

Bay Area Air Quality Management District

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**Permit Evaluation
and
Statement of Basis
for**

RENEWAL of

MAJOR FACILITY REVIEW PERMIT

for

**West Contra Costa Sanitary Landfill, Inc.
Facility Number A1840**

Facility Address:

Foot of Parr Boulevard
Richmond, CA 94801

Mailing Address:

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Richmond, CA 94806

Application Engineer: Jane H. Lundquist
Site Engineer: Irma C. Salinas

Title V Renewal Application: 15376

Applications Included: 14339, 14473, 14621, 14622, 14848, 14966, and 15702

Renewal of the Title V Permit

TABLE OF CONTENTS

A. Background..... 1

B. Facility Description..... 2

C. Permit Content 4

 I. Standard Conditions 4

 II. Equipment 5

 III. Generally Applicable Requirements 7

 IV. Source-Specific Applicable Requirements..... 8

 V. Schedule of Compliance..... 10

 VI. Permit Conditions..... 10

 VII. Applicable Limits and Compliance Monitoring Requirements 14

 VIII. Test Methods 16

 IX. Permit Shield 17

 X. Revision History 17

 XI. Glossary..... 17

D. Alternate Operating Scenarios:..... 17

E. Compliance Status: 18

F. Differences between the Application and the Proposed Permit: 18

APPENDIX A Engineering evaluations for the leachate treatment facility redesign and replacement, Application #s 14473, 14848, 14622, 14966

APPENDIX B Engineering evaluation for permitting the existing facility # A0198 sources at this site under facility # A1840, Application # 14621

APPENDIX C Engineering evaluation for changing the permit condition to reflect the change in class I landfill gas composition and the actual amount of waste in place, Application # 15702

APPENDIX D Engineering evaluation for landfill gas (LFG) collection alterations, flare permit condition revisions and alternative wellhead standards for the horizontal collectors in the class I landfill, where LFG generation has been declining, Application # 14339

APPENDIX E Compliance Report

Title V Statement of Basis: Renewal of Major Facility Operating Permit

West Contra Costa Sanitary Landfill, Inc.; Site Number A1840

Application Number 11374

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Title 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a major facility as defined by BAAQMD Regulation 2-6-212. It is a major facility because it has the “potential to emit,” as defined by BAAQMD Regulation 2-6-218, of more than 100 tons per year of carbon monoxide, a regulated air pollutant.

In addition, West Contra Costa Sanitary Landfill, Inc. (WCCSL) is a designated facility as defined by BAAQMD Regulation 2-6-204. The new source performance standard (NSPS), “Standards of Performance for Municipal Solid Waste Landfills,” 40 CFR Part 60, Subpart WWW, require the owner or operator of a landfill that is subject to this part and that has a design capacity of greater than or equal to 2.5 million megagrams and 2.5 million cubic meters to obtain an operating permit pursuant to Part 70. WCCSL is subject to this NSPS because on May 4, 2005, WCCSL was issued a revised landfill permit for an increase in the design capacity to 11.8 million megagrams and 16.4 million cubic meters that is considered a modification occurring after May 30, 1991. Thus, WCCSL is also required under this NSPS and BAAQMD Regulation 2-6-304 to have a Major Facility Operating permit (Title V permit).

Title V permits must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all applicable requirements (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility number that consists of a letter and a 4-digit number. This facility number is also considered to be the identifier for the permit. The facility number for WCCSL is A1840.

WCCSL received its initial Title V Permit on May 29, 2002 with an expiration date of April 30, 2007. The Title V Permit has been revised five times since the initial issuance: one reopening, two administrative amendments, one minor revision and one significant revision. This proposed permit renewal represents the sixth revision. Details of the previous revisions can be found in Section X of the permit “Revision History.” Although the current permit expired on April 30, 2007, it continues in force until the District takes final action on the permit renewal. The standard sections of the permit have been upgraded to include new standard language used in all

Statement of Basis:
Application No. 15376

Site A1840, West Contra Costa Sanitary Landfill, Inc.
Foot of Parr Boulevard, Richmond, CA 94901

Renewal of the Title V Permit

Title V permits. The proposed permit renewal shows all changes to the existing Title V permit in strikeout/underline format.

The last change to the WCCSL Title V Permit was an administrative amendment issued in December 2006, which does not include the changes resulting from the NSR permit applications listed in the table below.

Application #	Description
14473, 14848, 14622, 14966 14621	Addition of leachate storage tanks, redesign and replacement of existing leachate collection and treatment equipment Addition of existing sources at this site that were previously permitted under a separate facility number (A0198)
15702	Permit condition changes to reflect the class I landfill gas (LFG) composition and actual waste in place
14339	LFG collection alterations and flare permit condition revisions to allow for flexibility in diverting generated LFG to the different combustion equipment for emission control and to allow for compliance with alternative wellhead standards for the horizontal collectors in the class I landfill, where LFG generation has been declining

The changes associated with these NSR permit applications will be included in the proposed Title V permit renewal. The engineering evaluations for these changes are enclosed in Appendices A through D.

District permit applications not included in this proposed permit

This facility sends a number of permit applications to the District every year. The following permit applications are under review or were not completed in time to include the results in this Title V permit. The Title V permit will be revised periodically to incorporate these applications as permit revisions following the procedures in Regulation 2, Rule 6, Major Facility Review.

Application #	Project Description
14771	S-47 Corrective Action Management Unit
18127	Change of condition for the IC engines and flare temperature ranges
18128	Change of condition to add more gas collection wells at the S-15 Landfill and to include connections to the gas collection system to treat the gases collected in the leachate wells.
17593	Revised Collection and Control System Design Plan
20621	Modifications to the leachate treatment facility
21260	Tub Grinder and diesel engine
21424	Change of Condition to address wells where methane content < 5%.
21826	Landfill gas flare replacement

Renewal of the Title V Permit

B. Facility Description

WCCSL operates a municipal solid waste landfill facility in Richmond, California. The WCCSL facility is a 340-acre site where solid waste disposal operation began in 1952. The facility includes a closed 160-acre Class II landfill with a LFG collection system, LFG flare and three LFG fired internal combustion engines; a closed 28-acre Class I landfill with a LFG collection system and LFG flare; leachate collection and treatment equipment with carbon abatement; and a solid waste transfer station with water spray abatement. On September 30, 2006, waste acceptance for placement at the S15 class II landfill ceased. However, WCCSL continues to receive wastes delivered by self-haulers, industrial debris boxes and commercial vehicles at the solid waste transfer station where it is consolidated from multiple collection vehicles into larger, high-volume transfer vehicles for more economical shipment to distant disposal sites.

Existing sources at this site that had previously been omitted from the Title V permit are the concrete/asphalt recycling operations (concrete crusher, crushed concrete screener, conveyors, asphalt crushing, storage piles) abated by water spray, wood waste shredder and screener abated by water spray and a composting operation abated by water spray; these sources had BAAQMD permits under facility number A0198. Although many of these sources were not operating WCCSL is maintaining these permits. Prior to the operation of the concrete crusher, crushed concrete screener, conveyor, wood waste shredder and screener using a power source that requires a District permit, WCCSL must apply for and hold a valid District permit for the power source. In order to properly apply District requirements and Federal Major Facility Review requirements to all sources located at the WCCSL facility, the A0198 sources will be permitted under facility number, A1840.

Organic wastes decomposing in the landfills generate LFG, which consists mainly of methane, carbon dioxide, and very small amounts of hazardous air pollutants and sulfur compounds. The engines produce electricity using the LFG as a fuel and also serve as abatement equipment. Collected LFG that is not use as a fuel in the engines are combusted in the flares. Leachate, liquid runoff that contains small amounts of organic and toxic compounds, from the class I well field, condensate from the class I LFG collection system, storm water from the Leachate Treatment Facility (LTF) and storm water from the corrective action management unit are collected and treated in the LTF by a series of physical, chemical, and biological processes to remove heavy metals and toxic organic compounds from the water. Air emissions from the leachate treatment equipment are controlled by carbon adsorbers. Fugitive particulate emissions associated with waste handling are controlled by water spray abatement.

The table below shows the permitted emission increases associated with the NSR permit applications processed for WCCSL since the December 2006 Title V Administrative Amendment. Since application #14621 was processed, WCCSL decided to cancel the permit for the existing S110 Diesel Engine; the emission estimates from this cancelled source are not included in the table.

Renewal of the Title V Permit

Permitted Emissions Increases Since the December 2006 Title V Administrative Amendment						
Description	NMOC, tons/yr	NOx, tons/yr	CO, tons/yr	PM ₁₀ , tons/yr	SOx, tons/yr	Estimated Under Application#
Ozone Generator, S41	0.00	0.00	0.00	0.00	0.00	14473
Storage Tanks, S69 and S70	0.01					14848
Air Stripper S48	-0.23					14622
Leachate Treatment System S71, S72, S73, S74, S75 and S76 (includes exempt oil holding tanks)	0.19					14966
Concrete/Asphalt Recycling (S111, S112, S113, S114, S118) and Composting (S115, S116, S117) formerly permitted under facility number A0198 ⁽¹⁾	16.91	0.00	0.00	8.37 ⁽²⁾	0.00	14621
HWMF Landfill, S46	0.00	0.00	0.00	0.00	0.00	15702
HWMF Landfill, S46 and Flares A8 and A11	0.00	0.00	0.00	0.00	0.00	14339
Permitted Increase Totals	16.88	0.00	0.00	8.37	0.00	

(1) The permit for the S110 Diesel Engine Powering Wood Waste Screener was subsequently cancelled. Since the existing engine would not meet the standards of the state air toxic control measure that now apply, WCCSL agreed to cancel the S110 permit and to accept the following permit condition on S116 Wood Waste Screener: Prior to the operation of S116 using a power source that requires a District permit, the owner/operator must hold a valid District permit for the power source. Emissions estimates for this cancelled source are not included in the above table for application # 14621.

(2) Value includes 5.59 tpy of fugitive vehicle traffic PM10 emissions.

While there is an emissions increase calculated under application #14621 for A1840, there is no actual emission increase for the site since the emissions estimated were previously attributed to A0198, which has now been archived and the sources transferred to A1840. Thus, there are no net emission increases due to these applications for this site.

C. Permit Content

The legal and factual basis for the permit follows. The permit sections are described in the order that they are presented in the permit.

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil-fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District's General Provisions and Permitting rules.

Statement of Basis:
Application No. 15376

Site A1840, West Contra Costa Sanitary Landfill, Inc.
Foot of Parr Boulevard, Richmond, CA 94901

Renewal of the Title V Permit

Change to Permit, Section I:

- A reference to BAAQMD Regulation 2 Rule 5, New Source Review of Toxic Air Contaminants, will be added to part A.
- The applicable dates in part B will be updated to reflect the issuance date of the renewal permit.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S-24). Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302. Significant sources are those sources that have a potential to emit of more than 2 tons of a “regulated air pollutant,” as defined in BAAQMD Rule 2-6-222, per year or 400 pounds of a “hazardous air pollutant,” as defined in BAAQMD Rule 2-6-210, per year.

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an A and a number (e.g., A-24). If a source is also an abatement device, such as when an engine controls VOC emissions, it will be listed in the abatement device table but will have an “S” number. An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or “A”) device. If the primary function of a device is a non-control function, the device is considered to be a source (or “S”).

The equipment section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District’s regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403.

The following are explanations of the differences in the equipment list between the administrative amendment of Title V Permit that was issued in December 2006 and the proposed Title V permit renewal: the leachate treatment facility has been redesigned and previously permitted equipment that have been replaced will be deleted from section II; new leachate treatment facility equipment and existing facility number A0198 sources, which are located at the same site, will be added.

Statement of Basis:
Application No. 15376

Site A1840, West Contra Costa Sanitary Landfill, Inc.
Foot of Parr Boulevard, Richmond, CA 94901

Renewal of the Title V Permit

Changes to Permit, Section II:

Leachate Treatment Facility Devices Removed from Service or Archived:

- S-22 Primary Oil/Water Separator TK-2
- S-23 Secondary Oil/Water Separator TK-4
- S-24 Load Equalization Tank TK-7
- S-25 Photo Oxidizer Tank TK-5
- S-26 Neutralization Tank TK-9
- S-27 First Stage Clarifier TK-8
- S-28 Air Stripper Sump
- S-29 Flocculation/Mixing Tank TK-8A
- S-30 Air Stripper
- S-38 Secondary Oil/Water Separator TK-4
- S-39 Sludge Storage Tank TK-3
- S-40 Equalization Tank TK-1
- A-1 Carbon Adsorber
- A-2 Carbon Adsorber
- A-3 Carbon Adsorber
- A-4 Carbon Adsorber
- A-5 Carbon Adsorber
- A-6 Carbon Adsorber

New Leachate Treatment Facility Added to the Permit:

- S-41 HiPOx Advanced Oxidation System, ozone generator
- S-48 Air Stripper
- S-69 Inlet Storage Tank Tank #1
- S-70 Inlet Storage Tank Tank #2
- S-71 Primary Oil Water Separator
- S-72 Secondary Separator/Emulsion Breaker
- S-73 Clarifier Holding Tank
- S-74 Inclined Plate Clarifier
- S-75 Air Stripper Holding Tank
- S-76 Sludge Thickner
- A-12 Carbon Adsorber
- A-13 Carbon Adsorber
- A-14 Carbon Adsorber
- A-15 Carbon Adsorber
- A-16 Carbon Adsorber
- A-17 Carbon Adsorber
- A-41 Ozone Gas Destruct Unit

Existing Facility A0198 Devices Added to the Permit:

- S-111 Concrete Crusher
- S-112 Crushed Concrete Screener
- S-113 Concrete/Asphalt Storage Piles

Statement of Basis:
Application No. 15376

Site A1840, West Contra Costa Sanitary Landfill, Inc.
Foot of Parr Boulevard, Richmond, CA 94901

Renewal of the Title V Permit

- S-114 Conveyors (Crushed Concrete)
- S-115 Wood/Yard Waste Shredder (Tub Grinder)
- S-116 Wood Waste Screener
- S-117 Composting Operation
- S-118 Crushing of Asphalt Debris
- A-111 Water Spray System
- A-112 Water Spray System
- A-113 Water Spray System
- A-114 Water Spray System
- A-115 Water Spray System
- A-116 Water Spray System
- A-117 Water Spray System
- A-118 Water Spray System

Corrections to Devices Shown in Application

In Table IIB, the Ringelmann #1 limit is added to the Limit or Efficiency column for the A-50 Water Mist System.

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. Unpermitted sources may, however, be specifically described in a Title V permit if they are considered *significant sources* pursuant to the definition in BAAQMD Rule 2-6-239. This facility has no unpermitted significant sources.

Changes to Permit, Section III:

Table III was modified to reflect new and updated versions of Generally Applicable Requirements. These modifications include amending dates of adoption or approval of the rules, correcting the "federal enforceability" status for these rules, and adding or deleting rules and standards to conform to current practice.

Renewal of the Title V Permit

IV. Source-Specific Applicable Requirements

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules and Regulations
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District regulations that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are “federally enforceable” and a “Y” (yes) indication will appear in the “Federally Enforceable” column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the “Federally Enforceable” column will have a “Y” for “yes”. If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion is federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District’s or EPA’s websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

Complex Applicability Determinations

The landfills and LFG combustion equipment at this site are subject to BAAQMD Regulation 8, Rule 34, because waste has been accepted for placement in the landfill within the last 30 years and the landfill contains more than 1,000,000 tons of decomposable refuse. The landfills and LFG combustion equipment are subject to the NSPS for MSW Landfills (40 CFR, Part 60, Subpart WWW) and the NESHAP for MSW Landfills (40 CFR, Part 63, Subpart AAAA), because (1) it commenced construction on a landfill expansion after May 30, 1991, (2) it has accepted waste after November 8, 1987, (3) it has a design capacity of greater than 2.5 million cubic meters and greater than 2.5 million megagrams, and (4) the uncontrolled NMOC generation rate from the landfill exceeds 50 Mg/year.

Sources at Title V facilities may be subject to the Compliance Assurance Monitoring (CAM) requirements in 40 CFR, Part 64. A source must meet all of the three criteria specified in 40 CFR Part 64.2(a)(1-3) in order for CAM to apply. First, the source must be subject to an emission limit for a regulated air pollutant other than an exempt limitation. Second, the source

Renewal of the Title V Permit

must use a control device to achieve compliance with this emission limitation. Third, the pre-controlled emissions of the specific pollutant being controlled must be greater than the major facility emissions threshold for that pollutant.

At this facility, the landfills (S-15 and S-46) and related emission control devices, flares (A-8 and A-11) and internal combustion engines (S-5, S-6, and S37), are exempt from the first CAM applicability criteria, 40 CFR Part 64.2(a)(1), pursuant to 40 CFR Part 64.2(b)(1)(i), because the landfill and landfill gas control systems are subject to the NSPS and NESHAP requirements identified above, and these NSPS and NESHAP requirements were adopted pursuant to Sections 111 and 112 of the Clean Air Act after November 15, 1990. Since the applicable NSPS and NESHAP requirements contain adequate monitoring provisions, additional compliance assurance monitoring is not necessary. In addition, the pre-control emissions of precursor organic compounds from the landfills are less than the major facility emissions threshold of 100 tons of POC per year. Thus, the landfills and related emission control devices do not meet the third CAM applicability criteria from 40 CFR Part 64.2(a)(3). Since the landfill and its related control devices do not satisfy all three CAM applicability criteria, CAM does not apply to S-15, S-5, S-6, S-37, A-8, S-46 and A-11.

Changes to Permit, Section IV:

- In table IV, the amendment date for all references to BAAQMD Regulation 1 will be updated.
- In table IV, all references to BAAQMD Regulation 6 will be changed to refer to SIP Regulation 6 and Regulation 6, Rule 1 will be added. This is due to a renumbering of the BAAQMD Regulation 6.
- In table IV, all references to BAAQMD Toxics Risk Management Policy will be changed to replace the reference with BAAQMD Regulation 2 Rule 5, New Source Review for Toxic Air Contaminants.
- In tables IV-C, IV-D and IV-E, requirements for the leachate treatment facility (LTF) equipment S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-30, S-38, S-39, S-40, A-1, A-2, A-3, A-4, A-5 and A-6 will be deleted. The LTF has been redesigned and the equipment has been replaced.
- The table number IV-F will be renumbered to IV-C for the S-37 internal combustion engine requirements.
- Table IV-D will be added for the new LTF S-41 ozone generator and A-41 ozone gas destruct unit requirements.
- The table number IV-G will be renumbered to IV-E for the S-46 class I landfill requirements. The A-11 flare is currently operating and all entries of “upon start up of A-11” in the future effective date column will be deleted. Added references to BAAQMD regulations 8-34-305 for alternative wellhead requirements in permit conditions and 8-34-404 for less than continuous operations.
- Table IV-F will be added for the new LTF S-48 air stripper and A-14 through A-17 carbon adsorber requirements.

Renewal of the Title V Permit

- The table number IV-H will be renumbered to IV-G for the S-50 transfer station requirements.
- Table IV-H will be added for the new LTF S-69 and S-70 storage tanks and A-12 and A13 carbon adsorbers requirement.
- Table IV-I will be added for the new LTF S-71 and S-72 separator requirements.
- Table IV-J will be added for the new LTF S-73 and S-75 holding tanks, S-74 clarifier and S-76 thickner requirements.
- Requirements for the existing equipment (formerly permitted under facility number A0198) S-111 concrete crusher and A-111 water spray system will be added in table IV-K, S-112 concrete screener and A-112 water spray system will be added in table IV-L, S-113 storage piles and A-113 water spray system will be added in table IV-M, S-114 conveyors and A-114 water spray system will be added in table IV-N, S-115 wood waste shredder and A-115 water spray system will be added in table IV-O, S-116 wood waste screener and A-116 water spray system will be added in table IV-P, S-117 composting operation and A-117 water spray truck will be added in table IV-Q, and S-118 asphalt debris crushing and A-118 water spray system will be added in table IV-R.

V. Schedule of Compliance

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10, which provides that a major facility review permit shall contain the following information and provisions:

“409.10 A schedule of compliance containing the following elements:

- 10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;
- 10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and
- 10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.”

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

Statement of Basis:
Application No. 15376

Site A1840, West Contra Costa Sanitary Landfill, Inc.
Foot of Parr Boulevard, Richmond, CA 94901

Renewal of the Title V Permit

The BAAQMD Compliance and Enforcement Division has conducted a review of compliance over the past year and has no records of compliance problems at this facility during the past year. The compliance report is contained in Appendix E of this statement of basis.

Changes to Permit, Section V:

None.

VI. Permit Conditions

During the Title V permit development, the District has reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity and enforceability. Each permit condition is identified with a unique numerical identifier, up to five digits.

When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting has been added to the permit.

All changes to existing permit conditions are clearly shown in “strike-out/underline” format in the proposed permit. When the permit is issued, all ‘strike-out’ language will be deleted and all “underline” language will be retained, subject to consideration of comments received.

The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 et seq., an order of abatement pursuant to H&SC § 42450 et seq., or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- **BACT:** This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- **Cumulative Increase:** This term is used for a condition imposed by the APCO that limits a source’s operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- **Offsets:** This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- **PSD:** This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.

Renewal of the Title V Permit

Under previous Title V permit applications, parameter monitoring was added for each abatement device. Additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements.

The changes to the permit conditions are a result of (1) the leachate treatment facility redesign and replacement, (2) the LFG collection system alterations and (3) the addition of the sources that had previously been permitted by the District under facility number A0198.

Changes to Permit, Section VI:

- All references to the BAAQMD Toxics Risk Management Policy, in the regulatory basis that follows each condition, have been changed to BAAQMD Regulation 2 Rule 5.
- All references to Title V, in the regulatory basis that follows each condition, have been changed to BAAQMD Regulation 2-6-501.
- All references to BAAQMD Regulation 6, in the regulatory basis that follows each condition, have been changed to BAAQMD Regulation 6, Rule 1. This is due to a renumbering of the BAAQMD Regulation 6.
- Condition # 7463: This condition will be deleted from the permit because it is for leachate treatment equipment that has been taken out of service. This change was evaluated in permit applications 14473, 14848, 14622, 14966 (attached in Appendix A).
- Condition # 17821, Part 5: The change in this part will allow class II LFG to be combusted in A-11, which is the class I LFG flare. Class I LFG generation at S-46 has been declining. In order to keep the A-11 control device operating continuously, class II LFG is used to supplement the class I LFG. This change was evaluated in permit application 14339 (attached in Appendix D).
- Condition # 17821, Part 14g: This part is being modified to add record keeping to distinguish between those class II landfill wells or collectors that are venting to the class II LFG flare (A-8) or LFG fired engine and those wells or collectors venting to the class I LFG flare (A-11). This change was evaluated in permit application 14339 (attached in Appendix D).
- Condition # 20754, Part 1: The amount of waste in place is corrected to reflect the actual amount at the closed class I landfill (S-46). This change was evaluated in permit application 15702 (attached in Appendix C).
- Condition # 20754, Part 2: This part has been revised to reflect the class I LFG collection system and flare that was installed, to allow for specific future alterations to the class I LFG collection system, to specify operating requirements, to allow for compliance with alternative wellhead limits and to specify record keeping requirements. This change was evaluated in permit application 14339 (attached in Appendix D).
- Condition # 20754, Part 3: The change in this part reflects that the class I LFG flare, A-11, is currently operating and will allow class I LFG to be combusted in either A-11 or the class II LFG flare, A-8. This change was evaluated in permit application 14339 (attached in Appendix D).
- Condition # 20754, Part 10: The toxic air contaminant (TAC) concentration limits in this part were increased and a new limit for methylene chloride was added. Recent source testing

Renewal of the Title V Permit

by the facility showed that the benzene concentration in the class I LFG exceeded the limits in this part. However, the TAC concentration limits in this part were established using a very conservative health risk screening approach. A refined health risk analysis using the higher proposed concentration limits and a more refined modeling analysis showed that the health risk at these concentrations was not significant. Actual measured LFG TAC concentrations are well below the proposed concentration limits. This change was evaluated in permit application 15702 (attached in Appendix C).

