

## **West Contra Costa Sanitary Landfill, Inc.**

### **Title V Statement of Basis (SOB) for: Application # 18135 Minor Revisions of Title V Operating Permit for Site # A1840**

March 2017

#### Introduction

There are several minor revisions to the West Contra Costa Sanitary Landfill. The revisions are pursuant to Regulation 2 Rule 6, Section 215. The applications for these revisions are included in the appendices below:

#### Application #17593

The evaluation was to show design plans for the landfill gas connections for the Revised Collection and Control System Design Plan. No change of conditions occurred for this application.

#### Application # 18127

This application was for a change in permit conditions requested for the landfill gas fired IC engines (sources S-5, S-6, S-37) and the flare (A-8). For the engines, the allowable engine cylinder temperature range was expanded. For the flare, the source testing requirement was clarified.

#### Application # 18128

This application was for a change in permit conditions 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.

#### Application # 20621

This evaluation was for modifications to the leachate treatment facility along with the replacement of two air strippers and archiving of several sources that were replaced. This application also included a change in permit conditions to allow treatment of wastewater collected from several Class I locations (storm water from the corrective action management unit, condensate from the Class I area gas collection pipes, and leachate from Area E-22R) in addition to leachate collected from the hazardous waste management facility. This application did not increase any throughput limits for the leachate treatment system.

#### Application #21424

This evaluation was for a change of permit conditions for S-15 to allow temporary disconnection from the vacuum system for gas collection wells experiencing low methane production and high oxygen content. In addition, the S-46 Class I hazardous waste management facility was

combined with the S-15 closed Class II landfill. Conditions # 17821 for S-15 and Condition # 20754 for S-46 were deleted, and Condition # 25293 for the combined landfills was created. This Change of Condition also addressed operating criteria for wells where methane content was less than 5%. The A-8 flare was converted to a back-up unit to the new flare (see Application # 21826).

#### Application 21826

This evaluation was initially for a flare replacement (A-120 replaced A-8), but it was later revised to allow A-8 to remain on-site as a backup flare. Condition #17821 was replaced with a new condition # 25923 (see also Application # 21424). Conditions # 5771 and #17812 were also revised to reflect these flare changes.

#### Application # 23888

This engineering evaluation was for a change of condition # 23356 for source S-117 to allow the use of water as a dust suppressant as an alternative to either chemical or a petroleum resin dust suppressant.

### Section I Standard Conditions

#### A. Administrative Requirements

Amendment dates for Regulation 1, Regulation 2, Rule 1 and Regulation 2 Rule 4 were updated. SIP regulation 2 Rule 6 was also included.

#### B. Conditions to Implement Regulation 2, Rule 6, Major Facility Review

Part 12 was modified to include the word “of”

#### F. Monitoring Requirements

Modified to incorporate new BAAQMD headquarters address.

#### G. Compliance Certification

Included language to email certificate to EPA and also EPA’s Title has changed, so labeling address has shown changes to EPA.

### Section II Equipment

#### Table II A – Permitted Sources

The description of S-15 was modified to reflect that this landfill is now closed and is no longer accepting waste for disposal. Also, the count of horizontal collectors and vertical wells was updated to reflect gas collection system changes completed to date.

The following sources were deleted from Table II A:

S-41	HiPO <sub>x</sub> Advanced Oxidation System
S-46	HWMF equipped with LGCS
S-48	Air Stripper
S-73	Clarifier holding (Feed) Tank
S-75	Air Stripper Holding Tank
S-76	Sludge Thickener

The following sources were added to Table II A:

S-120	Air Stripper
S-123	Air Stripper Holding (Feed) Tank
S-130	Standby Air Stripper
S-140	Clarifier holding (Feed) Tank
S-141	Inlet Feed Holding Tank
S-142	Waste Oil Tank
S-145	E-22R Area Tank
S-146	Pretreatment Inlet Feed Tank
S-151	Waste Oil Tank
S-155	Oil Sludge Thickener
S-156	Three Day Tanks
S-157	Filter Press Surge Tank

Table II B - Abatement Devices

The following abatement equipment has been deleted from this table:

A-11	Landfill Gas Flare
A-12	Carbon Adsorber
A13	Carbon Adsorber
A-41	Ozone Gas Destruct Unit

The following abatement equipment has been added to this table, along with sources they abate, applicable requirements, operating parameters and limit or efficiency

A-120	Landfill Gas Flare
A-18	Carbon Adsorber - three vessels in series now; Table IV-F to Table IV-D
A-19	Carbon Adsorber - three vessels in series now; Table IV-F to Table IV-D
A-20	Carbon Adsorber- two vessels in series; Table IV F
A-21	Carbon Adsorber - two vessels in series; Table IV F

The descriptions of following abatement equipment were modified in Table II B:

A-8	Backup Landfill Gas Flare
A-14	Carbon Adsorber- three vessels in series now; Table IV-F to Table IV-D
A-15	Carbon Adsorber- three vessels in series now; Table IV-F to Table IV-D
A-16	Carbon Adsorber- three vessels in series now; Table IV-F to Table IV-D
A-17	Carbon Adsorber- three vessels in series now; Table IV-F to Table IV-D

In Table II B, the references to Section IV tables were updated.

A-50	Water Spray System - Table IV-H changed to Table IV-E
A-111	Water Spray System - Table IV-L changed to Table IV-I
A-112	Water Spray System - Table IV-M changed to Table IV-J
A-113	Water Spray System - Table IV-N changed to Table IV-K
A-114	Water Spray System - Table IV-O changed to Table IV-L
A-115	Water Spray System - Table IV-P changed to Table IV-M
A-116	Water Spray System - Table IV-Q changed to Table IV-N
A-117	Water Spray System - Table IV-R changed to Table IV-O
A-118	Water Spray System - Table IV-S changed to Table IV-P

### Section III Generally Applicable Requirements

Changes to this section are the following:

- BAAQMD Regulation 5 Open burning date change to 6/19/13
- BAAQMD Regulation 8 Rule 3 Organic Compounds - Architectural Coatings: date changed to 7/1/09 and not federally enforceable
- Added SIP Regulation 8, Rule 3 Organic Compounds - Architectural Coatings (1/2/04)
- CCR Title 17 Section 93115 - ATCM for Stationary Compression Ignition Engines date changed to 5/19/11
- CCR Title 17 Section 93116 ATCM for portable diesel engines date modified to 2/19/11
- The footnote to Table III was deleted because compliance with SIP versions of regulations is explained elsewhere in this permit.

### Section IV Source Specific Applicable Requirements

Changes to this section are the following:

- In all Section IV tables, the amendment date for all references to BAAQMD Regulation 1 was updated.
- In Table IV-A, added sections 8-34-404 less than continuous operation for sources S-5 and S-6

- In Table IV-A, included section 8-34-501.5 Record keeping requirements for less than continuous operation for sources S-5 and S-6
- In table IV-A, the amendment date for Regulation 9 Rule 8 will be updated.
- In table IV-A; modified enforceability for Regulation 9-8 to now include SIP for sections 9-8-302 and 302.1.
- In table IV-A; amendment date for 40 CFR Part 60 Subpart WWW will be updated.
- In table IV-A subpart F was missing for 40 CFR Part 62 Subpart F, it was added
- In table IV-A 40 CFR Part 63 Subpart A, amendment date was updated.
- In table IV-B, include A-120 Landfill Gas Flare in description and added backup to A-8.
- In table IV-B, deleted Regulation 8-2- as no longer applicable as facility is closed and not receiving waste or soil.
- In table IV-B deleted 8-34-116 (116.1-116.5) section Limited Exemption, Well Raising- as closed landfill
- In table IV-B; add sections 8-34-404 (404.1-404.5) Less than continuous operation for S-15
- In table IV-B added section 8-34-501.5. Record keeping requirements for less than continuous operation for source S-15.
- In table IV-B; amendment date for 40 CFR Part 60 Subpart WWW will be updated.
- In table IV-B subpart F was missing for 40 CFR Part 62 Subpart F, it was added
- In table IV-B 40 CFR Part 63 Subpart A, amendment date was updated.
- In table IV-B; remove old condition # 17821 and replace it with condition # 25293
- In table IV-C; add sections 8-34-404 Less than continuous operation for source S-37
- In table IV-C included section 8-34-501.5 Record keeping requirements for less than continuous operation for source S-37
- In table IV-C, the amendment date for Regulation 9 Rule 8 will be updated.
- In table IV-C; modified enforceability for Regulation 9-8 to now include SIP for sections 9-8-302 and 302.1
- In table IV-C, amendment date for 40 CFR Part 60 Subpart WWW will be updated.
- In table IV-C, subpart F was missing for 40 CFR Part 62 Subpart F, it was added
- In table IV-C 40 CFR Part 63 Subpart A, amendment date was updated.
- In tables IV-D and E; requirements for sources and abatement devices have been deleted, (sources S-41 and S-46) and abatement devices (A-41 and A-11).
- In Table IV-F, it has been renumbered to IV-D; source S-48 has been deleted and removed from service and sources S-120 and S-130 have been included as they replaced S-48. Abatement devices have been modified (A-14, A-15, A-16, A-17) and abatement devices (A-18 and A-19) have been added. Condition bases were corrected per current conditions.
- In Table IV-G it has been renumbered to IV-E and condition bases were corrected per current conditions.
- In Table IV-H it has been renumbered to IV-F; also sources S-141 and S-156 and abatement devices A-20 and A-21 have been added and archived abatement devices A-12 and A-13 2000 lbs carbon vessels in series. Condition bases were corrected per current conditions.
- In table IV-F, a new section of Regulation 8 Rule 5 was added and the SIP version of Regulation 8 Rule 5 was identified.
- In Table IV-F, Condition # 23220 has remained the same, only added sources and changed abatement devices to appropriate parts of the condition and corrected bases.

- In Table IV-I, it has been renumbered to IV-G; added source S-157 to Table IV-G and the appropriate parts of Condition # 23220 with corrected bases.
- In Table IV-G, included more sections of Regulation 8, Rule 8 and also included SIP for Regulation 8, Rule 8.
- In Table IV-J, it has been renumbered to IV-H; Sources S-73, S-75 and S-76 have been deleted and replaced by sources S-140, S-123, S-145, S-146, S-142, S-151 and S-155.
- In Table IV-H, condition has been modified to include additional sources and remove sources that have been archived and removed from service, and correct bases.
- In Table IV-K, it has been renumbered to IV-I. Condition bases were corrected.
- In Table IV-L, it has been renumbered to IV-J. Condition bases were corrected.
- In Table IV-M, it has been renumbered to IV-K. Condition bases were corrected.
- In Table IV-N, it has been renumbered to IV-L. Condition numbers and bases were corrected.
- In Table IV-O, it has been renumbered to IV-M. Condition bases were corrected.
- In Table IV-P, it has been renumbered to IV-N. Condition bases were corrected.
- In Table IV-Q, it has been renumbered to IV-O. Condition bases were corrected.
- In Table IV-R, it has been renumbered to IV-P. Condition bases were corrected.

Changes to Permit, Section VI:

- Condition # 5771,
  - Part 2 has been modified to allow landfill gas to be vented to engines S-5, S-6 and S-37 or Landfill Gas Flares (A-8 or A-120); states that A-8 is a backup flare. This change was evaluated in permit applications 21826 and 21424 (attached in Appendices E and F).
  - Part 7, changed date from 45 to 60 days for submittal of source test report to Compliance and Enforcement Division of BAAQMD. This change was evaluated in permit application # 21826 (attached in Appendix F)
  - Part 8; changed language from per year to “in any consecutive 12 month period”. This change was evaluated in permit application # 21826 (attached in Appendix F)
  - Part 9; included language for calculation of Heat Input and included Basis language for offsets, cumulative increase and Regulations 2-1-301 and 2-6-501 and 8-34-501. This change was evaluated in permit application #21826 (attached in Appendix F)
  - Part 10; modified language to allow larger range for cylinder temperature readings for engines S-5 and S-6 and removed language that was no longer applicable as date had already been past (July 1, 2002). This change was evaluated in permit applications # 18127, 21826 (attached in Appendices B & F)
- Condition # 17812,
  - Part 4 has been modified to allow landfill gas to be vented to engines S-5, S-6 and S-37 or Landfill Gas Flares (A-8 or A-120); states that A-8 is a backup flare. This change was evaluated in permit applications #18127 and 21826 (attached in Appendices B & E)
  - Part 8, removed language regarding source tests to be conducted within a range and changed date from 45 to 60 days for submittal of source test report to Compliance and Enforcement Division of BAAQMD. This change was evaluated in permit applications # 18127, 21826 (attached in Appendices B & F)

- Part 9d; included language for calculation of Heat Input and included in Basis language that includes Regulation 2-1-301 and 2-6-501. This change was evaluated in permit application #21826 (attached in Appendix F)
- Part 10; modified language to allow larger range for cylinder temperature readings for engine S-37 and removed language that was no longer applicable as date had already been past (July 1, 2002). This change was evaluated in permit applications # 18127 and 21826 (attached in Appendices B & F)
- Removed and deleted condition #17821 for S-15 and replaced it with condition #25293 also description changed for the landfill as it is now closed and no longer active. These permit condition changes were evaluated in permit applications #21826 and 21424 (attached in Appendices E &F).
- Added Condition #25293 for source S-15 as made many modifications and deletions to previous condition #17821. Also throughout the condition #25293; Permit Holder was deleted and replaced with owner/operator.
- Condition # 25293
  - Part 1, included language to state correct closure date of landfill in 2006; included language that states decomposable material placed in Class II landfill and amount of decomposable material placed in Class I landfill. Condition # 17821 deleted and replaced by Part I of condition # 25293.
  - Parts 2 and 3 were deleted as no longer applicable as it is a closed landfill and does not accept soil material.
  - Part 4 was renumbered to Part 2 in condition # 25293 and some language was removed that mentioned active fill areas and soil removal and capitalized B of Basis.
  - Part 3 emission limits was added for fugitive non-methane organic compounds for source S-15. Refer to application 21826 (Appendix F).
  - Part 4 was added to ensure compliance with inlet NMOC as hexane for S-15, included concentration limit for NMOC.
  - Part 5; language changed from permit holder to owner/operator; modified condition to include language that allows for continuous landfill operation unless meets language per Regulation 8-34-113. Include language that specifies where landfill gas can be vented to (Engines and Abatement devices). Specifies that abatement device A-8 is only to be used as a backup flare to A-120. Abatement devices can not be operated concurrently. Specifies that flares must be equipped with local and remote alarms and auto restart capabilities. Also language to include that if engines shuts down, landfill gas can be diverted to flare.
  - Part 6. Modified language to change permit holder to owner/operator in all of Part 6, Part 6a, Part 6b and Part 6c. Changes language from requirement to receive an Authority to Construct to a change of condition requirement. Part 6 of condition # 25293 also changed wording from modifications to “alterations” and then provided language that identifies an alteration, or an Authority to Construct and whether a facility will need to apply for either if it is a like for like component replacement.
  - For Part 6a, added language for baseline count of components for wells at Class I and Class II site for landfill gas collection system, modified number of horizontal collectors, vertical wells and added horizontal collectors from the Class I site. Also included language that included A/N 17593 Updated Landfill Gas Design Plan (Appendix A).

