operate for the landfill gas collection system components listed below as of November 1, 2007. Well and collector locations are described in detail in Permit Application #15498.
        i. The authorized number of landfill gas collection system components is the baseline count listed below plus any components installed and minus any components decommissioned pursuant to subpart 1b, as evidenced by start-up and decommissioning notification letters submitted to the District.
            - 68 vertical wells
            - 7 horizontal trench collectors (shredded tires may be used as fill material)
            - 1 leachate collection system clean-out riser
    b. The Permit Holder has been issued an Authority to Construct to allow for the landfill gas collection system alterations described below pursuant to Permit Application #16863. All collection system alterations shall comply with subparts 1b(i-vii) below.
        i. The authorized collection system alterations are:
            - Install up to 75 additional vertical wells
            - Permanently decommission up to 40 vertical wells
            - Install up to 25 additional horizontal trench collectors
            - Permanently decommission up to 10 horizontal trench collectors
            - Modify wellhead monitoring locations, as needed, provided that each landfill gas collection system component identified in Part 1a and each new collection system component installed per Part 1b is adequately represented by a wellhead monitoring location. The Permit Holder shall maintain documentation on site that identifies all landfill gas collection system components that are represented by each wellhead monitoring location.
        ii. The Permit Holder shall apply for and receive an Authority to Construct before altering the landfill gas collection components

described subpart 1a. Installing, altering, or permanently decommissioning a vertical well, horizontal collector, or other gas collection component is subject to the Authority to Construct requirement, unless this change constitutes a replacement as defined in subpart 1b(iii) below.

iii. Replacement of landfill gas collection system components with identical or functionally equivalent components will not be deemed an alteration and will not subject to the Authority to Construct requirement under the following circumstances. If a well or collector will be shut down and replaced by a new well or collector in essentially the same location as the old component and this decommission/installation will be accomplished in accordance with Regulations 8-34-117 and 8-34-118, then this activity shall be considered a component replacement that is not subject to the Authority to Construct requirement. For each individual well or collector replacement, this subpart authorizes a maximum vacuum disconnection time of five consecutive days for compliance with Regulation 8-34-117.5. The disconnected component and the new component shall not be counted toward the subpart 1b(i) limits; the numbers of replacement wells and replacement collectors are not limited. Alterations, repairs, or replacements of non-perforated piping sections (such as risers, laterals, or header pipes), piping connectors, or valves are not subject to the Authority to Construct requirement.

iv. At least three days prior to initiating operation of a well or collector installed pursuant to subpart 1b, the Permit Holder shall submit a start-up notice to the District that contains the component ID number for each new well or collector and the anticipated initial start-up date for each new component.

v. For each well or collector that is permanently decommissioned after June 20, 2007, the Permit Holder shall submit a decommissioning notice to the District within no later than three working days after the component was disconnected from vacuum system. This decommissioning notice shall contain the component ID for each well or collector that was decommissioned, the date and time that each component was disconnected from the vacuum system, and the reason the component was decommissioned.

vi. Within six months of installing a new component or permanently decommissioning an existing component, the Permit Holder shall prepare an updated map of the landfill gas collection system that identifies the ID numbers and locations of all operable wells and collectors. On this map or in accompanying documentation, the Permit Holder shall summarize all component changes that were made since the last map was prepared. The previous collection system map, the updated collection system map, and the component change summary shall be provided to District staff upon request.

vii. If the Permit Holder has a net reduction (number of decommissioned components minus the number of installed components) of more than five components within a 120-day period, the Permit Holder shall submit a more comprehensive decommissioning notice to the District. In addition to the information required by subpart 1b(v), this comprehensive decommissioning notice shall include the maps and documentation required by subpart 1b(vi), shall identify all component changes that have occurred but that are not included on

the most recently updated map, shall identify any components that are temporarily disconnected from vacuum pursuant to subpart 1c, shall provide estimated vacuum reconnection dates for these components, shall include a list of all well installations that are expected to occur within the next 120 days, and shall discuss the reasons why this reduction in gas collection components is not expected to result in surface emission leaks. Upon request, the Permit Holder shall provide wellhead monitoring data, surface leak monitoring data, records of repair attempts made to date, and other information to support the need for a net collection component reduction of more than five wells. The District may require additional surface monitoring to verify that this net component reduction is not causing landfill surface leaks. The District will notify the Permit Holder in writing of any additional surface monitoring that is required pursuant to this subpart.