- Condition # 20754, Part 11: This part is being modified to add record keeping for class II landfill wells or collectors that are venting to the class I LFG flare (A-11). This change was evaluated in permit application 14339 (attached in Appendix D).
- Condition # 23110: This condition has been added for the new ozone generator (S-41) that is part of the leachate treatment facility redesign and replacement. This change was evaluated in permit application 14473 (attached in Appendix A).
- Condition # 23220: This condition has been added for the new tanks, separators, clarifier and thickener that is part of the leachate treatment facility redesign and replacement. This change was evaluated in permit applications 14848 and 14966 (attached in Appendix A).
- Condition # 23316: This condition has been added for the air stripper that is part of the leachate treatment facility redesign and replacement. This change was evaluated in permit applications 14622 (attached in Appendix A).
- Condition # 23350: This condition has been added for the existing concrete crusher that had previously been permitted under facility number A0198. This change was evaluated in permit applications 14621 (attached in Appendix B).
- Condition # 23351: This condition has been added for the existing crushed concrete screener that had previously been permitted under facility number A0198. This change was evaluated in permit applications 14621 (attached in Appendix B).
- Condition # 23352: This condition has been added for the existing concrete/asphalt storage piles that had previously been permitted under facility number A0198. This change was evaluated in permit applications 14621 (attached in Appendix B).
- Condition # 23353: This condition has been added for the existing crushed concrete conveyors that had previously been permitted under facility number A0198. This change was evaluated in permit applications 14621 (attached in Appendix B).
- Condition # 23354: This condition has been added for the existing wood/yard waste shredder that had previously been permitted under facility number A0198. This change was evaluated in permit applications 14621 (attached in Appendix B).
- Condition # 23355: This condition has been added for the existing wood waste screener that had previously been permitted under facility number A0198. This change was evaluated in permit applications 14621 (attached in Appendix B).
- Condition # 23356: This condition has been added for the existing composting operation that had previously been permitted under facility number A0198. This change was evaluated in permit applications 14621 (attached in Appendix B).
- Condition # 23357: This condition has been added for the existing asphalt debris crushing operation that had previously been permitted under facility number A0198. This change was evaluated in permit applications 14621 (attached in Appendix B).

Statement of Basis:
Application No. 15376

Site A1840, West Contra Costa Sanitary Landfill, Inc.
Foot of Parr Boulevard, Richmond, CA 94901

Renewal of the Title V Permit

VII. Applicable Limits and Compliance Monitoring Requirements

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

The District has reviewed all monitoring and has determined the existing monitoring is adequate. This Statement of Basis addresses only the changes made in the proposed Significant Revision.

Monitoring decisions are typically the result of a balancing of several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) the degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements. It follows that, although Title V calls for a re-examination of all monitoring, there is a presumption that these factors have been appropriately balanced and incorporated in the District's prior rule development and/or permit issuance. When a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation. Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring only when it can support a conclusion that existing monitoring is inadequate.

POC Sources

# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-48 Air Stripper; A-14, A-15, A-16, A-17 Carbon Adsorbers	BAAQMD Condition # 23316, Part3	Leak Limit for Valves, Flanges, and Pumps of: 100 ppmv of POC above background at 1 cm from any component	None

Renewal of the Title V Permit

POC Sources

# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-69 and S-70 Inlet Storage Tanks, S-71 Primary Oil Water Separator, S-72 Secondary Separator/Emulsion Breaker, S-73 Clarifier Holding Tank, S-74 Inclined Plate Clarifier; S-75 Air Stripper Holding Tank; and S-76 Sludge Thickener A-12 and A13 Carbon Adsorbers	BAAQMD Condition # 23220, Part 4	Leak Limit for Valves, Flanges, and Pumps of: 100 ppmv of POC above background at 1 cm from any component	None

POC Discussion:

Leachate from the class I well field, condensate from the class I landfill gas collection system, storm water from the Leachate Treatment Facility (LTF) and storm water from the Corrective Action Management Unit are collected in S-69 and S-70 Inlet Storage Tanks. This wastewater is then treated in the LTF prior to being discharged. The wastewater treated in the LTF contains toxic compounds, but is less than 0.5 % volatile organic compounds. Sources S-48 Air Stripper, S-71 Primary Oil Water Separator, S-72 Secondary Separator/Emulsion Breaker, S-73 Clarifier Holding Tank, S-74 Inclined Plate Clarifier, S-75 Air Stripper Holding Tank and S-76 Sludge Thickener are all equipment used in the LTF to treat wastewater. Total emissions from the all the equipment in the LTF are estimated to be less than 0.3 pounds of organics per day. The system is not operated under high pressures and leaks are unlikely. No monitoring at the valves, flanges and pumps is required because emissions from these components and the potential for leaks are expected to be negligible.

Changes to Permit, Section VII:

- A note is being added at the beginning of the section to clarify that this section is a summary of the limits and monitoring, and that in the case of a conflict between Sections I-VI and Section VII, the preceding sections take precedence.
- In table VII, all citations of BAAQMD Regulation 6 will be changed to citations of SIP Regulation 6 and Regulation 6, Rule 1 will be added. This is due to a renumbering of the BAAQMD Regulation 6.
- In tables VII-C, VII-D and VII-E, requirements for the leachate treatment facility (LTF) equipment S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-30, S-38, S-39, S-40, A-1, A-2, A-3,

Renewal of the Title V Permit

A-4, A-5 and A-6 will be deleted. The LTF has been redesigned and the equipment has been replaced.

- The table number VII-F will be renumbered to VII-C for the S-37 internal combustion engine requirements.
- Table VII-D will be added for the new LTF S-41 ozone generator and A-41 ozone gas destruct unit requirements.
- The table number VII-G will be renumbered to VII-E for the S-46 class I landfill requirements. The A-11 flare is currently operating and all entries of “upon start up of A-11” and “upon installation of collection systems” in the future effective date column will be deleted. Changes will be made to monitoring requirements to allow for compliance with alternative wellhead limits, to specify operating requirements, to specify record keeping, and to allow for new toxic air contaminant concentrations in the landfill gas.
- Table VII-F will be added for the new LTF S-48 air stripper and A-14 through A-17 carbon adsorber requirements.
- The table number VII-H will be renumbered to VII-G for the S-50 transfer station requirements. The transfer station is currently operating and all entries of “upon start up of S-50” in the future effective date column will be deleted.
- Table VII-H will be added for the new LTF S-69 and S-70 storage tanks and A-12 and A13 carbon adsorbers requirements.
- Table VII-I will be added for the new LTF S-71 and S-72 separator requirements.
- Table VII-J will be added for the new LTF S-73 and S-75 holding tanks, S-74 clarifier and S-76 thickner requirements.
- Requirements for the existing equipment (formerly permitted under facility number A0198) S-111 concrete crusher and A-111 water spray system will be added in table VII-K, S-112 concrete screener and A-112 water spray system will be added in table VII-L, S-113 storage piles and A-113 water spray system will be added in table VII-M, S-114 conveyors and A-114 water spray system will be added in table VII-N, S-115 wood waste shredder and A-115 water spray system will be added in table VII-O, S-116 wood waste screener and A-116 water spray system will be added in table VII-P, S-117 composting operation and A-117 water spray truck will be added in table VII-Q, and S-118 asphalt debris crushing and A-118 water spray system will be added in table VII-R.

VIII. Test Methods

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not applicable requirements.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

Statement of Basis:
Application No. 15376

Site A1840, West Contra Costa Sanitary Landfill, Inc.
Foot of Parr Boulevard, Richmond, CA 94901

Renewal of the Title V Permit

Changes to Permit, Section VIII:

None.

IX. Permit Shield

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review (MFR) permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A provision in a MFR permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program. The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has no permit shields. This permit has no streamlining.

Changes to Permit, Section IX:

None.

X. Revision History

This section of the permit summarizes the revisions that have been made to the permit since it was initially issued.

Changes to Permit, Section X:

The permit revisions associated with this renewal were added to Section X.

XI. Glossary

This section of the permit defines and explains phrases, acronyms, abbreviations and other terms that are used in this permit.

Changes to Permit, Section XI:

Since references to "Toxic Risk Management Policy" in the permit have been changed to the BAAQMD Regulation 2 Rule 5, New Source Review for Toxic Air Contaminants, "TRMP" will be deleted from the glossary.

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

Statement of Basis:
Application No. 15376

Site A1840, West Contra Costa Sanitary Landfill, Inc.
Foot of Parr Boulevard, Richmond, CA 94901

Renewal of the Title V Permit

E. Compliance Status:

A June 16, 2010 office memorandum from the Director of Compliance and Enforcement, to the Director of Permit Services, presents a review of the compliance record of WCCSL (Site # A1840). The Compliance and Enforcement Division staff has reviewed the records for WCCSL for the period between May 29, 2002 through May 31, 2010. This review was initiated as part of the District evaluation of an application by WCCSL for a Title V Permit Renewal. During the period subject to review, activities known to the District include:

- The District issued 32 Notices of Violation (NOVs) to WCCSL during the period from May 29, 2002 to May 31, 2010. All violations associated with the NOVs were addressed and the facility was in compliance at the time of this review. The District's analysis of the NOVs for the 8-year period indicated that there are no ongoing violations or pattern of recurring violations that would currently require a compliance schedule.
- The District received two air pollution complaints alleging WCCSL as the source: one was confirmed and the other one was unconfirmed.
- The District received 41 notifications for Reportable Compliance Activity (RCA): 18 breakdown request, 20 indicated parametric monitor violations, and three in-operative monitor reports. One of the RCAs resulted in a NOV.
- The facility is operating under a variance, Docket #3552, to allow WCCSL to connect wells and leachate sumps to a gas collection unit and to cap areas of the Class II landfill to reduce emissions from the landfill surface and collection unit.
- The facility is not operating an Order of Abatement from the District Board.

The owner submitted a certification statement dated October 26, 2006 in the Title V permit renewal application certifying that all equipment was operating in compliance.

The Compliance and Enforcement Division has determined that for the eight -year period reviewed (from May 29, 2002 to May 31, 2010), West Contra Costa Sanitary Landfill was in intermittent compliance. However, there is no evidence of on-going non-compliance and no recurring pattern of violations that would warrant consideration of a Title V permit compliance schedule. The compliance report is contained in Appendix E of this statement of basis.

F. Differences between the Application and the Proposed Permit:

The Title V permit application for renewal was originally received on October 30, 2006. On January 18, 2007, existing sources S-11 through S-18 at this site, which were permitted under facility number A0198, were transferred to facility number A1840 and renumbered S-111 through S-118, respectively; this was completed under application number 14621 (engineering evaluation attached in Appendix B). The Title V permit application for renewal lists these sources as S-11(#198) through S-18(#198). The proposed Title V permit for facility number A1840 lists these sources as S-111 through S-118, respectively.

Statement of Basis:
Application No. 15376

Site A1840, West Contra Costa Sanitary Landfill, Inc.
Foot of Parr Boulevard, Richmond, CA 94901

Renewal of the Title V Permit

Also, permitted under application number 14621 was a small diesel engine, S-110 that was previously exempt. S-110 was used to powering a wood waste screener, S-116. However, S-110 would not be in compliance with the Airborne Toxic Control Measure for Stationary Compression Ignition Engines, section 93115, title 17, California Code of Regulations, by the effective date for the source and was not in use. As such, WCCSL agreed to cancel the permit for S-110 and accept a permit condition on S-116 that prior to its operation using a power source that requires a District permit, WCCSL would obtain the required permit for the power source. This permit condition for S-116 is included in the proposed Title V permit.

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APPENDIX A

ENGINEERING EVALUATION

For the Leachate Treatment Equipment

APPLICATION # 14473

APPLICATION # 14848

APPLICATION # 14622

APPLICATION # 14966

ENGINEERING EVALUATION
West Contra Costa Sanitary Landfill, Inc., Plant A1840
Application Number 14473
June 26, 2006

- I. BACKGROUND:** West Contra Costa Sanitary Landfill, Inc. (WCCSL) operates a municipal solid waste landfill facility in Richmond, California. This facility includes the active 160-acre Class II landfill (S15) and the 28-acre closed Class I landfill also known as the Hazardous Waste Management Facility (S46). Leachate, liquid runoff that contains small amounts of organic and toxic compounds, from the Class I landfill is collected and treated in an existing leachate treatment facility. This application is for an accelerated permit to operate to add the following equipment to the leachate treatment facility:

S41 HiPOx Advanced Oxidation System (ozone generator):
HiPOx APT, Inc., 35 gpm, 3 cfm abated by A41 Ozone Gas Destruct Unit:
Pacific Ozone Technology D412, 600 scfh.

The HiPOx system uses a combination of ozone and hydrogen peroxide to oxidize organic compounds in wastewater streams. The HiPOx system will be placed in the leachate treatment facility downstream of the existing air stripper (S30). Per District Regulation 2-1-128.17, ozone generators that produce more than one pound per day of ozone require permits.

- II. EMISSIONS:** The ozone generator in HiPOx system produces a 10% ozone/90% oxygen stream that is used to oxidize the VOC in the wastewater. The maximum ozone generation rate is 17 pounds per day; however, after wastewater treatment, the residual ozone will be converted to oxygen in the catalytic ozone gas destruct unit. The HiPOx system is also equipped with continuous ozone monitoring equipment that will alarm and shutdown the unit if ozone concentration exceeds 0.1 ppmv.

A. Emission Calculations - Based on 3 cfm flowrate and 0.1 ppmv ozone

$$\begin{aligned}\text{Ozone emissions} &= (3 \text{ ft}^3/\text{min}) * (0.1 \text{ ozone}/1\text{E}6) * (\text{lbmol}/386.9 \text{ ft}^3) \\ &\quad * (48 \text{ lbs ozone}/ \text{lbmol}) * (60\text{min}/\text{hr}) \\ &= 2.2\text{E}-6 \text{ lbs ozone}/\text{hr} \\ &= 5.4\text{E}-5 \text{ lbs ozone}/\text{day} \\ &= 0.02 \text{ lbs ozone}/\text{yr}\end{aligned}$$

B. Cumulative Emissions: No increase in POC, NPOC, NO_x, SO_x, PM₁₀, or CO emissions.

- III. HEALTH RISK ANALYSIS:** A health risk analysis is not required because ozone emissions do not exceed the trigger levels (0.4 lbs/hr and 7000 lbs/yr) found in Regulation 2, Rule 5, Table 2-5-1.

IV. MONITORING REQUIREMENTS: The HiPOx system shall be equipped with continuous ozone monitoring sensors in the exhaust that will alarm and shutdown the system if ozone concentrations are detected above 0.1 ppmv. (basis: Regulation 1-301)

V. STATEMENT OF COMPLIANCE

- A. California Environmental Quality Act Requirements (CEQA, Regulation 2-1-310 and 426):** Under District Regulation 2-1-312.11, the operation of the HiPOx system is exempt from CEQA review because the project has no potential for causing a significant environmental effect.
- B. Public Notice, Schools (Regulation 2-1-412):** 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.
- C. Best Available Control Technology (BACT):** There are no BACT requirements for the emissions of ozone.
- D. Offsets:** There are no offset requirements for the emissions of ozone.
- E. Prevention of Significant Deterioration (PSD):** There are no PSD requirements for the emissions of ozone.
- F. Maximum Achievable Control Technology (MACT):** Total Hazardous Air Pollutant (HAP) emissions from WCCSL are less than 25 tons per year with no single HAP emissions exceeding 10 tons per year; thus, WCCSL is not major facility of HAPs and Regulation 2-2-317 does not apply.
- G. New Source Review for Toxic Air Contaminants:** The operation of the HiPOx System is not subject to Regulation 2, Rule 5 because the emissions of ozone are below the trigger levels found in Table 2-5-1 (0.4 lbs/hr and 7000 lbs/yr).
- H. Major Facility Review (MFR):** A Title V Permit has been issued for this facility. The proposed HiPOx system will require a minor revision to the MFR Permit pursuant to Regulation 2-6-201. This evaluation report serves as the statement of basis for the minor MFR permit revision.
- I. Federal Requirements:** This application is not subject to federal NSPS or NESHAP requirements.
- J. General Provisions:** This application is subject to Regulation 1-301, Public Nuisance standard. However, ozone emissions are negligible and no violation of this standard is expected.

VI. PERMIT CONDITIONS: The following permit conditions are proposed for the HiPOx system.

1. S41, HiPOx Advanced Oxidation System, shall be abated at all times during operation by A41, Ozone Gas Destruct Unit. (basis: Regulation 1-301)
2. S41 shall be equipped with a continuous ozone monitoring sensor in the exhaust gas stack that will alarm and shutdown the ozone generator when ozone concentrations are detected above 0.1 ppmv. (basis: Regulation 1-301)
3. Wastewater throughput to S41 shall not exceed 40,800 gallons per day or 14,892,000 gallons per year. (basis: Cumulative Increase)
4. The owner/operator shall maintain, in a District approved logbook, daily records of the amount of wastewater treated. All records shall be retained on site for a minimum of 5 years and shall be made available to District staff upon request. (basis: Cumulative Increase)

VII. RECOMMENDATION: Issue a Permit to Operate for the source listed below.

**S41 HiPOx Advanced Oxidation System (ozone generator):
HiPOx APT, Inc., 35 gpm, 3 cfm abated by A41 Ozone Gas Destruct Unit:
Pacific Ozone Technology D412, 600 scfh.**

Jane H. Lundquist
Senior Air Quality Engineer
Engineering Division
June 26,2006

ENGINEERING EVALUATION
West Contra Costa Sanitary Landfill, Inc., Plant A1840
Application Number 14848

- I. BACKGROUND:** West Contra Costa Sanitary Landfill, Inc. (WCCSL) operates a municipal solid waste landfill facility in Richmond, California. This facility includes the active 160-acre Class II landfill (S15) and the 28-acre closed Class I landfill also known as the Hazardous Waste Management Facility (HWMF, S46). This application was originally for an accelerated permit to operate the following equipment:

S69 Inlet Storage Tank #1: 16,500-gallon Snyder High Density Linear Polyethylene Tank, 11.8 feet diameter, 21.5 feet high abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each

S70 Inlet Storage Tank #2: 16,500-gallon Snyder High Density Linear Polyethylene Tank, 11.8 feet diameter, 21.5 feet high abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs each

Leachate, liquid runoff that contains small amounts of organic and toxic compounds, from the HWMF is collected and treated in an existing leachate treatment facility (LTF). The inlet storage tanks, S69 and S70 will be used to equalize the flow of leachate from the HWMF well field, Class I condensate, LTF storm water and Corrective Action Management Unit (CAMU) rainwater. The combined volume of the two tanks will allow for storage of one to two days capacity from the HWMF well field in the event that the LTS needs to be shut down for repairs. The top liquid phase of the leach is a non-aqueous phase liquid (NAPL) that contains about 7.2 % volatile organic compounds (VOCs).

II. EMISSIONS:

A. Emission Calculations – Emissions are estimated using the methodology described in EPA's AP42 Chapter 7.1 Organic Liquid Storage Tanks. EPA's TANKS 4.0.9d program was used to calculate the emissions. Total throughput of wastewater through both tanks will not exceed 14,892,000 gallons per year. Emission estimates were based on a worst-case throughput of the NAPL layer.

1. The applicant provided estimates of unabated VOC emissions. The concentrations of compounds in the NAPL layer, the applicant's basis for estimating emissions and the EPA's TANKS 4.0.9d program results are in attachment A. VOC emissions were based on the concentrations of the petroleum hydrocarbon fractions. Within the TANKS program, the gasoline fraction was treated as gasoline RVP11, the diesel and Stoddard solvent fractions were treated as distillate fuel oil no.2, the motor oil was treated as crude, and the remainder was treated as residual fuel oil no. 6. Unabated VOC emissions are 1732 pounds per year. Two 2000-pound carbon vessels connected in series abate these tanks. Assuming an abatement efficiency of 99% by weight, VOC emissions are not expected to exceed 20 pounds per year (0.01 tons per year).
2. Unabated toxic air contaminant (TAC) emissions were estimated using the TANK program in the partial speciation option, the TAC concentrations provided by the applicant and conservatively assuming crude as the liquid. The results are in attachment B. Unabated TAC emissions are 138 pounds per year, with each individual TAC emission below its respective Table 2-5-1 TAC trigger level. Since

two 2000-pound carbon vessels connected in series abate these tanks, actual TAC emissions will be much lower.

B. Cumulative Emissions: Table 1 shows the potential to emit emissions for the entire facility including the inlet storage tanks. Table 2 shows the cumulative emissions for this facility.

Table 1 - Potential to Emit for the Facility Including New Inlet Storage Tanks						
Description	NMOC, tons/yr	NOx, tons/yr	CO, tons/yr	PM ₁₀ , tons/yr	SOx, tons/yr	Estimated Under Application#
Class II Landfill, S15	12.44					AN11375
Flare for S15, A3	2.01	13.44	67.22	3.76	19.33	AN11375
IC Engine, S5	2.61	11.93	43.33	2.30	4.65	AN11375
IC Engine, S6	2.61	11.93	43.33	2.30	4.65	AN11375
IC Engine, S37	2.30	10.52	31.40	2.25	4.10	AN11375
Leachate System, S22-30 and S38-40	2.68					AN11375
HWMF Landfill, S46	1.43					AN2789 & 8514
Flare for S46, A11	0.34	1.37	6.86	0.39	1.14	AN2789 & 8514
Transfer Station, S50				142.39 ⁽¹⁾		AN13247
Inlet Storage Tanks, S69 and S70	0.01					AN14848
PTE Totals	26.43	49.18	192.14	153.39	33.87	

(1) Value includes fugitive vehicle traffic (VT) emissions for which S15 VT emission reductions will provide offsets.

Table 5 – Cumulative Increases					
Description	POC, tons/yr	NOx, tons/yr	CO, tons/yr	PM ₁₀ , tons/yr	SOx, tons/yr
Cumulative Emission Increase (post 4/5/1991) Established in AN8514	0.000	0.000	6.378	0.429	4.094
Emission Increase from AN11375 ⁽²⁾	6.25	10.44	47.29	2.67	11.71
Emission Increase from AN13247				1.39	
Emission Increase from this application (AN14848)	0.01				
New Cumulative Emission Totals	6.26	10.44	53.67	4.49	15.80

(2) Under application number 11375, offsets were provided for the 10.44 tpy NOx cumulative increase from the small facilities bank account and must be reimbursed when any increase in the PTE for these pollutants trigger new offset requirements.

III. HEALTH RISK ANALYSIS: A health risk analysis is not required because toxic air contaminant emissions do not exceed the trigger levels found in Regulation 2, Rule 5, Table 2-5-1.

IV. MONITORING REQUIREMENTS: The owner/operator shall maintain records of the type and amount of liquids stored in S69 and S70. To monitor for carbon vessel breakthrough the owner/operator shall maintain records of the NMOC concentrations at the inlet to A12, the first carbon vessel in series, at the outlet of the A12, and at the outlet of the A13, the last carbon vessel in series. The owner/operator shall maintain records of the carbon vessel replaced and the date of replacement. These records shall be retained on site for a minimum of five years from the date of entry and shall be made available to the District representatives upon request. (basis: Cumulative Increase, Regulations 2-6-501, and 8-5-501.1)

V. STATEMENT OF COMPLIANCE

- A. California Environmental Quality Act Requirements** (CEQA, Regulation 2-1-310 and 426): The inlet storage tanks S69 and S70 are evaluated in accordance with District Permit Handbook Chapter 4 “Organic Liquid Storage Tanks”; as such, these sources qualify for a ministerial exemption from CEQA review.
- B. Public Notice, Schools** (Regulation 2-1-412): 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.
- C. Best Available Control Technology** (BACT, Regulation 2-2-301): BACT is not required because emission increases of POC and NPOC from this project will not exceed 10 pounds per highest day.
- D. Offsets** (Regulation 2-2-302): Offsets will not be required because POC are less than 35 tons per year.
- E. Prevention of Significant Deterioration** (PSD, Regulation 2-2-304): Emissions from S69 and S70 do not trigger PSD requirements.
- F. Major Facility Review** (MFR, Regulation 2, Rule 6): A Title V Permit has been issued for this facility. The permitting of S69 and S70 will require a minor revision to the MFR Permit pursuant to Regulation 2-6-201. This evaluation report serves as the statement of basis for the minor MFR permit revision.
- G. Maximum Achievable Control Technology** (MACT, Regulation 2-2-317): Total Hazardous Air Pollutant (HAP) emissions from WCCSL are less than 25 tons per year with no single HAP emissions exceeding 10 tons per year; thus, WCCSL is not major facility of HAPs and Regulation 2-2-317 does not apply.
- H. New Source Performance Standards** (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP): This application is not subject to federal NSPS and NESHAP requirements.
- I. New Source Review for Toxic Air Contaminants** (Regulation 2, Rule 5): The operation of the two inlet storage tanks abated by carbon adsorption is not subject to Regulation 2, Rule 5 because the emissions TACs are below the trigger levels found in Table 2-5-1.
- J. Storage of Organic Liquids** (Regulation 8, Rule 5): Operation of the two inlet storage tanks with carbon adsorption abatement will be in compliance with Regulation 8-5-301. The carbon adsorbers, with an abatement efficiency at least 95% by weight, will be in compliance with Regulation 8-5-306.