- Part 6b, provided count for future well installation and horizontal collector installation, also provided count for number of wells and collectors that facility can decommission.
- Part 7, added for clarification purposes the word “components” as it references part 6a. Also deleted Permit Holder and replaced it with owner/operator. Also stated that facility needed to gain District authorization before it removed or replaced wells, collectors or made adjustments to valves. Also included language and included more regulations for basis determination.
- Part 7a, added to allow vacuum operation at leachate collection and recovery system (LCRS) to prevent component or surface leaks and maintenance at landfill operation compliance with 8-34-305.
- Part 7b, added to allow temporary disconnection of LGCS wells located at Class II site provided facility complies with subparts (i-v).
- Part 7c, added to address the horizontal landfill gas collectors that are located at both the Class I and Class II site. Subparts (i-vi) specifies operating requirements for each component, specifies compliance requirements and monitoring and reporting requirements. Allows continuous operation of horizontal landfill gas collectors, but allows facility to disconnect a horizontal collector from vacuum in accordance with criteria of i-vi below.
- Part 7d, added allow LCRS components and horizontal collectors in compliance with alternative component limits and related monitoring requirements subject to 8-34-305.
- Part 8 modified language to allow facility to divert landfill gas to engines or flares so long as facility did not exceed a heat input of 780,134 MM Btu in any consecutive 12 month period.
- Part 8a, included method to calculate Heat Input and included in Basis, Regulation 3-34-301.
- Part 9; was modified to include new flare A-120 and backup flare A-8, also language was included to allow venting to Flares when not venting to engines. Added additional regulations in basis of determination.
- Part 10, capitalized D for draeger tube, included language for sampling to allow Tedlar bag instead of Draegar tube. Deleted language regarding frequency of draeger tube testing.
- Part 11; added language to ensure compliance for new flare with State and Federal regulations. Added language for start-up requirements for flare A-120 and testing every 3 years thereafter. Part 11d, removed some compounds (Benzene, Formaldehyde and Vinyl chloride). Part 11e, included methane and corrected language. Part 11g, added language for NO<sub>x</sub> and CO emission rates testing. Also deleted language in paragraph after part 11g, as date of October 1, 2002 has expired and no longer applicable. Also removed the language which stated a requirement as to when source test could be performed (9 months and no later than 12 months after the previous source test). Added reference in baseline for CCR.
- Part 12, capitalized P in reference to part 11. Also included language for the testing of sulfur and all sulfur compounds. Deleted some organic compounds from list and added compounds from list that included sulfur.
- Part 13; added better description of compounds and concentrations collected in the landfill gas. In part 13, include two additional compounds (Acrylonitrile and



- Methylene Chloride with their respective concentration limit in ppmv). Added basis regulation for Regulation 2-5-302.
- Part 14, parts 1-d were deleted and renumbered items e-j as a-f.
  - Part 14a, deleted wording referencing active soil or fill areas.
  - Part 14c, included backup flare A-8 and engines sources (S-5, S-6 and S-37) and modified language by removing “either” and include control system. Included language that facility is to identify on map waste disposal area that contains non-decomposable waste and that is not part of the landfill gas collection system. Owner is to maintain records of non-decomposable material.
  - Part 14d, included backup flare A-8 and modified language to calculate and record heat input to each flare (as there are now two flares). Also capitalized P in reference to Part 8.
  - Part 14e, modified condition for temperature reading zones to include both flares.
  - Part 14f- no change only changed labeling from Part 14j to Part 14f.
  - Part 14, capitalized basis to Basis.
  - Part 16; added NOx limit for flare A-120. Language for cumulative increase also added as basis.
  - Part 17; added CO limit for flare A-120. Language for cumulative increase also added as basis.
  - Part 18; language that states that flare A-120 needs to comply with Regulation 8-34-301.3. Included language for Basis.
  - Part 19, added record keeping for planned and unanticipated shut downs for the flare A-120.
  - Condition #20754 was deleted and removed as source S-46 and abatement device A-11 were archived. This change was evaluated in application #21424 (Appendix E).
  - Condition #23110 was deleted as S-41 and abatement device A-41 were archived see application # 20621 (attached in Appendix D).
  - Condition #23220 was modified to incorporate the changes to the leachate treatment system. This condition has been modified for the new tanks, separators, clarifier, filter press surge tank, and thickener that is part of the leachate treatment facility redesign and replacement. Also abatement devices A-12 and A-13 were replaced with A-20 and A-21. This change was evaluated in permit application 20621 (attached in Appendix D).
  - Condition #23220 description in Title V was modified to incorporate all additional sources that relate to the modified leachate treatment system.
  - Condition #23220
    - Part 1 was modified to incorporate all the sources that were added with the modified treatment system. Removed some language that is no longer applicable (leachate treatment facility storm water) and add new locations and additional areas where wastewater is diverted for treatment in the Leachate Treatment System.
    - Part 1a, added to ensure compliance with Health Risk Analysis for influent of wastewater stream of various compounds. Source test analysis required.
    - Part 1b, condition added to collect sample for testing to ensure compliance with Part 1a above.
    - Part 2, modified to include all additional equipment that is abated by A-20 and A-21 and removed sources and abatement equipment that have been replaced by the

- modification of the leachate treatment system. Additional flowrate to abatement device has increased.
- Part 3, added hyphenated between source.
  - Part 5, replaced abatement device A-12 with A-20 carbon vessel.
  - Part 6 replaced abatement device A-13 with A-21.
  - Part 7, added other inlet tanks sources S-141 and S-156 for daily record keeping of liquid in part a, and in part c, added semiannual testing for VOCs.
  - Part 8, replaced abatement devices with replacement abatement devices, and modified language in part c.
  - Condition #23316 was modified as replaced one air stripper with two new air strippers. In addition, abatement devices were changed as each stripper is abated by three carbon canisters in series. In addition, cumulative flow rate to strippers has increased from 295 scfm to 850 scfm. This permit condition change was evaluated in permit application #20621 (attached in Appendix D).
  - Condition # 23354, Part 6 – a missing basis for this part was added.
  - Condition # 23356 was modified to include an alternative dust control method under Part 4. This permit condition change was evaluated in permit application # 23888 (attached in Appendix G).

#### Changes to Section VII

- Table VII-A and VII-C Regulation 9 Rule 8 for NO<sub>x</sub> has been changed and now also includes the SIP 9-8. Changes to waste fuel gas now < 70 ppm dry basis at 15% O<sub>2</sub>.
- Table VII-A; Gas Flow for condition # 5771 Part 2, added abatement device A-120 and included language for A-8 state it is not backup A-8 Flare.
- Table VII-B; added language to A-8 as not it is a backup flare and also included new flare A-120 in Heading
- Table VII-B changed condition reference from 17821 to 25293 throughout table.
- In Table VII-B added section 404 (less than continuous operation) for gas flow. Also throughout table reference Section 8-34-404 (404.1-404.5) and 8-34-501.5.
- In Table VII-B Gas Concentration at Wellheads, add citation BAAQMD condition # 25293 Parts 5,6 and 7 for less than continuous operation,
- In Table VII-B deleted Well Shutdown Limits as not applicable as it is a closed landfill.
- In Table VII-B Temperature of Combustion Zone, has been modified per source test for A-120
- In Table VII-B Total Carbon 8-2-301 and VOC for soils has been deleted as no longer applicable as this is a closed landfill.
- In Table VII-B Opacity deleted as this was a duplicate for 6-1-301
- In Table VII-B FP was modified to include SIP 6-310 and also corrected FP for 6-1-310 and applied flares A-120.
- In Table VII-B deleted Amount of Waste Accepted- as no longer applicable as this is a closed landfill
- In Table VII-B modified Heat Input for condition # 25293
- In Table VII-B for Toxic Air Contaminants included additional toxic compounds and changed condition from 17821 to condition # 25293
- In Table VII-B added a table to include limits for NO<sub>x</sub> and CO for the Flare A-120
- In Table VII-C SO<sub>2</sub> limit changed condition # 17821 to 25293

- In Table VII-C modified NOX for Regulation 9-8-302 as changed limit to 70 ppmv from 140 also included SIP for Regulation 9-8-302.1
- In Table VII-D and VII-E deleted both tables as these sources have been deleted (S-41 and S-46).
- In Table VII-F has been renumbered to Table VII-D in addition S-48 air stripper has been removed and replaced by two air strippers S-120 and S-130. Carbon units have been changed from 2 in series to three in series, added more carbon adsorption units.
- In Table VII-G has been renumbered to Table VII-E
- In Table VII- H has been renumbered to Table VII-F; sources added are S-141, S-156,
- In Table VII-I has been renumbered to Table VII-G source added is S-157 and changed carbon units from A-12 and A-13 to A-20 and A-21. Archived abatement devices A-12 and A-13.
- In Table VII-G added SIP 8-8-301.3
- In Table VII-J has been renumbered to Table VII-H; also miscellaneous sources (S-140, S-123, S-145, S-146i, S-155 S-142 and S-151 have been added.
- In Table VII-K has been renumbered to Table VII-I- no change
- In Table VII-L has been renumbered to Table VII-J- no change
- In Table VII-M has been renumbered to Table VII-K -no change
- In Table VII-N has been renumbered to Table VII-L- no change
- In Table VII-O has been renumbered to Table VII-M- no change
- In Table VII-P has been renumbered to Table VII-N- no change
- In Table VII-Q has been renumbered to Table VII-O- no change
- In Table VII-R has been renumbered to Table VII-P -no change

### Section VIII Test Methods

Table VIII Regulation 8-2-301 has been deleted as these parts re no longer applicable since cover materials placement has ceased and this is a closed landfill.

Table VIII BAAQMD Condition # 7463 has been changed in 23220- change out for abatement devices for air strippers and LCTS.

Table VIII Deleted Condition # 17821 Parts 2 and 3 deleted as no longer applicable (Acceptance Criteria for Soils containing VOCs).

Table VIII Changed condition # 17821 to Condition # 25293 (Parts 8-13)

Table VIII Changed Condition # 20754 Parts 4-10 to Condition # 25293 Parts 9, 16,17,10, 11-3

Table VIII Added BAAQMD Condition #25293 Part 2 (Ringelmann No 1 Limitation)

Table VIII Added BAAQMD Condition # 25293 Part 7 (Methane & Oxygen Concentration in Gas at Wellheads)

### Section X

All permit changes for these minor revision applications are described in Section X.

# **APPENDIX A**

## **ENGINEERING EVALUATION**

**For the Amended Design Plan for Landfill Gas  
Collection and Control System**

**APPLICATION # 17593**

**Engineering Evaluation**  
**West Contra Costa Sanitary Landfill**  
**A/N 17593**  
**Plant # 1840**

**Background**

West Contra Costa Sanitary Landfill (WCCSL) is now a closed landfill. It stopped receiving waste in September 2006. The facility is submitting this application as part of the requirement of Regulation 8, Rule 34 Section 408 (Collection and Control System Design Plan). The facility is submitting this revised design plan to replace the original design plan that was submitted in May 2001. No increase in landfill capacity is requested. The facility submitted the design to show the landfill gas connections when the landfill is completely closed. Per A/N 11375, the facility is not increasing its generation rate. The projected maximum landfill gas generation rate is 2169 cfm. The facility will be below this level, and the waste accepted at the landfill did not exceed the 13 Million that it was permitted for. The existing Class II landfill gas collection system consists of a combination of both vertical extraction wells and horizontal collection trenches. Landfill volume is 12,330.387 tons in place at time of closure and this is in compliance with its permit condition of not to exceed 13 million tons. Previous permitted applications have already taken into account any increases in wells, trenches or sumps at this site. The facility is requesting that a P/O be issued for the updated design plan for the following source:

S-15 West Contra Costa Sanitary Landfill with Amended Design Plan -Updated Plans for Landfill Gas Collection and Control System:

**Emissions-** no increase in emissions as facility only submitted plans for the revised LCCC design for the class II landfill. LandGEM was run to demonstrate that there would be no increase in emissions. LandGEM shows that flowrate will not exceed 2028 cfm. This flow rate is in compliance with the permit application # 11375 which determined that an expansion of the landfill was based on a flow rate of 2169 cfm.

**Statement of Compliance**

Regulation 2 Rule 1

This application is for a change in the final design of the Landfill Gas Collection and Control System for source S-15 that involve alterations to the landfill gas collection system (connection of the leachate system) and for the addition of 60 vertical wells, which is part of the overall emission control system for this landfill. These items have already been permitted under previous applications A/N 11375 and 18128. Therefore, this proposed change of design is categorically exempt from CEQA review pursuant to Regulation 2-1-312.12. There will be no increase in emissions at this site. No further CEQA review is required.

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

Regulation 2 Rule 2

Since there are no increases in emissions from S-15, this project is not subject to New Source Review or any other requirements of Regulation 2, Rule 2.

Regulation 2, Rule 5

Since there are no increase in emissions, and no expansion to the design of the abatement system, there is no increase in toxic emissions into the atmosphere. Thus, this facility is not subject to New Source Review of Toxic Air Contaminants per Regulation 2, Rule 5.

Regulation 2, Rule 6 Major Facility Review

This facility is subject to the operating 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 because it is a designated facility as defined by the BAAQMD Regulation 2, Rule 6, Section 204. The facility is subject to a Title V permit per Regulation 2-6-304. A minor revision to the Title V permit will be completed under A/N 18135. This application serves as part of the Statement of Basis for the Title V permit application for the revised design plan of the Landfill Gas Collection and Control System.

Regulation 8, Rule 34

Section 408 requires that the facility submit an application for their Revised Design Plan. The facility is in compliance.

Section 303 requires that at no point on the landfill surface shall there be a surface leak that exceeds 500 ppm by volume and if a leak is detected, then the facility must comply with the requirements of Regulation 8-34-415. The facility was given a limited variance (until September 30, 2008) from this requirement per Order No. 3552. The facility has since applied for an extension of the variance until August 2009. This variance was approved and the terms are being drafted by legal. This variance is only subject to the part of the landfill that has not been capped and is awaiting approval from the California Integrated Waste Management Board (CIWMB). The facility is monitoring the site more frequently to ensure that they are in compliance with this regulation.

Federal Requirements

NSPS for MSW landfills: WCCSL 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 ppm(v) 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 design plan. The Administrator (BAAQMD) must approve the gas collection system design plan and any changes to this design plan.

The facility is complying with the NSPS for MSW landfills.

NESHAP's for MSW Landfills: This landfill is also subject to NESHAPs for the MSW landfill (40 CFR, Part 63, Subpart AAAA). This NESHAP requires that subject facilities implement startup, shutdown, malfunction plans (SSM Plans) and compile additional reporting requirements. All applicable requirements are contained in the existing MFR permit. This facility is expected to continue to comply with these requirements.

**Permit Condition Revisions: NONE**

**Recommendation:**

Recommend that an A/C be waived, and a P/O be issued for the following source:

S-15 West Contra Costa Sanitary Landfill with Amended Design Plan-Updated Plans for Landfill Gas Collection and Control System:

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Irma C. Salinas  
Senior Air Quality Engineer

October 30, 2008

# **APPENDIX B**

## **ENGINEERING EVALUATION**

### **Change of Condition**

### **APPLICATION # 18127**

**Engineering Evaluation**  
**West Contra Costa Sanitary Landfill**  
**A/N 18127**  
**Plant # 1840**

**Background**

West Contra Costa Sanitary Landfill (WCCSL) stopped receiving waste in September 2006. The facility is requesting a change in conditions for sources S-5, S-6 and S-37 and abatement device A-8. The facility would like to increase the cylinder temperature range from plus or minus 10 degrees F to plus or minus 20 degrees with respect to the average cylinder temperature range for the IC engines. The facility is currently meeting its condition limits and the facility has provided sources test to show that at various loads (from 700 to 900 KW), the engines will still be in compliance with the permit condition limits. Therefore, this change is acceptable, as it will allow the facility to operate at various loads. The facility is requesting that S-37 and A-8 conditions be changed to reflect annual testing and remove the limit of 9 months to 12 months in the condition, as this limit is not imposed on sources S-5 and S-6. The change in this request is also granted. In addition, the facility requested that a change in condition for the flares be approved which would allow them not to be required to operate when one of the engines is not operating. This condition request is not granted because the facility needs to comply with Regulation 8 Rule 34 section 301. In addition, the facility will need to apply for a petition per Regulation 8-34-404 (Less than continuous operation). The following source is requesting a change in condition for:

- S-5 Internal Combustion Lean Burn Engine
- S-6 Internal Combustion Lean Burn Engine
- S-37 Internal Combustion Lean Burn Engine
- A-8 Flare at Class II

**Emissions-** no increase in emissions as this is for a change in conditions.

**Statement of Compliance**

Regulation 2 Rule 1

This application is for a change of permit conditions for condition # 5771 and 17821 and 17281. This proposed change of permit conditions is categorically exempt from CEQA review pursuant to Regulation 2-1-312.1. No further CEQA review is required.

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

Regulation 2 Rule 2

Since there are no increase in emissions from these sources, this project is not subject to New Source Review or any other requirements of Regulation 2, Rule 2.

Regulation 2, Rule 5

No increase in toxic emissions into the atmosphere will result from the change in conditions. Thus, this facility is not subject to New Source Review of Toxic Air Contaminants per Regulation 2, Rule 5.

Regulation 2, Rule 6 Major Facility Review

This facility is subject to the operating 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 because it is a designated facility as defined by the BAAQMD Regulation 2, Rule 6, Section 204. The facility is subject to a Title V permit per



Regulation 2-6-304. A minor revision to the Title V permit will be completed under A/N 18135. This application serves as part of the Statement of Basis for the Title V permit application for the change in permit conditions for sources S-37, S-5, S-6 and A-8.

Regulation 9, Rule 1

The facility will continue to be in compliance with SO<sub>2</sub> emissions from Regulation 9-1 per section 302.

Regulation 9, Rule 8

The operation of the IC engines (S-5, S-6, S-37) and flare A-8 are subject to this Regulation and will remain in compliance. Source tests were performed in January 3, 2008 and April 23, 2008 for sources S-5, S-6, S-37 and A-8. Results show that the engines and flare are in compliance with their permit conditions per section 302 limitations for NO<sub>x</sub> and CO.