c. The Permit Holder may temporarily disconnect individual wells or collectors from the vacuum system, provided that all requirements of this subpart are satisfied. (Basis: Regulation 8-34-404)
   i. No more than five (5) landfill gas collection system components (wells or collectors) may be temporarily disconnected from the vacuum system at any one time pursuant to subpart 1c.
   ii. For each individual well or collector that is disconnected from the vacuum system pursuant to subpart 1c, the total vacuum system disconnection time shall not exceed 120 days during any 12-month period.
   iii. Collection system components that are disconnected from the vacuum system are not subject to wellhead limits (Regulation 8-34-305 or Part 1d, as applicable) or monthly wellhead monitoring requirements (Regulation 8-34-505) during this vacuum disconnection time.
   iv. Wells or collectors that are temporarily disconnected from the vacuum system continue to be subject to the component leak limit (Regulation 8-34-301.2) and the quarterly leak testing requirement (Regulation 8-34-503) at all times. In addition, the Permit Holder shall conduct the following component leak monitoring at each component that has been disconnected from the vacuum system pursuant to subpart 1c: test for component leaks using the procedures identified in Regulation 8-34-602 within 10 calendar days of disconnection from vacuum and again within 1 month of disconnection from vacuum. If a component leak is detected at the well, the Permit Holder shall take all steps necessary to reduce the leak below the applicable limit, including reconnecting the well to the vacuum system, if no other corrective action measures are successful within the time frames allowed by Rule 34.
   v. For each well disconnection event, the Permit Holder shall record each affected well ID number, all well disconnection dates and times, all well reconnection dates and times, all related monitoring dates and monitoring results in a District approved log. This log shall also include an explanation of why the temporary well shut down was necessary and shall describe all adjustments or repairs that were made in order to allow this well to operate continuously, to reduce leaks, or to achieve compliance with an applicable limit. All records shall be retained for a minimum of five years and shall be made available to District staff upon request.

d. Each landfill gas collection system component listed in Part 1a shall be operated in compliance with the wellhead limits of Regulation 8-34-305, unless an

alternative wellhead limit has been approved for that component and the operator complies with all of the additional requirements identified in this subpart. Components that are subject to an alternative wellhead limit may still use the Regulation 8-34-414 repair schedule for operator discovered excesses of the alternative limit; however, invoking this repair schedule does replace the monitoring requirements described in Parts 1d(ii-viii). (Basis: Regulations 8-34-305 and 8-34-414)

i. For each of the wells identified in Part 1d(ii), the Regulation 8-34-305.2 wellhead temperature limit does not apply, and the landfill gas temperature at each wellhead shall not exceed 145 degrees F.

ii. The wells that are subject to the Part 1d(i) alternative wellhead temperature limit are:
#40, #401, #403, #443, #444, #456, #457, and #458.
If any other component has a wellhead temperature of 131 degrees F or higher, the operator may elect to add this component to the above list of alternative temperature limit wells by satisfying all of the following requirements:
- The wellhead temperature shall not exceed 145 degrees F.
- The carbon monoxide (CO) concentration in the wellhead gases shall not exceed 500 ppmv.
- Prior to adding a component to the list in this subpart, the operator shall monitor the gas in the component for CO concentration at least two times, with no more than 15 days between tests. CO monitoring shall continue on a monthly basis, or more frequently if required by subparts 1d(iv-vii), until the operator is allowed to discontinue CO monitoring per subpart 1d(vii).
- The operator shall comply with all applicable monitoring and record keeping requirements in subparts 1d(iii-viii).
- The component shall not exceed any wellhead limit other than temperature and shall have had no excesses of wellhead limits (other than temperature) during the 120 days prior to adding this component to the list in this subpart.
- Within 30 days of adding a component to the list in this subpart, the operator shall notify the District in writing that the operator is requesting to add the component to the Part 1d(ii) list of alternative temperature limit wells. This notification shall include the well ID number, a map of the collection system to identify the location of this well, and the dates and results of all monitoring conducted on the well to verify that the above requirements have been satisfied.
- If the Regulation 8-34-414 repair schedule has been invoked for the wellhead temperature excess, and the operator has meet the requirements Sections 414.1 and 414.2, then compliance with the requirements of this subpart shall be deemed an acceptable resolution of the wellhead temperature excess in lieu of the collection system expansion specified in Sections 414.3 and 414.4.

iii. The operator shall demonstrate compliance with the alternative wellhead temperature limit in Part 1d(i) by monitoring and recording the temperature of the landfill gas in each wellhead on a monthly basis, in accordance with Regulations 8-34-501.4, 8-34-501.9, and 8-34-505.

iv. If the temperature of the landfill gas in a wellhead exceeds 140 degrees F, the operator shall investigate the possibility of a subsurface fire at the wellhead by monitoring for CO concentration in the wellhead gases and by searching for smoke, smoldering odors, combustion residues, and other fire indicators in the wellhead and in the landfill area near this

wellhead. Within 5 days of triggering a fire investigation, the operator shall measure the CO concentration in the landfill gas at the wellhead using a portable CO monitor or an EPA approved test method. CO monitoring shall continue according to the frequency specified in subparts 1d(v-vii).