VI. PERMIT CONDITIONS: The following permit conditions are proposed for the inlet storage tanks and will be consistent with the permit conditions for the leachate treatment system modifications under application number 14769 that will also vent to the same carbon vessels.

1. The owner/operator shall not exceed a combined wastewater throughput limit of 40,800 gallons per day nor 14,892,000 gallons during any consecutive twelve-month period in the inlet storage tanks, S69 and S70. The wastewater streams from the following are permitted for S69 and S70:
 - class I leachate well field
 - class I landfill gas condensate
 - leach treatment facility storm water
 - Corrective Action Management Unit (CAMU) storm water(Basis: Cumulative Increase, Regulation 2 Rule 5)
2. The owner/operator shall vent the S69 and S70 inlet storage tanks to A12 and A13, two 2000-pound activated carbon vessels arranged in series. Influent vapor flow to the carbon vessels shall not exceed 200 scfm. (Basis: Regulation 8-5-301, Cumulative Increase, Regulation 2 Rule 5)
3. Detectable non-methane organic compound (NMOC) leaks shall not exceed concentrations higher than 100 ppmv (measured as methane) above background at a distance of 1 cm from any of the valves, flanges, or pumps. (Basis: Cumulative Increase)
4. The owner/operator shall change out A12, the first carbon vessel in series, with unspent carbon upon measuring a NMOC concentration at the A12 outlet that meets both of the following conditions:
 - a. NMOC concentration is 10 % or more of the A12 inlet concentration, and
 - b. NMOC concentration is 10 ppmv or greater (measured as methane).(Basis: Cumulative Increase, Regulation 2 Rule 5)
5. The owner/operator shall change out A13, the last carbon vessel, with unspent carbon upon measuring a NMOC concentration at the A13 outlet of 6 ppmv or greater (measured as methane). (Basis: Cumulative Increase, Regulation 2 Rule 5)
6. To determine compliance with Part 1, the owner/operator shall maintain the following records:
 - a. Daily records of the type of liquid and the liquid throughput to S69 and S70, and
 - b. Monthly totals of the liquid throughputs over the previous 12-month period.(Basis: Cumulative Increase, Regulation 2 Rule 5)
7. To determine compliance with Parts 4 and 5, the owner/operator shall:
 - a. Measure NMOC concentrations with a flame-ionization detector (FID), or other method approved in writing by the Air Pollution Control Officer. To determine the presence of methane, readings at each monitoring location shall be taken with and without an unspent carbon filter tip fitted on the FID probe. Concentrations measured with the carbon filter tip in place shall be considered methane. Measurements shall be conducted at the following locations:
 - i. At the inlet to A12, the first carbon vessel in series.
 - ii. At the outlet of A12, the first carbon vessel in series.
 - iii. At the outlet of A13, the last carbon vessel in series prior to venting to the atmosphere.
 - b. Calculate and record the period of time that the carbon vessels may operate until breakthrough occurs based on the emissions of all sources vented to the carbon vessels.

- c. Measure NMOC concentrations at the inlet and outlet of A12 and at the outlet of A13 on at least a:
 - i. monthly basis when the period of time until breakthrough is 40 days or longer;
 - ii. weekly basis when the period of time until breakthrough is between 10 days and 40 days;
 - iii. daily basis when the period of time until breakthrough is 10 days or less.
- d. Record these measurements in a monitoring log at the time they are taken.
- e. Record the carbon vessel(s) replaced with unspent carbon and the date of replacement.

(Basis: Cumulative Increase, Regulation 2 Rule 5)

- 8. The owner/operator shall maintain, in a District approved log, all measurements, data and calculations that are required to be recorded. These records shall be retained on-site for a minimum of five years following the date of entry and shall be made available to the District representatives upon request. (Basis: Cumulative Increase, Regulation 2 Rule 5, Regulation 2-6-501)

VII. RECOMMENDATION: A temporary permit to operate for these tanks was issued on August 1, 2006 and will expire on September 24, 2006. The facility has not yet installed these tanks. I recommend that we issue an Authority to Construct for the sources listed below with the conditions listed in part VI. If necessary, this will provide the facility flexibility to install the tanks after the temporary permit to operate expires.

S69 Inlet Storage Tank #1: 16,500-gallon Snyder High Density Linear Polyethylene Tank, 11.8 feet diameter, 21.5 feet high abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs each

S70 Inlet Storage Tank #2: 16,500-gallon Snyder High Density Linear Polyethylene Tank, 11.8 feet diameter, 21.5 feet high abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs each

Jane H. Lundquist
Senior Air Quality Engineer
Engineering Division
September 12, 2006

ENGINEERING EVALUATION
West Contra Costa Sanitary Landfill, Inc., Plant A1840
Foot of Parr Blvd, Richmond, California
Application Number 14622, Leachate Treatment Facility Air Stripper

I. BACKGROUND: West Contra Costa Sanitary Landfill, Inc. (WCCSL) operates a municipal solid waste landfill facility in Richmond, California. This facility includes a 160-acre closed Class II landfill (S15) and a 28-acre closed Class I landfill also known as the Hazardous Waste Management Facility (HWMF, S46). Leachate from the class I well field, condensate from the class I landfill gas collection system, storm water from the Leachate Treatment Facility and storm water from the Corrective Action Management Unit are collected and treated in the Leachate Treatment Facility (LTF). This application is for a new air stripper that will replace the existing air stripper, S30 in the LTF:

S48 Air Stripper: Paragon 4 tray low profile, 29 gpm, 295 cfm abated by A14, A15, A16 and A17, Four Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each

II. EMISSIONS:

A. Air Stripper Emissions: Emission calculations are based on the maximum throughput of wastewater in the air stripper, 40800 gallons per day, the concentration of pollutant in the wastewater and the stripper efficiency for the pollutant provided by the applicant. The results are presented in the table below.

Table 1 Emissions								
Pollutant	Conc. in wastewater, ppb ⁽¹⁾	Stripper Efficiency, % ⁽¹⁾	Unabated Emissions, lbs/day ⁽²⁾	Abated Emissions, lbs/day ⁽³⁾	Abated Emissions, lbs/yr	Reg 2-5 Chronic TAC Trigger Level, lbs/yr	Abated Emissions, lbs/hr	Reg 2-5 Acute TAC Trigger Level, lbs/hr
1,1,1-Trichloroethane	1,700	99.92	5.78E-01	1.16E-02	4.22E+00	3.9E+04	2.41E-02	1.5E+02
1,1,2,2-Tetrachloroethane	125	0.00	0.00E+00	0.00E+00	0.00E+00	3.2E+00	0.00E+00	na
1,1,2-Trichloroethane	770	86.07	2.26E-01	4.51E-03	1.65E+00	1.1E+01	9.40E-03	na
1,1-Dichloroethane	4,300	99.33	1.45E+00	2.91E-02	1.06E+01	1.1E+02	6.06E-02	na
1,1-Dichloroethene	2,300	99.97	7.82E-01	1.56E-02	5.71E+00	2.7E+03	3.26E-02	na
1,2,4-Trimethylbenzene	1,000	99.76	3.39E-01	6.79E-03	2.48E+00	na	1.41E-02	na
1,2-Dichlorobenzene	3,000	93.45	9.54E-01	1.91E-02	6.96E+00	na	3.97E-02	na
1,2-Dichloroethane	9,600	89.86	2.94E+00	5.87E-02	2.14E+01	8.9E+00	1.22E-01	na
1,2-Dichloropropane	180	97.28	5.96E-02	1.19E-03	4.35E-01	na	2.48E-03	na
1,3,5-Trimethylbenzene	400	99.74	1.36E-01	2.72E-03	9.91E-01	na	5.66E-03	na
1,4-Dichlorobenzene	60	95.35	1.95E-02	3.89E-04	1.42E-01	1.6E+01	8.11E-04	na
1,4-Dioxane	40,000	0.00	0.00E+00	0.00E+00	0.00E+00	2.4E+01	0.00E+00	6.6E+00
2-Butanone (MEK)	1,200,000	0.00	0.00E+00	0.00E+00	0.00E+00	3.9E+04	0.00E+00	2.9E+01
4-Methyl-2-Pentanone (MIBK)	87,000	85.21	2.52E+01	5.05E-01	1.84E+02	na	1.05E+00	na
Acetone	560,000	0.00	0.00E+00	0.00E+00	0.00E+00	na	0.00E+00	na

Table 1 Emissions (continued)								
Pollutant	Conc. in wastewater, ppb ⁽¹⁾	Stripper Efficiency, % ⁽¹⁾	Unabated Emissions, lbs/day ⁽²⁾	Abated Emissions, lbs/day ⁽³⁾	Abated Emissions, lbs/yr	Reg 2-5 Chronic TAC Trigger Level, lbs/yr	Abated Emissions, lbs/hr	Reg 2-5 Acute TAC Trigger Level, lbs/hr
Benzene	6,000	99.32	2.03E+00	4.06E-02	1.48E+01	6.4E+00	8.45E-02	2.9E+00
Carbon Disulfide	114	99.99	3.88E-02	7.76E-04	2.83E-01	3.1E+04	1.62E-03	1.4E+01
Carbon Tetrachloride	164	99.97	5.58E-02	1.12E-03	4.07E-01	4.3E+00	2.32E-03	4.2E+00
Chlorobenzene	1,800	98.48	6.03E-01	1.21E-02	4.40E+00	3.9E+04	2.51E-02	na
Chloroethane	4,300	99.85	1.46E+00	2.92E-02	1.07E+01	1.2E+06	6.09E-02	na
Chloroform	2,400	99.61	8.13E-01	1.63E-02	5.94E+00	3.4E+01	3.39E-02	3.3E-01
Chloromethane	780	99.00	2.63E-01	5.26E-03	1.92E+00	na	1.09E-02	na
cis-1,2-Dichloroethene	14,000	99.49	4.74E+00	9.48E-02	3.46E+01	na	1.97E-01	na
Diethyl ether	24,000	95.58	7.81E+00	1.56E-01	5.70E+01	na	3.25E-01	na
Diisopropyl ether	60	86.86	1.77E-02	3.55E-04	1.29E-01	na	7.39E-04	na
Ethyl Benzene	1,900	99.52	6.43E-01	1.29E-02	4.70E+00	7.7E+04	2.68E-02	na
Isopropylbenzene	60	99.94	2.04E-02	4.08E-04	1.49E-01	na	8.50E-04	na
Methylene Chloride	220,000	96.89	7.25E+01	1.45E+00	5.29E+02	1.8E+02	3.02E+00	3.1E+01
Methyl-t-butyl Ether	60	86.96	1.78E-02	3.55E-04	1.30E-01	3.6E+02	7.40E-04	na
Naphthalene	2,300	0.00	0.00E+00	0.00E+00	0.00E+00	5.3E+00	0.00E+00	na
n-Propylbenzene	7	99.92	2.38E-03	4.76E-05	1.74E-02	na	9.92E-05	na
ter-Butyl Alcohol (TBA)	180,000	0.00	0.00E+00	0.00E+00	0.00E+00	na	0.00E+00	na
Tetrachloroethene	600	99.91	2.04E-01	4.08E-03	1.49E+00	3.0E+01	8.50E-03	4.4E+01
Tetrahydrofuran	29,000	0.00	0.00E+00	0.00E+00	0.00E+00	na	0.00E+00	na
Toluene	96,000	99.41	3.25E+01	6.49E-01	2.37E+02	1.2E+04	1.35E+00	8.2E+01
trans-1,2-Dichloroethene	60	99.76	2.04E-02	4.07E-04	1.49E-01	na	8.49E-04	na
Trichloroethene	3,600	99.77	1.22E+00	2.44E-02	8.92E+00	9.1E+01	5.09E-02	na
Trichlorofluoromethane	60	100.00	2.04E-02	4.08E-04	1.49E-01	2.7E+04	8.51E-04	na
Vinyl Chloride	4,500	99.98	1.53E+00	3.06E-02	1.12E+01	2.4E+00	6.38E-02	4.0E+02
Xylenes	9,700	99.81	3.29E+00	6.59E-02	2.40E+01	2.7E+04	1.37E-01	4.9E+01
		sum	1.63E+02	3.25E+00				

1. Pollutant concentrations in the wastewater and stripper efficiency by pollutant from applicant Table 1, Air Stripper Efficiency S48
2. Unabated Emissions, lbs/day = (40800 gal/day) * (8.34 lbs/gal) * (ppb/1E9) * (stripper efficiency, %/100)
3. Abated Emissions, lbs/day = (Unabated Emissions, lbs/day) * (1-carbon adsorber efficiency, 98%/100)

B. Estimated Breakthrough: Four 2000-pound carbon vessels, two vessels in parallel, each followed by a vessel in series, abate the air stripper emissions. Total unabated emissions are 163 lbs organics per day. Based on an adsorptive capacity of 29% by weight, the number of days until breakthrough of a single carbon vessel is 3.6 days.

$$\text{days until breakthrough} = (2000 \text{ lbs carbon}) * (0.29 \text{ lbs organic adsorbed/lb carbon}) / (163 \text{ lbs organics/day})$$

C. Cumulative Emissions: Table 2 shows the potential to emit emissions for the entire facility including the modifications to the LTF.

Table 2 - Potential to Emit for the Facility						
Description	NMOC, tons/yr	NOx, tons/yr	CO, tons/yr	PM ₁₀ , tons/yr	SOx, tons/yr	Estimated Under Application#
Class II Landfill, S15	12.44					AN11375
Flare for S15, A3	2.01	13.44	67.22	3.76	19.33	AN11375
IC Engine, S5	2.61	11.93	43.33	2.30	4.65	AN11375
IC Engine, S6	2.61	11.93	43.33	2.30	4.65	AN11375
IC Engine, S37	2.30	10.52	31.40	2.25	4.10	AN11375
HWMF Landfill, S46	1.43					AN2789 & 8514
Flare for S46, A11	0.34	1.37	6.86	0.39	1.14	AN2789 & 8514
Transfer Station, S50				142.39 ⁽¹⁾		AN13247
Inlet Storage Tanks, S69 and S70	0.02					AN14848
Air Stripper S48	0.59					AN14622
Leachate System S71, S72, S73, S74, S75 and S76 (including exempt oil holding tanks)	0.19					AN14966
PTE Totals	24.54	49.18	192.14	153.39	33.87	

(1) Value includes 142.2 tpy of fugitive vehicle traffic emissions.

Maximum emission for the new S48 air stripper is 0.59 tpy of POC. The maximum emission for the S30 air stripper that is being replaced was calculated in application number 11375 and is 0.82 tpy of POC. Net cumulative increase resulting from the replacement and new wastewater concentrations is - 0.23 tons of POC per year.

Table 3 – Cumulative Increases Since 4/5/1991					
Description	POC, tons/yr	NOx, tons/yr	CO, tons/yr	PM ₁₀ , tons/yr	SOx, tons/yr
Cumulative Emission Increase (post 4/5/1991) Established in AN8514	0.000	0.000	6.378	0.429	4.094
Emission Increase from AN11375 ⁽¹⁾	6.25	10.44	47.29	2.67	11.71
Emission Increase from AN13247				1.39	
Emission Increase from AN14848	0.02				
Emission Increase from AN14966	-1.67				
Emission Increase from this application (AN14622)	-0.23				
New Cumulative Emission Totals	4.37	10.44	53.67	4.49	15.80

(1) Under application number 11375, offsets were provided for POC and NOx cumulative increase from the small facilities bank account. Any future WCCSL application that increases the POC PTE above 35 tpy will require that WCCSL provide offsets for the application as well as reimburse 4.37 tpy POC. Any future WCCSL application that increases the NOx PTE will require that WCCSL provide offsets for the application as well as reimburse 10.44 tpy NOx.

III. HEALTH RISK ANALYSIS: A health risk analysis is required because toxic air contaminant emissions of 1,2-Dichloroethane, Benzene, Methylene chloride, and Vinyl chloride (see Table 1 Emissions) exceed the trigger levels found in Regulation 2, Rule 5, Table 2-5-1. The health values used in the health risk analysis are from Table 1 – Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values, updated April 25, 2005. The ISCST3 dispersion model was run with a unit emission rate, Chevron Refinery meteorological data, the rural land use option, and USGS terrain data for San Quentin and

Richmond to determine the maximum annual average and one-hour average X/Q (concentration per unit emission rate) for the residential and worker receptors.

Table 4, Health Risks, shows the maximum incremental risks. The estimate of residential cancer risk is based on the assumption that residents are exposed to continuous annual average pollutant concentrations over a 70-year lifetime. The maximum incremental cancer risk for a residential receptor (located to the southeast of the facility) is 0.01 in a million. Estimates of the off-site worker cancer risk is based on a higher breathing rate (447 L/kg day instead of 302 L/kg day) and the assumption that the worker is exposed 8 hours per day, 245 days per year for 40 years out of a 70-year lifetime. The maximum incremental cancer risk for a worker receptor (located at the wastewater treatment facility to the east of the facility) is 0.05 in a million. The maximum chronic hazard index is 0.0003 and the acute hazard index is 0.003. These values are in compliance with Regulation 2-5.

Table 4 – Health Risks									
Pollutant	Abated Emissions, lbs/day	Abated Emissions, g/s ⁽¹⁾	Unit Risk Value ($\mu\text{g}/\text{m}^3\text{-}1$)	Chronic REL ($\mu\text{g}/\text{m}^3$)	Acute REL ($\mu\text{g}/\text{m}^3$)	Resident Cancer Risk ⁽³⁾	Worker Cancer Risk ⁽⁴⁾	Chronic Hazard Index ⁽⁵⁾	Acute Hazard Index ⁽⁶⁾
1,1,1-Trichloroethane	1.16E-02	6.07E-05		1.0E+03	6.8E+04				
1,1,2-Trichloroethane	4.51E-03	2.37E-05	1.5E-05			1.4E-10	5.3E-10		
1,1-Dichloroethane	2.91E-02	1.53E-04	1.5E-06			9.2E-11	3.4E-10		
1,1-Dichloroethene	1.56E-02	8.22E-05		7.0E+01				8.8E-06	
1,2-Dichloroethane	5.87E-02	3.08E-04	2.1E-05	4.0E+02		2.6E-09	9.6E-09	5.8E-06	
1,4-Dichlorobenzene	3.89E-04	2.04E-06	1.1E-05	8.0E+02		9.0E-12	3.3E-11	1.9E-08	
Benzene	4.06E-02	2.13E-04	2.9E-05	6.0E+01	1.3E+03	2.5E-09	9.1E-09	2.7E-05	2.9E-04
Carbon Disulfide	7.76E-04	4.07E-06		8.0E+02	6.2E+03			3.8E-08	1.2E-06
Carbon Tetrachloride	1.12E-03	5.86E-06	4.2E-05	4.0E+01	1.9E+03	9.8E-11	3.6E-10	1.1E-06	5.5E-06
Chlorobenzene	1.21E-02	6.33E-05		1.0E+03				4.8E-07	
Chloroethane	2.92E-02	1.53E-04		3.0E+04				3.8E-08	
Chloroform	1.63E-02	8.54E-05	5.3E-06	3.0E+02	1.5E+02	1.8E-10	6.7E-10	2.1E-06	1.0E-03
Ethyl Benzene	1.29E-02	6.76E-05		2.0E+03				2.5E-07	
Methylene Chloride	1.45E+00	7.62E-03	1.0E-06	4.0E+02	1.4E+04	3.0E-09	1.1E-08	1.4E-04	9.7E-04
Methyl-t-butyl Ether	3.55E-04	1.86E-06	5.4E-07	8.0E+03		4.0E-13	1.5E-12	1.7E-09	
Tetrachloroethene	4.08E-03	2.14E-05	5.9E-06	3.5E+01	2.0E+04	5.1E-11	1.9E-10	4.6E-06	1.9E-06
Toluene	6.49E-01	3.41E-03		3.0E+02	3.7E+04			8.5E-05	1.6E-04
Trichloroethene	2.44E-02	1.28E-04	2.0E-06	6.0E+02		1.0E-10	3.8E-10	1.6E-06	
Trichlorofluoromethane	4.08E-04	2.14E-06		7.0E+02				2.3E-08	
Vinyl Chloride	3.06E-02	1.61E-04	7.8E-05	2.6E+01	1.8E+05	5.0E-09	1.9E-08	4.6E-05	1.6E-06
Xylenes	6.59E-02	3.46E-04		7.0E+02	2.2E+04			3.7E-06	2.8E-05
					sum	1.4E-08	5.1E-08	3.3E-04	2.5E-03

- Abated Emissions, g/s = (Abated Emissions, lbs/day) * (453.6g/lb) * (day/24hrs) * (hr/3600s)
- ISCST3 modeling Results:
 - Maximum annual average resident X/Q is 0.4 ($\mu\text{g}/\text{m}^3$)/(g/s)
 - Maximum annual average off-site worker X/Q is 7.5 ($\mu\text{g}/\text{m}^3$)/(g/s)
 - Maximum one-hour average resident X/Q is 260 ($\mu\text{g}/\text{m}^3$)/(g/s)
 - Maximum one-hour average off-site worker X/Q is 1788 ($\mu\text{g}/\text{m}^3$)/(g/s)
- Residential Cancer Risk = (Abated Emissions, g/s) * (Residential Annual Average X/Q, ($\mu\text{g}/\text{m}^3$)/(g/s)) * (Unit Risk Value, ($\mu\text{g}/\text{m}^3$)/(g/s))⁻¹).
- Off-site Worker Cancer Risk = (Abated Emissions, g/s) * (Worker Annual Average X/Q, ($\mu\text{g}/\text{m}^3$)/(g/s)) * (Unit Risk Value, ($\mu\text{g}/\text{m}^3$)/(g/s))⁻¹ * (worker breathing rate/resident breathing rate, 447/302) * (8hr/24hr) * (245 days/350 days) * (40yrs/70yrs)
- Chronic Hazard Index = (Abated Emissions, g/s) * (Highest Annual Average X/Q, ($\mu\text{g}/\text{m}^3$)/(g/s)) / (Chronic REL ($\mu\text{g}/\text{m}^3$)/(g/s))⁻¹
- Acute Hazard Index = (Abated Emissions, g/s) * (Highest One-hour Average X/Q, ($\mu\text{g}/\text{m}^3$)/(g/s)) / (Acute REL ($\mu\text{g}/\text{m}^3$)/(g/s))⁻¹

IV. MONITORING REQUIREMENTS: To monitor for carbon vessel breakthrough the owner/operator shall maintain records of the NMOC concentrations at the inlet to A14 and

A16, the first carbon vessels in series, at the outlets of the A14 and A16, and at the outlet of the A15 and A17, the last carbon vessels in series. The owner/operator shall maintain records of the carbon vessel replaced and the date of replacement. These records shall be retained on site for a minimum of five years from the date of entry and shall be made available to the District representatives upon request. (basis: Cumulative Increase, Regulations 2-6-501, and 8-5-501.1)

V. STATEMENT OF COMPLIANCE:

- A. California Environmental Quality Act Requirements** (CEQA, Regulation 2-1-312 and 426): The replacements and modifications under this application fall in the categories of projects that are exempt from CEQA review per section 312.6 and 312.7. Section 312.6 exempts from CEQA review permit applications "...relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing." Section 312.7 exempts from CEQA review permit applications "...for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced."
- B. Public Notice, Schools** (Regulation 2-1-412): 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.
- C. Best Available Control Technology** (BACT, Regulation 2-2-301): BACT is not required because emission increases of POC and NPOC from this project will not exceed 10 pounds per highest day.
- D. Offsets** (Regulation 2-2-302): Offsets will not be required because POC are less than 35 tons per year.
- E. Prevention of Significant Deterioration** (PSD, Regulation 2-2-304): Emissions do not trigger PSD requirements.
- F. Major Facility Review** (MFR, Regulation 2, Rule 6): A Title V Permit has been issued for this facility. The replacement of the air stripper will require a minor revision to the MFR Permit pursuant to Regulation 2-6-201. This evaluation report serves as the statement of basis for the minor MFR permit revision.
- G. Maximum Achievable Control Technology** (MACT, Regulation 2-2-317): Total Hazardous Air Pollutant (HAP) emissions from WCCSL are less than 25 tons per year with no single HAP emissions exceeding 10 tons per year; thus, WCCSL is not major facility of HAPs and Regulation 2-2-317 does not apply.
- H. New Source Performance Standards** (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP): This application is not subject to federal NSPS and NESHAP requirements.
- I. New Source Review for Toxic Air Contaminants** (Regulation 2, Rule 5): As discussed in section III, the maximum incremental cancer risk is 0.05 in a million, chronic hazard index is 0.0003 and the acute hazard index is 0.003. These values are in compliance with Regulation 2, Rule 5.