Regulation 8, Rule 34

The facility is in compliance with Regulation 8-34 and is subject to the Emission Guidelines (EG) for MSW Landfills (40 CFR, Part 60, Subpart Cc). No change in conditions will result in facility being out of compliance.

Federal Requirements

NSPS for MSW landfills: WCCSL is subject to the New Source Performance Standards (NSPS) for Municipal Solid Waste (MSW), landfills, 40 CFR, Part 60 Subpart W. The facility is in compliance with Federal Requirements.

The monitoring requirements in the proposed permit condition revisions will not affect the facility being able to meet requirements. Therefore, the facility will continue to comply with the NSPS for MSW landfills.

NESHAP's for MSW Landfills: This landfill is also subject to NESHAPs for the MSW landfill (40 CFR, Part 63, Subpart AAAA). This NESHAP requires that subject facilities implement startup, shutdown, malfunction plans (SSM Plans) and compile additional reporting requirements. All applicable requirements are contained in the existing MFR permit. This facility is expected to continue to comply with these requirements.

**Permit Condition Revisions:**

The District is proposing to modify condition # 17821, condition # 17281 and condition # 5771-10 as indicated below:

- S-5 Internal Combustion Lean Burn Engine, and
- S-6 Internal Combustion Lean Burn Engine:
- S-37 Internal Combustion Lean Burn Engine
- A-8 Flare at Class II site

Condition # 5771 for sources S-5 and S-6

10. Effective January 1, 2003, the average cylinder temperature for each Internal Combustion Engine shall be maintained at the temperature determined by the most recent ~~annual~~ source test, plus or minus ~~± 20~~ ± 20 degrees F (or other appropriate range established by the source test) and averaged over 3 hours, during all times that the engine is operated. In order to demonstrate compliance with this condition, each engine shall be equipped with at least one thermocouple that will continuously monitor engine cylinder temperature (or engine exhaust temperature at an APCO approved location). The engine cylinder temperature (or average cylinder temperature if more than one thermocouple is used) shall be continuously recorded. These temperature monitors and recorders shall be installed and operating by no later than July 1, 2002. The

appropriate temperature range for each engine that is established by the source tests shall be added to this part in accordance with the procedures identified in Regulations 2-6-414 or 2-6-415.  
(basis: Regulations 8-34-301, 8-34-501.11 and 8-34-509)

Condition # 17812 for source S-37

8. In order to demonstrate compliance with parts 5 and 6 above and Regulations 8-34-301.4, 9-8-302.1, and 9-8-302.3, the Permit Holder shall ensure that a District approved source test is conducted annually on the S-37 Internal Combustion Engine. ~~Source tests shall be conducted no sooner than 9 months and no later than 12 months after the previous source test.~~ The Source Test Section of the District shall be contacted to obtain their approval of the source test procedures at least 14 days in advance of each source test. They shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division within 45 days of the test date.  
. .
10. Effective January 1, 2003, the average cylinder temperature for each Internal Combustion Engine shall be maintained at the temperature determined by the most recent ~~annual~~ source test, plus or minus ~~40~~ 20 degrees F (or other appropriate range established by the source test) and averaged over 3 hours, during all times that the engine is operated. In order to demonstrate compliance with this condition, each engine shall be equipped with at least one thermocouple that will continuously monitor engine cylinder temperature (or engine exhaust temperature at an APCO approved location). The engine cylinder temperature (or average cylinder temperature if more than one thermocouple is used) shall be continuously recorded. These temperature monitors and recorders shall be installed and operating by no later than July 1, 2002. The appropriate temperature range for each engine that is established by the source tests shall be added to this part in accordance with the procedures identified in Regulations 2-6-414 or 2-6-415.  
(basis: Regulations 8-34-301, 8-34-501.11 and 8-34-509)

Condition # 17821 for source A-8

11. .  
. .  
The first annual source test shall be conducted by no later than October 1, 2002. ~~Subsequent source tests shall be conducted no sooner than 9 months and no later than 12 months after the previous source test.~~ The Source Test Section of the District shall be contacted to obtain their approval of the source test procedures at least 14 days in advance of each source test. They shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division within 45 days of the test date. (Basis: Regulations 8-34-301.3 and 8-34-412)

**Recommendation:**

Issue a Change of Condition for the following equipment:

- S-5, Internal Combustion Lean Burn Engine
- S-6 Internal Combustion Lean Burn Engine
- S-37 Internal Combustion Lean Burn Engine
- A-8 Flare at Class II

January 6, 2009

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Irma C. Salinas  
Senior Air Quality Engineer

# **APPENDIX C**

## **ENGINEERING EVALUATION**

**For the Permit Condition Changes to Reflect the  
Modification to connect leachate collection recovery  
system (LCRS) and modification to install additional  
vertical wells**

**APPLICATION # 18128**

**Engineering Evaluation**  
**West Contra Costa Sanitary Landfill**  
**A/N 18128**  
**Plant # 1840**

**Background**

West Contra Costa Sanitary Landfill (WCCSL) is now a closed landfill. It stopped receiving waste in September 2006. The facility is requesting a change in condition to allow an additional 94 wells to be installed at the closed landfill. The current application #14722 allows for an additional 34 wells (43-9 wells that have been installed) to be installed, but during the design of the closure plan, the facility has determined that they need an additional 60 vertical wells. No increase in emissions are to occur at this site as it is closed and is no longer receiving waste. Since A/N 14772 was issued back in August 2006 and it will soon expire, it was decided to incorporate the additional wells from A/N 14722 into this application. By doing this, A/N 14722 can be cancelled; and the facility will still be able to install the number of wells it desires. This application will supercede A/N 14722 and carry over the additional wells of 34 to this one.

The facility has received violations notices for surface leaks in excess of the 500 ppm. Thus the facility has agreed to connect three leachate sump wellheads and six dormant landfill gas wells to the existing gas collection system. This application is being submitted so that the facility will stop receiving violation notices for component leaks in excess of 500 ppm on the already capped areas. The facility has applied to connect the leachate collection recovery system which is comprised of 16 sumps, 13 wells and 5 vaults to the landfill gas collection system. This application is for a change in condition to allow the leachate gas collected in the LCRS to be connected to the gas collection system known as S-15. All fees have been paid. This application is being handled pursuant to the accelerated permitting process. The facility has connected three leachate sump wellheads (QR-22S, QR-24S and QR-21S) under this application pursuant to the signed variance dated June 12, 2008. All six landfill gas wells are identified as (06-01 shallow, 06-01 deep, 06-02, 06-03, 06-05, 06-06). The facility currently has only connected three sumps and they are identified, the remaining sumps, wells and vaults have not yet been connected, but will be connected as needed. In addition, per a letter dated Oct 5, 2007, GWH-10 has been decommissioned. Under A/N 8366, the facility has connected 3 of the six dormant landfill gas wells ("06 Wells") and per A/N 14772, the facility has connected an additional 6 wells. It has been decided to close out A/N 14772 because the well increase can be incorporated into this new application and issue a P/O for A/N 8366 as all wells have been installed. The conditions will reflect this change along with the connection of wells 06-4, 06-7 and 06-8 per an email dated June 26, 2008 and Table 2 dated August 7, 2008. When the facility connects any additional components, wells, etc, they will be required to notify the District. The following source is requesting a change in condition:

S-15 West Contra Costa Sanitary Landfill with Active Gas Collection System: Modification to connect leachate collection recovery system (LCRS) and modification to install an additional 60 vertical wells for a total of (127 wells)

**Emissions-** no increase in emissions as surface leaks will be abated to flares or IC engines. The emission estimates were calculated for the expansion under application 11375. No change is proposed to the landfill design capacity or maximum waste acceptance under this application. The landfill gas generated at S-15 is captured in vertical wells and horizontal collectors and vented to three IC engines and a gas flare for destruction and control. The proposed modification to add vertical wells are to ensure adequate capture of the landfill gas that is generated. No increase in emissions are expected to occur.

**Statement of Compliance**

Regulation 2 Rule 1

This application is for a change of permit conditions at S-15 that involve minor alterations to the landfill gas collection system (connection of the leachate system) and for the addition of 60 vertical wells, which is part of the overall emission control system for this landfill. 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

significant 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 condition is categorically exempt from CEQA review pursuant to Regulation 2-1-312.12. No further CEQA review is required.

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

#### Regulation 2 Rule 2

Since there are no increase in emissions from S-15, this project is not subject to New Source Review or any other requirements of Regulation 2, Rule 2.

#### Regulation 2, Rule 5

Since there are no increase in emissions, and no expansion to the design of the abatement system, there is no increase in toxic emissions into the atmosphere. Thus, this facility is not subject to New Source Review of Toxic Air Contaminants per Regulation 2, Rule 5.

#### Regulation 2, Rule 6 Major Facility Review

This facility is subject to the operating 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 because it is a designated facility as defined by the BAAQMD Regulation 2, Rule 6, Section 204. The facility is subject to a Title V permit per Regulation 2-6-304. A minor revision to the Title V permit will be completed under A/N 18135. This application serves as part of the Statement of Basis for the Title V permit application for the connection of the leachate collection and recovery system (LCRS) and for the installation of 60 additional vertical wells to the gas collection system.

#### Regulation 8, Rule 34

Section 303 requires that at no point on the landfill surface shall there be a surface leak that exceeds 500 ppm by volume and if a leak is detected, then the facility must comply with the requirements of Regulation 8-34-415. The facility was given a limited variance (until September 30,2008) from this requirement per Order No. 3552. This variance is only subject to the part of the landfill that has not been capped and is awaiting approval from the California Integrated Waste Management Board (CIWMB). All other parts of the Class II landfill that have been capped are subject to 8-34-303. In addition, the facility has stated that they will perform monthly monitoring for surface emissions in the area of the variance (area that is not capped) including monitoring area around each protrusion through the landfill surface.

To resolve surface leak problems, the facility has agreed to connect the leachate wellhead sumps to the gas vacuum system. The facility is in compliance with Regulation 8-34. In addition, the facility is and will continue to be in compliance with Regulation 8-34-305 (Wellhead Requirements).

#### Federal Requirements

NSPS for MSW landfills: WCCSL 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 ppm(v) 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 design plan. The Administrator (BAAQMD) must approve the gas collection system design plan and any changes to this design plan.

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.

NESHAP's for MSW Landfills: This landfill is also subject to NESHAPs for the MSW landfill (40 CFR, Part 63, Subpart AAAA). This NESHAP requires that subject facilities implement startup, shutdown, malfunction plans (SSM Plans) and compile 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.

**Permit Condition Revisions:**

The District is proposing to modify condition # 17821 as indicated below:

Condition # 17821

S-15 West Contra Costa Sanitary Landfill with Active Gas Collection System: Modification to connect leachate collection recovery system (LCRS) and modification to install an additional 60 vertical wells for a total of (127 wells)

**Recommendation:**

Issue a Change of Condition for the following equipment:

6. The Permit Holder shall apply for and receive ~~an Authority to Construct~~ a Change of Condition from the District before modifying altering the landfill gas collection system described in Parts 6.a.-b. below. 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~~ alterations that are subject to ~~the Authority to Construct~~ this requirement.
  - a. The ~~P~~permit ~~H~~holder has been issued a ~~Permit to Operate~~ Change of Condition for the landfill gas collection system components listed below. Well and collector locations, depths and lengths are as described in detail in the Republic Services West Contra Costa Sanitary Landfill ~~LFG Extraction system As-Built Drawings, Revision 2, dated May 3, 2006~~ Updated Landfill Gas Collection and Control System Design Plan Class II dated March 3, 2008 and in Table ~~4~~ 2 Class II Landfill Gas Extraction Well List Submitted ~~March 10, 2006~~ (note that wells GW6/GW7 and GW8 are abandoned) August 11, 2008

Required Components

Total Number of Vertical Wells:	<del>58</del> <u>67</u>
Total Number of Horizontal Collectors:	<del>8</del> <u>7</u>
Total Number of leachate sump wellheads	<u>3</u>

- 6 (b) The ~~P~~permit ~~H~~holder ~~has been issued~~ Authorities to Construct is authorized to make ~~under application number 8366 and 14772, to allow for~~ the landfill gas collection system ~~modifications~~ alterations described below:
  - i. install up to ~~43~~ 94 new vertical wells
  - ii. install up to 20 new horizontal collectors
  - iii. decommission up to ~~30~~ 27 vertical wells
  - iv. decommission up to ~~40~~ 9 horizontal collectors
  - v. connect the leachate collection and recovery system (LCRS) to the landfill gas collection unit. LCRS is comprised of (5 vaults, 13 wells and 13 sumps)

Wells installed pursuant to this subpart shall be added to or removed from subpart a in accordance with the procedures identified in Regulations 2-6-414 or 2-6-415.

August 15, 2008

Irma C. Salinas  
Senior Air Quality Engineer

# **APPENDIX D**

## **ENGINEERING EVALUATION**

**Relocation of existing leachate system to a different location and the addition of equipment and strippers**

**APPLICATION # 20621**

**Engineering Evaluation**  
**West Contra Costa Sanitary Landfill**  
**A/N 20621**  
**Plant # 1840**

**Background**

West Contra Costa Sanitary Landfill (WCCSL) is now a closed landfill. It stopped receiving waste in September 2006. This application is for relocating its existing leachate system to a different location and the addition of equipment to the leachate treatment system along with the replacement of two air strippers and archiving some sources that are being replaced. The facility currently treats leachate from Class I well field, condensate from the Class I landfill gas collection system (GCS), stormwater located under the Corrective Action Management Unit (CAMU) and stormwater that collects in the secondary containment of the LTS and the inlet tanks. The facility would now like to collect wastewater from the following locations. Leachate from the HWMF, CAMU and E-22R area will be collected and treated in the Leachate Treatment System (LTS). There is no increase in throughput requested at this time; only equipment replacement, change of location and change in conditions. Total throughput of wastewater will not exceed the current throughput limit of 14,892,000 gallons per year or 40,800 gallons per day. The leachate, contains small amounts of organic and toxic compounds and heavy metals.

E-22R Area is located east of the HWMF. The wastewater that goes to S-145 E-22R Area Tank is generated from three extraction wells (EW-1, EW-7 and EW-13). It contains low levels of VOCs and does not have any metals, NAPLs, petroleum hydrocarbons or other wastewater contaminants. Therefore, it does not need to go through the oil water separator, emulsion breaking system and clarifier treatment. The pumping of wastewater into this tank cannot exceed 10,200 gpd.

Wastewater that is pumped to S-146 Pretreatment Inlet feed tank comes from the following sources: Wastewater from any process equipment in the LTS, wastewater from any extraction well in the LTS that shows a change in chemical composition or where wastewater from a specific well needs to be pumped at quantities that are higher than normal extraction rates, and wastewater that results from spills or the general waste tank if additional pretreatment is necessary. Again for calculation purposes, assumed worst case scenario is 25% of wastewater from the E-22R (low VOC concentrations) Area and 75% of the wastewater from other areas.

The defoamer, polymer, oxidizer and acid and base tanks are used throughout the LTS in order to assist in treating wastewater prior to discharge to local POTW. Some of these tanks are exempt from permitting, however the acids and base tanks are required to have permits because they exceed the toxic trigger levels. Some of these chemicals are added in the pretreatment tank process area and to the clarifier for pH adjustment, remove flocculants,

Under the direction of DTSC, WCCSL is moving the treatment system to a different location within WCCSL. The following sources are requesting permits to operate for the new equipment:

S-120 Air Stripper QED 6 tray model; 115 gpm blower rate 850 cfm (V-4) abated by two vessels in parallel, each followed by a vessel in series A-14, A-15 and A-16 or A-17, A-18 and A-19. Each carbon vessel is 2000 lbs (US filter Westates VSC-2000, 2000 lbs each).

S-123 Air Stripper Feed Tank 2500 gallon capacity (T-5)-abated by A-20 and A-21 (each a minimum of 500 lbs carbon vessels in series)

S-130 Standby Air Stripper QED 4-tray model; 60 gpm blower flow rate of 600 cfm (V-5) abated by two vessels in parallel, each followed by a vessel in series A-14, A-15 and A-16 or A-17, A-18 and A-19. Each carbon vessel is 2000 lbs (US filter Westates VSC-2000, 2000 lbs each).



S-140 Clarifier Holding (Feed) Tank 1600 gallon capacity (T-4) abated by two carbon vessels A-20 and A-21 in series. Each carbon vessel is 500 lbs each.