v. If the CO concentration is greater than 500 ppmv, the operator shall immediately take all steps necessary to prevent or extinguish the subsurface fire, including disconnecting the well from the vacuum system if necessary. If the well is not disconnected from the vacuum system or upon reconnecting a well to the vacuum system, the operator shall monitor the well for CO concentration, wellhead temperature, and other fire indicators on at least a weekly basis until the CO concentration drops to 500 ppmv or less.

vi. If the CO concentration is less than or equal to 500 ppmv but greater than 100 ppmv, the operator shall monitor for CO concentration at least twice per month (not less than once every 15 days) until the CO concentration drops to 100 ppmv or less. Wellhead temperature and other fire indicators shall be evaluated at each of these semimonthly-monitoring events.

vii. If the CO concentration is less than or equal to 100 ppmv, the operator shall monitor for CO concentration on a monthly basis. CO monitoring may be discontinued if three consecutive CO measurements are 100 ppmv or less and the wellhead temperature during each of these three monitoring events is 140 degrees F or less. If a component has three or more CO measurements of 100 ppmv or less but the wellhead temperature was greater than 140 degrees F, the operator must receive written approval from the District before discontinuing the monthly CO monitoring at that component.

viii. The permit holder shall record the dates and results of all monitoring events required by this subpart in a District approved log. If Part 1d(v) applies, the operator shall also describe all actions taken to prevent or extinguish the fire.

(No Changes to Parts 2-23)

F. RECOMMENDATION

Issue a Change of Conditions for the following source:

S-2 Altamont Landfill with Landfill Gas Collection System

signed by Carol S. Allen — January 30, 2008

By: Carol S. Allen — Date

Senior Air Quality Engineer

APPENDIX E

ADMINISTRATIVE CONDITION CHANGE REPORT

APPLICATION # 16863

Administrative Condition Change Report

for

Landfill Gas Collections System Alterations at S-2 Altamont Landfill

Waste Management of Alameda County; PLANT # 2066

APPLICATION # 16863

A. BACKGROUND

Waste Management of Alameda County operates the Altamont Landfill and Resource Recovery Facility in Livermore, CA (Site # A2066). This facility includes an active landfill: S-2 Altamont Landfill with Landfill Gas Collection System.

As described in the District's December 11, 2007 letter to Waste Management (see Condition # 19235, Part 1), the landfill gas collection system for the S-2 Altamont Landfill consisted of 68 vertical wells, 7 horizontal collectors, and 1 leachate collection riser. The additional gas collection system alterations that were authorized pursuant to the Authority to Construct for Application # 16863 included:

- install up to 75 additional vertical wells,
- decommission up to 40 vertical wells,
- install up to 25 horizontal collectors, and
- decommission up to 10 horizontal collectors.

Waste Management's consultant, Cornerstone Environmental Group, LLC, submitted start-up/shut-down notifications on 1/11/2008, 2/5/2008, 2/18/2008, 3/26/2008, 4/29/2008, 5/28/2008, and 6/24/2008. From December 11, 2007 through June 30, 2008, Waste Management decommissioned 21 vertical wells and 6 horizontal collectors and began operating 37 new vertical wells.

The District is administratively adjusting the well counts identified in Condition # 19235, Part 1 to reflect the gas collection system alterations completed to date. The gas collection system now consists of 84 vertical wells, 1 horizontal collector, and 1 leachate collection riser. The remaining gas collection system alterations authorized by Authority to Construct # 16863 are:

- install up to 38 additional vertical wells,
- decommission up to 19 vertical wells,
- install up to 25 horizontal collectors, and
- decommission up to 4 horizontal collectors.

These alterations are authorized until December 11, 2009.

B. STATEMENT OF COMPLIANCE

As discussed in the Engineering Evaluation for Application # 16863, this project does not result in any emission increases. Therefore, NSR is not triggered for this alteration, and BACT and Offsets are not required.

The most recent collection system alterations discussed in this report are expected to ensure that this facility complies with the Regulation 8-34-303 surface leak limits and the Regulation 8-34-305 wellhead standards.

Gas collection system alterations completed between December 11, 2007 and June 30, 2008 are summarized in Table 1. The individual gas collection system components are listed in Tables 2a and 2b. Well ID numbers that are underlined were installed between December 2007 and June 2008. Well ID numbers that have strike through formatting were decommissioned during December 2007 through June 2008.