- J. Air Stripping and Soil Vapor Extraction Operations** (Regulation 8, Rule 47):
Operation of the air stripper abated by carbon adsorption, with an abatement efficiency greater than 90% by weight, will be in compliance with Regulation 8-47-301 and 302.

VI. PERMIT CONDITIONS: The following permit conditions are proposed for the air stripper:

1. The owner/operator shall not exceed a combined wastewater throughput limit of 40,800 gallons per day nor 14,892,000 gallons during any consecutive twelve-month period in the S48 Air stripper. The wastewater streams from the following are permitted:
 - class I leachate well field
 - class I landfill gas condensate
 - leachate treatment facility storm water
 - Corrective Action Management Unit (CAMU) storm water(Basis: Cumulative Increase, Regulation 2 Rule 5)
2. The owner/operator shall vent the emissions from S48 to either A14 and A15, two 2000-pound activated carbon vessels arranged in series, or to A16 and A17, two 2000-pound activated carbon vessels arranged in series, during all periods of operation. Influent vapor flow to the carbon vessels shall not exceed 295 scfm. (Basis: Regulation 8-5-301, Cumulative Increase, Regulation 2 Rule 5)
3. Detectable non-methane organic compound (NMOC) leaks shall not exceed concentrations higher than 100 ppmv (measured as methane) above background at a distance of 1 cm from any of the valves, flanges, or pumps. (Basis: Cumulative Increase)
4. The owner/operator shall change out A14 or A16, the first carbon vessel in series, with unspent carbon upon measuring a NMOC concentration at the A14 or A16 outlet that meets both of the following conditions:
 - a. NMOC concentration is 10 % or more of the A14 or A16 inlet concentration, and
 - b. NMOC concentration is 10 ppmv or greater (measured as methane).(Basis: Cumulative Increase, Regulation 2 Rule 5)
5. The owner/operator shall change out A15 or A17, the last carbon vessel, with unspent carbon upon measuring a NMOC concentration at the A15 or A17 outlet of 6 ppmv or greater (measured as methane). (Basis: Cumulative Increase, Regulation 2 Rule 5)
6. Sufficient carbon inventory must be kept on site to completely replace at least two 2000-pound carbon vessels. Whenever a carbon vessel is replaced, the standby carbon vessel inventory shall be replenished within seven calendar days. (Basis: Cumulative Increase, Regulation 2 Rule 5)
7. To determine compliance with Part 1, the owner/operator shall maintain the following records:
 - a. Daily records of the type of liquid and the liquid throughput to the leachate treatment facility sources, and
 - b. Monthly totals of the liquid throughputs over the previous 12-month period.(Basis: Cumulative Increase, Regulation 2 Rule 5)
8. To determine compliance with Parts 4 and 5, the owner/operator shall:

- a. Measure NMOC concentrations with a flame-ionization detector (FID), or other method approved in writing by the Air Pollution Control Officer. To determine the presence of methane, readings at each monitoring location shall be taken with and without an unspent carbon filter tip fitted on the FID probe. Concentrations measured with the carbon filter tip in place shall be considered methane. Measurements shall be conducted at the following locations:
 - i. At the inlet to A14 or A16, the first carbon vessel in series that is in operation.
 - ii. At the outlet of A14 or A16, the first carbon vessel in series that is in operation.
 - iii. At the outlet of A15 or A17, the last carbon vessel in series that is in operation prior to venting to the atmosphere.
- b. Calculate and record the period of time that the carbon vessels may operate until breakthrough occurs based on the emissions from the air stripper.
- c. Measure NMOC concentrations at the inlet and outlet of A14 or A16, the first carbon vessel in series that is in operation, and at the outlet of A15 or A17, the last carbon vessel in series that is in operation, at least:
 - i. twice a week when the period of time until breakthrough is between 4 days and 10 days;
 - ii. daily when the period of time until breakthrough is 4 days or less.
- d. Record these measurements in a monitoring log at the time they are taken.
- e. Record the carbon vessel(s) replaced with unspent carbon and the date of replacement.

(Basis: Cumulative Increase, Regulation 2 Rule 5)

- 9. The owner/operator shall maintain, in a District approved log, all measurements, data and calculations that are required to be recorded. These records shall be retained on-site for a minimum of five years following the date of entry and shall be made available to the District representatives upon request. (Basis: Cumulative Increase, Regulation 2 Rule 5, Regulation 2-6-501)
- 10. Within 90 days after the start-up of the air stripper, S48, the owner/operator shall cease operating the air stripper, S30. (Basis: Cumulative increase, Regulation 2-2-410)

VII. RECOMMENDATION: Issue an Authority to Construct with the conditions listed in section VI for the source listed below.

S48 Air Stripper: Paragon 4 tray low profile, 29 gpm, 295 cfm abated by A14, A15, A16 and A17, Four Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each

Jane H. Lundquist
 Senior Air Quality Engineer
 Engineering Division
 December 5, 2006

ENGINEERING EVALUATION
West Contra Costa Sanitary Landfill, Inc., Plant A1840
Foot of Parr Blvd, Richmond, California
Application Number 14966, Medium-Term Leachate Treatment Facility

- I. **BACKGROUND:** West Contra Costa Sanitary Landfill, Inc. (WCCSL) operates a municipal solid waste landfill facility in Richmond, California. This facility includes a 160-acre closed Class II landfill (S15) and a 28-acre closed Class I landfill also known as the Hazardous Waste Management Facility (HWMF, S46). This application was submitted as an accelerated permit application. A temporary permit to operate was issued on October 12, 2006. The new sources began operations on December 11, 2006.

Leachate from the class I well field, condensate from the class I landfill gas collection system, storm water from the Leachate Treatment Facility (LTF) and storm water from the Corrective Action Management Unit are collected and treated in the LTF. Under the direction of the Department of Toxic Substances Control, WCCSL is replacing the current LTF with a "medium-term" LTF, located adjacent to the current LTF, that will operate for about a year while a more permanent LTF system is being designed. This accelerated permit application is for the permits to operate the following new equipment:

- S71 Primary Oil Water Separator: Hoffland Environmental Inc., OWS-100, 100 gpm abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each
- S72 Secondary Separator/Emulsion Breaker: HydroFlow Technologies, EBX 50 gpm abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each
- S73 Clarifier Holding Tank: Snyder Industries Inc., 500 gallon Polyethylene Storage Tank abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each
- S74 Inclined Plate Clarifier: Hoffland Environmental Inc., 250/60/MA 50 gpm abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each
- S75 Air Stripper Holding Tank: Snyder Industries Inc., 2000 gallon Polyethylene Storage Tank abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each
- S76 Sludge Thickener: Hoffland Environmental Inc., ACS-6ST-01, 50 gpm abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each

These medium-term LTF sources replace the following current LTF sources, which will be archived when the medium-term sources begin operation:

- S24 Load Equalization Tank: 750 gallon capacity
- S26 Neutralization Tank: 750 gallon capacity

- S29 Flocculation/Mixing Tank: 300 gallon capacity
- S27 First Stage Clarifier: Great Lakes Inclined Plate Clarifier, IPC-2-110, 20 gpm
- S28 Air Stripper Sump: 630 gallons
- S30 Air Stripper
- S33 Second Stage Clarifier: Great Lakes Inclined Plate Clarifier, IPC-2-110, 20 gpm
- S42 Primary Oil Water Separator: Clear Creek OWS 100, 100 gpm
- S43 Secondary Oil Water Separator: Clear Creek OWS 200, 200 gpm
- S45 Sludge Storage Tank: Rain for Rent, 4,900 gallons

II. EMISSIONS: The top liquid phase of the leach is a non-aqueous phase liquid (NAPL) that contains about 7.2 % volatile organic compounds (VOCs). Total throughput of wastewater will not exceed the current throughput limit of 14,892,000 gallons per year.

A. Waste Water Treatment Sources– Emissions from the LTF separators, clarifiers, holding tanks, and sludge thickener are estimated using the methodology described in EPA’s AP42 Chapter 4.3 Waste Water Collection, Treatment and Storage. Emission estimates were conservatively based the highest concentrations found in any wastewater stream. The attached Table 1, Wastewater TAC Concentrations, shows the toxic air contaminant (TAC) concentrations provided by the applicant for each of the wastewater streams. The attached Tables 2 through 7 shows the variables, equations and calculated unabated emission results for each source.

The table below shows a summary of emissions. Two 2000-pound carbon vessels connected in series abate all of the sources listed below. Assuming an abatement efficiency of 98% by weight, VOC emissions after abatement are 0.13 lb/day (0.024 tpy).

Source	Unabated Organic Emissions, lbs/day	Organic Emissions after abatement, lbs/day	Organic Emissions after abatement, tons/year
Primary Oil Water Separator, S71	1.36	0.027	0.005
Secondary Separator/ Emulsion Breaker, S72	1.91	0.038	0.007
Clarifier Holding Tank, S73	0.23	0.005	0.001
Inclined Plate Clarifier, S74	1.60	0.032	0.006
Air Stripper Holding Tank, S75	0.90	0.018	0.003
Sludge Thickener, S76	0.49	0.010	0.002
Subtotal	6.49	0.13	0.024
Inlet Storage Tanks, S69 and S70 permitted under AN14848	4.75	0.09	0.017
Total including inlet tanks	11.24	0.22	0.041

B. Estimated Breakthrough: Two 2000-pound carbon vessels connected in series abate all of the sources in this permit application and two inlet storage tanks S69 and S70. Total unabated emissions are less than 12 lbs organics per day. Based an adsorptive capacity of 29%, the number of days until breakthrough of a carbon vessel is 48 days.

$$\text{days until breakthrough} = (2000 \text{ lbs carbon}) * (0.29 \text{ lbs organic adsorbed/lb carbon}) / (12 \text{ lbs organics/day})$$

C. Cumulative Emissions: The table below shows the potential to emit emissions for the entire facility including the modifications to the LTF.

Potential to Emit for the Facility						
Description	NMOC, tons/yr	NOx, tons/yr	CO, tons/yr	PM ₁₀ , tons/yr	SOx, tons/yr	Estimated Under Application#
Class II Landfill, S15	12.44					AN11375
Flare for S15, A3	2.01	13.44	67.22	3.76	19.33	AN11375
IC Engine, S5	2.61	11.93	43.33	2.30	4.65	AN11375
IC Engine, S6	2.61	11.93	43.33	2.30	4.65	AN11375
IC Engine, S37	2.30	10.52	31.40	2.25	4.10	AN11375
HWMF Landfill, S46	1.43					AN2789 & 8514
Flare for S46, A11	0.34	1.37	6.86	0.39	1.14	AN2789 & 8514
Transfer Station, S50				142.39 ⁽¹⁾		AN13247
Inlet Storage Tanks, S69 and S70	0.02					AN14848
Air Stripper S48	0.59					AN14622
Leachate System S71, S72, S73, S74, S75 and S76 (including exempt oil holding tanks)	0.19					AN14966
PTE Totals	24.54	49.18	192.14	153.39	33.87	

(1) Value includes 142.2 tpy of fugitive vehicle traffic emissions.

Maximum emission for the new sources under this application is 0.19 tpy of POC. The maximum emissions for sources being replaced were calculated in application number 11375 and are 1.86 tpy of POC. Net cumulative increase resulting from the replacement and new wastewater concentrations is - 1.67 tons of POC per year.

Cumulative Increases Since 4/5/1991					
Description	POC, tons/yr	NOx, tons/yr	CO, tons/yr	PM ₁₀ , tons/yr	SOx, tons/yr
Cumulative Emission Increase (post 4/5/1991) Established in AN8514	0.000	0.000	6.378	0.429	4.094
Emission Increase from AN11375 ⁽²⁾	6.25	10.44	47.29	2.67	11.71
Emission Increase from AN13247				1.39	
Emission Increase from AN14848	0.02				
Emission Increase from AN14622	-0.23				
Emission Increase from this application (AN14966)	-1.67				
New Cumulative Emission Totals	4.37	10.44	53.67	4.49	15.80

(2) Under application number 11375, offsets were provided for POC and NOx cumulative increase from the small facilities bank account. Any future WCCSL application that increases the POC PTE above 35 tpy will require that WCCSL provide offsets for the application as well as reimburse 4.37 tpy POC. Any future WCCSL application that increases the NOx PTE will require that WCCSL provide offsets for the application as well as reimburse 10.44 tpy NOx.

III. HEALTH RISK ANALYSIS: A health risk analysis is not required because as shown in the attached Table 8, Summary of TAC emissions, toxic air contaminant emissions do not exceed the trigger levels found in Regulation 2, Rule 5, Table 2-5-1.

IV. MONITORING REQUIREMENTS: To monitor for carbon vessel breakthrough the owner/operator shall maintain records of the NMOC concentrations at the inlet to A12, the first carbon vessel in series, at the outlet of the A12, and at the outlet of the A13, the last carbon vessel in series. The owner/operator shall maintain records of the carbon vessel

replaced and the date of replacement. These records shall be retained on site for a minimum of five years from the date of entry and shall be made available to the District representatives upon request. (basis: Cumulative Increase, Regulations 2-6-501, and 8-5-501.1)

V. STATEMENT OF COMPLIANCE:

- A. California Environmental Quality Act Requirements** (CEQA, Regulation 2-1-312 and 426): The replacements and modifications under this application fall in the categories of projects that are exempt from CEQA review per section 312.6 and 312.7. Section 312.6 exempts from CEQA review permit applications "...relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing." Section 312.7 exempts from CEQA review permit applications "...for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced."
- B. Public Notice, Schools** (Regulation 2-1-412): 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.
- C. Best Available Control Technology** (BACT, Regulation 2-2-301): BACT is not required because emission increases of POC and NPOC from this project will not exceed 10 pounds per highest day.
- D. Offsets** (Regulation 2-2-302): Offsets will not be required because POC are less than 35 tons per year.
- E. Prevention of Significant Deterioration** (PSD, Regulation 2-2-304): Emissions do not trigger PSD requirements.
- F. Major Facility Review** (MFR, Regulation 2, Rule 6): A Title V Permit has been issued for this facility. The replacement of sources and modification of permit conditions will require a minor revision to the MFR Permit pursuant to Regulation 2-6-201. This evaluation report serves as the statement of basis for the minor MFR permit revision.
- G. Maximum Achievable Control Technology** (MACT, Regulation 2-2-317): Total Hazardous Air Pollutant (HAP) emissions from WCCSL are less than 25 tons per year with no single HAP emissions exceeding 10 tons per year; thus, WCCSL is not major facility of HAPs and Regulation 2-2-317 does not apply.
- H. New Source Performance Standards** (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP): This application is not subject to federal NSPS and NESHAP requirements.
- I. New Source Review for Toxic Air Contaminants** (Regulation 2, Rule 5): All of the sources reviewed under this application are abated by carbon adsorption. Emission levels of TACs are below the trigger levels found in Table 2-5-1 and the application is exempt from the provisions of Regulation 2, Rule 5 under section 2-5-110.

J. Miscellaneous Operations (Regulation 8, Rule 2): Operation of the S74 clarifier, S73 and S75 holding tanks and S76 sludge thickener abated by carbon adsorption will be in compliance with Regulation 8-2-301. Permit conditions limit non-methane hydrocarbon emission at the last carbon vessel outlet to no more than 6 ppmv.

K. Wastewater Collection and Separation Systems (Regulation 8, Rule 8): Operation of the S71 and S72 wastewater separators abated by carbon adsorption, with a combined collection and control efficiency of at least 95% by weight will be in compliance with Regulation 8-2-301.3. Operation of S71 and S72 with all the openings kept closed at all times except when the opening is used for the inspection and maintenance of the separators will be in compliance with Regulation 8-2-303.

VI. PERMIT CONDITIONS: The following permit conditions are proposed for the leachate treatment sources and are consistent with the permit conditions for the new inlet storage tanks, S69 and S70, permitted under application number 14848:

1. The owner/operator shall not exceed a combined wastewater throughput limit of 40,800 gallons per day nor 14,892,000 gallons during any consecutive twelve-month period in the inlet storage tanks, S69, S70, and the leachate treatment facility sources, S71, S72, S73, S74, S75 and S76. The wastewater streams from the following are permitted:
 - class I leachate well field
 - class I landfill gas condensate
 - leachate treatment facility storm water
 - Corrective Action Management Unit (CAMU) storm water(Basis: Cumulative Increase, Regulation 2 Rule 5)
2. The owner/operator shall vent the emissions from S69, S70, S71, S72, S73, S74, S75 and S76 to A12 and A13, two 2000-pound activated carbon vessels arranged in series. Influent vapor flow to the carbon vessels shall not exceed 200 scfm. (Basis: Regulation 8-5-301, Cumulative Increase, Regulation 2 Rule 5)
3. The owner/operator shall operate the wastewater separators, S71 and S72, with all the openings kept closed at all times except when the opening is used for the inspection and maintenance of the separators. (basis: Regulations 8-8-301 and 8-8-303)
4. Detectable non-methane organic compound (NMOC) leaks shall not exceed concentrations higher than 100 ppmv (measured as methane) above background at a distance of 1 cm from any of the valves, flanges, or pumps. (Basis: Cumulative Increase)
5. The owner/operator shall change out A12, the first carbon vessel in series, with unspent carbon upon measuring a NMOC concentration at the A12 outlet that meets both of the following conditions:
 - a. NMOC concentration is 10 % or more of the A12 inlet concentration, and
 - b. NMOC concentration is 10 ppmv or greater (measured as methane).(Basis: Cumulative Increase, Regulation 2 Rule 5)
6. The owner/operator shall change out A13, the last carbon vessel, with unspent carbon upon measuring a NMOC concentration at the A13 outlet of 6 ppmv or greater (measured as methane). (Basis: Cumulative Increase, Regulation 2 Rule 5)

7. To determine compliance with Part 1, the owner/operator shall maintain the following records:
 - a. Daily records of the type of liquid and the liquid throughput to the inlet storage tanks, S69 and S70, and to the leachate treatment facility sources.
 - b. Monthly totals of the liquid throughputs over the previous 12-month period.
(Basis: Cumulative Increase, Regulation 2 Rule 5)

8. To determine compliance with Parts 5 and 6, the owner/operator shall:
 - a. Measure NMOC concentrations with a flame-ionization detector (FID), or other method approved in writing by the Air Pollution Control Officer. To determine the presence of methane, readings at each monitoring location shall be taken with and without an unspent carbon filter tip fitted on the FID probe. Concentrations measured with the carbon filter tip in place shall be considered methane. Measurements shall be conducted at the following locations:
 - i. At the inlet to A12, the first carbon vessel in series.
 - ii. At the outlet of A12, the first carbon vessel in series.
 - iii. At the outlet of A13, the last carbon vessel in series prior to venting to the atmosphere.
 - b. Calculate and record the period of time that the carbon vessels may operate until breakthrough occurs based on the emissions of all sources vented to the carbon vessels.
 - c. Measure NMOC concentrations at the inlet and outlet of A12 and at the outlet of A13 on at least a:
 - i. monthly basis when the period of time until breakthrough is 40 days or longer;
 - ii. weekly basis when the period of time until breakthrough is between 10 days and 40 days;
 - iii. daily basis when the period of time until breakthrough is 10 days or less.
 - d. Record these measurements in a monitoring log at the time they are taken.
 - e. Record the carbon vessel(s) replaced with unspent carbon and the date of replacement.
(Basis: Cumulative Increase, Regulation 2 Rule 5)

9. The owner/operator shall maintain, in a District approved log, all measurements, data and calculations that are required to be recorded. These records shall be retained on-site for a minimum of five years following the date of entry and shall be made available to the District representatives upon request. (Basis: Cumulative Increase, Regulation 2 Rule 5, Regulation 2-6-501)

VII. RECOMMENDATION: Issue a Permit to Operate with the conditions listed in section VI for the sources listed below.

- S71 Primary Oil Water Separator: Hoffland Environmental Inc., OWS-100, 100 gpm abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each
- S72 Secondary Separator/Emulsion Breaker: HydroFlow Technologies, EBX 50 gpm abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each
- S73 Clarifier Holding Tank: Snyder Industries Inc., 500 gallon Polyethylene Storage Tank abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each

- S74 Inclined Plate Clarifier: Hoffland Environmental Inc., 250/60/MA 50 gpm abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each
- S75 Air Stripper Holding Tank: Snyder Industries Inc., 2000 gallon Polyethylene Storage Tank abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each
- S76 Sludge Thickener: Hoffland Environmental Inc., ACS-6ST-01, 50 gpm abated by A12 and A13, Two Vapor Phase Carbon Vessels: USFilter Westates VSC-2000, 2000 lbs, each

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December 12, 2006

APPENDIX B

ENGINEERING EVALUATION

**For the Transfer of
Facility Number A0198 Sources to A1840**

APPLICATION # 14621

ENGINEERING EVALUATION
West Contra Costa Sanitary Landfill, Inc., Plant A1840
Foot of Parr Blvd, Richmond, California
Application Number 14621, Concrete/Asphalt Recycling and Composting Operations

I. BACKGROUND: West Contra Costa Sanitary Landfill, Inc. (WCCSL), Plant A1840, in Richmond is a 340-acre site that includes the 160-acre closed Class II landfill (S15), the 28-acre closed Class I landfill also known as the Hazardous Waste Management Facility (HWMF, S46), a Solid Waste Transfer Station (S50) and a leachate treatment facility. Located within the Class II landfill are sources that had been permitted under plant number A0198, West County Landfill, Inc. Both plants, A1840 and A0198, are under common ownership or control, are located on contiguous property, and fall under a single major industrial grouping identified by the first two-digits of the applicable code in the Standard Industrial Classification Manual. Per the definitions in District Regulation 2, Rule 1, Section 213 and Rule 2, Section 215, these two plants (A1840 and A0198) meet the District's definitions of "Facility". In order to properly apply District requirements and Federal Major Facility Review requirements to all sources located at this site, the sources should be permitted under a single plant number. This application is to permit existing sources at A0198 that were previously exempt, but now require permits, and to consolidation all the sources located at this site under one plant number by transferring the A0198 sources to A1840.

Permits to Operate, under plant A1840, are to be issued for the following sources, which had at one time been exempt (Regulation 2-1-114.2 and 115.2), but now require permits:

S110 Diesel Engine Powering Wood Waste Screener S116: Cummins B5.9P, 174 hp engine

S117 Composting Operation: 40-acre area abated by A117 Water Spray Trucks

The Permits to Operate for plant A0198 sources and related abatement devices (S11, S12, S13, S14, S15, S16 and S18) shall be transferred to A1840 under the following source numbers:

S111 Concrete Crusher: Torgerson CXR Rubble Impactor, 200 tons/hr abated by A111 Water Spray System

S112 Crushed Concrete Screener: Tyler 2-Deck Portable Screening Plant, 200 tons/hr abated by A112 Water Spray System

S113 Concrete/Asphalt Storage Piles: 20-acre area for all concrete/asphalt operations abated by A113 Water Spray System

S114 Conveyors (Crushed Concrete): 62.5 tons/hr abated by A114 Water Spray System

S115 Wood/Yard Waste Shredder (Tub Grinder): Morbark 5600, 60 tons/hr abated by A115 Water Spray System

S116 Wood Waste Screener, Morbark 721, 60 tons/hr abated by A116 Water Spray System

S118 Crushing of Asphalt Debris: 7 tons/hr abated by A118 Water Spray System

Plant number A0198 shall be closed and the following sources and abatement devices archived:

S11 Concrete Crusher	A11 Water Spray System
S12 Crushed Concrete Screener	A12 Water Spray System
S13 Concrete/Asphalt Storage Piles	A13 Water Spray System
S14 Conveyors (Crushed Concrete)	A14 Water Spray System
S15 Wood/Yard Waste Shredder (Tub Grinder)	A15 Water Spray System
S16 Wood Waste Screener	A16 Water Spray System
S17 Composting Operation	
S18 Crushing of asphalt debris	A18 Water Spray System

WCCSL currently contracts the concrete and asphalt recycling operations to a third-party offsite facility. Per their May 5, 2006 letter, WCCSL confirms that the S111 concrete crusher, S112 crushed concrete screener, S114 crushed concrete conveyors and S115 wood waste tub grinder were currently not in operation and the diesel engines that powered these equipment have been removed. Although these sources do not have a power source, WCCSL wants to retain the permits to operate S111, S112, S114 and S115. WCCSL has agreed that if they use a power source that requires a District permit, they will obtain permits to operate for the power sources prior to commencing operation.

II. EMISSIONS: Particulate emissions are expected from vehicle traffic, the concrete and asphalt recycling operations, composting operations and diesel engine powering equipment. The composting operation will also have organic and ammonia emissions.