S-141 Inlet Feed Tank 16,500 Snyder High Density Linear Polyethylene Tank (T-3) 12 feet diameter, 22 feet high abated by A-20 and A-21; Two Vapor Phase Carbon Vessels: US filter Westates VSC-500, 500 lbs each

S-142 Waste Oil Tank 1000 gallon (T-12) - abated by A-20 and A-21

S-145 E-22R Area Tank 12,500 gallons (T-6) - abated by A-20 and A-21

S-146 Pretreatment Inlet Feed Tank 11,500 gallons (T-7) abated by A-20 and A-21. Each carbon vessel is 500 lbs which also includes the following mixing tanks prior to being pumped to S-130 Standby Air Stripper (V5)  
Mixing Tank 1000 gallons (T-8) abated by A-20 and A-21.  
Mixing Tank 8000 gallons (T-21) abated by A-20 and A-21  
Mixing Tank 1000 gallons (T-22) abated by A-20 and A-21

S-151 Waste Oil Tank 1000 gallons (T-11) will be abated by A-20 and A-21

S-153 1400 Gallon (HCL) Tank (T-13) abated by A-153 200 gallon HCL Scrubber Assembly with an efficiency of 95%

S-155 Oil Sludge Thickener; 4500 gallons (V-14) abated to A-20 and A-21 Auxiliary equipment include two filter presses and then sludge disposed to local disposal site. Sludge will contain heavy metals, inorganics and some organic compound.

S-156 Three (3) Day Tanks each 16,500 gallon capacity (D-1, D-2, D-3) abated by two vessels in series A-20 and A-21 when the wastewater has not been treated yet. Each carbon vessel is 500 lbs. When wastewater has been treated after S-150 LGAC feed tank and granulated activated carbon vessels, source S-156 is not required to have abatement devices attached as organic content is less than 1% VOC.

S-157 Filter Press Surge Tank (T-19) 1600 gallons – abated to A-20 and A-21

And a C/E for the following sources:

S-144 Three (3) Treated Storage tanks each 75,000 gallon capacity (ST1 – ST3) –exempt per 2-1-123.2

S-150 LGAC Feed Tank 1000 gallons (T-10) abated by liquid granulated activated carbon vessels each 2000 lbs V-8, V-9 and V-10 and or V-11, V-12 and V-13 exempt per 2-1-123.2

S-152 1500 Gallon (NAOH) Tank (T-15) exempt per 2-1-123.2

S-154 2 Polymer Mixing Tanks up to 1000 gallons each (T-23, T-24) exempt per 2-1-123.2

S-158 55 gallon defoamer tank (T-14) exempt per 2-1-123.1

S-159 55 gallon polymer tank(T-16) exempt per 2-1-123.1

S-160 55 gallon oxidizer tank (T-18) hydrogen peroxide exempt per 2-1-123.1

Archive the following sources and abatement devices:

S-21 Oil Collection Tank 110 gallons (exempt source)

S-41 HiPox Advanced Oxidation System abated by Oxidation Catalyst A-41 with emission stack P-41

S-73 Clarifier Holding Tank 500 gallon capacity (T-4)

S-75 Air Stripper Holding Tank 2000 gallon capacity (T-5)- [replaced by S-123 also ID'd as T-5]

S-48 Air Stripper Paragon 4-tray model with 20 gpm flowrate

S-76 Sludge Thickener Hoffland Environmental Inc, ACS 6-ST-01 50 gpm abated by A12 and A-13 [ID'd as T-14].

A-12 and A-13 2000 lbs carbon vessels in series.

**Emissions-** See Attached Spreadsheet from Tank4 Program and Excel Spreadsheet Appendix A

S-141 Inlet Feed Tank 16,500 gallon (T-3) – no emissions increase as emissions for source has already been calculated in A/N 14848 for sources S-69 and S-70 based on total throughput of 14,892,000 gallons per year. Where emission estimates were based on a worst-case scenario throughput of the NAPL (non aqueous phase liquid) layer. Note that this tank has paint color white whereas in the previous application both sources S-69 and S-70 had medium grey which results in a larger emissions level and is more conservative as it is worst case scenario. No increase in emissions. Fraction of oil is estimated to be ½ to 2 inches thick which equates to 0.9% of total volume or 131,729 gallons per year. Leachate is based on the mixture containing 21% gasoline, 16.6% distillate fuel no 2 (diesel and Stoddard solvent) 27% crude oil (motor oil) and 35.4% residual fuel no 6. For the 3 day tanks, the facility would also like to use these as receiving leachate prior to treatment (if there is a problem with the leachate treatment system) these tanks would hold the capacity of leachate prior to treating) and when raw leachate is being held in these tanks, the tanks will be abated by A-20 and A-21. Emissions will also not be increased as emission calculations have already been accounted for in the previous application. For S-141 with paint color white rather than medium gray, emissions were less than under A/N 14848 (1458.12 lbs/yr and not 1731.61 lbs/yr).

For sources S-156 the three day tanks, emissions would not exceed 1678.39 lbs/yr and this is less than 1731.61 lbs/yr. No increase in emissions with this throughput. In addition any emissions are abated by A-20 and A-21. Emissions are negligible (33.57 lbs/yr 0.01678 tons/yr).

Emission Calculations for the pretreatment tank area- S-146. Leachate from the wells, HWMF or CAMU area are taken directly to S-146 pretreatment tank where mixing tanks sources S-147, S-148 and S-149 are then piped to the standby air stripper known as S-130 prior to being abated by abatement devices A-20, A-21 (activated carbon vessels). Mixing tanks sources S-147, S-148 and S-149 may be used to treat the wastewater with polymers, hydrogen peroxide or bases. Sludge waste is treated by S-155 Sludge Thickener; 4500 gallons (V-14). S-146 is abated by A-20 and A-21.

S-146 Pretreatment Tank emissions from breathing and working losses are 433.30 before abatement. After abatement emissions are 8.67 pounds per year for the tank. This is based on total gallons not to exceed 14.892 million gallons per year with 2 inch thickness or 0.0885 or 131,729 gallons per year of organics.

For S-140 which replaced S-73 emissions have increased from .232 lbs/day unabated to 1.2 lbs/day. However as emissions are then abated to units A-20 and A-21, emissions are 8.76 lbs/yr after abatement (incremental increase of 7.0664 lbs/yr).

S-145 E-22R Area Tank emissions from breathing and working losses are 124.79 before abatement. After abatement emissions to atmosphere will be 2.50 lbs/yr. Emissions are based on throughput not exceeding 3.723M gallons per year with 0.0885 % volume of organics or 32,932.25 gallons per year of organics and based on the following compounds wt % (Acetone 32.7%, t butyl alcohol 8.7%, 1,4 dioxane 20.7%; methyl isobutyl ketone 6.53%, tetrahydrofuran 9.07% and toluene 22.3%. However, if tank emissions from source coming from LTS and not based solely on E-22 R wells, emissions are greater. Thus will use Table 6 values and get 3.35 lbs/day or 1222.75 lbs/yr or after abatement get 24.455 lbs/yr.

S-150 LGAC Feed Tank abated in parallel by V-8 through V-10 and V-11 through V-13- each granulated carbon vessel is 2000 lbs each. Before abatement emissions are 620.76 lbs/day in liquid phase. After abatement, emissions are 411.11 lbs/day in liquid phase. Emissions from tank will be negligible as this is a closed system, and leachate is pumped to local POTW. Using the tank program, it was determined that the breathing and working losses from the tank are derived from the following. Liquid organic waste entering S-150 is 8224 gal/yr of organics. It is broken down to the following compounds [acetone 47%, MEK 37.2%, TBA 5.6%, 1,4 Dioxane 1.3%, 2 Hexanone .7%, methylene chloride 6%, MIBK 4.9%, tetrahydrofuran 1.7%, 1,2 DCA .4%, acetonitrile .4%. Emissions from tank are 46.15 lbs/yr unabated. After abatement, emissions are less than 1 lbm/yr (0.923 lbs/yr). Wastewater is then polished by 6 LGAC vessels (liquid granulated activated carbon) each 2000 lbs prior to being pumped to day tanks source S-156 3 Day Tanks which are then sent to S-144 9 Storage Tanks each having a 25,000 gallon capacity prior to being discharged to local POTW.

Air Stripper Emission Calculations S-120 and S-130: blower 850 maximum

Emission calculations are based on the maximum throughput of wastewater in the air stripper, 40,800 gallons per day, with 25 % coming from E-22R Area and the remainder 75% from HWMF and CAMU area. All are located in the Class I Landfill area.

Results are presented below in the table: For detailed calculations, refer to attachment A, and Tables in Appendix A.

Components	POCs/NPOCs lbs/yr	Tons/yr
Air Strippers	1192.53	0.596
Tanks & Misc. Eq.	117.08	0.059
HCL Tank	629.3	0.315

Calculation Assumptions for the Air Stripper

1. Pollutant concentrations in the wastewater and stripper efficiency by pollutant from applicant- provided
2. Unabated Emissions lbs/day- (40800 gal/day)\*(8.34 lbs/gal\*(ppb/1E9)\*(stripper efficiency%/100)
3. Abated Emissions, lbs/day- (Unabated Emissions, lbm/day)\*(1-carbon adsorber efficiency, 98%/100)
- 4.

For the air strippers sources S-120 and S-130, emissions were based on the following most conservative assumptions 1) emissions from the leachate were stripped from the air strippers based on consultants information and 2) efficiency of the air strippers was 98% per applicant. See attached spreadsheet. Emissions from air stripper unabated does not exceed 188 lbs/day and this is greater than A/N 14622 where emissions were calculated not to exceed 163 lbs/day. There is an incremental increase in emissions from the air strippers of 25 lbs/day. For the abatement devices, the facility will have the option to use three different carbon vessel flow paths. The air strippers are abated by two parallel abatement devices. The parallel streams contain three 2000 pound carbon vessels in series. The abatement devices for the air stripper allows air flow to be piped to abatement devices A-14, A-15 and A-16 or A-17, A-18 and A-19. All other tanks and sources that are in the LTS that are not sources S-120 and S-130 are abated by abatement Devices A-20 and A-21. Carbon vessels A-20 and A-21 are each 500 lbs of activated carbon. Per A/N 14622 and 14966 used organic absorption of 29%, breakthrough of the carbon bed will occur a little over 3.08 days. See calculation below

Air strippers (S-120 and S-130) = 187.909 lbs/day

Days until breakthrough = (2000 lbs carbon)\*(0.29 lbs organic adsorbed/lb carbon)/(187.909 lbs organics/day) = 3.08 days (per each carbon vessel) until breakthrough.

Leachate Treatment System (Tanks & Misc Equipment)

Other tanks and components of system that go to 2 carbon beds in series each 500 lbs. Unabated emissions is 26.4204 lbs/day. Carbon beds are 500 lbs each, with an adsorption capacity of 29%.

Days until breakthrough = (500 lbs carbon)\*(0.29 lbs organic adsorbed/lb carbon)/(26.4204 lbs organics/day) = 5.49 days (per each carbon vessel).

40,800 gal/day of leachate \* 8.34 \*.01 = 3402.72 lbs/day. Emissions from unabated effluent prior to air stripper is 648 lbs/day. This is much less than 1% after abatement.

S-154 2 Polymer Mixing Tanks 550 gallons each (T-23, T-24) go to source S-74 Clarifier Mixing Tank. Polymer is used to remove dirt and other negatively charged particles so that they exit at the waste stream or sludge (bottom of tank).

S-151 Waste Oil Tank 1000 gallon (T-11) as sludge that is collected into this tank will be large hydrocarbon chain, not volatilized that readily emissions calculated from TANK4 program unabated were 292.6 lbs/yr with abatement, emissions are 5.85 lbs/yr.

S-142 Waste Oil Tank 1000 gallon (T-11) as sludge that is collected into this tank will be large hydrocarbon chain, not volatilized that readily emissions calculated from TANK4 program unabated were 292.6 lbs/yr with abatement, emissions are 5.85 lbs/yr.

\*S-152 NaOH 1500 gallon tank-calculations

$$E = \frac{(0.284) u^{0.78} M^{0.667} A P}{R T}$$

					lbm/hr	Acute- lbm/hr
<b>Evaporation Rate</b>	<b>E =</b>	<b>0.0002</b>	lb/min or	<b>0.220728</b>	lb/day	0.009197
<b>Wind speed Inside Tank (mph) =</b>	<b>u =</b>	0.01		0.00		
	<b>M =</b>			40.00		
<b>Tank Diameter =</b>	<b>A =</b>	8		50.24		
	<b>P =</b>			1.50		
<b>Temp in °F =</b>	<b>T =</b>	68		293.00		
	<b>R =</b>			82.05		

**E** = evaporation rate, lb/min

**u** = windspeed just above the pool liquid surface, m/sec

**M** = molecular weight of the pool liquid

**A** = surface area of the pool liquid, ft<sup>2</sup>

**P** = vapor pressure of pool liquid at the pool temperature, mmHg

**T** = pool liquid temperature, K

**R** = Universal Gas Law constant = 82.05 (atm . Cm<sup>3</sup>)/(gmol . K)

**A** = (cubic feet of pool liquid)/  
(0.033 ft)

\*S-153 HCL 1500 gallon tank with a maximum throughput of 14,000 gallons per year concentration is 30% and it is abated by a 200 gallon HCL Scrubber Assembly with an efficiency of 95%. The 30% emission factor is a conservative value, and it was used from the permit handbook chapter 7.4 for wet stations at semiconductor facilities. (Emissions 1.72 lbm/day; 629 lbm/yr and 0.07 lbm/hr) Chronic Trigger levels 350 lbm/yr and the Acute Trigger Level is 4.6 lbm/hr. The Hazard Index for non cancer Chronic and Acute based on emissions into the atmosphere for HCL are:

Non Cancer Hazard Index

	Chronic	Acute
lbm/year	lbm/yr	lbm/hr

HCL	629.30	350	4.6
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Tank S-153 HCL Tank, with Scrubber Closed system.

Receptor	Max. Chronic Non-cancer HQ <sup>5</sup>	Max. Acute Non-cancer HQ <sup>6</sup>
Residential	4.4E-04	5.154E-02
Worker	4.67E-03	5.154E-02

Emissions from the LTS 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 on the highest concentrations found in any wastewater stream taken from A/N 14966 and also the concentrations provided in A/N 20260. The attached Table 1, Wastewater TAC Concentrations, shows the toxic air contaminant (TAC) concentrations provided by the applicant for each of the wastewater streams, please note that 7 concentration streams were increased from the original application as these concentrations provided in A/ 20260 were greater than in the previous submittal under A/N 14966 [1,1 dichloroethane, 1,2, dichloroethane, acetone, chlorobenzene, ethyl benzene, methylene chloride, tetrachloroethene, 2-methylphenol]

Therefore emissions in already permitted sources have increased and thus the calculations have been provided. The attached Tables 2 through 7 shows the variables, equations and calculated unabated emission results for each source.