Table 1. Summary of Gas Collection System Alterations (12-11-07 to 6-30-08)

Notification Letter Date	Action Taken	Number and Type of Components
1-11-2008	Decommissioned Decommissioned	12 vertical wells 2 horizontal collectors
2-5-2008	Installed	37 vertical wells
2-18-2008	Decommissioned	1 vertical well
3-26-2008	Decommissioned Decommissioned	5 vertical wells 3 horizontal collectors
4-29-2008	Decommissioned	1 horizontal collector
5-28-2008	Decommissioned	1 vertical well
6-24-2008	Decommissioned	2 vertical wells
Summary	Net Change Net Change	+ 16 vertical wells - 6 horizontal collectors

Table 2a. Landfill Gas Collection System Components Installed as of 7-1-2008

Vertical Landfill Gas Extraction Wells										
VW-#	VW-#	VW-#	VW-#	VW-#	VW-#	VW-#	VW-#	VW-#	VW-#	VW-#
2	24	54	77	404	444	456	467	478	488	499
3	~~26~~	~~55~~	80	405	445	457	468	479	489	500
8	~~29~~	56	84	~~424~~	448	458	469	480	490	501
~~11~~	~~33~~	59	85	426	449	460	471	~~481~~	491	502
15	37	64	~~86~~	428	450	461	472	482	492	503
~~16~~	40	~~67~~	87	~~430~~	451	462	473	483	494	
18	45	69	88	431	~~452~~	463	474	484	495	
~~19~~	~~50~~	71	401	~~432~~	~~453~~	464	475	485	496	
~~21~~	~~51~~	73	402	~~433~~	~~454~~	465	476	486	497	
~~23~~	53	74	403	443	455	466	477	487	498	

Table 2b. Landfill Gas Collection System Components Installed as of 7-1-2008

Horizontal Collectors	Other Components
HC-#	
~~106~~	LCRS-201
107	
~~302B~~	
~~311A~~	
~~311B~~	
~~312~~	
~~317~~	

C. PERMIT CONDITION REVISIONS

The District is proposing to administratively modify Condition # 19235, Parts 1a and 1b, as shown below in strike through and underline formatting. The proposed revisions to Part 1a are necessary to make the collection system description consistent with the current in-place configuration. The proposed revisions to Part 1b will update the remaining authorized revisions to the collection system.

Condition # 19235
FOR: S-2 ALTAMONT LANDFILL WITH LANDFILL GAS COLLECTION SYSTEM, AND A-15 LANDFILL GAS FLARE:

1. The S-2 Altamont Landfill shall be equipped with a landfill gas collection system, which shall be operated continuously as defined in Regulation 8-34-219, unless the Permit Holder complies with all applicable provisions of Regulation 8, Rule 34, Section 113. Individual wells, collectors, and adjustment valves shall not be disconnected, removed, or completely closed, without prior written authorization from the District, unless the Permit Holder complies with all applicable provisions of Regulation 8, Rule 34, Sections 113, 116, 117 or with Part 1c below. The gas collection system shall also be operated in accordance with the wellhead requirements described in Part 1d. (Basis: Regulations 8-34-301.1, 8-34-303, 8-34-304, 8-34-305, and 8-34-404)
   a. The Permit Holder has been issued a Permit to Operate for the landfill gas collection system components listed below as of ~~November 1, 2007~~ July 1, 2008. Well and collector locations are described in detail in Permit Application #~~15498~~16863.
      i. The authorized number of landfill gas collection system components is the baseline count listed below plus any components installed and minus any components decommissioned pursuant to subpart 1b, as evidenced by start-up and decommissioning notification letters submitted to the District.
         - ~~68~~84 vertical wells
         - ~~7~~1 horizontal trench collector~~s~~ (shredded tires may be used as fill material)
         - 1 leachate collection system clean-out riser
   b. The Permit Holder has been issued an Authority to Construct to allow for the landfill gas collection system alterations described below pursuant to Permit Application #16863. All collection system alterations shall comply with subparts 1b(i-vii) below.
      i. The authorized collection system alterations are:
         - Install up to ~~75~~38 additional vertical wells
         - Permanently decommission up to ~~40~~19 vertical wells
         - Install up to 25 additional horizontal trench collectors
         - Permanently decommission up to ~~10~~4 horizontal trench collectors
         - Modify wellhead monitoring locations, as needed, provided that each landfill gas collection system component identified in Part 1a and each new collection system component installed per Part 1b is adequately represented by a wellhead monitoring location. The Permit Holder shall maintain documentation on site that identifies all landfill gas collection system components that are represented by each wellhead monitoring location.

No Changes to Parts 1c or 1d or to the remainder of Condition #19235

D. RECOMMENDATION

Issue an administrative Change of Conditions for S-2 pursuant to Application # 16863.

S-2 Altamont Landfill with Landfill Gas Collection System

	signed by Carol S. Allen	July 11, 2008
By:	Carol S. Allen	Date
	Senior Air Quality Engineer	