A. The particulate emission factors for the operation S111 Concrete Crusher, S112 Crushed Concrete Screener, S114 Conveyors (Crushed Concrete) and S118 Crushing of Asphalt Debris, are from AP42 5th Edition Section 11.19.2 Crushed Stone Processing and Pulverized Mineral Processing, Table 11.19.2-2 for uncontrolled tertiary crushing, screening, and conveyor transfer point. Abatement efficiencies are per permit handbook guidance for Crushing and Grinding (11.7).

B. The particulate emission factors for the operation of S115 Wood/Yard Waste Shredder (Tub Grinder) and S116 Wood Waste Screener are from AP42 4th Edition Section 10.3 Plywood Veneer and Layout Operations, Table 10.3-1 for log debarking, assuming 60% of emission is PM10. Abatement efficiencies are per permit handbook guidance for Tub Grinders (11.13).

C. Except for SO_x, the pollutant emission factors for the operation of S110 Diesel Engine Powering Wood Waste Screener are based on CARB certified diesel engine emissions rates for model year 2000, Cummins B5.9 engine (Executive order U-R-2-49, Engine Family YCEXL0359ABA).

Basis: 174 hp engine; 4.5 gal/hr max fuel rate, 3120 hours of operation per year.

$$\begin{aligned} \text{Annual Fuel Usage, Mgal/yr} &= (3120 \text{ hr/yr}) * (4.5 \text{ gal/hr}) * (\text{Mgal}/1000 \text{ gal}) \\ &= 14 \text{ Mgal/yr} \end{aligned}$$

$$\text{EF lb/Mgal} = [(\# \text{ g/hp hr}) * (174 \text{ hp}) / (453.6 \text{ g/lb}) / (4.5 \text{ gal/hr})] * (1000 \text{ gal/Mgal})$$

SO_x emission factor is based on S content in fuel for low sulfur diesel (0.05 wt %)

$$\begin{aligned} \text{EF, lbs/Mgal} &= [1000 \text{ gal/Mgal}] * [7.25 \text{ lbs/gal}] * [\text{S, wt\%}] * [0.01] * [64 \text{ lbs SO}_2/32 \text{ lb S}] \\ &= 7.25 \text{ lbs SO}_x/\text{Mgal} \end{aligned}$$

S110 Emission Factors		
Pollutant	g/hp hr	EF, lbs/Mgal
PM10	0.1	8.52
ORG	0.3	25.57
NOx	6.6	562.61
CO	0.6	51.15
SOx		7.25

D. Emission factors used for S113 Concrete/Asphalt Storage Piles are particulate emission factors for an inactive pile and from vehicle traffic emission. A 50% abatement efficiency is assumed for the water spray system on the storage pile.

1. The emission factor for an inactive storage pile is from AP42 4th Edition Section 8.19.1 Sand and Gravel Processing, Table 8.19.1-1.
2. The emission factor for vehicle traffic on paved roads to and from the concrete/asphalt storage piles is calculated based on 8000 feet of paved road estimated by the applicant and using the following equation found in EPA's AP42 5th Edition Chapter 13.2.1 Paved Roads, December 2003.

$$E_{\text{ext}} = [k (sL/2)^{0.65} (W/3)^{1.5} - C] (1 - P / 4N)$$

Where

E_{ext} = Emission factor, pounds per vehicle miles traveled (lbs/VMT)

k = particle size multiplier (lbs/VMT) = 0.016, for PM₁₀ from Table 13.2.1-1

sL = road surface silt loading (g/m²)

= 7.4, mean value for municipal solid waste landfills from Table 13.2.1-4

W = average weight of vehicles (tons) = 7.8, estimate provided by applicant

C = factor for 1980's vehicle fleet exhaust, brake and tire wear (lbs/VMT)

= 0.00047, for PM₁₀ from Table 13.2.1-2

P = number of days with at least 0.01 in. of precipitation in the averaging period

= 50 days, estimated from Graph of Probability of 0.01" Precipitation for Richmond obtained from the Western Regional Climate Center Website

(www.wrcc.dri.edu)

N = number of days in the averaging period = 365 for annual

$$E_{\text{paved}} = [0.016 (7.4/2)^{0.65} (7.8/3)^{1.5} - 0.00047] (1 - 50 / 4(365)) = 0.151 \text{ lbs/VMT}$$

$$\text{Emission Factor (paved), lbs/vehicles} = E_{\text{paved}} * \text{VMT} = (0.151) * (8000/5280) = 0.229$$

3. The emission factor for vehicle traffic on unpaved roads to and from the concrete/asphalt storage piles is calculated based on 1000 feet of unpaved road estimated by the applicant and using the following equations found in EPA's AP42 5th Edition Chapter 13.2.2 Unpaved Roads, December 2003. Assume 75% abatement efficiency for use of dust suppressant.

$$E = k (s/12)^a (W/3)^b \quad \text{and} \quad E_{\text{ext}} = E [(365 - P) / 365]$$

$$E_{\text{ext}} = [k (s/12)^a (W/3)^b] [(365 - P) / 365]$$

Where

E_{ext} = Annual Emission factor (lbs/VMT)

k = empirical constant (lbs/VMT)

= 1.5, for PM_{10} and industrial roads in Table 13.2.2-2

a = empirical constant = 0.9, for PM_{10} , industrial roads from Table 13.2.2-2

b = empirical constant = 0.45, for PM_{10} , industrial roads from Table 13.2.2-2

s = surface material silt content (%)

= 6.4, mean value for municipal solid waste landfills from Table 13.2.2-1

W = mean vehicle weight (tons) = 7.8, estimate provided by applicant

P = number of days with at least 0.01 in. of precipitation in the averaging period

= 50 days, estimated from Graph of Probability of 0.01" Precipitation

for Richmond obtained from the Western Regional Climate Center Website

(www.wrcc.dri.edu)

$$E_{\text{unpaved}} = [1.5 (6.4/12)^{0.9} (7.8/3)^{0.45}] [(365 - 50) / 365] = 1.13 \text{ lbs/VMT}$$

$$\begin{aligned} \text{Emission Factor (unpaved), lbs/vehicles} &= E_{\text{unpaved}} * \text{VMT} = (1.13) * (1000/5280) \\ &= 0.214 \end{aligned}$$

E. Emission factors used for S117 Composting Operation are particulate, volatile organic compound and ammonia emission factors for the composting windrows and vehicle traffic emissions.

1. The windrow PM_{10} emission factor is derived using methodology described in "Emission Inventory Methodology-Biosolids Management and Imported Livestock Waste," Nov. 18, 2003, Sonoma Technology Inc., prepared for San Joaquin Valley Unified APCD and an average CARB emission factor for agricultural land preparation from area source categories emission estimates Section 7.4 Agricultural Land Preparation, Emission Inventory Source Category: Miscellaneous Processes/ Farming Operations, Jan. 2003. Assume 75% abatement efficiency for use of water spray.

Basis: Compost materials are kept in windrows for 12 weeks and are turned once/week
 average emission factor agricultural land preparation = 5 lb PM_{10} /acre-pass
 5000 m³ of compost material take up one hectare
 Compost bulk density is 1000 lbs/yd³

$$\begin{aligned} \text{PM}_{10} \text{ emission factor, lbs/ton compost} &= (5 \text{ lb } PM_{10}/\text{acre-pass}) * (12 \text{ passes}) \\ &* (2.47 \text{ acres/hectare}) * (\text{hectare}/5000 \text{ m}^3) * (\text{m}^3/1.3079 \text{ yd}^3) \\ &* (\text{yd}^3/1000 \text{ lbs}) * (2000 \text{ lbs/ton}) \end{aligned}$$

$$\text{PM}_{10} \text{ emission factor, lbs/ton compost} = 0.045 \text{ lbs } PM_{10}/\text{ton compost}$$

2. Windrow VOC and NH3 emission factors are from Attachment A to the Staff Report, Technology Assessment for Proposed Rule 1133: Emission Reductions from Composting and Related operations, South Coast AQMD, March 22, 2002

3. The emission factor for vehicle traffic on paved roads to and from the windrows is calculated based on 8000 feet of paved road estimated by the applicant and using the following equation found in EPA's AP42 5th Edition Chapter 13.2.1 Paved Roads, December 2003.

$$E_{\text{ext}} = [k (sL/2)^{0.65} (W/3)^{1.5} - C] (1 - P / 4N)$$

Where

E_{ext} = Emission factor, pounds per vehicle miles traveled (lbs/VMT)

k = particle size multiplier (lbs/VMT) = 0.016, for PM₁₀ from Table 13.2.1-1

sL = 7.4, mean value for municipal solid waste landfills from Table 13.2.1-4

W = average weight of vehicles (tons) = 5.05, estimate provided by applicant

C = 0.00047, for PM₁₀ from Table 13.2.1-2

P = 50 days

N = number of days in the averaging period = 365 for annual

$$E_{\text{paved}} = [0.016 (7.4/2)^{0.65} (5.05/3)^{1.5} - 0.00047] (1 - 50 / 4(365)) = 0.079 \text{ lbs/VMT}$$

$$\text{Emission Factor (paved), lbs/vehicles} = E_{\text{paved}} * \text{VMT} = (0.079) *(8000/5280) = 0.119$$

4. The emission factor for vehicle traffic on unpaved roads to and from the windrows is calculated based on 1000 feet of unpaved road estimated by the applicant and using the following equations found in EPA's AP42 5th Edition Chapter 13.2.2 Unpaved Roads, December 2003. Assume 75% abatement efficiency for use of dust suppressant.

$$E_{\text{ext}} = [k (s/12)^a (W/3)^b] [(365 - P) / 365]$$

Where

E_{ext} = Annual Emission factor (lbs/VMT)

k = empirical constant (lbs/VMT)

= 1.5, for PM₁₀ and industrial roads in Table 13.2.2-2

a = empirical constant = 0.9, for PM₁₀, industrial roads from Table 13.2.2-2

b = empirical constant = 0.45, for PM₁₀, industrial roads from Table 13.2.2-2

s = 6.4, mean value for municipal solid waste landfills from Table 13.2.2-1

W = mean vehicle weight (tons) = 5.05, estimate provided by applicant

P = number of days with at least 0.01 in. of precipitation in the averaging period

= 50 days, estimated from Graph of Probability of 0.01" Precipitation

for Richmond obtained from the Western Regional Climate Center Website

(www.wrcc.dri.edu)

$$E_{\text{unpaved}} = [1.5 (6.4/12)^{0.9} (5.05/3)^{0.45}] [(365 - 50) / 365] = 0.93 \text{ lbs/VMT}$$

$$\begin{aligned} \text{Emission Factor (unpaved), lbs/vehicles} &= E_{\text{unpaved}} * \text{VMT} = (0.93) *(1000/5280) \\ &= 0.176 \end{aligned}$$

F. Emissions estimates for the sources covered in this application are presented in the Tables 1 below. These estimates are based on permit condition limit throughputs and estimates of vehicle weights and vehicle traffic provided by the applicant. Using the emission factors described above, the emissions are calculated as follows:

$$\text{Emissions, lb/yr} = (\text{Throughput}) * (\text{emission factor}) * (1 - \text{abatement efficiency}/100)$$

Table 1 – Emission Estimates for Each Source								
Source	Through-put	Through-put Unit	Pollutant	Emission Factor	Factor Units	% Abate-ment Efficiency	Emissions, lbs/yr	Emissions, tons/yr
Concrete and Asphalt Recycling Operations								
S111	30000	tons/yr	PM10	0.0024	lbs/ton	70	21.6	0.0108
S112	30000	tons/yr	PM10	0.0087	lbs/ton	70	78.3	0.039
S114	30000	tons/yr	PM10	0.0011	lbs/ ton	70	9.9	0.0050
S118	5000	tons/yr	PM10	0.0024	lbs/ton	70	3.6	0.0018
S113, inactive pile	16	acres	PM10	1.7	lbs/acre /day	50	4964	2.48
S113, paved road	24820	vehicles/yr	PM10	0.229	lbs/vehicle	0	5684	2.84
S113, unpaved road	24820	vehicles/yr	PM10	0.214	lbs/vehicle	75	1328	0.66
Wood Waste Handling and Composting Operations								
S115	19000	tons/yr	PM10	0.0144	lbs/ton	50	136.8	0.068
S116	19000	tons/yr	PM10	0.0144	lbs/ ton	50	136.8	0.068
S110	14	Mgal/yr	PM10	8.52	lbs/Mgal	0	119.3	0.060
S110	14	Mgal/yr	ORG	25.57	lbs/Mgal	0	358.0	0.18
S110	14	Mgal/yr	NOx	562.61	lbs/Mgal	0	7876.5	3.94
S110	14	Mgal/yr	CO	51.15	lbs/Mgal	0	716.0	0.36
S110	14	Mgal/yr	SOx	7.25	lbs/Mgal	0	101.5	0.051
S117, windrows	19000	tons/yr	PM10	0.045	lbs/ton	75	213.8	0.107
S117, windrows	19000	tons/yr	ORG	1.78	lbs/ton	0	33820	16.9
S117, windrows	19000	tons/yr	NH3	2.93	lbs/ton	0	55670	27.8
S117, paved road	25550	vehicles/yr	PM10	0.119	lbs/vehicle	0	3040	1.52
S117, unpaved road	25550	vehicles/yr	PM10	0.176	lbs/vehicle	75	1124	0.56

Table 2 - Total Emissions Estimated For This Application					
PM10, tons/yr	ORG, tons/yr	NOx, tons/yr	CO, tons/yr	SOx, tons/yr	NH3, tons/yr
8.43	17.09	3.94	0.36	0.051	27.8

G. The table below shows the potential to emit emissions for the entire facility.

Table 3 - Potential to Emit for the Facility						
Description	NMOC, tons/yr	NOx, tons/yr	CO, tons/yr	PM ₁₀ , tons/yr	SOx, tons/yr	Estimated Under Application#
Class II Landfill, S15	12.44					AN11375
Flare for S15, A3	2.01	13.44	67.22	3.76	19.33	AN11375
IC Engine, S5	2.61	11.93	43.33	2.30	4.65	AN11375
IC Engine, S6	2.61	11.93	43.33	2.30	4.65	AN11375
IC Engine, S37	2.30	10.52	31.40	2.25	4.10	AN11375
HWMF Landfill, S46	1.43					AN2789 & 8514
Flare for S46, A11	0.34	1.37	6.86	0.39	1.14	AN2789 & 8514
Transfer Station, S50				142.39 ⁽¹⁾		AN13247
Inlet Storage Tanks, S69 and S70	0.02					AN14848
Air Stripper S48	0.59					AN14622
Leachate System S71, S72, S73, S74, S75 and S76 (includes exempt oil holding tanks)	0.19					AN14966
Concrete/Asphalt Recycling (S111, S112, S113, S114, S118) and Composting (S115, S116, S117, S110)	17.09	3.94	0.36	8.43 ⁽²⁾	0.05	AN14621
PTE Totals	41.63	53.13	192.50	161.82	33.92	

(1) Value includes 142.2 tpy of fugitive vehicle traffic PM10 emissions.

(2) Value includes 5.59 tpy of fugitive vehicle traffic PM10 emissions.

H. Cumulative Increases Since April 5, 1991: The sources evaluated under this application were originally issued Authorities to Construct in December 1992 under application number (AN) 7352 for plant number A0198. At that time, the diesel engines used to power the equipment and the composting operation were determined to be exempt and do not contribute to the cumulative increase. Emission factors and estimation methods have changed since the evaluation for AN7352 was prepared. The cumulative increases estimated under this application, using the latest emission factors and estimation methods, are presented in the table below.

Table 4 - Cumulative Increases Since 4/5/1991					
Description	POC, tpy	NOx, tpy	CO, tpy	PM ₁₀ , tpy	SOx, tpy
Cumulative Increase Established in AN8514			6.378	0.429	4.094
Emission Increase from AN11375 ⁽¹⁾	6.25	10.44	47.29	2.67	11.71
Emission Increase from AN13247				1.39	
Emission Increase from AN14848	0.02				
Emission Increase from AN14622	-0.23				
Emission Increase from AN14966	-1.67				
Emission Increase from AN14621				6.18	
New Cumulative Emission Totals	4.37	10.44	53.67	10.67	15.80

(1) Under application number 11375, offsets were provided for POC and NOx cumulative increase from the small facilities bank account. Any future WCCSL application that increases POC and NOx will require that WCCSL provide offsets for the application as well as for the cumulative.

III. HEALTH RISK ANALYSIS: The sources evaluated in this application are existing sources or sources that have lost exemptions. As such, a health risk analysis is not required.

IV. MONITORING REQUIREMENTS: The owner/operator shall maintain records of concrete throughput at S111, S112, S113 and S114; asphalt throughput at S118 and S113; wood waste throughput at S115 and S116; fuel use and annual hours of operation at S110; throughput of compost materials at S117; and vehicle route maintenance events (cleaning of paved roads and application of water or dust suppressants on unpaved roads) in a District-approved log. These records shall be retained on site for a minimum of five years from the date of entry and shall be made available to the District representatives upon request. (basis: Cumulative Increase, Regulations 2-6-501)

V. STATEMENT OF COMPLIANCE

A. California Environmental Quality Act Requirements (CEQA, Regulation 2-1-310 and 426): The purpose of this application is to permit existing sources at A0198 that were previously exempt, but now require permits, and to consolidation the permitted sources at A0198 under plant A1840. Both plants are on contiguous property, under common ownership or control, and fall under a single major industrial grouping identified by the first two-digits of the applicable code in the Standard Industrial Classification Manual and should be permitted as a single facility. As such, this application falls in the categories of projects that are exempt from CEQA review per Regulation 2, Rule 1, Sections 312.4 and 312.7. Section 312.4 exempts from CEQA review permit applications "...pursuant to a loss of a previously valid exemption from the District's permitting requirements." Section 312.7 exempts from CEQA review permit applications "...for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced."

B. Public Notice, Schools (Regulation 2-1-412): 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.

C. Best Available Control Technology (BACT, Regulation 2-2-301), **Offsets** (Regulation 2-2-303), **Prevention of Significant Deterioration** (PSD, Regulation 2-2-304) and **New Source Review for Toxic Air Contaminants** (Regulation 2, Rule 5): The existing sources or sources that have lost exemptions, evaluated under this application, are not subject to the new source review requirements.

D. Maximum Achievable Control Technology (MACT, Regulation 2-2-317): Total Hazardous Air Pollutant (HAP) emissions from WCCSL are less than 25 tons per year with no single HAP emissions exceeding 10 tons per year; thus, WCCSL is not major facility of HAPs and Regulation 2-2-317 does not apply.

E. Major Facility Review (MFR, Regulation 2, Rule 6): The sources under evaluation in this application will require a minor revision to the facility's MFR Permit pursuant to Regulation 2-6-215. The necessary Title V MFR Permit revisions will be incorporated into the facility's MFR renewal application number 15376 in a separate document. This evaluation report serves as the statement of basis for the MFR permit renewal.

F. Particulate Matter and Visible Emissions (Regulation 6): Operation of the concrete/asphalt recycling and composting sources, abated by water spray systems, are expected to be in compliance with Regulation 6, section 301. The operation of S110, diesel engine powering wood waste screener, is expected to be in compliance with section 303.

G. Sulfur Dioxide (Regulation 9, Rule 1): Operation of the diesel engine, using low sulfur diesel fuel, is expected to be in compliance with Regulation 9-1-301 and 304.

H. NOx and CO from Stationary Internal Combustion Engines (Regulation 9, Rule 8): Operation of S110, diesel engine powering wood waste screener, is exempt from the requirements of 9-8-301, 302 and 502 per section 110.1 and 110.2.

I. Federal Requirements: This application is not subject to federal NSPS or NESHAP requirements.

VI. PERMIT CONDITIONS: Changes to the existing source permit conditions, for consistency and for Title V, have been highlighted in underline and strikeout test as show below:

A. Conditions for S111, Concrete Crusher

1. Prior to the operation of S111 using a power source that requires a District permit, the owner/operator must hold a valid District permit for the power source. (basis: Regulation 2-1-301 and 302)

~~2.1) The owner/operator Total concrete throughput for S 111 Crusher shall not exceed 30,000 tons of concrete throughput at S111 in any consecutive twelve month period. (basis: Cumulative increase)~~

~~3.2) The owner/operator S 111 shall be continuously abated S111 with by A 111 Water Spray whenever concrete or other rock material is being crushed. (basis: Cumulative increase)~~

4. The owner/operator shall not operate S111 in such a way that visible emissions, which are as dark or darker than a Ringelmann 1.0, occur for a period or periods aggregating more that 3 minutes in any hour; or results in fallout on adjacent property which causes a public nuisance. (basis: Regulation 6-301 and Regulation 1-301)

~~5.3) The owner/operator A waterborne petroleum resin dust suppressant or other equivalent chemical dust suppressant shall be applyied a waterborne petroleum resin dust suppressant or other equivalent chemical dust suppressant to all unpaved on--site truck routes, to and from the concrete and asphalt recycling operations, on a regular basis according to manufacturer's recommendations to achieve and maintain a minimum particulate matter (TSP) control efficiency of 75% by weight. Richmond Sanitary Service shall submit an application schedule and manufacturer's literature and specifications for the designated chemical dust suppressant to the District's Permit Services Division within 15 days of start up. (basis: Cumulative increase)~~

6.4) The owner/operator Richmond Sanitary Service shall maintain records, summarized on a monthly and annual basis, of concrete throughput at S-111. The owner/operator shall maintain records of and chemical dust suppressant applied to ~~truck-vehicle~~ routes and other unpaved areas, ~~in a District approved log.~~ These records shall be kept in a District-approved log, shall be retained on-site for a minimum of ~~two-five~~ years from the date of entry, and shall be made available to District representatives upon request. (basis: Cumulative increase, Regulation 2-6-501)

B. Conditions for S112, Crushed Concrete Screener

1. Prior to the operation of S112 using a power source that requires a District permit, the owner/operator must hold a valid District permit for the power source. (basis: Regulation 2-1-301 and 302)

2.1) The owner/operator ~~Total concrete throughput for S-12~~ shall not exceed 30,000 tons of concrete throughput at S112 in any consecutive twelve month period. (basis: Cumulative increase)

3.2) The owner/operator ~~S-12~~ shall ~~be continuously~~ abated S112 with by A-112 Water Spray whenever concrete or other rock material is being screened. (basis: Cumulative increase)

4. The owner/operator shall not operate S112 in such a way that visible emissions, which are as dark or darker than a Ringelmann 1.0, occur for a period or periods aggregating more than 3 minutes in any hour; or result in fallout on adjacent property which causes a public nuisance. (basis: Regulation 6-301 and Regulation 1-301)

5.3) The owner/operator ~~of S-12~~ shall maintain records, summarized on a monthly and annual basis, of concrete throughput at S112. ~~in a District approved log.~~ These records shall be kept in a District-approved log, shall be retained on-site for a minimum of ~~two-five~~ years from the date of entry, and shall be made available to District representatives upon request. (basis: Cumulative increase, Regulation 2-6-501)

C. Conditions for S113, Concrete/Asphalt Storage Piles

1.) The owner/operator ~~Total concrete throughput for S-13~~ shall not exceed 30,000 tons of concrete throughput or 5,000 tons of asphalt throughput at S113 in any consecutive twelve month period. (basis: Cumulative increase)

2.) The owner/operator ~~S-13~~ shall be abated ~~S113 with by~~ A-113 Water Spray on a regular basis to prevent wind erosion particulate emissions. The unloading and loading of concrete and asphalt associated with S113 shall be abated as necessary by water spray to prevent visible particulate emissions. Dry, dusty material shall be wetted down before unloading from truck beds as necessary to prevent visible emissions. (basis: Cumulative increase)

3. The owner/operator shall not operate S113 in such a way that visible emissions, which are as dark or darker than a Ringelmann 1.0, occur for a period or periods aggregating more than 3 minutes in any hour; or results in fallout on adjacent property which causes a public nuisance. (basis: Regulation 6-301 and Regulation 1-301)

4.3) The owner/operator ~~of S-13~~ shall maintain records, summarized on a monthly and annual basis, of concrete and asphalt throughput at S113 in a District approved log. These records shall be kept in a District-approved log, shall be retained on-site for a minimum of ~~two~~ five years from the date of entry, and shall be made available to District representatives upon request. (basis: Cumulative increase, Regulation 2-6-501)

D. Conditions for S114, Conveyors (Crushed Concrete)

1. Prior to the operation of S114 using a power source that requires a District permit, the owner/operator must hold a valid District permit for the power source. (basis: Regulation 2-1-301 and 302)

2.1) The owner/operator ~~Total crushed concrete throughput for S-14~~ shall not exceed 30,000 tons of crushed concrete throughput at S114 in any consecutive twelve month period. (basis: Cumulative increase)

3.2) The owner/operator ~~S-14~~ shall be abated ~~S114 with by~~ A-115 Water Spray whenever crushed concrete or other rock material is being conveyed ~~at S-14~~. (basis: Cumulative increase)

4. The owner/operator shall not operate S114 in such a way that visible emissions, which are as dark or darker than a Ringelmann 1.0, occur for a period or periods aggregating more than 3 minutes in any hour; or results in fallout on adjacent property which causes a public nuisance. (basis: Regulation 6-301 and Regulation 1-301)

5.3) The owner/operator ~~of S-14~~ shall maintain records, summarized on a monthly and annual basis, of crushed concrete throughput at S114 in a District approved log. These records shall be kept in a District-approved log, shall be retained on-site for a minimum of ~~two~~ five years from the date of entry, and shall be made available to District representatives upon request. (basis: Cumulative increase, Regulation 2-6-501)

E. Conditions for S115, Wood/Yard Waste Shredder (Tub Grinder)

1. Prior to the operation of S115 using a power source that requires a District permit, the owner/operator must hold a valid District permit for the power source. (basis: Regulation 2-1-301 and 302)

2.1) The owner/operator total wood waste throughput at S-15 shall not exceed 19,000 tons of wood waste throughput at S115 in any consecutive twelve month period. (basis: Cumulative increase)

3.2) The owner/operator S-15 Tub Grinder shall be abated S115 with by A-115 Water Spray during all periods of operation. (basis: Cumulative increase)

3) Visible particulate emissions from S-15 shall not exceed Ringelmann 0.5 or result in fallout on adjacent property which may cause a public nuisance pursuant to Regulation 1-301.