EPA's AP-42 Chapter 4.3 Waste Water Collection, Treatment & Storage

Components	unabated lbs/day	abated lbm/day	abated lbm/yr	abated tons/yr
S-71	2.26E+00	4.52E-02	1.65E+01	8.25E-03
S-72	3.19E+00	6.38E-02	2.33E+01	1.16E-02
S-140	1.37E+00	2.74E-02	10.0E+00	5.00E-03
S-74	2.74E+00	5.49E-02	2.00E+01	1.00E-02
S-123	1.53E+00	3.07E-02	1.12E+01	5.60E-03
S-145	3.35E+00	6.70E-02	2.45E+01	1.22E-02
S-155	1.52E+00	3.04E-02	1.11E+01	5.54E-03
S-157	1.33E+00	2.67E-02	9.73E+00	4.86E-03

Tanks 4.09b Program Organic Liquid Storage Tank AP-42 Section 7.1 Organic Liquid Storage Tanks

		unabated lbs/yr	unabated tons/yr
S-142	Waste oil T-12	100.86	0.05043
S-146	Pretreatment Tank T-7	433.3	0.21665
S-150	LGAC Feed Tank T-10	46.15	0.02308

S-151	Waste Oil T-11	292.6	0.14630
S-69, S70, S141	Inlet Feed Tanks	1731.61	0.86581

Source	Unabated Organic Emissions lbs/day	Organic Emissions after abatement lbs/day	Organic Emissions after abatement, tons/yr
Primary Oil Water Separator, S-71	2.26	0.045	0.008
Secondary Oil Water Separator, S-72	3.19	0.064	0.012
Clarifier Holding Tank, S-140	1.37	0.024	0.004
Inclined Plate clarifier, S-74	2.74	0.055	0.01
Air Stripper Holding Tank S-123	1.53	0.031	0.006
Sludge Thickener S-155	1.52	0.030	0.006
Inlet Storage Tanks S-141	No change	No change	No change
T-6 E-22R Holding Tank S-145	3.35	0.067	0.0122
T-11 Waste Oil Tank, S-151	0.802	0.016	0.003
T-12 Waste Oil Tank, S-142	0.276	0.0055	0.001
T-7; Pretreatment Tank S-146	1.187	0.0237	0.0043
Emissions Air Strippers S-130 & 120	188.0	3.76	0.6859
T-10 LGAC Feed Tank; S-150	0.126	0.00253	0.00046
S-152 NAOH Tank T-15			
S-153 HCL Tank T-13			
S-157 Filter Press T-19	1.33	0.027	0.0049
S-69 and S-70 ( no change)	4.745	0.095	0.0173
<b>Total</b>	<b>212.334</b>	<b>4.247</b>	<b>0.7750</b>

Application	Source	Lbm/day- unabated	Lb/day abated	Tons/yr
14622	S-48	163	3.25	0.5931
14966	All sources	6.49	0.13	0.0237
14848 Inlet storage tanks	S-69 and S-70	4.75	0.09	0.017
<b>Total</b>		<b>174.24</b>	<b>3.47</b>	<b>0.6338</b>

Increase in emissions from the LTS modification and addition of equipment is:

Source	Unabated Organic Emissions lbs/day	Organic Emissions after abatement lbs/day	Organic Emissions after abatement, tons/yr
LTS Modification	38.690	0.7738	0.1412

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

Description	NMOC/POCs tons/yr	NOX, tons/yr	CO, tons/yr	PM <sub>10</sub> , tons/yr	SO <sub>x</sub> , tons/yr	Estimated Under A/N
Class II Landfill, S-15	12.44					A/N 11375
Flare for S-15, A3	2.01	13.44	67.22	3.76	19.33	A/N 11375
IC Engine, S-5	2.61	11.93	43.33	2.3	4.65	A/N 11375
IC Engine, S-6	2.61	11.93	43.33	2.3	4.65	A/N 11375
IC Engine, S-37	2.3	10.52	31.4	2.25	4.10	A/N 11375
HWMF Landfill, S-46	1.43					A/N 2789 & 8514
Flare for S-46, A-11	0.34	1.37	6.86	0.39	1.14	A/N 2789 & 8514

Transfer Station, S-50				142.39 <sup>(1)</sup>		A/N 13247
Inlet Storage Tanks S-69 and S-70	.017					A/N 14848
Air Stripper S-48	(0.59 -.59)=0					A/N 14622 – archive with this application
Leachate System S-71,S-72, S-73, S-74 S-75 and S-76 (including exempt oil tanks = 0.142)	(0.17 - .0237)= 0.142					A/N 14966 (some permitted sources will be archived other sources modified in A/N 20621)
Leachate System S-24, S-26, S-27, S-28, S-29, S-33, S-40, S-42, S-43 and S-45	0					A/N 14769 (all sources archived)
Concrete/Asphalt Recycling (S111, S112, S113, S114, S118) and Composting (S115, S116, S117) formerly permitted under facility number A0198 <sup>(2)</sup>	16.9			8.37 <sup>(3)</sup>		A/N 14621 (S-117 windrow 16.9 tons/yr)
Modified Leachate System	0.7577					A/N 20621
PTE Totals	41.567	49.19	192.14	161.76	33.87	

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

(2) 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.

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

The maximum emissions from the new modified LTS and air stripper is 0.7744 tons/year (including already permitted sources S-69 and S-70) of POCs. The maximum emissions from the previous air stripper that is being replaced was calculated under A/N 14622 was 0.5931 tons/yr and the LTS under A/N 14966 was 0.041 tons/yr (0.5931 and 0.0407 = 0.6338 tons/yr). Net cumulative increase resulting from the replacement and installation of new equipment is 0.1412 tons/yr less exempt source S-150 =0.00046 = 0.1407.

Description	NMOC/POCs tons/yr	NOX, tons/yr	CO, tons/yr	PM <sub>10</sub> , tons/yr	SO <sub>x</sub> , tons/yr
Cumulative Emission Increase (post 4/5/1991) Established A/N 8514	0.00	0.00	6.378	0.429	4.094
Emission Increase from A/N 11375 <sup>(1)</sup>	4.4	10.44	47.29	2.67	11.71
Emission Increase from A/N 13247				1.39	
Emssion Increase from A/N 2789 <sup>(1)</sup>	1.527				
Emission Increase from A/N 14848 <sup>(1)</sup>	0.017				
Emission Increase from A/N 14966 <sup>(1)</sup>	0.19				
Emission Increase from A/N 14621				6.18	
Emission Increase from A/N 20621	.1407				
New Cumulative Emission Totals	6.275	10.44	53.668	10.669	15.804

<sup>(1)</sup>Under A/N 11375, 2789, 14966 and 14848, offsets were provided for POCs and NOx cumulative increase from the small facilities bank account.

Offsets that need to be provided are  $6.134 + .1407 * 1.15 = 6.296$  tons/yr. Facility provided offsets in the amount of 6.291 per Banking Certificate #1254 however, it was not sufficient. Per 2-2-421 Offset Deferral will be required in the amount of 0.005 tons/yr.

**Health Risk Analysis:** A health risk analysis is required as this is a new location, emission point has changed and so has other information. Facility exceeded the toxic trigger level for methylene chloride and vinyl chloride. The ISCST3 dispersion model was run with a unit emission rate. The model was run with Chevron Refinery meteorological data. Elevated terrain was considered using 10m DEM input from the USGS Richmond, San Quentin, Mare Island and Petaluma Point areas. Model run was made with rural dispersion coefficient as Urban/Rural classification was determined based on the typing scheme proposed by Auer.

Estimates of residential risk assume potential exposure to annual average TAC concentrations occur 24 hours per day, 350 days per year, for a 70-year lifetime. Risk estimates for offsite workers assume potential exposure occurs 8 hours per day, 245 day per year, for 40 years. Cancer risk adjustment factors (CRAFs) were used to calculate all cancer risk estimates. The CRAFs are age-specific weighting factors used in calculating cancer risks from exposures of infants, children and adolescents, to reflect their anticipated special sensitivity to carcinogens.

Risk is less than 1 in a million. Facility is in compliance.

Receptor	Cancer Risk	Non-cancer Hazard Index	
		Chronic	Acute
Resident	0.030 chances in a million	0.00044	0.05227
Worker	0.088 chances in a million	0.00484	0.05227

**Monitoring Requirements:** The owner/operator shall maintain records of the type and amount of liquid stored in S-69, S-70, S-141, S-156, S-145, S-146 and S-143. To monitor for carbon vessel breakthrough, the owner/operator shall maintain records of the NMOC concentrations at the inlet to all abatement devices, at the outlet of the abatement devices- 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, Regulation 2-6-501, and 8-5-501.1)

**Statement of Compliance**

Regulation 2 Rule 1

California Environmental Quality Act Requirements (CEQA, Regulation 2-1-312 and 426): 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." Also, the facility for the air strippers is considered a ministerial project per 2-1-311 and thus is exempt from 2-1-310. Permit handbook calculations were used per Chapter 9.1 for Soil/Water Remediation, Chapter 8.2 Wastewater Treatment Facilities, Tank Program 4.09d and so was AP-42 calculations Chapter 4 Evaporative Loss Sources, Section 3 Waste Water Collection. Facility has various sources that are also exempt per 2-1-123.

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.



### Regulation 2 Rule 2

There is an increase in emissions from the various sources, however, only source S-130 and S-120 exceed the 10 lbm/day level. The facility is applying BACT to these sources. Facility is in compliance with Regulation 2-2 Section 301.

The facility is subject to offsets per Section 302, as the cumulative emissions from this facility exceed 35 tons/yr for both NOX and POCs. Facility has provided the District with offsets in the amount of 6.291 tons/yr per Banking Certificate # 1254. Additional offsets of 0.005 tons/yr are needed but the facility will provide these offsets during its renewal period per Reg 2-2-421 (Offset Deferral, Annual Permit Renewal).

The facility is not subject to offsets per section 303 for PM10 and SOX, as this facility is not listed as one of the 28 PSD source categories in section 169(1) of the federal Clean Air Act. Thus for unlisted category it can not exceed 250 tons/yr of PM10, SOx, CO and NOx and it is below this level. Facility not subject to PSD requirements per section 304.

The facility is not subject to Regulation 2-2-317 (Maximum Achievable Control Technology): As total HAP pollutants do not exceed 25 tons per year with no single HAP emissions exceeding 10 tons per year. Thus WCCSL is not a major facility of HAPs and Regulation 2-2-317 does not apply.

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. Facility not subject to Regulation 2-2-304-PSD Requirements as facility is not a major facility.

### Regulation 2, Rule 5

Since there is an increase in toxic emissions, facility is subject to New Source Review of Toxic Air Contaminants per Regulation 2, Rule 5. Facility is complying with TBACT, emissions are less than 10 in a million.

### Regulation 2, Rule 6 Major Facility Review

This facility is subject to the operating 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 because it is a designated and major facility defined by the BAAQMD Regulation 2, Rule 6, Section 204, Regulation 2-6-304 and Regulation 2-6-212. The facility has been issued a Title V permit. 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 application serves as the Statement of Basis for the minor MFR permit revision.

### Regulation 8 Rule 2 – Miscellaneous Operations:

Operation of the sources 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. Operation of sources S-74 Clarifier (existing source), S-140 Clarifier Feed Tank and S-155 Sludge Thickener are abated by carbon vessels and are and will be in compliance with Regulation 8-2-301.

### Regulation 8 Rule 5 – Storage of Organic Liquids

Facility will be in compliance with 8-5-301 (Storage tank Control Requirements) and 306 (Requirements for Approved Emission Control System) by carbon canisters in series having an efficiency greater than 95%. Facility will comply with 8-5-307 (Requirements for Fixed Roof Tanks) by having efficiency greater than 95% - 8-5-307.3. Facility will comply with 8-5-328 (Tank Degassing Requirements), 8-5-331 (Tank Cleaning Requirements) and 8-5-332 (Sludge Handling Requirements).

Regulation 8, Rule 8 – Wastewater Collection and Separation System

Operation of the S-71 and S-72 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 8-8-301.3. The filter press Surge tank S-157 is in compliance with 8-8-304, as emissions are abated to carbon vessels in series with a minimum efficiency of 95% and tank is enclosed. The facility will be in compliance with 8-8-303 (Gauging and Sampling Devices). The facility will be in compliance with 8-8-305 (Oil-Water Separator And/or Air Flotation Unit Slop Oil Vessels), as facility is abating S-71, S-151 and S-142 to carbon vessels with an efficiency greater than 70%. Facility is complying with all of Regulation 8-8 Rules.

Regulation 8, Rule 47 Air Stripping and Soil Vapor Extraction Operations

Facility will be in compliance with Regulation 8-47-301 and 302, as abatement device (carbon vessels in series) will have an efficiency greater than 90%.

**Permit Condition Revisions:**

The District is proposing to modify condition # 23316 and 23220 as indicated below:

Condition # 23220

**Recommendation:**

**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 14848 and 14622.

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, S-69S70, S-141 and S-156 and the leachate treatment facility sources, S-71, S-72, S-140, S74, S-123 and S-155, S-151, S-142, S-146, S-145, S-150 and S-157. The wastewater streams from the following are permitted:
  - class I leachate well field
  - class I landfill gas condensate
  - Corrective Action Management Unit (CAMU) storm water
  - E-22R Area –East of HWMF (extraction wells EW-1, EW-7 and EW-13)(Basis: Cumulative Increase, Regulation 2 Rule 5)
  - a. Wastewater inlet to sources S-69, S-70 and S-141and S-156 shall not have a VOC content in excess of 809 pounds per day or 295,285 pounds per year. The sample shall be analyzed for VOCs by Method 8260 or 8021. Records of laboratory results showing VOC concentration from the discharge side of the inlet storage tanks. Submit results within 1 month of operation to Engineering Division.
  - b. To determine compliance with Part 1A, the owner/operator shall collect a sample from the discharge from the inlet storage tanks to the Leachate Treatment System semiannual.
2. The owner/operator shall vent the emissions from S-69, S-70, S-141, S-156, S-71, S-72, S-140, S-74, S-123, S-155, S-151, S-142, S-146, S-145, S-156 and S-157 to A-20 and A-21, two 500-pound activated carbon vessels arranged in series. However, for S156 if

influent into tanks have been treated by S-150 which includes the treated wastewater being polished with carbon vessels, no abatement is required for the vapor phase of S-156. Influent vapor flow to the carbon vessels shall not exceed a cumulative flow rate of 300 scfm. (Basis: Regulation 8-5-301, Cumulative Increase, Regulation 2 Rule 5)

3. The owner/operator shall operate the wastewater separators, S-71 S-72, S-151, S-142, S-157 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, 8-8-303 and 304)
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 A-20, the first carbon vessel in series, with unspent carbon upon measuring a NMOC concentration at the A-20 outlet that meets both of the following conditions:
  - a. NMOC concentration is 10 % or more of the A-20 carbon vessel 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 A-21, the last carbon vessel, with unspent carbon upon measuring a NMOC concentration at the A-21 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, S-69 S-70, S-141 and S-156 and to the leachate treatment facility sources.
  - b. Monthly totals of the liquid throughputs over the previous 12-month period.
  - c. Semiannual test results, with calculated and speciated VOCs.(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 A-20, the first carbon vessel in series.
    - ii. At the outlet of A-20 the first carbon vessel in series.
    - iii. At the outlet of A-21, 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 all abatement devices 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)

The following permit conditions are proposed for the air strippers S-120 and S-130:

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 S-120 and S-130 Air strippers. The wastewater streams from the following are permitted:

class I leachate well field  
class I landfill gas condensate  
Corrective Action Management Unit (CAMU) storm water  
E-22R Area –East of HWMF (extraction wells EW-1, EW-7 and EW-13)

(Basis: Cumulative Increase, Regulation 2 Rule 5)

2. The owner/operator shall vent the emissions from S-130 and S-120 to either A-14, A-15 and A-16, three 2000-pound activated carbon vessels arranged in series, or to A-17, A-18 and A-19, three 2000-pound activated carbon vessels arranged in series, during all periods of operation. Influent vapor flow to the carbon vessels shall not exceed a cumulative flowrate of 850 scfm from the air strippers. (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 A-14 and A-15 or A-17, and A-18 the first and second carbon vessels in series, with unspent carbon upon measuring a NMOC concentration at the A-14 and A-15 or A-17 and A-18 outlet that meets both of the following conditions:

- a. NMOC concentration is 10 % or more of the A-14 and A-15 or A-17 and A-18 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 A-16 or A-19, the last carbon vessels, with unspent carbon upon measuring a NMOC concentration at the –A-16 or A-19 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 four 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 A-14 or A-17, the first carbon vessel in series that is in operation.
    - ii. At the outlet of A-14 or A-17, the first carbon vessel in series that is in operation.
    - iii. At the outlet of A-16 or A-19, 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 A-14 and, A-17, the first carbon vessel in series that is in operation, and at the outlet of A-16 and A-19, 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 strippers, S120 and S130, the owner/operator shall cease operating the air stripper, S48. (Basis: Cumulative increase, Regulation 2-2-410)

Recommendation: Issue an Authority to Construct with the conditions listed above for the following sources listed below:

- S-120 Air Stripper QED 6 tray model; 115 gpm blower rate 850 cfm (V-4) abated by two vessels in parallel, each followed by a vessel in series A-14, A-15 and A-16 or A-17, A-18 and A-19. Each carbon vessel is 2000 lbs (US filter Westates VSC-2000, 2000 lbs each).
- S-123 Air Stripper Feed  
Tank 2500 gallon capacity (T-5)-abated by A-20 and A-21 (each a minimum of 500 lbs carbon vessels in series)
- S-130 Standby Air Stripper QED 4-tray model; 60 gpm blower flow rate of 600 cfm (V-5) abated by two vessels in parallel, each followed by a vessel in series A-14, A-15 and A-16 or A-17, A-18 and A-19. Each carbon vessel is 2000 lbs (US filter Westates VSC-2000, 2000 lbs each).
- S-140 Clarifier Holding (Feed) Tank 1600 gallon capacity (T-4) abated by two carbon vessels A-20 and A-21 in series. Each carbon vessel is 500 lbs each.
- S-141 Inlet Feed Tank 16,500 Snyder High Density Linear Polyethylene Tank (T-3) 12 feet diameter, 22 feet high abated by A-20 and A-21; Two Vapor Phase Carbon Vessels: US filter Westates VSC-500, 500 lbs each
- S-142 Waste Oil Tank 1000 gallon (T-12) - abated by A-20 and A-21
- S-145 E-22R Area Tank 12,500 gallons (T-6) - abated by A-20 and A-21
- S-146 Pretreatment Inlet Feed Tank 11,500 gallons (T-7) abated by A-20 and A-21. Each carbon vessel is 500 lbs which also includes the following mixing tanks prior to being pumped to S-130 Standby Air Stripper (V5)  
Mixing Tank 1000 gallons (T-8) abated by A-20 and A-21.  
Mixing Tank 8000 gallons (T-21) abated by A-20 and A-21  
Mixing Tank 1000 gallons (T-22) abated by A-20 and A-21
- S-151 Waste Oil Tank 1000 gallons (T-11) will be abated by A-20 and A-21
- S-153 1400 Gallon (HCL) Tank (T-13) abated by A-153 200 gallon HCL Scrubber Assembly with an efficiency of 95%
- S-155 Oil Sludge Thickener; 4500 gallons (V-14) abated to A-20 and A-21 Auxiliary equipment include two filter presses and then sludge disposed to local disposal site. Sludge will contain heavy metals, inorganics and some organic compound.
- S-156 Three (3) Day Tanks each 16,500 gallon capacity (D-1, D-2, D-3) abated by two vessels in series A-20 and A-21 when the wastewater has not been treated yet. Each carbon vessel is 500 lbs. When wastewater has been treated after S-150 LGAC feed tank and granulated activated carbon vessels, source S-156 is not required to have abatement devices attached as organic content is less than 1% VOC.
- S-157 Filter Press Surge Tank (T-19) 1600 gallons – abated to A-20 and A-21

And issue C/E for the following sources:

- S-144 Three (3) Treated Storage tanks each 75,000 gallon capacity (ST1 – ST3) –exempt per 2-1-123.2
- S-150 LGAC Feed Tank 1000 gallons (T-10) abated by liquid granulated activated carbon vessels each 2000 lbs V-8, V-9 and V-10 and or V-11, V-12 and V-13 exempt per 2-1-123.2
- S-152 1500 Gallon (NAOH) Tank (T-15) exempt per 2-1-123.2
- S-154 2 Polymer Mixing Tanks up to 1000 gallons each (T-23, T-24) exempt per 2-1-123.2
- S-158 55 gallon defoamer tank (T-14) exempt per 2-1 123.1
- S-159 55 gallon polymer tank(T-16) exempt per 2-1-123.1
- S-160 55 gallon oxidizer tank (T-18) hydrogen peroxide exempt per 2-1-123.1

And Archive the following sources and abatement devices:

- S-21 Oil Collection Tank 110 gallons (exempt source)
  - S-41 HiPox Advanced Oxidation System abated by Oxidation Catalyst A-41 with emission stack P-41
  - S-73 Clarifier Holding Tank 500 gallon capacity (T-4)
  - S-75 Air Stripper Holding Tank 2000 gallon capacity (T-5)- [replaced by S-123 also ID'd as T-5]
  - S-48 Air Stripper Paragon 4-tray model with 20 gpm flowrate
  - S-76 Sludge Thickener Hoffland Environmental Inc, ACS 6-ST-01 50 gpm abated by A12 and A-13 [ID'd as T-14].
- A-12 and A-13 2000 lbs carbon vessels in series.

June 30, 2011

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Irma Salinas  
Senior AQ Engineer

# **APPENDIX E**

## **ENGINEERING EVALUATION**

### **Change of Condition for S-15**

#### **APPLICATION # 21424**



**Engineering Evaluation Report**  
**Application # 21424**  
West Contra Costa Sanitary Landfill, P#1840  
1 Parr Blvd, Richmond

I. Background

This facility has applied for a change in condition # 17821 for S-15. The facility would like the existing condition to include language that states that the listed well heads may be temporarily disconnected from the vacuum system if the methane concentration detected in the wells is less than 5 percent by volume and the oxygen concentration is 15% or more. Facility has stated that low methane generation in the shallow zone is the cause for excessive oxygen levels in horizontal wells rather than excessive oxygen intrusion. Facility believes that surface emissions control across the top surface can be maintained by a combination of increasing extraction rates at nearby vertical wells and operating selective compliant horizontal wells, while keeping noncompliant locations off line until they are returned back to a compliant state or surface emissions are detected. WCCSL has reported that some of the horizontal collectors are indeed experiencing high oxygen values. This non operation of horizontal wells will only be allowed for the following 20 Class II horizontal wells (WCLFHC01A, WCLFHC01B, WCLFHC02A, WCLFHC02B, WCLFHC03A, WCLFHC03B, WCLFHC04A, WCLFHC04B, WCLFHC05A, WCLFHC05B, WCLFHC06A, WCLFHC06B, WCLFHC07A, WCLFHC07B, WCLFHC08A, WCLFHC08B, WCLFHC09A, WCLFHC09B, WCLFHC10A, WCLFHC10B). The horizontal collectors in the Class I area that have already been permitted are identified as R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, R-13, R-14, R-15 and R-16. Facility has demonstrated that they are having difficulties maintaining this requirement and changes will be granted.

In addition, after the issuance of the A/C for the replacement flare, the Class I area of the landfill (currently identified as a separate source number - S-46 – from the main Class II landfill – S-15) will be archived under A/N 21826 and the conditions will be transferred over to S-15 for all horizontal wells that were part of S-46. Now, source S-15 will include both the closed Class II and Class I areas of the landfill (except for the exempt S-47 Corrective Action Management Unit – CAMU – which remains active to accommodate disposal of leachate treatment sludge from the HWMF). S-15 will also include the entire landfill gas collection system that is present in the Class I and Class II waste disposal areas.

The waste disposal records for S-15 will also be corrected under this application. In the Engineering Evaluation report for A/N 21826, the date of waste cessation was incorrectly identified as 2008, but in the report for A/N 18127, it was identified as September 2006. The facility has verified that waste was last accepted in September 2006. Hence, S-15 became an inactive landfill as of October 2006. Certification of final closure of this landfill occurred on August 4, 2011.

In A/N 21826, condition # 20754 for S-46 was all deleted. Application 21826 will be modified prior to issuing the Permit to Operate to incorporate the conditions that pertained to the gas collection system in the Class I site. Under A/N 21424, the conditions that apply to the horizontal collectors and landfill gas collection system located in the Class I landfill will be included in the conditions for the combined landfill (S-15).

The Regulation 8-34-404 Less Than Continuous Operation provisions allow the District to establish procedures for operating individual wells on a less than continuous basis. The proposed permit condition for the Class II landfill are intended to give operators the flexibility of turning off up to 5 wells (less than

10% of the total number of collection components) for up to 120 days to allow landfill operators to quickly isolate leaking wells or to further evaluate the best course of action for resolving wellhead limit compliance issues that may be the result of uncontrollable gas production fluctuations. As explained earlier, landfill gas collection systems that are designed to meet the Bay Area's stringent Regulation 8, Rule 34 standards must have gas collection wells with overlapping areas of influence. As a result of this conservative design feature, neighboring wells located near a problem well normally provide sufficient vacuum to a nearby refuse volume long after a problem well has been disconnected from the vacuum system. Any landfill gas generated by that refuse volume will travel to one of these neighboring wells, but it will still be captured by the collection system. Therefore, shutting down these few landfill gas collection wells in different areas of the landfill will not result in any emission increases. Additional component monitoring will be required, to ensure that temporarily disconnected wells will not result in excess component leaks.

## II. Emission Calculations

The proposed permit condition changes discussed in this report are necessary to reflect the current closed status of the MSW landfill and Hazardous Waste landfill operations and to allow flexibility and optimization of the landfill gas collection systems for these landfills. These permit condition changes will not authorize any increases in emissions from S-15 are not expected to result in any reductions in the effectiveness of the landfill gas collection or control systems. Therefore, these permit condition changes will not result in any changes to the PTE for S-15.

The permit condition changes discussed in this application will not authorize any increases in toxic air contaminant emissions from the combined landfill (S-15) or landfill gas control equipment. Therefore, a risk screening analysis is not required.

## III. Plant Cumulative Emission Increase Inventory

The sources evaluated in this application are existing sources that have already been permitted. The permit condition changes will not authorize any changes to the potential to emit for the landfill or the landfill gas control equipment. Therefore, this application will not result in any changes to the plant cumulative emission increase inventory.

## IV. Statement of Compliance

### Regulation 2 Permits, Rule 1 General Provisions

#### CEQA:

There is no possibility that the proposed permit condition revisions could have any significant impact on the environment. Therefore, this proposed change of permit condition is categorically exempt from CEQA review pursuant to Regulation 2-1-312.12. No further CEQA review is required.

#### School Public Notice:

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 Permits, Rule 2 New Source Review

Since there are no increases in emissions from S-15, this project is not subject to New Source Review or any other requirements of Regulation 2, Rule 2.

The facility is not subject to Regulation 2-2-317 (Maximum Achievable Control Technology): As total HAP pollutants do not exceed 25 tons per year with no single HAP emissions exceeding 10 tons per year. Thus WCCSL is not a major facility of HAPs and Regulation 2-2-317 does not apply.

Since this facility has never had a potential to emit that is greater than 250 tons/year for any regulated air pollutant, this site has not been deemed to be a PSD major facility in the past and has not previously been subject to the Regulation 2-2-304-PSD Requirements. Although GHG emissions have now been added to the PSD program, the GHG emissions from this facility are primarily biogenic GHG emissions, which have been deferred from inclusion in the PSD applicability determination until July 1, 2014. Since non-biogenic CO<sub>2</sub> equivalent emissions from this facility are less than the federal PSD threshold of 100,000 tons/year, this site is not currently subject to PSD due to GHG emissions.

#### Regulation 2 Permits, Rule 5 New Source Review of Toxic Air Contaminants

Since this application will not result in any increases in toxic air contaminant emissions, this project is not subject to New Source Review of Toxic Air Contaminants per Regulation 2, Rule 5.

#### Regulation 2 Permits, Rule 6 Major Facility Review

This facility is subject to the operating 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 because it is a designated and major facility as defined by the BAAQMD Regulation 2, Rule 6, Section 204, Regulation 2-6-304 and Regulation 2-6-212. The facility has been issued a Title V permit. This Title V permit was last renewed on December 20, 2010 and was last modified on September 29, 2011.

The Title V permit for this facility will need to be modified to incorporate the permit condition changes that are proposed in this application. These permit condition changes will require a minor revision to the MFR Permit pursuant to Regulation 2-6-201. The facility has already submitted Application # 18135 to request a minor revision of the Title V permit for this facility regarding other changes related to the landfill and landfill gas collection and control systems. The permit condition changes proposed under A/N 21424 will be combined with these other changes and added to the Title V permit for this site pursuant to Title V Minor Revision A/N 18135.

#### Regulation 6 Particulate Matter, Rule 1 General Requirements

The facility is in compliance with Regulation 6 Rule 1. The facility is in compliance with Regulation 6-1-305 and will continue to be in compliance.

#### Regulation 8 Organic Compounds, Rule 34 Solid Waste Disposal Sites

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. This landfill

area and gas collection system are subject to 8-34-301.2, 303, 305, and the associated administrative and monitoring requirements.

As allowed under Regulation 8-34-305, the District is proposing to establish alternative wellhead standards for the individual horizontal collectors associated with the Class I and Class II landfill. The proposed permit conditions will allow the specified horizontal collectors to operate at a higher oxygen content (up to 15% by volume) compared to the 5% oxygen content allowed by Regulation 8-45-305.4. As discussed in the Background Section of this report, the affected wells are unable to meet the lower oxygen content on a routine basis. The higher oxygen allowance will enable the operator to properly balance the gas collection system near these horizontal collectors.

As allowed under Regulation 8-34-404, the District is proposing to authorize some of the individual horizontal landfill gas collectors to operate on a less than continuous basis, while continuing to require that the collection system as a whole be operated continuously pursuant to Regulation 8-34-301.1.

This site is complying with all applicable monitoring requirements: Regulation 8-34, Sections 505-510.

### Federal Requirements

New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP): As indicated in the most recent Title V permit for this facility, the S-15 West Contra Costa Sanitary Landfill is subject to federal NSPS and NESHAP requirements for MSW Landfills (40 CFR Part 60, Subpart WWW and 40 CFR Part 63, Subpart AAAA).

The Subpart WWW NSPS requirements are similar to the Regulation 8, Rule 34 requirements discussed above, except that the NSPS requirements do not have a component leak limit and allow a higher outlet NMOC concentration for landfill gas flares. As also required by Regulation, Rule 34, 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. Subpart WWW requires that the gas collection system operate with negative pressure at each wellhead (40 CFR Part 60.753(b), similar to 8-34-305.1), but it allows permanently decommissioned wells to have a static positive pressure for up to 120 days. 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. Therefore, the permit condition changes proposed in this application (an alternative wellhead oxygen standard and intermittent operation of selected horizontal collectors) are acceptable under the design plan requirements of the NSPS. The other permit condition changes discussed in this application will not trigger any new requirements or change the applicability of any existing requirements under these federal regulations.

The NESHAP requires that this landfill maintain a start-up, shutdown, and malfunction plan and requires semi-annual reporting of monitoring and other events. These NESHAP requirements have been incorporated into permit conditions and the existing Title V permit. No changes are necessary.

## V. Permit Conditions

Condition # 17821 was last modified on August 24, 2011 pursuant to Application # 21826 when the District issued an Authority to Construct for the A-120 Landfill Gas Flare and combined the S-15 Class II Landfill and the S-46 Class I Landfill into a single source number (S-15 Class I and Class II Landfills).

Under Application # 21826, the District is proposing additional permit condition revisions to eliminate unnecessary language that applied when the Class II area was an active landfill and to allow for less than continuous operation of the gas collection system and alternative wellhead limits that were discussed in the Background of this report. Due to the substantial nature of these changes, the conditions will be assigned a new condition ID number (Condition # 25293).

**Condition # ~~17821~~25293**

**FOR: S-15, WEST CONTRA COSTA SANITARY LANDFILL (~~INACTIVE~~CLOSED CLASS ~~I~~ AND CLASS ~~2II~~ LANDFILL WASTE DISPOSAL AREAS) – WASTE DECOMPOSITION PROCESS; EQUIPPED WITH LANDFILL GAS COLLECTION SYSTEM; ABATED BY ~~ANY COMBINATION OF INTERNAL COMBUSTION ENGINES A-8~~ LANDFILL GAS FLARE AND/OR A-120 LANDFILL ~~G~~AS FLARE**

1. ~~Effective October 1, 2006, no waste shall be disposed of in the S-15 Class I or Class II Landfills. S-15 does not include the waste disposal activities associated with the Corrective Action Management Unit (CAMU), which are included under S-47. The facility stopped accepting waste for disposal at the Class 2 landfill in 2008.~~ The total cumulative amount of all ~~wastes decomposable materials~~ placed in the ~~S-15~~ landfills shall not exceed 13.0 million tons. ~~This amount includes; the facility placed 12.3 million tons in the Class 2II landfill at time of closure and 376,110 tons of decomposable materials in the Class I landfill.~~ The maximum design capacity of the landfill (total volume of all wastes and cover materials placed in the landfill, excluding final cover) shall not exceed 21.47 million cubic yards. ~~The maximum capacity of all decomposable wastes placed in the Class 1 landfill was 376,110 tons.~~ (b) ~~B~~asis: Regulation 2-1-301, Cumulative Increase)

~~\*2. This facility is not subject to Regulation 8, Rule 40 because the landfill does not accept contaminated soil (soil containing more than 50 ppmw of volatile organic compounds, VOCs). The following types of materials may be accepted:~~

- ~~a. Materials for which the Permit Holder has appropriate documentation demonstrating that either the organic content of the soil or the organic concentration above the soil is below the “contaminated” level (as defined in Regulation 8, Rule 40, Sections 205, 207, and 211).~~
- ~~b. Materials for which the Permit Holder has no documentation to prove that soil is not contaminated, but source of the soil is known and there is no reason to suspect that the soil might contain organic compounds.~~
- ~~c. Materials which the Permit Holder plans to test in order to determine the VOC contamination level in the soil, provided that the material is sampled within 24 hours of receipt by this site and is handled as if the soil were contaminated until the Permit Holder receives the test results. The Permit Holder shall collect soil samples in accordance with Regulation 8 40-601. The organic content of the collected soil samples shall be determined in accordance with Regulation 8 40-602.~~
  - ~~i. If these test results indicate that the soil is still contaminated or if the soil was not sampled within 24 hours of receipt by the facility, the Permit Holder must continue to handle the soil in accordance with Regulation 8,~~