4. The owner/operator shall not operate S115 in such a way that visible emissions, which are as dark or darker than a Ringelmann 1.0, occur for a period or periods aggregating more than 3 minutes in any hour; or results in fallout on adjacent property which causes a public nuisance. (basis: Regulation 6-301 and Regulation 1-301)

5.4) The unloading, stockpiling, and loading of wood and yard waste associated with S-115 shall be abated as necessary by water spray to prevent visible particulate emissions. Dry, dusty material shall be wetted down before unloading from truck beds as necessary to prevent visible emissions. (basis: Cumulative increase)

6.5) If the facility receives 2 or more violation notices for "public nuisance" from the District in any consecutive 12 month period, the owner/operator of the facility shall submit to the District within 30 days, an application to modify the permit to operate to include the following control measures as applicable or any other measures deemed necessary and appropriate by the District.

- a. Enclosure of S-115 Tub Grinder
- b. Complete enclosure of all operations in a warehouse-like building.

7.6) The owner/operator of S-15 shall maintain records, summarized on a monthly and annual basis, of wood waste throughput at S115 in a District approved log. These records shall be kept in a District-approved log, shall be retained on-site for a minimum of two-five years from the date of entry, and shall be made available to District representatives upon request. (basis: Cumulative increase, Regulation 2-6-501)

F. Conditions for S116, Wood Waste Screener

- 1.) ~~The owner/operator Total wood waste throughput for S 16~~ shall not exceed 19,000 tons of wood waste throughput at S116 in any consecutive twelve month period. (basis: Cumulative increase)
- 2.) ~~The owner/operator S 16 Wood Waste Screener~~ shall ~~be~~ abated S116 by with A-116 Water Spray at all times. (basis: Cumulative increase)
- 3.) ~~The owner/operator shall not operate S116 in such a way that visible emissions, which are as dark or darker than a Ringelmann 1.0, occur for a period or periods aggregating more that 3 minutes in any hour; or results in fallout on adjacent property which causes a public nuisance. (basis: Regulation 6-301 and Regulation 1-301)Visible particulate emissions from S 16 shall not exceed Ringelmann 0.5 or result in fallout on adjacent property which may cause a public nuisance pursuant to Regulation 1 301.~~
- 4.) The owner/operator ~~of S 16~~ shall maintain records, summarized on a monthly and annual basis, of wood waste throughput at S116~~in a District approved log.~~ These records shall be kept in a District-approved log, shall be retained on-site for a minimum of two-five years from the date of entry, and shall be made available to District representatives upon request. (basis: Cumulative increase, Regulation 2-6-501)

G. Conditions for S118, Crushing of Asphalt Debris

- 1.) ~~The owner/operator Total asphalt throughput for S 18~~ shall not exceed 5,000 tons of asphalt throughput at S118 in any consecutive twelve month period. (basis: Cumulative increase)
- 2.) ~~The owner/operator S 18 Asphalt Crushing Operations~~ shall ~~be~~ abated S118 with by A-118 Water Spray during all crushing and related material transfer operations. (basis: Cumulative increase)
- 3.) ~~The owner/operator shall not operate S118 in such a way that visible emissions, which are as dark or darker than a Ringelmann 1.0, occur for a period or periods aggregating more that 3 minutes in any hour; or results in fallout on adjacent property which causes a public nuisance. (basis: Regulation 6-301 and Regulation 1-301)~~
- 4.)~~3)~~ The owner/operator ~~of S 18~~ shall maintain records, summarized on a monthly and annual basis, of asphalt throughput at S118~~in a District approved log.~~ These records shall be kept in a District-approved log, shall be retained on-site for a minimum of two-five years from the date of entry, and shall be made available to District representatives upon request. (basis: Cumulative increase, Regulation 2-6-501)

H. New conditions for previously exempt S110, Diesel Engine Powering Wood Waste Screener S116

1. The owner/operator of S110, diesel engine powering wood waste screener S116, shall comply with the in-use stationary prime diesel-fueled compression ignition engine (>50 bhp) emission standards of the "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(D) by January 1, 2008. The diesel particulate matter emission rate must be reduced by at least 85 percent, by weight, from the baseline level or the diesel particulate matter emission rate must be less than or equal to 0.01 g/bhp-hr. (Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (f)(2)(C))

2. The owner/operator shall submit to the District an application identifying the control strategy for S110 that when implemented will result in compliance with the ATCM subsection (e)(2)(D) no later than July 5, 2007. (Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(4)(A)(4))

3. The owner/operator shall operate S110 only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained. (Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(4)(G)(1))

4. The owner/operator shall maintain records, summarized on a monthly and annual basis, of the hours of operation and fuel use at S110. These records shall be kept in a District-approved log, shall be retained on-site for a minimum of five years from the date of entry, and shall be made available to District representatives upon request. (Basis: Regulation 2-6-501)

I. New conditions for previously exempt S117, Composting Operation

1. The owner/operator shall not exceed 19,000 tons of compost material throughput at S117 in any consecutive twelve month period.

2. The owner/operator shall abate S117 with A117 Water Spray whenever composting material is being processed. The unloading and loading of compost material associated with S117 shall be abated as necessary by water spray to prevent visible particulate emissions. Dry, dusty material shall be wetted down before unloading from truck beds as necessary to prevent visible emissions. (basis: Cumulative increase)

3. The owner/operator shall not operate S118 in such a way that visible emissions, which are as dark or darker than a Ringelmann 1.0, occur for a period or periods aggregating more than 3 minutes in any hour; or results in fallout on adjacent property which causes a public nuisance. (basis: Regulation 6-301 and Regulation 1-301)

4. The owner/operator shall apply a waterborne petroleum resin dust suppressant or other equivalent chemical dust suppressant to all unpaved on-site truck routes, to and from the composting operation, on a regular basis according to manufacturer's recommendations to achieve and maintain a minimum particulate matter (TSP) control efficiency of 75% by weight.

5. The owner/operator shall maintain records, summarized on a monthly and annual basis, of compost material throughput at S117. The owner/operator shall maintain records of chemical dust suppressant applied to vehicle routes and other unpaved areas. These records shall be kept in a District-approved log, shall be retained on-site for a minimum of five years from the date of entry, and shall be made available to District representatives upon request. (basis: Regulation 2-6-501)

VII. RECOMMENDATION: This purpose of this application is to permit existing sources at A0198 that were previously exempt, but now require permits, and to consolidation all the sources located at this site under one plant number by transferring the A0198 sources to A1840. I recommend that we do the following:

1. Transfer the permits to operate for the sources under plant A0198, which is located within the plant A1840 Class II landfill, to plant A1840. Both plants are under common ownership or control, are located on contiguous property, and fall under a single major industrial grouping identified by the first two-digits of the applicable code in the Standard Industrial Classification Manual.

2. Issue permits to operate to plant A1840 for:

S110 Diesel Engine Powering Wood Waste Screener S116: Cummins B5.9P, 174 hp engine

S117 Composting Operation: 40-acre area abated by A117 Water Spray System

Jane H. Lundquist
Principal Air Quality Engineer
Engineering Division
January 10, 2007

APPENDIX C

ENGINEERING EVALUATION

**For the Permit Condition Changes to Reflect the
Measured Landfill Gas Composition
and the Actual Waste in Place**

APPLICATION # 15702

ENGINEERING EVALUATION
West Contra Costa Sanitary Landfill, Inc., Plant A1840
Foot of Parr Blvd, Richmond, California
Application Number 15702, Hazardous Waste Management Facility
Landfill Gas Toxic Air Contaminant Concentration Limits

I. BACKGROUND: West Contra Costa Sanitary Landfill, Inc. (WCCSL), Plant A1840, in Richmond is a 340-acre site that includes the 160-acre Class II landfill (S15) and the 28-acre Class I landfill also known as the Hazardous Waste Management Facility (HWMF, S46). Recent source testing by the facility shows that benzene concentrations in the HWMF landfill gas (LFG) exceed permit condition limits. This application is for a change in permit condition limits to update the amount of waste in-place at the landfill and to update the concentrations of toxic air contaminants (TAC) in the LFG generated at:

S46 Hazardous Waste Management Facility.

II. EMISSIONS: This application addresses the change in TAC emissions based on recent source test. No changes in criteria emissions are expected. Emissions are calculated based on the highest concentration found from either the October 2002 or November 2006 source test results for the TAC composition in the LFG generated at the HWMF. To allow for future fluctuations in the composition, the maximum concentrations were multiplied by a factor of 1.5. TAC emissions are calculated for two emission points: fugitive emissions from the landfill and emissions out the flare stack.

Fugitive TAC emissions are based on the amount of LFG generated, the percentage collected in the LFG collection system and the TAC concentration in the LFG. The gas generation rate is determined using EPA's Landfill Gas Emissions Model (LandGEM) version 3.02 based on the amount of decomposable waste in-place. Flare TAC emissions are based on the amount of LFG flared, the TAC concentration in the LFG, the flare destruction efficiency, and a mass balance to estimate HCl, HF, HBr and SOx emission in the combustion products based on the amount of Cl, F, Br and S in the LFG that is combusted.

A. Unabated LFG Emission Factors - are calculated based on the maximum LFG TAC concentrations, corrected for air infiltration and increased by 50% to allow for future fluctuations. Table I shows the resulting unabated LFG TAC emission factors.

Table I - Hazardous Waste Management Facility (HWMF)							
Unabated Landfill Gas (LFG) Emission Factors							
Compound	Formula	Molecular Weight	HWMF LFG (Nov. 2006 Test) ²	HWMF LFG (Nov. 2006 Test) corrected for air infiltration ³	AN8514 Concentrations (Oct. 2002 Test)	AN15702 Permit Limit Concentrations	Unabated LFG Emission Factor, lbs/M scf ⁴
Methane	CH4	16.04	37.99%	50.0%	50.0%	50.0%	
Carbon Dioxide	CO2	44.01	23.38%	50.0%	50.0%	50.0%	
Nitrogen	N2	28.01	30.89%	0.0%	0.0%	0.0%	
Oxygen	O2	32.00	7.61%	0.0%	0.0%	0.0%	
			ppmv	ppmv	ppmv	ppmv	
Hydrogen Sulfide	H2S	34.08	0.240	0.391	27.7	41.6	3.66E-03
Carbon Disulfide	CS2	76.13	0.087	0.142		0.213	4.18E-05
Carbonyl Sulfide	COS	60.07	0.012	0.020		0.029	4.55E-06
Methyl Mercaptan	CH3SH	48.10	0.052	0.085		0.127	1.58E-05
Ethyl Mercaptan	C2H5SH	62.13	0.012	0.020		0.029	4.71E-06

**Table I - Hazardous Waste Management Facility (HWMF)
Unabated Landfill Gas (LFG) Emission Factors**

Compound	Formula	Molecular Weight	HWMF LFG (Nov. 2006 Test) ²	HWMF LFG (Nov. 2006 Test) corrected for air infiltration ³	AN8514 Concentrations (Oct. 2002 Test)	AN15702 Permit Limit Concentrations	Unabated LFG Emission Factor, lbs/M scf ⁴
Dimethyl Sulfide	C2H6S	62.13	0.012	0.020		0.029	4.71E-06
Total Reduced Sulfur as H2S	H2S	34.08	7.90	12.9		19.3	1.70E-03
Trichlorofluoromethane	CCl3F	137.37	13.0	21.2	8.7	31.8	1.13E-02
Dichlorodifluoroethane	C2H2Cl2F2	120.91	0.880	1.43		2.15	6.72E-04
Methylene Chloride	CH2Cl2	84.93	140	228	10.1	350	7.68E-02
1,1,1 Trichloroethane	Cl3CCH3	133.40	2.80	4.56	2.2	6.84	2.36E-03
Tetrachloroethene (perchloroethylene)	Cl2C:CCl2	165.83	6.00	9.78	1.5	14.67	6.29E-03
Chlorodifluoromethane	CHClF2	86.47	5.40	8.80		13.20	2.95E-03
Dichlorodifluoromethane	CCl2F2	120.91	5.20	8.47		12.71	3.97E-03
Trichlorotrifluoroethane	C2Cl3F3	187.38			6.50	9.75	4.72E-03
Vinyl Chloride	CH2:CHCl	62.50	58.0	94.5	90.4	150.0	2.42E-02
Chloroethane (ethyl chloride)	C2H5Cl	64.51	9.60	15.6	26.2	39.3	6.55E-03
1,1 Dichloroethene (vinylidene chloride)	Cl2C:CH2	96.94	1.80	2.93	1.5	4.40	1.10E-03
Hexane	C6H14	86.18	250	407		611	1.36E-01
1,1 Dichloroethane (ethylidene chloride)	CH3CHCl2	98.96	29.0	47.3	8.8	70.9	1.81E-02
Chloroform	CHCl3	119.38	3.10	5.05		7.58	2.34E-03
Carbon Tetrachloride	CCl4	153.82	0.200	0.326		0.489	1.94E-04
Benzene	C6H6	78.11	15.0	24.4	4.4	40.0	8.08E-03
1,2 Dichloroethane	CH3CHCl2	98.96	1.30	2.12		3.18	8.13E-04
Trichloroethylene	CHCl:CCl2	131.39	4.30	7.01	1.6	10.5	3.57E-03
1,2 Dibromoethane (ethylene dibromide)	BrCH2:CH2Br	187.86	0.200	0.326		0.489	2.37E-04
Chlorobenzene	C6H5Cl	112.56	0.200	0.326		0.489	1.42E-04
Toluene	C6H5CH3	92.14	17.0	27.7	8.8	41.6	9.90E-03
Ethyl Benzene	C6H5C2H5	106.17	0.920	1.50	3.6	5.40	1.48E-03
Xylenes (o,m,p)	C6H4(CH3)2	106.17	2.32	3.78	3.4	5.67	1.56E-03
1,1,2,2 Tetrachloroethane	Cl2CH2:CH2Cl2	169.87	0.200	0.326		0.489	2.15E-04
1,4 Dichlorobenzene	C6H4Cl2	147.00	0.200	0.326	0.3	0.489	1.86E-04
Benzyl chloride	C6H5CH2Cl	125.58	0.200	0.326		0.489	1.59E-04
2 Propanol	C3H7OH	60.10	2.20	3.59	1.4	5.38	8.35E-04
2 Butanone (methyl ethyl ketone)	CH3COCH2CH3	72.11	2.20	3.59	2.3	5.38	1.00E-03
Acrylonitrile	H2C:CHCN	53.06	0.80	1.30		10.00	1.37E-03
Methyl tert-Butyl Ether	(CH3)3COCH3	88.15			1.40	2.10	4.78E-04
Chloromethane (methyl chloride)	CH3Cl	50.49			3.10	4.65	6.07E-04
1,2 Dichloroethene (cis and trans)	ClHC:CHCl	96.94			1.40	2.10	5.26E-04

Notes:

1. Concentrations in HWMF LFG are from October 2002 and November 2006 source tests by facility.
2. If compounds were not detected, calculations are based on 1/2 the reported detection limit.
3. If the ratio of N2 to O2 is <= 4, then per AP42 adjust for sample dilution by assuming that CO2 and CH4 are the primary constituents of LFG.
4. Unabated Emission Factor, lbs/Mscf = (Conc/1E6) * (1000 cf/ Mcf) * (lbmol/386.9 cf) * (MW lb/lbmol)

B. TAC Emission Factors Resulting from Combustion: Based on the concentrations of chloride, fluoride, bromide and sulfide ions in the LFG, estimates of HCl, HF, HBr and SO2 emissions from combustion are estimated. Table II shows the resulting Flare combustion emission factors.

Table II - Hazardous Waste Management Facility (HWMF) Flare Combustion Emission Factors											
Compound	Formula	AN15702 Permit Limit Conc., ppmv	# Cl- ions	Cl- ion Conc. In LFG, ppmv	# F- ions	F- ion Conc. In LFG, ppmv	# Br- ions	Br- ion Conc. In LFG, ppmv	# S ²⁻ ions	S ²⁻ ion Conc. In LFG, ppmv	Flare Combust. Emission Factor, lbs/M scf
Hydrogen Sulfide	H2S	41.6							1	40.719	
Carbon Disulfide	CS2	0.213							2	0.417	
Carbonyl Sulfide	COS	0.029							1	0.029	
Methyl Mercaptan	CH3SH	0.127							1	0.125	
Ethyl Mercaptan	C2H5SH	0.029							1	0.029	
Dimethyl Sulfide	C2H6S	0.029							1	0.029	
Total Reduced Sulfur as H2S	H2S	19.3							1	18.924	
Trichlorofluoromethane	CCl3F	31.8	3	93.42	1	31.14					
Dichlorodifluoroethane	C2H2Cl2F2	2.15	2	4.22	2	4.22					
Methylene Chloride	CH2Cl2	350	2	686.00							
1,1,1 Trichloroethane	Cl3CCH3	6.84	1	6.71							
Tetrachloroethene (perchloroethylene)	Cl2C:CCl2	14.67	4	57.49							
Chlorodifluoromethane	CHClF2	13.20	1	12.94	2	25.87					
Dichlorodifluoromethane	CCl2F2	12.71	2	24.91	2	24.91					
Trichlorotrifluoroethane	C2Cl3F3	9.75	3	28.67	3	28.67					
Vinyl Chloride	CH2:CHCl	150.0	1	147.00							
Chloroethane (ethyl chloride)	C2H5Cl	39.3	1	38.51							
1,1 Dichloroethene (vinylidene chloride)	Cl2C:CH2	4.40	2	8.62							
1,1 Dichloroethane (ethylidene chloride)	CH3CHCl2	70.9	2	138.94							
Chloroform	CHCl3	7.58	3	22.28							
Carbon Tetrachloride	CCl4	0.489	4	1.92							
1,2 Dichloroethane	CH3CHCl2	3.18	2	6.23							
Trichloroethylene	CHCl:CCl2	10.5	3	30.90							
1,2 Dibromoethane (ethylene dibromide)	BrCH2:CH2Br	0.489					2	0.96			
Chlorobenzene	C6H5Cl	0.489	1	0.48							
1,1,2,2 Tetrachloroethane	Cl2CH2:CH2Cl2	0.489	4	1.92							
1,4 Dichlorobenzene	C6H4Cl2	0.489	2	0.96							
Benzyl chloride	C6H5CH2Cl	0.489	1	0.48							
Chloromethane (methyl chloride)	CH3Cl	4.65	1	4.56							
1,2 Dichloroethene (cis and trans)	ClHC:CHCl	2.10	2	4.12							
Sum (Cl, F, S ion conc.)				1321.25		114.81		0.96		60.27	
Hydrogen Chloride ⁹	HCl										1.25E-01
Hydrogen Fluoride ⁹	HF										5.94E-03
Hydrogen Bromide ⁹	HBr										2.00E-04
Sulfur Dioxides ⁹	SO2										9.98E-03

Notes:

1. Ion concentration in the LFG, ppmv = (# of ions in pollutant) * (pollutant concentration, ppmv) * (0.98). This is used to calculate HCl, HF, HBr and SO2 emissions from combustion of LFG
2. Emission factors are based on the presence of Cl, F, Br, and S in the LFG. Assume that 98% of the Cl, F, Br and S get converted to HCl, HF, HBr and SO2, respectively. Emission factor, lbs/mscf = (1000 scf) * (ion ppmv/1E6) * (lbmol/386.9 scf) * (MW lbs/lbmol)

C. TAC Emissions and Model Inputs for HWMF landfill Fugitives. Table III shows the fugitive TAC emission rates from the HWMF landfill and the health risk weighted inputs for modeling the health risks. These emissions are based on a LFG generation rate of 60 scfm and a LFG collection system capture efficiency of 75%. The LFG generation rate was determined using EPA's LandGEM model based on 376,110 tons of waste in place.

Table III - S46, LANDFILL FUGITIVE EMISSIONS, EMISSION FACTORS AND MODEL INPUTS									
POLLUTANT	[G7145511] LFG Unabated Emission Factor, lbs/Mscf ¹	Annual Average Fugitive Emission Rate, g/s ²	[G7145580] Fugitive Emission Factor, lbs/ton-in- place ³	URV, Unit Risk (ug/m ³) ⁻¹	Cancer Risk Model Input ⁴	Chronic REL (ug/m3)	Chronic HI Model Input ⁵	Acute REL (ug/m3)	Acute HI Model Input ⁶
Hydrogen Sulfide	3.66E-03	4.15E-04	7.67E-05			1.00E+01	4.15E-05	4.20E+01	9.88E-06
Carbon Disulfide	4.18E-05	4.75E-06	8.77E-07			8.00E+02	5.93E-09	6.20E+03	7.65E-10
Trichlorofluoromethane	1.13E-02	1.28E-03	2.36E-04			7.00E+02	1.83E-06		
Dichlorodifluoroethane	6.72E-04	7.62E-05	1.41E-05			7.00E+02	1.09E-07		
Methylene Chloride	7.68E-02	8.71E-03	1.61E-03	1.06E-06	9.24E-03	4.00E+02	2.18E-05	1.40E+04	6.22E-07
1,1,1 Trichloroethane	2.36E-03	2.68E-04	4.95E-05			1.00E+03	2.68E-07	6.80E+04	3.94E-09
Tetrachloroethene (perchloroethylene)	6.29E-03	7.13E-04	1.32E-04	6.24E-06	4.45E-03	3.50E+01	2.04E-05	2.00E+04	3.56E-08
Chlorodifluoromethane	2.95E-03	3.35E-04	6.18E-05			5.00E+04	6.69E-09		
Dichlorodifluoromethane	3.97E-03	4.50E-04	8.33E-05			7.00E+02	6.44E-07		
Trichlorotrifluoroethane	4.72E-03	5.35E-04	9.90E-05			7.00E+02	7.65E-07		
Vinyl Chloride	2.42E-02	2.75E-03	5.08E-04	8.20E-05	2.25E-01	2.60E+01	1.06E-04		
Chloroethane (ethyl chloride)	6.55E-03	7.43E-04	1.37E-04			3.00E+04	2.48E-08		
1,1 Dichloroethene (vinylidene chloride)	1.10E-03	1.25E-04	2.31E-05			7.00E+01	1.79E-06		
Hexane	1.36E-01	1.54E-02	2.85E-03			7.00E+03	2.21E-06		
1,1 Dichloroethane (ethylidene chloride)	1.81E-02	2.06E-03	3.80E-04	1.70E-06	3.50E-03				
Chloroform	2.34E-03	2.65E-04	4.90E-05	5.60E-06	1.48E-03	3.00E+02	8.84E-07	1.50E+02	1.77E-06
Carbon Tetrachloride	1.94E-04	2.20E-05	4.07E-06	4.40E-05	9.70E-04	4.00E+01	5.51E-07	1.90E+03	1.16E-08
Benzene	8.08E-03	9.16E-04	1.69E-04	3.10E-05	2.84E-02	6.00E+01	1.53E-05	1.30E+03	7.04E-07
1,2 Dichloroethane	8.13E-04	9.22E-05	1.70E-05	2.20E-05	2.03E-03	4.00E+02	2.30E-07		
Trichloroethylene	3.57E-03	4.05E-04	7.48E-05	2.10E-06	8.50E-04	6.00E+02	6.75E-07		
1,2 Dibromoethane (ethylene dibromide)	2.37E-04	2.69E-05	4.98E-06	7.50E-05	2.02E-03	8.00E-01	3.36E-05		
Chlorobenzene	1.42E-04	1.61E-05	2.98E-06			1.00E+03	1.61E-08		
Toluene	9.90E-03	1.12E-03	2.07E-04			3.00E+02	3.74E-06	3.70E+04	3.03E-08
Ethyl Benzene	1.48E-03	1.68E-04	3.11E-05			2.00E+03	8.40E-08		
Xylenes (o,m,p)	1.56E-03	1.76E-04	3.26E-05			7.00E+02	2.52E-07	2.00E+04	8.82E-09
1,1,2,2 Tetrachloroethane	2.15E-04	2.43E-05	4.50E-06	6.10E-05	1.48E-03				
1,4 Dichlorobenzene	1.86E-04	2.11E-05	3.89E-06	1.20E-05	2.53E-04	8.00E+02	2.63E-08		
Benzyl chloride	1.59E-04	1.80E-05	3.33E-06	5.20E-05	9.36E-04	1.20E+01	1.50E-06	2.40E+02	7.50E-08
2 Propanol	8.35E-04	9.47E-05	1.75E-05						
2 Butanone (methyl ethyl ketone)	1.00E-03	1.14E-04	2.10E-05			1.00E+03	1.14E-07	1.00E+04	1.14E-08
Acrylonitrile	1.37E-03	1.56E-04	2.87E-05	3.10E-04	4.82E-02	5.00E+00	3.11E-05		
Methyl tert-Butyl Ether	4.78E-04	5.43E-05	1.00E-05	5.70E-07	3.09E-05	8.00E+03	6.78E-09		
				Sum		3.29E-01		2.85E-04	1.32E-05
				m ²		647499.2		647499.2	647499.2
				MODEL INPUT g/s / m ²		5.08E-07		4.40E-10	2.03E-11

Notes:

1. Unabated Landfill Gas (LFG) Emission factor from section A.
2. Ann. Avg. emission rate, g/s = (max. LFG rate, cf/min) * (min/60s) * (Mscf/1000 scf) * (unabated em. fac. lbs/Mscf) * (453.6 g/lb) * (% Fug.)
3. LFG Fugitive emission factor, lbs/tons-in-place = (Ann. Avg. emission rate, g/s) * (3600s/hr) * (8760 hr/yr) * (lb/453.6g) / (tons-in-place/yr)
4. Cancer Risk Model Input = Sum [(Annual average emission rate, g/s) * (Unit Risk, (ug/m³)-1) * 1E6] / (Area, 160 acres)
5. Chronic Hazard Index Model Input = Sum [(Annual average emission rate, g/s) / (Chronic REL, ug/m³)] / (Area, 160 acres)
6. Acute Hazard Index Model Input = Sum [(Hourly average emission rate, g/s) / (Acute REL, ug/m³)] / (Area, 160 acres)
7. TAC emission factors entered in DataBank are highlighted in **bold**. DataBank has a max capacity of 20 pollutants.

D. TAC Emissions and Model Inputs for the HWMF landfill Flare. Table IV shows the TAC emission rates from the HWMF landfill flare (A11) and the health risk weighted inputs for modeling the health risks. These emissions are based on a 98% destruction of the TACs in the LFG and the formation of HCl, HF and HBr that would result from the combustion process.

Table IV - A11 FLARE EMISSIONS AND MODEL INPUTS									
POLLUTANT	S46 [G7145511] LFG Unabated Emission Factor, lbs/Mscf ¹	S(-11) [C8540511] Flare Emission Factor, lbs/Mscf¹	Annual Average Flare Emissions, g/s ²	URV, Unit Risk (ug/m ³) ⁻¹	Cancer Risk Model Input ³	Chronic REL (ug/m3)	Chronic HI Model Input ⁴	Acute REL (ug/m3)	Acute HI Model Input ⁵
Hydrogen Sulfide	3.66E-03		2.49E-05			1.00E+01	2.49E-06	4.20E+01	5.93E-07
Carbon Disulfide	4.18E-05		2.85E-07			8.00E+02	3.56E-10	6.20E+03	4.59E-11
Trichlorofluoromethane	1.13E-02		7.68E-05			7.00E+02	1.10E-07		
Dichlorodifluoroethane	6.72E-04		4.57E-06			7.00E+02	6.53E-09		
Methylene Chloride	7.68E-02		5.23E-04	1.06E-06	5.54E-04	4.00E+02	1.31E-06	1.40E+04	3.73E-08
1,1,1 Trichloroethane	2.36E-03		1.61E-05			1.00E+03	1.61E-08	6.80E+04	2.36E-10
Perchloroethylene	6.29E-03		4.28E-05	6.24E-06	2.67E-04	3.50E+01	1.22E-06	2.00E+04	2.14E-09
Chlorodifluoromethane	2.95E-03		2.01E-05			5.00E+04	4.01E-10		
Dichlorodifluoromethane	3.97E-03		2.70E-05			7.00E+02	3.86E-08		
Trichlorotrifluoroethane	4.72E-03		3.21E-05			7.00E+02	4.59E-08		
Vinyl Chloride	2.42E-02		1.65E-04	8.20E-05	1.35E-02	2.60E+01	6.34E-06		
Chloroethane (ethyl chloride)	6.55E-03		4.46E-05			3.00E+04	1.49E-09		
1,1 Dichloroethene (vinylidene chloride)	1.10E-03		7.50E-06			7.00E+01	1.07E-07		
Hexane	1.36E-01		9.26E-04			7.00E+03	1.32E-07		
1,1 Dichloroethane (ethylidene chloride)	1.81E-02		1.23E-04	1.70E-06	2.10E-04				
Chloroform	2.34E-03		1.59E-05	5.60E-06	8.91E-05	3.00E+02	5.30E-08	1.50E+02	1.06E-07
Carbon Tetrachloride	1.94E-04		1.32E-06	4.40E-05	5.82E-05	4.00E+01	3.31E-08	1.90E+03	6.96E-10
Benzene	8.08E-03		5.49E-05	3.10E-05	1.70E-03	6.00E+01	9.16E-07	1.30E+03	4.23E-08
1,2 Dichloroethane	8.13E-04		5.53E-06	2.20E-05	1.22E-04	4.00E+02	1.38E-08		
Trichloroethylene	3.57E-03		2.43E-05	2.10E-06	5.10E-05	6.00E+02	4.05E-08		
1,2 Dibromoethane (ethylene dibromide)	2.37E-04		1.62E-06	7.50E-05	1.21E-04	8.00E-01	2.02E-06		
Chlorobenzene	1.42E-04		9.68E-07			1.00E+03	9.68E-10		
Toluene	9.90E-03		6.73E-05			3.00E+02	2.24E-07	3.70E+04	1.82E-09
Ethyl Benzene	1.48E-03		1.01E-05			2.00E+03	5.04E-09		
Xylenes (o,m,p)	1.56E-03		1.06E-05			7.00E+02	1.51E-08	2.00E+04	5.29E-10
1,1,2,2 Tetrachloroethane	2.15E-04		1.46E-06	6.10E-05	8.91E-05				
1,4 Dichlorobenzene	1.86E-04		1.26E-06	1.20E-05	1.52E-05	8.00E+02	1.58E-09		
Benzyl chloride	1.59E-04		1.08E-06	5.20E-05	5.61E-05	1.20E+01	9.00E-08	2.40E+02	4.50E-09
Methyl ethyl ketone)	1.00E-03		6.82E-06			1.00E+03	6.82E-09	1.00E+04	6.82E-10
Acrylonitrile	1.37E-03		9.33E-06	3.10E-04	2.89E-03	5.00E+00	1.87E-06		
Methyl tert-Butyl Ether	4.78E-04		3.26E-06	5.70E-07	1.86E-06	8.00E+03	4.07E-10		
Hydrogen Chloride		1.25E-01	5.65E-02			9.00E+00	6.28E-03	2.10E+03	2.69E-05
Hydrogen Fluoride		5.94E-03	2.69E-03			1.40E+01	1.92E-04	2.40E+02	1.12E-05
Hydrogen Bromide		2.00E-04	9.09E-05			1.70E+01	5.35E-06		
Sulfur Dioxides		9.98E-03	4.53E-03			6.60E+02	6.86E-06	6.60E+02	6.86E-06
Sum					1.97E-02		6.50E-03		4.58E-05

Notes:

1. LFG and Flare combustion emission factors from sections A and B.
2. Annual average flare LFG pollutant emission rate, g/s = (max. LFG generation rate, scf/min) * (min/60s) * (Mscf/1000 scf) * (unabated emission factor lbs/Mscf) * (453.6 b/lb) * (1-% Fugitive) * (1-% destruction)
Ann. Avg. flare combustion rate, g/s = (max. LFG rate, scf/min) * (min/60s) * (Mscf/1000 scf) * (combustion em. fac. lbs/Mscf) * (453.6 b/lb)
3. Cancer Risk Model Input = Sum of [(Annual average emission rate, g/s) * (Unit Risk, (ug/m3)-1) * 1E6]
4. Chronic Hazard Index Model Input = Sum of [(Annual average emission rate, g/s) / (Chronic REL, ug/m3)]
5. Acute Hazard Index Model Input = Sum of [(Hourly average emission rate, g/s) / (Acute REL, ug/m3)]
6. TAC emission factors entered in DataBank are highlighted in **bold**.

E. Potential to Emit: No changes in the potential to emit are proposed for this application.

F. Cumulative Increases Since April 5, 1991: No cumulative increases in criteria emissions are associated with this application.

III. HEALTH RISK ANALYSIS: The increase in TAC concentrations in the LFG triggers the requirement for a health risk assessment of the TAC emissions from the HWMF landfill (S46) and flare (A11). In addition, a project risk assessment that includes all sources permitted within the last two years is also required. As such, the health risk analysis includes the impacts from the landfill fugitive emissions for both the class I and II sites, both landfill flares (A8 and A11), the three LFG-fired IC engines, and the leachate treatment system.

A. TAC Emissions: TAC emissions for the HWMF landfill (S46) and flare (A11) were estimated as described in section II C and D. TAC emissions for the rest of the project are from the engineering evaluation for application number 11375. The emission rate input into the model for the cancer risk run is the sum of the product of each carcinogenic TAC emission rate (g/s), unit risk factor ($\mu\text{g}/\text{m}^3$)⁻¹ and a scalar (1E6) so that the resulting output from the model would be the increased cancer risk. Likewise, the emission rate inputs into the model for the hazard indices is the sum of the each TAC emission rate (g/s) divided by the TAC reference exposure level so that the resulting output from the model would be the increased hazard index.

B. Dispersion Modeling: The ISCST3 dispersion model was run using USGS terrain data for Richmond and San Quentin, Chevron Refinery meteorological data and the rural land use option to determine the maximum cancer risk and hazard indices.

C. Results: The modeling results show that the maximum incremental cancer risk for the HWMF is 0.6 in a million, the chronic hazard index is 0.07 and the acute hazard index for the HWMF is less than 0.02. The maximum incremental cancer risk for the project is less than 2 in a million and the chronic hazard index is less than 0.1. These health risk values have been conservatively calculated for a residential receptor. Estimates of residential are based on the assumption that residents are exposed to continuous annual average pollutant concentrations over a 70-year lifetime. The health risk for the worker receptor will be less when adjusting for exposure.

Receptor	HWMF Cancer Risk in a million	HWMF Chronic Hazard Index	HWMF Acute Hazard Index	Facility Cancer Risk in a million	Facility Chronic Hazard Index
Actual Resident location	0.017	0.0019	0.0056	0.086	0.0036
Actual Worker location (calculated as for a resident)	0.61	0.071	0.023	1.7	0.095

IV. MONITORING REQUIREMENTS: The purpose of this application is to increase the permit condition limits for the HWMF LFG TAC concentration. The permit conditions for the HWMF contain annual source testing requirements. No changes to the current monitoring requirements are proposed.

V. STATEMENT OF COMPLIANCE:

A. California Environmental Quality Act Requirements (CEQA, Regulation 2-1-312 and 426): This application addresses the change in TAC concentrations in the HWMF LFG measured in recent source test. No changes in criteria emissions are expected. Pursuant to Regulation 2-1-312.1, this application is exempt from CEQA review because it only involves a permit condition modification that does not involve any increases in criteria emissions or physical modifications.

B. Public Notice, Schools (Regulation 2-1-412): 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.

C. Best Available Control Technology (BACT, Regulation 2-2-301), **Offsets** (Regulation 2-2-303), and **Prevention of Significant Deterioration** (PSD, Regulation 2-2-304): These new source review requirements are not triggered by this application.

D. Maximum Achievable Control Technology (MACT, Regulation 2-2-317): Total Hazardous Air Pollutant (HAP) emissions from WCCSL are less than 25 tons per year with no single HAP emissions exceeding 10 tons per year; thus, WCCSL is not major facility of HAPs and Regulation 2-2-317 does not apply.

E. New Source Review of Toxic Air Contaminants (Toxics NSR, Regulation 2, Rule 5): As discussed in section III, the cumulative impacts from all related projects permitted within the last two years must be included in the health risk analysis (Regulation 2-5-216, 2-5-217 and 2-5-302). The cumulative impacts due to the TAC emissions from the landfill fugitive emissions for both the class I and II sites, both landfill flares (A8 and A11), the three LFG-fired IC engines, and the leachate treatment system were evaluated. The maximum incremental source cancer risk is 0.6 in a million and the chronic hazard index is 0.07. The maximum incremental project cancer risk is less than 2 in a million, the chronic hazard index is 0.1 and the acute hazard index is 0.03. With these levels of risk, the project complies with Regulation 2, Rule 5.

F. Major Facility Review (MFR, Regulation 2, Rule 6): The sources under evaluation in this application will require an administrative revision to the facility's MFR Permit pursuant to Regulation 2-6-215. The necessary Title V MFR Permit revisions to update the permit conditions will be incorporated into the facility's MFR renewal application number 15376 in a separate document. This evaluation report serves as the statement of basis for the MFR permit renewal.

G. Solid Waste Disposal Sites (Regulation 8, Rule 34): The operation of the S46 HWMF landfill and the A11 LFG flare are expected to comply with Regulation 8, Rule 34 by maintaining a LFG collection system, sending the LFG collected to the flare for combustion and implementing the monitoring requirements of section 500. Based on the November 15, 2006 source test, the flare complies with section 301.3 with a destruction efficiency >98 wt% and exhaust concentrations at 22 ppmv non-methane organic compound, expressed as methane and corrected to 3% oxygen.

H. Particulate Matter and Visible Emissions (Regulation 6): Operation of the flare is expected to be in compliance with the Ringelmann limitations of Regulation 6, section 301.

I. Sulfur Dioxide (Regulation 9, Rule 1): Operation of the flare is expected to be in compliance with the sulfur dioxide emission limits of Regulation 9-1-301 and 302.

J. Hydrogen Sulfide (Regulation 9, Rule 2): The HWMF and flare are expected to be in compliance with the hydrogen sulfide emission limits of Regulation 9-2-301.

K. Federal Requirements: WCCSL is subject to 40 CFR Part 60, Subpart WWW, the NSPS for Municipal Solid Waste (MSW) Landfills and 40 CFR Part 63, Subpart AAAA, the NESHAPs for MSW Landfills. Based on their current compliance with Regulation 8, Rule 34 and their Title V permit, WCCSL is expected to be in compliance with both the federal NSPS and NESHAP requirements.

VI. PERMIT CONDITIONS: Changes to part 1 and 10 of the existing permit condition ID# 20754, highlighted below in underline and strikeout test, are proposed for this application. The change to the decomposable waste in-place more accurately reflects what is currently reported by WCCSL for the HWMF site. The increases in TAC concentrations are based on source tested amounts in the HWMF LFG, but with an additional 50% to allow for future fluctuations and to provide for a conservative basis for the health risk analysis. The TACs and concentrations listed in the permit condition are those that have the most significant impact on risk.

1. The S-46 Hazardous Waste Management Facility (HWMF) is inactive. The Permit Holder shall apply for and receive a Change of Permit Conditions before accepting any solid waste for disposal at S-46. The total cumulative amount of all decomposable wastes placed in the HWMF shall not exceed ~~210,700~~376,110 tons.
(Basis: Regulation 2-1-301)

*10. If the concentrations (dry basis) of toxic air contaminants in the collected landfill gas exceed any of the limits listed below, the Permit Holder shall submit a permit application for a Change of Permit Conditions within 30 days of receiving the test results.

Acrylonitrile	=	106.3 ppmv
Benzene	=	404.4 ppmv
Vinyl Chloride	=	15090.4 ppmv
<u>Methylene Chloride</u>	=	<u>350</u> ppmv

(Basis: Regulation 2 Rule 5 and AB2588 Air Toxics Hot Spots Act)

VII. RECOMMENDATION: Issue revised permit conditions with the changes described above for:

S46 Hazardous Waste Management Facility

Jane H. Lundquist
Principal Air Quality Engineer
Engineering Division
April 4, 2007

APPENDIX D

ENGINEERING EVALUATION

**For Landfill Gas Collection Alterations, Flare Permit
Condition Revisions and Alternative Wellhead
Standards for the Horizontal Collectors
in the Class I Landfill**

APPLICATION # 14339

ENGINEERING EVALUATION

West Contra Costa Sanitary Landfill, Inc.; Site # A1840

APPLICATION # 14339

A. BACKGROUND

Site Description:

The West Contra Costa Sanitary Landfill (WCCSL) Facility (Site # A1840) includes: an active Class II landfill (S-15), a closed Class I landfill (S-46), three landfill gas fired IC engines (S-5, S-6, and S-37), two landfill gas fired flares (A-8 and A-11), a solid waste transfer station (S-50), waste water processing equipment (S-21, S-41, S-48, S-69, S-70, S-71, S-72, S-73, S-74, S-75, and S-76), recycling operations (S-110, S-111, S-112, S-113, S-114, S-115, S-116, and S-118), and a composting facility (S-117).

Current Request:

This application concerns the landfill gas collection and control systems for the S-46 Hazardous Waste Management Facility (HWMF) and the S-15 Class II Landfill. Previously, the landfill gas collection systems for each of these landfills (S-46 and S-15) were entirely separate with landfill gas collected from S-15 vented to either the IC engines or to the A-8 Landfill Gas Flare and landfill gas collected from S-46 vented to the A-11 Landfill Gas Flare. However, a few months after the A-11 Landfill Gas Flare began operating on November 4, 2005, the flare began to have operating problems due to lack of sufficient gas. This lack of gas was likely due to a combination of problems including both lower than expected gas production and lower than expected gas collection efficiency. Excessive leachate in the HWMF area may also have inhibited gas production and gas movement to the collection system piping. Both the HWMF and the Class II landfill were also experiencing surface and component emission leaks during this time period. Enforcement actions were taken for these violations.

During subsequent meetings, WCCSL agreed to change the operating procedures for the flares and to make alterations to the landfill gas collection systems that would allow the A-11 flare to operate continuously and that would address the surface and component leak issues. In particular, WCCSL requested to be allowed to transfer landfill gas from either landfill to either flare. In addition, WCCSL requested to connect the leachate wells to the gas vacuum system on an as needed basis (less than continuous operation of these individual collectors). WCCSL submitted this application to request an Authority to Construct for the specific alterations and permit condition revisions that were necessary for S-15, A-8, S-46, and A-11. In addition, WCCSL anticipated that maintaining continuous operation on the horizontal collectors may result in high oxygen values at these wells. WCCSL requested alternative wellhead standards for these collectors to address this potential problem.

Initially, WCCSL submitted just a Title V revision for these changes. At the District's request, this application was converted into an NSR application for the gas collection system alterations, permit condition revisions, and alternative wellhead standards. The District agreed that the gas collection system alterations could be handled pursuant to the accelerated permit process. On February 26, 2007, WCCSL completed the necessary collection system alteration that allowed landfill gas from two of the Class II gas collection wells to be sent to the Class I Flare (A-11). Since then, A-11 has been operating continuously. WCCSL has recently reported that some of the horizontal collectors are indeed experiencing high oxygen values as expected. Therefore, WCCSL does require alternative wellhead standards for the gas collection system at S-46.

B. EMISSIONS

The S-46 HWMF is a closed landfill, and the landfill gas generation rate is declining. The landfill gas collection system and flare were installed pursuant to Applications # 2789 and # 8514 in order to abate the previously uncontrolled emissions from this landfill. The proposed revisions to the collection system operating requirements and the adoption of alternative wellhead standards are intended to ensure that the HWMF gas collection system will be able to operate continuously and that this collection system will capture as much landfill gas as possible. Therefore, these alterations will not result in any emission increases.

The proposed permit condition revisions for the flares will allow landfill gas from either landfill to be sent to either flare. Since both flares are required to meet the Regulation 8-34-301.3 NMOC emission limits and are expected to achieve the same control efficiency for toxic compounds, venting gas collected from one landfill (either S-15 or S-46) to a different flare (either A-8 or A-11) will not result in any POC or toxic emission increases.

The A-8 Flare is permitted to control an average of 49.5 MM BTU/hour of landfill gas. This flare is currently operating at about 25% capacity. If all of the collected landfill gas from the S-15 landfill were sent to A-8, the flare would be operating at 70% of maximum capacity and would be able handle an additional 14.8 MM BTU/hour of landfill gas. The maximum permitted capacity of the A-11 Flare is 5.25 MM BTU/hour of landfill gas. Therefore, A-8 has sufficient excess capacity to handle all of the landfill gas that would have been controlled by the A-11 Flare with no changes in the current throughput limit or secondary pollutant emission limits for A-8. Therefore, this permit change will not result in any secondary pollutant emission increases above the current permitted emission levels for A-8.

The A-11 Flare was permitted to handle up to 5.25 MM BTU/hour of landfill gas (about 175 cfm of gas at 50% methane). For 2007, the maximum projected landfill gas generation rate from S-46 was 54 cfm of landfill gas (about 30% of maximum capacity). Therefore, A-11 has sufficient excess capacity to handle an additional 121 cfm of landfill gas from S-15. Venting up to 121 cfm of additional landfill gas from S-15 to A-11 will not require any changes to the current permitted throughput rate for A-11 and will not result in any secondary pollutant emission increases above the current permitted emission levels for A-11.

C. STATEMENT OF COMPLIANCE

Regulation 2, Rule 1:

This application is for a change of permit conditions at the S-15 and S-46 landfills that could involve minor alterations of the landfill gas collection system, which is part of the overall emission control system for these landfills. However, these alterations and permit condition revisions will not allow any expansion of any operations beyond the currently permitted maximum operating rates and will not result in any emission increases at this facility. There is no possibility that the proposed permit condition revisions or collection system modifications could have any significant impact on the environment. Therefore, this proposed change of permit conditions is categorically exempt from CEQA review pursuant to Regulations 2-1-312.1, 2-1-312.2, and 2-1-312.6. 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 project will not result in any increases of maximum permitted emissions from S-15, A-8, S-46, or A-11, this project is not subject to New Source Review or any requirements of Regulation 2, Rule 2.

Regulation 2, Rule 5:

Since this project will not result in any increases of maximum permitted emissions from S-15, A-8, S-46, or A-11, this project is not subject to New Source Review for Toxic Air Contaminants or any requirements of Regulation 2, Rule 5.

Regulation 2, Rule 6:

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a designated facility as defined by BAAQMD Regulation 2-6-204. Therefore, a Title V permit is required pursuant to Regulation 2-6-304.

This facility received its initial Title V permit on May 29, 2002. The permit was revised on September 29, 2004, October 26, 2005, and October 17, 2006. The proposal to establish alternative wellhead standards will require a significant revision of the MFR permit, but all other revisions will require a minor revision of the MFR permit. All proposed permit revisions will be discussed in detail in the Statement of Basis for the Title V Permit Renewal under Permit Application # 15376.

Regulation 8, Rule 34:

The S-15 West Contra Costa Sanitary Landfill is subject to the landfill gas collection and control requirements of Regulation 8, Rule 34, because this landfill has accepted waste within the last thirty years and contains more than 1 million tons of decomposable waste. Regulation 8, Rule 34 requires continuous collection and control of landfill gas from all areas of S-15 that contain decomposable waste. Segregated areas that contain only non-decomposable waste or that emit less than 1% of the total NMOC emissions for the entire site may be excluded from this landfill gas collection requirement. Landfill gas collection components (58 vertical wells and 8 horizontal wells) have been installed in all decomposable waste areas for S-15. These wells are connected to a vacuum system that operates continuously and that vents the collected gases to approved control devices. The proposed condition revisions for S-15 clarify that the A-11 Flare is an approved control device but do not make any changes to the operating requirements for the landfill or gas collection system. S-15 continues to be subject to Regulation 8-34-301, 301.1, 301.2, 303, 304, 305, and the associated administrative and monitoring requirements, while the flares (A-8 and A-11) continue to be subject to 8-34-301.3 and the landfill gas fired IC engines (S-5, S-6, and S-37) continue to be subject to 8-34-301.4.