- ~~Rule 40, until the soil has been removed from this site or has completed treatment. Storing soil in a temporary stockpile or pit is not considered treatment. Co-mingling, blending, or mixing of soil lots is not considered treatment.~~
- ii. ~~If these test results indicate that the soil, as received at this site, has an organic content of 50 ppmw or less, then the soil may be considered to be not contaminated and need not be handled in accordance with Regulation 8, Rule 40 any longer.~~  
(basis: Regulations 2-1-403 and 8-40-301)
3. ~~The Permit Holder shall limit the quantity of low VOC soil (soil that contains 50 ppmw or less of VOCs) disposed of per day so that no more than 15 pounds of total carbon could be emitted to the atmosphere per day. In order to demonstrate compliance with this condition, the Permit Holder shall maintain the following records in a District approved log.~~
- a. ~~Record on a daily basis the amount of low VOC soil disposed of in the landfill or used as cover material in the landfill. This total amount (in units of pounds per day) is Q in the equation in subpart c. below.~~
- b. ~~Record on a daily basis the VOC content of all low VOC soils disposed of or used as cover material. This VOC Content (C in the equation below) should be expressed as parts per million by weight as total carbon (or C<sub>t</sub>).~~
- c. ~~Calculate and record on a daily basis the VOC Emission Rate (E) using the following equation:~~  
$$E = Q * C / 10^6$$
  
(basis: Regulation 8-2-301)
42. Water and/or dust suppressants shall be applied to all unpaved roadways ~~and active soil removal and fill areas~~ associated with this landfill as necessary to prevent visible particulate emissions. Paved roadways at the facility shall be kept sufficiently clear of dirt and debris as necessary to prevent visible particulate emissions from vehicle traffic or wind. (basis: Regulations 2-1-403, 6-1-301, and 6-1-305)
3. The owner/operator shall ensure that fugitive non-methane organic compounds (NMOC) emissions from S-15 do not exceed 15.8 tons (calculated as hexane) during any consecutive 12 month period. The owner/operator shall demonstrate compliance with this emission limit by complying with the landfill gas NMOC concentration limit in Part 4 and by complying with the landfill gas collection and control requirements specified in Parts 5-8. (Basis: Cumulative Increase and Regulation 2-1-301)
4. The concentration of total non-methane organic compounds (NMOC) in the combined landfill gas collected from S-15 shall not exceed 392 ppmv, measured as C6 or hexane, on a dry basis. (Basis: Cumulative Increase and Regulation 2-1-301)
5. S-15 shall be equipped with a landfill gas collection system, which shall be operated continuously as defined in Regulation 8-34-219, unless the Permit Holder owner/operator complies with all applicable provisions of Regulation 8, Rule 34, Section 113. All collected landfill gas shall be vented to properly operating abatement equipment including the Internal Combustion Engines (S-5, S-6, and S-37), ~~and/or~~ the Landfill Gas Flares (A-8 and A-120), or both a combination of these devices. Upon start-up of A-120, A-8 shall only be operated as a back-up to A-120. The flares shall not operate

concurrently, except for short periods of time when necessary during the diversion of gas from one flare to the other flare. In the event of an engine shutdown, the landfill gas that was being burned at that engine shall be automatically diverted to a flare. In order to assure compliance with this condition, each flare shall be equipped with local and remote alarms and auto restart capabilities. 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)

6. The ~~Permit Holder~~-owner/operator shall apply for and receive a Change of Condition from the District before altering the landfill gas collection system described in Part 6a below. 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 alterations that are subject to this requirement. 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 1b(i) limits; the numbers of replacement wells and replacement collectors are not limited. Alterations, repairs, or replacements of non-perforated piping sections (such as risers, laterals, or header pipes), piping connectors, or valves are not subject to the Authority to Construct requirement.

a. The ~~Permit holder~~-owner/operator has been issued Change of Condition for the landfill gas collection system components listed below. Well and collector locations, depths, and lengths are as described in detail in the Republic Services West Contra Costa Sanitary Landfill Updated Landfill Gas Collection and Control System Design Plan Class II dated March 3, 2008 and in Table 2 Class II Landfill Gas Extraction Well List submitted August 11, 2008. 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 6b, as evidenced by start-up and decommissioning notification letters submitted to the District.

i. Baseline Count of Components Located in Class II Waste Disposal Area

	Required Components
Total Number of Vertical Wells:	67
Total Number of Horizontal Collectors:	<u>237</u>
Total Number of leachate sump wellheads	3

ii. Baseline Count of Components Located in Class I Waste Disposal Area

	Required Components
<u>Total Number of Horizontal Collectors:</u>	<u>16</u>

b. The ~~permit holder~~-owner/operator is authorized to make the landfill gas collection system -alterations described below:

- i. install up to 94 new vertical wells;
- ii. install up to 20 new horizontal collectors;
- iii. decommission up to 27 vertical wells;
- iv. decommission up to 9 horizontal collectors;
- v. connect the leachate collection and recovery system (LCRS) to the landfill gas collection unit. LCRS is comprised of (5 vaults, 13 wells and 13 sumps)

Wells installed pursuant to this subpart shall be added to or removed from subpart a in accordance with the procedures identified in Regulations 2-6-414 or 2-6-415.

- c. The ~~Permit Holder~~ owner/operator shall submit a start-up/shutdown notification to the District at least three days before the installation of a new well or the decommissioning of an existing well. The notification shall include:
  - i. an updated well list that includes the well name, installation date, well type, well status (active/not active) well depth and decommission date (if applicable)
  - ii. an updated LFG Extraction System drawing reflecting the modifications.(basis: Regulations 2-1-301, 8-34-301.1, 8-34-304, 8-34-305)

7. The landfill gas collection system components described in Part 6a 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~~ owner/operator complies with all applicable requirements of Regulation 8, Rule 34, Sections 113, 116, 117, and 118. 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~~ owner/operator complies with all applicable provisions of Regulation 8, Rule 34, Sections 113, 116, 117, or with Parts ~~47a-ed~~ below. (~~b~~Basis: Regulations 8-34-301.1, 8-34-404, 8-34-305, 8-34-414, 8-34-501.5, and 8-34-505)

- a. The owner/operator may operate the vacuum on any of the leachate collection and recovery system (LCRS) components on a less than continuous basis. LCRS components may be connected to the vacuum system as needed to prevent component or surface leaks or to abate landfill gas that has migrated into the LCRS. The LCRS components may be disconnect from the vacuum system when methane concentration in the component is less than 5.0% by volume, or when oxygen concentration in the component is 15.0% by volume or more, or when abatement is no longer necessary to maintain compliance with applicable component and surface leak limits. LCRS components are not subject to subparts 7b-c below or Regulation 8-34-305 but are subject to the alternative wellhead operating and monitoring requirements in subpart 7d below.
- b. The owner/operator may temporarily disconnect individual landfill gas collection system vertical wells located in the Class II Waste Disposal Area from the vacuum system, provided that all requirements of this subpart are satisfied.
  - i. No more than five (5) vertical wells may be temporarily disconnected from the vacuum system at any one time pursuant to subpart 7b.
  - ii. For each individual well that is temporarily disconnected from the vacuum system pursuant to subpart 7b, the total vacuum system disconnection time shall not exceed 120 days during any 12-month period.



- iii. Vertical wells that are temporarily disconnected from the vacuum system pursuant to this subpart are not subject to wellhead limits (Regulation 8-34-305) or monthly wellhead monitoring requirements (Regulation 8-34-505).
- iv. Wells that are temporarily disconnected from the vacuum system pursuant to subpart 7b continue to be subject to the component leak limit (Regulation 8-34-301.2) and the quarterly leak testing requirement (Regulation 8-34-503) at all times. In addition, the owner/operator shall conduct the following additional component leak monitoring at each well that has been disconnected from the vacuum system pursuant to subpart 7b: test for component leaks using the procedures identified in Regulation 8-34-602 within 10 days of disconnection from vacuum and again within 30 days of disconnection from vacuum. If a component leak is detected at a component, the owner/operator 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.
- v. For each well disconnection event, the owner/operator shall record each affected well ID number, all well disconnection dates and times, all well reconnection dates and times, all related monitoring dates and monitoring results in a District approved log. This log shall also include an explanation of why the temporary well shut down was necessary and shall describe all adjustments or repairs that were made in order to allow this well to operate continuously, to reduce leaks, or to achieve compliance with an applicable limit. All records shall be retained for a minimum of five years and shall be made available to District staff upon request.
- c. The owner/operator shall operate each group of horizontal landfill gas collectors (one group of horizontal collectors is located in the Class I waste disposal area and one group of horizontal collectors is located in the Class II waste disposal area) on a continuous basis. Individual horizontal collectors within each group of horizontal collectors may be connected to or disconnected from the vacuum system in accordance with the following criteria.
  - i. The owner/operator shall begin operating each horizontal collector (open the valve to the vacuum system with sufficient vacuum to generate gas flow from the collector and direct collected gases to a control device) upon detection of a gauge pressure of 1.0 inches of water or more, or upon detection of a methane concentration of 5.0% by volume or more in the collector.
  - ii. The owner/operator may temporarily disconnect a horizontal collector from the vacuum system (isolation valve completely closed) upon detection of a methane concentration in the collector of less 5.0% by volume, or upon detection of an oxygen concentration in the collector of 15.0% by volume or more.
  - iii. 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 7d alternative component limits.
  - iv. 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 owner/operator shall conduct the following component-leak monitoring at each component that has been disconnected from the vacuum system pursuant to subpart 7c: test for component leaks using the procedures identified in Regulation 8-34-602 within 10 days of disconnection from vacuum and again within 30 days of disconnection from vacuum. If a component leak is detected at a component, the owner/operator 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 owner/operator 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. The owner/operator shall operate any LCRS components (subject to subpart 7a) and any horizontal collectors (subject to subpart 7c) 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 each LCRS component and to each horizontal collector while it is connected to the vacuum system and required to be operating. The alternative component limits do not apply during vacuum disconnection time that is authorized by subpart 7a or 7c or Regulation 8, Rule 34.
    - 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 15.0% oxygen by volume (dry basis), except for the following circumstances. If a component must be operated pursuant to subpart 7c(i), the oxygen concentration may exceed 15% by volume from the time of detection until the component is disconnected from the vacuum system pursuant to subpart 7c(ii).
    - iv. The owner/operator shall demonstrate compliance with these alternative component limits by monitoring each LCRS component and each horizontal collector listed in subpart 6a and any LCRS components or

horizontal collectors installed pursuant to subpart 6b 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 owner/operator shall compare these monitoring results to the operating requirements in subparts 7a and 7c and the alternative component limits in subpart 7d(i-iii). The owner/operator shall identify any components that must or may undergo a change of operational status due to the pressure results or methane and oxygen concentration results. The owner/operator shall also identify any operating components where the measured gauge pressure, temperature, or oxygen concentration exceeds the applicable limit in subpart 7d(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 7a or 7c), or permanently decommissioning the component (if authorized by subpart 6b). In each 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.

8. ~~The facility has the option of venting landfill gas to either the engines S-5, S-6, S-37 or the flare A-120 or any combination of engines and/or flare. In order to assure compliance with this condition, A-120 shall be equipped with local and remote alarms and auto-restart capabilities.~~ The total combined Heat Input to all internal combustion engines and flares (S-5, S-6, S-37, A-8 and A-120) shall not exceed 780,134 MM BTU in any consecutive 12 month period. In order to demonstrate compliance with this part, the ~~owner/operator-Permit Holder~~ shall calculate and record on a monthly basis the maximum daily and total monthly heat input to ~~each~~ the flare and engines based on the landfill gas flow rate recorded pursuant to ~~p~~Part 14, the average methane concentration in the landfill gas based on the most recent source test, and a high heating value for methane of 1013 BTU/ft<sup>3</sup> at 60 degrees F.

a. Heat Input (MM BTU/day) =  
Daily Fuel Flow Rate (ft<sup>3</sup>/day at 60 °F and 14.7 psia) \* Methane Concentration (%) \* Gross Methane Heat Content (1013 BTU/ft<sup>3</sup> CH<sub>4</sub>) \* Conversion Factor (1E-8)

~~b. Fugitive NMOC shall not exceed 15.8 tons/yr in any consecutive 12 month period.~~ (b)Basis: Cumulative Increase and Regulation 2-1-301, Regulation 8-34-301)

9. The combustion zone temperature of ~~each the A-120~~ Landfill Gas Flare (A-8 and A-120) shall be maintained at a minimum of 1400 degrees Fahrenheit, averaged over any 3-hour period, during any time that landfill gas is vented to the flare. If a source test demonstrates compliance with all applicable requirements at a different temperature, the APCO may revise this minimum temperature limit in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415, based on the following criteria. The minimum combustion zone temperature for the flare shall be equal to the average

combustion zone temperature determined during the most recent complying source test minus 50 degrees F, provided that the minimum combustion zone temperature is not less than 1400 degrees F. (b)Basis: ~~Regulation 2 Rule 5 and Regulations 2-5-301, 8-34-301.3, and 8-34-501.3, and 40 CFR 60.756(b)(1))~~

10. Total reduced sulfur compounds in the collected landfill gas shall be monitored as a surrogate for monitoring sulfur dioxide in control system's exhaust. The concentration of total reduced sulfur compounds in the collected landfill gas shall not exceed 300 ppmv (dry). In order to demonstrate compliance with this part, the ~~Permit Holder~~ owner/operator shall measure the total sulfur content in collected landfill gas on a quarterly basis using a Draeger tube or by Tedlar Bag sampled laboratory analysis. The landfill gas sample shall be taken from the main landfill gas header. The ~~Permit Holder~~ owner/operator shall follow the manufacturer's recommended procedures for using the Draeger tube and interpreting the results. ~~The Permit Holder shall conduct the first sulfur test no later than 3 months after the issue date of the MFR Permit and quarterly thereafter.~~ (b)Basis: Regulation 9-1-302, Cumulative Increase)
11. In order, to demonstrate compliance with Part 4, Regulation 8, Rule 34, Sections 301.3 and 412, and 40 CFR 60.8 and 60.752(b)(2)(iii)(B), and the CARB Landfill Methane Control Measure, the ~~Permit Holder~~ owner/operator shall ensure that a District approved source test is conducted on the Landfill Flare, A-120 within 90 days of startup, followed by annual source tests thereafter. The facility shall obtain prior approval from the Source Test Manager for the location of sampling ports and source testing procedures. ~~The owner/operator shall ensure that source tests continue to be performed annually on the Landfill Gas Flare (A-120). The owner/operator shall conduct a source test on the A-8 back-up flare at least once every three years.~~ As a minimum, the ~~annual~~ source tests required by this part shall determine the following:
- landfill gas flow rate to the flare (dry basis);
  - concentrations (dry basis) of carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), oxygen (O<sub>2</sub>), ~~total hydrocarbons (THC)~~, methane (CH<sub>4</sub>), and total non-methane organic compounds (NMOC) in the landfill gas;
  - stack gas flow rate from the flare (dry basis);
  - concentrations (dry basis) of NO<sub>x</sub>, CO, SO<sub>2</sub>, NMOC, ~~Benzene, Formaldehyde, Vinyl Chloride,~~ and O<sub>2</sub> in the flare stack gas;
  - NMOC and methane destruction efficiencyies achieved by the flare; and
  - the average combustion temperature in the flare during the test period.
  - NO<sub>x</sub> and CO emission rates from the flare in units of pounds per ~~MM~~ million BTU

The Source Test Section of the District shall be contacted to obtain their approval of the source test procedures at least 14 days in advance of each source test. They shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division within 60 days of the test date.