Regulation 8, Rule 34 applies to all contiguous waste disposal areas that are owned and operated by the same entity or that are under common control. In accordance with this facility definition, the waste disposal unit identified as the S-46 Hazardous Waste Management Facility (HWMF) is also subject to Regulation 8, Rule 34. Prior to 2000, the District determined the HWMF was a waste disposal area with low gas generation rate. Since this area was emitting < 1% of the NMOC emissions from the total site, this area was excluded from the requirement to collect and control landfill gas. In 2000-2001, about 200,000 tons of MSW were placed on top of the hazardous waste disposal unit. The addition of MSW to this area raised the NMOC emissions from this area to about 6% of the total site's NMOC emissions. Consequently, this area no longer qualified for an exclusion from the requirement to collect and control landfill gas. In accordance with Regulation 8-34-304, this landfill area (S-46) must be equipped with a landfill gas collection system, and this collection system must operate continuously pursuant to Regulation 8-34-301.1. This landfill area and gas collection system are also subject to 8-34-301.2, 303, 305, and the associated administrative and monitoring requirements.

As discussed in the background section, the facility had difficulty maintaining continuous operation of the landfill gas collection system due to a low gas collection rate that was insufficient to maintain continuous operation of the A-11 flare. Although the facility requested to operate the entire landfill gas collection

system and A-11 flare less than continuously pursuant to Regulation 8-34-404, the District denied this request because surface and component leaks had been detected and other problems (such as excessive leachate) may have been interfering with gas movement to the gas collection system.

The overall intent of the proposed condition revisions for S-46, A-11, and A-8 is to eliminate surface and component leaks at S-46 by increasing the operating time and improving the collection efficiency of the entire landfill gas collection system for S-46. The proposed permit condition revisions will allow the facility to divert some of the gas collected from S-15, which has a higher percentage of methane, to A-11. This diversion of gas from S-15 to A-11 will increase the landfill gas flow rate to A-11 and will increase the BTU content of this landfill gas. These two improvements should allow A-11 to operate continuously. However, operating A-11 continuously may lead to high oxygen values and a temporary depletion of gas at some of the individual horizontal collectors. Therefore, the District is also proposing to establish alternative wellhead standards for the individual horizontal collectors associated with S-46 and to allow some of these individual collectors to operate on a less than continuous basis, while requiring the collection system as a whole to operate continuously.

Meanwhile, the facility has been addressing the excessive leachate problem. Reducing the leachate build up in the landfill is expected to improve the collection efficiency of each individual collector, which should further boost the flow rate to A-11. The District has identified a propensity for surface leaks near leachate wells that penetrate that cap even though some of these leachate wells are not located in refuse. Improving the collection efficiency of the horizontal collectors may reduce this leak tendency, but these collectors have little influence on gas that is being generated deep within the hazardous waste area. Migration of gas from the older hazardous waste area may be contributing to gas leaks at the leachate wells. To resolve this potential surface leak problem, the facility has requested to have the option of connecting the leachate wells to the gas vacuum system, if methane is detected in these leachate wells. For these leachate wells, the gas vacuum would only be turned on for as long as necessary to remove the methane that has migrated into these piping systems. The District is proposing to establish less than continuous operating procedures and site-specific monitoring procedures for these leachate wells to handle this non-routine gas collection practice.

While the S-46 gas collection system as whole remains subject to the 8-34-301.1 continuous operation provisions, individual horizontal collectors and leachate wells will be subject to less than continuous operation pursuant to 8-34-404, which states:

8-34-404 Less than Continuous Operation Petition: Any operator seeking to operate less than continuously shall submit a written petition to the APCO that contains the following:

- 404.1 The landfill gas flow rate and methane concentrations as measured for the entire system or as measured for individual gas collection wells or components for which less than continuous operation is being sought;
- 404.2 A map showing the locations of individual components; and
- 404.3 An operating, maintenance, and inspection schedule.
- 404.4 If the APCO grants written approval, such approval shall contain landfill gas flow rate, methane concentration, and operating conditions.
- 404.5 A less than continuous operation petition must be renewed every three years or whenever the information submitted pursuant to Section 8-34-404.1 changes.

A petition to operate the entire gas collection and emission control systems less than continuously will only be considered when a landfill is not generating enough landfill gas to operate the emission control system continuously.

(Adopted 11/17/93; Amended 7/17/96; 10/6/99)

Federal Requirements:

NSPS for MSW Landfills: The West Contra Costa Sanitary Landfill is subject to the New Source Performance Standards (NSPS) for Municipal Solid Waste (MSW) Landfills, 40 CFR, Part 60, Subpart WWW. This regulation limits surface leaks to 500 ppmv as methane (40 CFR 60.753(d)). It requires that a gas collection system be installed and operated in each area or cell, where MSW has been in place for two years or longer. The gas collection system must be designed with a sufficient density of collectors to prevent surface leaks. Gas wells and other collectors must be installed and operated in accordance with an approved collection system design plan. The Administrator must approve the gas collection system design plan and any changes to this design plan, such as the permanent decommissioning of wells.

Subpart WWW requires continuous operation of the entire landfill gas collection system, except during start-up, shut-down, and malfunction events, provided these events do not exceed 5 consecutive days. This regulation also requires that the gas collection system operate with negative pressure at each wellhead (40 CFR Part 60.753(b)), but it does allow permanently decommissioned wells to have a static positive pressure. It does not specifically prohibit temporarily or permanently disconnecting a well from the vacuum system as long as these changes are authorized by the collection and control system design plan. Within the District, the BAAQMD is the administrator, and the permit application process constitutes the collection system design plan approval and modification process. Design plan changes, including well decommissioning, are acceptable as long as the changes will ensure that a sufficient density of collectors is in place to maintain compliance with the surface leak standard.

The monitoring requirements in the proposed permit condition revisions will ensure that temporary and permanent well disconnections will not result in surface leak excesses. Therefore, these proposed changes will ensure compliance with the NSPS for MSW Landfills.

NESHAPs for MSW Landfills: This landfill is also subject to the NESHAPs for MSW Landfills (40 CFR, Part 63, Subpart AAAA). This NESHAP requires that subject facilities implement startup, shutdown, malfunction plans (SSM Plans) and comply additional reporting requirements. All applicable requirements are contained in the existing MFR permit. This facility is expected to continue to comply with these requirements. The proposed permit conditions will identify procedures that WCCSL must follow, if surface leaks are found in the vicinity of a decommissioned well.

D. PERMIT CONDITION REVISIONS

The District is proposing to modify Condition # 17821 and Condition # 20754, as indicated below.

Condition # 17821

For: S-15 West Contra Costa Sanitary Landfill with Active Gas Collection System, and A-8 Landfill Gas Flare

No Changes to Parts 1-4

5. All collected landfill gas shall be vented to properly operating abatement equipment including the Internal Combustion Engines (S-5, S-6, and S-37) or the Landfill Gas Flares (A-8 and A-11). Raw landfill gas shall not be vented to the atmosphere, except for

unavoidable landfill gas emissions that occur during collection system installation, maintenance, or repair that is performed in compliance with Regulation 8, Rule 34, Sections 113, 116, 117, or 118 and for inadvertent component or surface leaks that do not exceed the limits specified in 8-34-301.2 or 8-34-303. (basis: Regulation 8-34-301)

No Changes to Parts 6-13

14. In order to demonstrate compliance with the above conditions, the Permit Holder shall maintain the following records in a District approved logbook.
- a. Record the total amount of municipal solid waste received at S-15 on a daily basis. Summarize the daily waste acceptance records for each calendar month.
 - b. For each area or cell that is not controlled by a landfill gas collection system, maintain a record of the date that waste was initially placed in the area or cell. Record the cumulative amount of waste placed in each uncontrolled area or cell on a monthly basis.
 - c. If the Permit Holder plans to exclude an uncontrolled area or cell from the collection system requirement, the Permit Holder shall also record the types and amounts of all non-decomposable waste placed in the area and the percentage (if any) of decomposable waste placed in the area.
 - d. Maintain daily records of low VOC soil acceptance rate and emissions, pursuant to part 3.
 - e. Record of the dates, locations, and frequency per day of all watering activities on unpaved roads or active soil or fill areas. Record the dates, locations, and type of any dust suppressant applications. Record the dates and description of all paved roadway cleaning activities. All records shall be summarized on monthly basis.
 - f. Record the initial operation date for each new landfill gas well and collector.
 - g. Maintain an accurate map of the landfill, which indicates the locations of all refuse boundaries and the locations of all wells and collectors (using unique identifiers) ~~that are required to be operating continuously pursuant to part 6.a.~~ Maintain a list of the wells or collectors that are venting to either the A-8 flare or the landfill gas fired engines and a separate list of the wells or collectors that are venting to the A-11 flare. Any areas containing only non-decomposable waste shall be clearly identified. This map shall be updated at least once a year to indicate changes in refuse boundaries, ~~and~~ to include any newly installed wells and collectors, and to remove any decommissioned wells and collectors.
 - h. Record the operating times and the landfill gas flow rate to the A-8 Landfill Gas Flare on a daily basis. Summarize these records on a monthly basis. Calculate and record the heat input to A-8, pursuant to part 8.
 - i. Maintain continuous records of the combustion zone temperature for the A-8 Landfill Gas Flare during all hours of operation.
 - j. Maintain records of all test dates and test results performed to maintain compliance parts 10, 11, and 12 above or to maintain compliance with any applicable rule or regulation.

All records shall be maintained on site or shall be made readily available to District staff upon request for a period of at least 5 years from the date of entry. These record keeping requirements do not replace the record keeping requirements contained in any applicable

rules or regulations. (basis: Cumulative Increase, 2-1-301, 2-6-501, 6-301, 6-305, 8-2-301, 8-34-301, 8-34-304, and 8-34-501)

No Changes to Part 15

Condition # 20754

For: S-46 Hazardous Waste Management Facility with Gas Collection System and A-11 Landfill Gas Flare for HWMF

No Changes to Part 1

- ~~2. The Permit Holder has been issued an Authority to Construct for 19 horizontal collectors. Specific locations, depths, and lengths of associated piping are as described in detail in Permit Application # 2789. The Permit Holder shall apply for and receive an Authority to Construct before modifying this gas collection system. Increasing or decreasing the number of wells or collectors, or significantly changing the length of collectors, or the locations of wells or collectors are all considered to be modifications that are subject to the Authority to Construct requirement. Upon start-up of the A-11 Landfill Gas Flare, this gas collection system shall be operated continuously. Wells shall not be shut off, disconnected or removed from operation without written authorization from the District, unless the Permit Holder complies with all applicable requirements of Regulation 8, Rule 34, Sections 113, 116, 117, and 118. (Basis: Regulations 2-1-301 and 8-34-301.1)~~
2. The S-46 HWMF Class I Landfill shall be equipped with a landfill gas collection system, as described in subpart 2a. Authorized alterations to the HWMF landfill gas collection system are described in subpart 2b. The HWMF landfill gas collection system shall be operated in accordance with the requirements of subpart 2c. All HWMF landfill gas collection system components shall comply with the alternative component limits and monitoring requirements specified in subpart 2d. (Basis: Regulations 2-1-301, 8-34-301.1, 8-34-305, and 8-34-404)
- a. The Permit Holder has been issued a Permit to Operate for the HWMF landfill gas collection system components listed below. Well and collector locations, depths, and lengths are as described in detail in Permit Application #14339. The Permit Holder shall apply for and receive an Authority to Construct before altering the landfill gas collection system described below. Increasing or decreasing the number of wells or collectors or substantially moving the locations of these collection components are considered alterations 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 subpart 2b as evidenced by start-up and decommissioning 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 2b, as

evidenced by start-up and decommissioning notification letters submitted to the District.

- 16 horizontal collectors
- 0 leachate / gas extraction wells

b. The Permit Holder has been issued an Authority to Construct to allow for the HWMF landfill gas collection system alterations described below. Well and collector locations, depths, and lengths are as described in detail in Permit Application #14339. All collection system alterations shall comply with subparts 2b(i-v) below.

- i. The authorized collection system alterations are:
 - Connect up to 32 leachate removal wells to the landfill gas vacuum system
- ii. The Permit Holder shall apply for and receive an Authority to Construct before altering the landfill gas collection components described in subpart 2a. 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 2b(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 be 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 2b(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 2b, 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. Within six months of installing a new 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.

- c. The Permit Holder shall operate the HWMF gas collection system in accordance with the requirements of this subpart (2c). The entire collection system shall be operated continuously, as defined in Regulation 8-34-219, unless the Permit Holder complies with all applicable provisions of Regulation 8-34-113. 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 8-34-113 or 8-34-117 or with subpart 2c(iii).
- i. A minimum of eight (8) horizontal collectors shall be operating (valve open to the vacuum system with collected gases flowing to a control device) at any one time.
 - ii. Each horizontal collector and leachate / gas extraction well shall be operated upon detection of a gauge pressure of 1.0 inches of water column or more, or upon detection of a methane concentration in the collector or well of 5.0% by volume or more.
 - iii. A horizontal collector or leachate / gas extraction well may be temporarily disconnected from the vacuum system (isolation valve completely closed), if the methane concentration detected in the collector or well is less than 5.0 % by volume and the oxygen concentration detected in the collector or well is 15.0 % by volume or more.
 - iv. Collection system components that are temporarily disconnected from the vacuum system in accordance with this subpart are not subject to the Regulation 8-34-305 wellhead limits or the subpart 2d alternative component limits.
 - v. Collection system components 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 component-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 2c: test for component leaks using the procedures identified in Regulation 8-34-602 within seven days of disconnection from vacuum and again within 30 days of disconnection from vacuum. If a component leak is detected at a component, the Permit Holder shall take all steps necessary to reduce the leak below the applicable limit, including reconnecting the component to the vacuum system, if no other corrective action measures are successful within the time frames allowed by Regulation 8, Rule 34.
 - vi. For each well or collector disconnection event, the Permit Holder shall record the well/collector ID number, all vacuum disconnection dates and times, all vacuum reconnection dates and times, all related monitoring dates, and all monitoring results in a District approved log. This log shall

also include an explanation of why the temporary disconnection was necessary and shall describe all adjustments or repairs that were made in order to allow the collection system component 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 subpart 2a shall be operated in compliance with the alternative component limits and related monitoring requirements listed in this subpart instead of the wellhead limits cited in Regulation 8-34-305. The alternative component limits listed below apply to the components listed in subpart 2a and to any components installed pursuant to subpart 2b upon initial start-up of these components. These alternative limits apply during all times that these components are required to be operating (except for the circumstances specifically described below) and do not apply during vacuum disconnection time that is authorized pursuant to Regulation 8, Rule 34 or pursuant to subpart 2c(iii).
 - i. Each component that is required to be operating shall operate under a vacuum with a gauge pressure of less than 0.0 inches of water, except for the following circumstance. If a component has been disconnected from the vacuum system for more than 24 hours, the gauge pressure may exceed 0.0 inches of water for up to 24 hours after the vacuum reconnection time.
 - ii. For each component that is required to be operating, the gas temperature shall not exceed 131 degrees F.
 - iii. For each component that is required to be operating, the oxygen concentration of the gas in the wellhead shall not exceed 15% oxygen by volume (dry basis), except for the following circumstance. If a component must be operated pursuant to subpart 2c(ii), the oxygen concentration may exceed 15% by volume until the requirements of subpart 2c(iii) can be satisfied.
 - iv. The Permit Holder shall demonstrate compliance with these alternative component limits by monitoring each component listed in subpart 2a and any components installed pursuant to subpart 2b on a monthly basis for gauge pressure, gas temperature, methane concentration, and oxygen concentration using the procedures identified in Regulation 8-34-604 and 8-34-608.
 - v. All monitoring dates and monitoring results shall be recorded in a District approved log. Each month, the Permit Holder shall compare these monitoring results to the operating requirements in subpart 2c and the alternative component limits in subpart 2d. The Permit Holder shall identify any components that must or may undergo a change of operational status due to these methane and oxygen concentration results. The Permit Holder shall also identify any operating components where the measured gauge pressure, temperature, or oxygen concentration exceeds the applicable limit in subparts 2d(i-iii). If the operator identifies an excess of a component limit, the operator may follow the repair schedule

requirements in Regulation 8-34-414 to correct the excess. For compliance with Regulation 8-34-414.3-4, gas collection system expansion is not required, if the excess can be corrected in some other manner such as adjusting, repairing, or replacing the component, temporarily disconnecting the component from the vacuum system (if authorized by subpart 2c), or permanently decommissioning the component (if authorized by subpart 2d). In any case, the excess shall be corrected within 120 days of the date that the excess was first discovered. All records shall be retained for a minimum of five years and shall be made available to District staff upon request.

3. ~~Upon start-up of A-11, a~~All collected landfill gas shall be vented to ~~the a~~ properly operating landfill gas control system. Gas collected from the S-46 Hazardous Waste Management Facility may be vented to either the A-8 Landfill Gas Flare or the A-11 Landfill Gas Flare. Raw landfill gas shall not be vented to the atmosphere, except for unavoidable landfill gas emissions that occur during collection system installation, maintenance, or repair that is performed in compliance with Regulation 8, Rule 34, Sections 113, 116, 117, or 118 and for inadvertent component or surface leaks that do not exceed the limits specified in 8-34-301.2 or 8-34-303. (Basis: Regulations 2-1-301 and 8-34-301)

No Changes to Parts 4-10

11. In order to demonstrate compliance with the above conditions, the Permit Holder shall maintain the following records in a District approved logbook.
 - a. record the initial start-up date for each well and collector in the HWMF landfill gas collection system and for the A-11 Landfill Gas Flare,
 - b. ~~record the initial start-up date for the A-11 Landfill Gas Flare,~~maintain a list of all wells and collectors in the S-15 Class II Landfill's gas collection system that are venting landfill gas to A-11, and - for each well or collector in this list - record the date that this landfill gas diversion to A-11 was initiated and the date that landfill gas diversion to A-11 is discontinued.
 - c. record the dates, times, durations, and reasons for each shut-down of (i) an individual collector, (ii) the entire collection system, or (iii) the A-11 Flare.
 - d. maintain records of the test dates and the test results for any tests conducted to demonstrate compliance with these permit conditions.

(Basis: Regulations 2-1-301, 8-34-501, and 2-6-501)

No Changes to Part 12

E. RECOMMENDATION

Issue a Change of Permit Conditions for the following equipment:

S-15 West Contra Costa Sanitary Landfill with active gas collection system abated by S-5, S-6, and S-37 IC Engines and by A-8 and A-11 Landfill Gas Flares.

S-46 Hazardous Waste Management Facility with active gas collection system; abated by A-8 or A-11 Landfill Gas Flares.

By: _____
Carol S. Allen
Senior Air Quality Engineer

Date

APPENDIX E

COMPLIANCE REPORT

COMPLIANCE & ENFORCEMENT DIVISION

Inter-Office Memorandum

June 16, 2010

TO: BRIAN BATEMAN – DIRECTOR OF ENGINEERING 

FROM: KELLY WEE – DIRECTOR OF ENFORCEMENT 

SUBJECT: REVIEW OF COMPLIANCE RECORD OF:

WEST CONTRA COSTA SANITARY LANDFILL (WCCSL) - SITE # A1840

Background

This review was initiated as part of the District evaluation of an application by WCCSL for a Title V Permit Renewal. It is standard practice of the Compliance and Enforcement Division to undertake a compliance review in advance of a renewal of a Title V Permit to Operate. The purpose of this review is to assure that any non-compliance problems identified during the prior five-year permit term have been adequately addressed by returning the facility to compliance, or, if non-compliance persists, that a schedule of compliance is properly incorporated into the Title V permit compliance schedule. In addition, the review checks for patterns of recurring violation that may be addressed by additional permit terms. Finally, the review is intended to recommend, if necessary, any additional permit conditions and limitations to improve compliance.

Compliance Review

District staff reviewed WCCSL Annual Compliance Certifications for May 29, 2002 to May 31, 2010 and found no ongoing non-compliance and no recurring pattern of violations, which have not already been corrected.

The District has conducted a compliance review of 32 Notices of Violation (NOVs) issued to WCCSL from May 29, 2002 to May 31, 2010. While the landfill received 32 violations over this 8-year period, for large facilities within the Bay Area Air Quality Management District's jurisdiction, violations are likely to occur. It is important to note that all of the violations associated with the NOVs were in compliance at the time of this review. The District's analysis of the NOVs for the 8-year period indicated that there are no ongoing violations or pattern of recurring violations that would currently require a compliance schedule.

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Understanding how the District handles the violations associated with the NOV's is important to understanding how the District evaluated the facility's compliance status. Whenever the District discovers a violation, it begins a two-step process. The first step is to end the violation and bring the alleged violator back into compliance. Once compliance is achieved, the second step is to proceed with penalty assessment. It is District policy to not proceed with penalty assessment until compliance has been achieved. If a facility has not achieved compliance in a timely fashion, the District proceeds with additional enforcement action. The vast majority of Notice of Violation penalties are resolved through settlement negotiations.

The results of the District's compliance review are shown in Table I. As stated above, the 36 violations associated with the 32 NOV's were in compliance at the time of this review. In 44% of the violations, compliance was achieved within 1 day of occurrence. In the remaining 56% of the violations, the violations achieved compliance shortly after discovery but did not represent ongoing violation that would require a compliance schedule in a Title V permit. In some cases, permit condition modifications have been made to address permit condition violations during the review period. There were two sources that had multiple violations. The violations did not indicate recurrent patterns of violation because investigations into the cause of the violations revealed unrelated causes. Of the 32 NOV's issued, approximately 16% of the violations resulted from the facility self-reporting, pursuant to District Regulations and Title-V requirements.

Based on this review and analysis of all the violations for the 8-year period, the District has concluded that no schedule of compliance or change in permit terms is necessary beyond what is already contained in WCCSL's Title V permit, as the record showed that the violations returned to compliance, were intermittent or did not evidence on-going non-compliance, there are no patterns of recurring violation, and the facility was in compliance at the time of this review.

The violation details associated with the 32 Notices of Violation (36 violations) are summarized below and detailed in Table 1.

Violation Category	TOTAL
Emissions Related	25
Administrative	6
Permit-to-Operate	5
TOTAL	36

REVIEW OF COMPLIANCE RECORD OF:
WEST CONTRA COSTA SANITARY LANDFILL - SITE #A1840

June 1, 2010
Page 3 of 3

District Staff has conducted a compliance review for WCCSL and zero (0) Notice to Comply (NTC's) were issued to WCCSL from May 29, 2002 through May 31, 2010. The District uses the NTC to achieve compliance by using enforcement action appropriate to the severity of the violation. In most cases, these minor violations involve procedural, administrative, or recordkeeping omissions that did not conceal a violation or were de minimis emissions.

District staff also reviewed additional District compliance records for WCCSL for May 29, 2002 to May 31, 2010. During this period WCCSL activities known to the District include:

The District received two (2) air pollution complaints alleging WCCSL as the source: one (1) was confirmed and the other one (1) was unconfirmed.

The District received forty-one (41) notifications for Reportable Compliance Activity (RCA)¹: eighteen (18) breakdown requests, twenty (20) indicated parametric monitor violations, and three (3) in-operative monitor reports. One (1) of the RCAs resulted in a NOV.

The District processed one (1) docket for a variance before the District's Hearing Board.

- Docket #3552 was filed to allow WCCSL to connect wells and leachate sumps to a gas collection unit and to cap areas of the Class II landfill to reduce emissions from the landfill surface and collection unit. The variance was granted.

Conclusion

The Compliance and Enforcement Division has made a determination that for the review period West Contra Costa Sanitary Landfill was in intermittent compliance. There is no evidence of on-going non-compliance and no recurring pattern of violations that would warrant consideration of a Title V permit compliance schedule or additional permit terms. The Division does not have any recommendations for any additional permit conditions and limitations to improve compliance beyond what is already contained in the Title V Permit under consideration.

¹ Reportable Compliance Activity (RCA), also known as "Episode" reporting, is the reporting of compliance activities involving a facility as outlined in District Regulations and State Law. Reporting covers breakdown requests, indicated monitor excesses, pressure relief device releases, and inoperative monitor reports.

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