(Basis: Regulations 8-34-301.3 and 8-34-412 and CCR 95464(b)(2)(A)(1))

12. The ~~Permit Holder~~ owner/operator shall conduct a characterization of the landfill gas concurrent with the annual source test required by ~~p~~ Part 11 above. The landfill gas sample shall be drawn from the main landfill gas header. In addition to the compounds listed in ~~p~~ Part 11b, the landfill gas shall be analyzed for all the organic compounds listed below. If the owner/operator is conducting a laboratory analysis of the landfill gas to

determine the total reduced sulfur content pursuant to Part 10, the landfill gas shall be analyzed for all of the sulfur compounds listed below. All concentrations shall be reported on a dry basis. The test report shall be submitted to the Compliance and Enforcement Division within 45 days of the test date. (Basis: Regulation 2 Rule 5, AB-2588 Air Toxics Hot Spots Act, and Regulation 8-34-412)

Organic Compounds

acrylonitrile  
benzene  
benzyl chloride  
1,3 butadiene  
~~carbon disulfide~~  
carbon tetrachloride  
chlorobenzene  
chloroform  
1,1 dichloroethane  
1,1 dichlorethene  
1,2 dichloroethane  
1,4 dichlorobenzene  
1,4 dioxane  
ethylbenzene  
ethylene dibromide  
hexane  
isopropyl alcohol  
methyl ethyl ketone  
methyl tert butyl ether  
methylene chloride  
perchloroethylene  
styrene  
toluene  
1,1,1 trichloroethane  
1,1,2,2 tetrachloroethane  
trichloroethylene  
vinyl chloride  
xylenes

Sulfur Compounds

hydrogen sulfide  
carbon disulfide  
carbonyl sulfide  
dimethyl sulfide  
ethyl mercaptan  
methyl mercaptan

- \*13. If the concentrations (dry basis) of toxic air contaminants in the collected landfill gas exceed any of the limits listed ~~in Parts 13a or 13b~~ below, the Permit Holder owner/operator shall submit a permit application for a Change of Permit Conditions within 30 days of receiving the test results.

a. ~~Total Non Methane Organic Compounds: 392 ppmv~~  
~~(Calculated as Hexane equivalent)~~

~~\*b.~~ Limits on Toxic Air Contaminant Concentrations in Collected Landfill Gas:

Acrylonitrile	=	10	ppmv
Benzene	=	8.9	ppmv
Chlorobenzene	=	1.5	ppmv
Ethylbenzene	=	41	ppmv
Ethylene Chloride	=	350	ppmv
Perchloroethylene	=	4	ppmv
Toluene	=	110	ppmv
Trichloroethylene	=	0.873	ppmv
Vinyl Chloride	=	6.4	ppmv
Xylene	=	78	ppmv

(~~b~~Basis: Regulation 2-~~Rule 5-5-302~~ and AB-2588 Air Toxics Hot Spots Act)

14. In order to demonstrate compliance with the above conditions, the Permit Holder owner/operator 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.
  - ~~ea.~~ 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.
  - ~~fb.~~ Record the initial operation date for each new landfill gas well and collector.
  - ~~gc.~~ 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). Maintain a list of the wells or collectors that are venting to ~~either the control system (A-8, A-120, S-5, S-6, and S-37) flare or the landfill gas fired engines. 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,~~ to include any newly installed wells and collectors; and to remove any decommissioned wells and collectors. On this map, the owner/operator shall also clearly identify each waste disposal area that contains non-decomposable waste and that is being excluded from landfill gas collection system requirements. For each excluded area, the owner/operator shall maintain records of the types and amounts of all non-decomposable waste placed in the excluded area and the percentage (if any) of decomposable waste located in the excluded area.
  - ~~hd.~~ Record the operating times and the landfill gas flow rate to the A-8 or A-120 Landfill Gas Flare on a daily basis. Summarize these records on a monthly basis. Calculate and record the heat input to A-120 each flare, pursuant to ~~p~~Part 8.
  - ~~ie.~~ Maintain continuous records of the combustion zone temperature for the each A-

- ~~120 Landfill Gas Flare~~ during all hours of operation of that flare.
- ~~12.~~ 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.

(~~b~~Basis: Cumulative Increase, Regulations 2-1-301, 2-5-302, 2-6-501, 6-1-301, 6-1-305, 8-2-301, 8-34-301, 8-34-304, and 8-34-501)

15. The annual report required by BAAQMD Regulation 8-34-411 shall be submitted in two semi-annual increments. The reporting periods and report submittal due dates for the semi-annual increments of the Regulation 8-34-411 report and the MSW Landfill NESHAP report, which is required pursuant to 40 CFR Part 63.1980(a), shall be synchronized with the reporting periods and report submittal due dates for the semi-annual MFR Permit monitoring reports that are required by Section I.F of the MFR Permit for this site. A single report may be submitted to satisfy the requirements of Section I.F, Regulation 8-34-411, and 40 CFR Part 63.1980(a), provided that all items required by each applicable reporting requirement are included in the single report. (Basis: Regulation 8-34-411 and 40 CFR Part 63.1980(a))
16. Nitrogen oxide (NO<sub>x</sub>) emissions from the A-120 Landfill Gas Flare shall not exceed 0.05 ~~lbs/MM BTU-pounds~~ of NO<sub>x</sub> per million BTU. (Basis: Cumulative Increase)
17. Carbon monoxide (CO) emissions from the A-120 Landfill Gas Flare shall not exceed 0.20 ~~lbs/MM BTU-pounds~~ of CO per million BTU. (Basis: Cumulative Increase)
18. The A-120 Landfill Gas Flare shall comply with the NMOC emission limit in Regulation 8-34-301.3. (Basis: Cumulative Increase, 8-34-301.3, and 40 CFR 60.752(b)(2)(iii)(B))
19. The ~~Permit Holder-owner/operator~~ shall maintain records of all planned and unanticipated shut downs of the A-120 Flare and of any temperature excursions. The records shall include the date, time, duration, and reason for any shut down or excursion. Any unanticipated shut downs or temperature excursions shall be reported to the Enforcement Division immediately. All inspection and maintenance records, records of shut downs and excursions, gas flow records, temperature records, analytical results, source test results, and any other records required to demonstrate compliance with the above permit conditions, Regulation 8 Rule 34, or 40 CFR Part 60 Subpart WWW shall be retained on site for a minimum of five years and shall be made available to District staff upon request. (Basis: 2-6-501, 8-34-501, 40 CFR 60.758)

## VI. Recommendations

*I recommend issuing a Change of Conditions for the following source:*

**S-15 WEST CONTRA COSTA SANITARY LANDFILL (CLOSED CLASS I AND CLASS II WASTE DISPOSAL AREAS) – WASTE DECOMPOSITION PROCESS; EQUIPPED WITH LANDFILL GAS COLLECTION SYSTEM; ABATED BY A-8 AND A-120 LANDFILL GAS FLARES**

***S-15 is currently subject to Condition # 17821. Since the proposed permit condition changes are substantial, the new permit condition language will be identified under a separate condition ID number: Condition # 25293. Condition # 25293 will be kept in the future file until the Title V permit is revised to include the new language in Condition # 25293.***

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Carol Allen for Irma Salinas  
Supervising Air Quality Engineer

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Date



# **APPENDIX F**

## **ENGINEERING EVALUATION**

**Change of Condition for S-15; abatement replacement**

**APPLICATION # 21826**

**Permit to Operate Report**  
**Application # 21826**  
West Contra Costa Sanitary Landfill, P#1840  
1 Parr Blvd, Richmond

II. Background

On August 21, 2011, the District issued an Authority to Construct for a new 91 MM BTU/hour enclosed landfill gas flare (A-120) that would replace the two existing landfill gas flares (A-8 and A-11) that were controlling landfill gas from the West Contra Costa Sanitary Landfills (S-15 and S-46). Under Application # 21424, the S-15 Class II Landfill (which became inactive in 2007) and the S-46 Closed Class I Landfill were consolidated into a single landfill source (S-15 Closed Class I and Class II Landfills), and permit conditions were modified to allow landfill gas from either at the Class I or Class II landfills to be controlled by either the existing the three lean-burn landfill gas fired IC engines (S-5, S-6, and S-37) or the new landfill gas flare (A-120).

Subsequent to the issuance of the Authority to Construct for A-120, West County requested to retain the A-8 Landfill Gas Flare as a back-up device. A-8 would only be used in the event that the IC Engines and the A-120 flare are not available. West County agreed to limit the combined throughput to A-8 and A-120 to the same limit as they had originally agreed for A-120 alone. These permit condition changes were included in Application # 21424 (see new Condition # 25293).

Retaining A-8 as a back-up flare affects the cumulative emission increase calculations for Application # 21826. The corrections are discussed below in the Cumulative Increase section of this report.

West Contra Costa Sanitary District began operating the A-120 Landfill Gas Flare on 11/26/2012. A source test was conducted on 1/31/2013. During the source test, the flare was only operating at 23% capacity because most of the collected landfill gas was being diverted to the IC engines. However, this source test did demonstrate that A-120 met all limits at an average combustion temperature of 1467 °F. Source test results are presented below.

The District is now ready to issue the Permit to Operate for the A-120 Landfill Gas Flare with minor revisions to Condition # 25923.

II. Plant Cumulative Emission Increase Inventory

As discussed in the Engineering Evaluation Report for Application # 21826, the A-120 Landfill Gas Flare results in emission increases of criteria pollutants and these emission increases exceed the contemporaneous on-site reductions that would have occurred due to the shut down of the existing flares. The site-wide potential to emit for Plant # 1840 is greater than 35 tons/year each of POC and NOx. Therefore, offsets are required for POC and NOx increases pursuant to Regulation 2-2-302. Normally, a site would be required to supply their own offsets for these emission increases, because the site-wide PTE exceeds 35 tons/year. However, California Health and Safety Code 42301.2 states that a District shall not require offsets for emission increases that result from the installation of abatement equipment where the source is not being modified. Such is the case with A-120 and S-15: the new flare results in emission increases, but the landfill is not being modified. In accordance with direction from former Engineering Division Director, Brian

Bateman, the District will continue to provide offset for such projects from a special account, account # 1157, to ensure compliance with district-wide no net increase provisions.

As discussed in the Background Section, West Contra Costa County Sanitary District has requested to retain one of the old flares (A-8) as a back-up device. Therefore, the emission reductions from A-8 can no longer be counted as contemporaneous on-site reductions for this project. All other offset provisions are as described above and in the engineering evaluation report for the Authority to Construct for A-120. The revised on-site emission reduction credits are shown below in Table 1.

Table 1. Revised Cumulative Emission Increases Summary for Application # 21826

	A-120 Emission Increases Tons/Year	A-11 On-Site Credits Tons/Year	Net Increases Tons/Year	Offset Ratio	Offets Due Account # 1157 Tons/Year
PM10	6.672	0.426	2.842		
POC	5.457	0.349	5.108	1.15	5.874
NO <sub>x</sub>	19.503	1.495	18.008	1.15	20.709
SO <sub>2</sub>	39.002	1.987	37.015		
CO	78.013	7.475	70.538		

### III. Source Test Results

A District approved source test on A-120 was conducted on January 31, 2013. The source test results are compared to the applicable limits in Table 2 below. A summary of the source test report (OS-4450) is attached. The average flare combustion temperature during this test was 1467 °F. In accordance with the permit conditions (see Part 9), the minimum flare combustion zone temperature should be equal to this average temperature minus 50 °F, or 1417 °F. Condition # 25923, Part 9 will be revised to reflect this new minimum temperature limit for A-120. The minimum temperature limit for A-8 will remain at 1400 °F based on source test data for this device.

Table II. Source Test Summary Compared to Applicable Limits

	A-120 Test Results, January 31, 2013	Limits (Conditions or Regulations)
NO <sub>x</sub>	0.04 lbs/MM BTU	0.05 lbs/MM BTU
CO	0.11 lbs/MM BTU	0.20 lbs/MM BTU
Inlet TRS	65.5 ppmv	300 ppmv
Outlet SO <sub>2</sub>	5.1 ppmv	300 ppmv
Inlet NMHC	232 ppmv as hexane	392 ppmv as hexane
Outlet NMHC	<4.9 ppmv at 3% O <sub>2</sub>	30 ppmv at 3% O <sub>2</sub>
NMHC Destruction	> 98.2%	98% or higher
CH <sub>4</sub> Destruction	99.994%	99% or higher
Combustion Zone Temperature	1467 °F	1400 °F or higher (revise to 1417 °F pursuant to Part 9)

### VII. Permit Conditions

As discussed under Application # 21424, the District replaced Condition # 17821 with Condition # 25923 in February 2013. The District is proposing to revise the temperature limit for A-120 based on the January 31, 2013 source test results and to remove obsolete language. The proposed revisions are shown in strike-out and underline format below.

**Condition # 25293**

**FOR: S-15 WEST CONTRA COSTA SANITARY LANDFILL (CLOSED CLASS I AND CLASS II WASTE DISPOSAL AREAS) – WASTE DECOMPOSITION PROCESS; EQUIPPED WITH LANDFILL GAS COLLECTION SYSTEM; ABATED BY A-8 LANDFILL GAS FLARE AND A-120 LANDFILL GAS FLARE**

1. Effective October 1, 2006, no waste shall be disposed of in the S-15 Class I or Class II Landfills. S-15 does not include the waste disposal activities associated with the Corrective Action Management Unit (CAMU), which are included under S-47. The total cumulative amount of all decomposable materials placed in the S-15 landfills shall not exceed 13.0 million tons. This amount includes 12.3 million tons in the Class II landfill at time of closure and 376,110 tons of decomposable materials in the Class I landfill. The maximum design capacity of the landfill (total volume of all wastes and cover materials placed in the landfill, excluding final cover) shall not exceed 21.47 million cubic yards. (Basis: Regulation 2-1-301, Cumulative Increase)
2. Water and/or dust suppressants shall be applied to all unpaved roadways associated with this landfill as necessary to prevent visible particulate emissions. Paved roadways at the facility shall be kept sufficiently clear of dirt and debris as necessary to prevent visible particulate emissions from vehicle traffic or wind. (Basis: Regulations 2-1-403, 6-1-301, and 6-1-305)
3. The owner/operator shall ensure that fugitive non-methane organic compounds (NMOC) emissions from S-15 do not exceed 15.8 tons (calculated as hexane) during any consecutive 12 month period. The owner/operator shall demonstrate compliance with this emission limit by complying with the landfill gas NMOC concentration limit in Part 4 and by complying with the landfill gas collection and control requirements specified in Parts 5-8. (Basis: Cumulative Increase and Regulation 2-1-301)
4. The concentration of total non-methane organic compounds (NMOC) in the combined landfill gas collected from S-15 shall not exceed 392 ppmv, measured as C6 or hexane, on a dry basis. (Basis: Cumulative Increase and Regulation 2-1-301)
5. S-15 shall be equipped with a landfill gas collection system, which shall be operated continuously as defined in Regulation 8-34-219, unless the owner/operator complies with all applicable provisions of Regulation 8, Rule 34, Section 113. All collected landfill gas shall be vented to properly operating abatement equipment including the Internal Combustion Engines (S-5, S-6, and S-37), the Landfill Gas Flares (A-8 ~~and or~~ A-120), or a combination of these devices. Upon start-up of A-120, The A-8 flare shall only be operated as a back-up to A-120. The A-8 and A-120 flares shall not operate concurrently, except for short periods of time when necessary during the diversion of gas from one flare to the other flare. In the event of an engine shutdown, the landfill gas that was being burned at that engine shall be automatically diverted to a flare. In order to assure compliance with this condition, each flare shall be equipped with local and remote

alarms and auto restart capabilities. 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. (b) Basis: Regulation 8-34-301)

6. The owner/operator shall apply for and receive a Change of Condition from the District before altering the landfill gas collection system described in Part 6a below. 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 alterations that are subject to this requirement. 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 1b(i) limits; the numbers of replacement wells and replacement collectors are not limited. Alterations, repairs, or replacements of non-perforated piping sections (such as risers, laterals, or header pipes), piping connectors, or valves are not subject to the Authority to Construct requirement.
  - a. The owner/operator has been issued Change of Condition for the landfill gas collection system components listed below. Well and collector locations, depths, and lengths are as described in detail in the Republic Services West Contra Costa Sanitary Landfill Updated Landfill Gas Collection and Control System Design Plan Class II dated March 3, 2008 and in Table 2 Class II Landfill Gas Extraction Well List submitted August 11, 2008. 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 6b, as evidenced by start-up and decommissioning notification letters submitted to the District.
    - i. Baseline Count of Components Located in Class II Waste Disposal Area

	Required Components
Total Number of Vertical Wells:	67
Total Number of Horizontal Collectors:	7
Total Number of leachate sump wellheads	3
    - ii. Baseline Count of Components Located in Class I Waste Disposal Area

	Required Components
Total Number of Horizontal Collectors:	16
  - b. The owner/operator is authorized to make the landfill gas collection system alterations described below:
    - i. install up to 94 new vertical wells;
    - ii. install up to 20 new horizontal collectors;
    - iii. decommission up to 27 vertical wells;
    - iv. decommission up to 9 horizontal collectors;

- v. connect the leachate collection and recovery system (LCRS) to the landfill gas collection unit. LCRS is comprised of (5 vaults, 13 wells and 13 sumps)  
Wells installed pursuant to this subpart shall be added to or removed from subpart a in accordance with the procedures identified in Regulations 2-6-414 or 2-6-415.
  - c. The owner/operator shall submit a start-up/shutdown notification to the District at least three days before the installation of a new well or the decommissioning of an existing well. The notification shall include:
    - i. an updated well list that includes the well name, installation date, well type, well status (active/not active) well depth and decommission date (if applicable)
    - ii. an updated LFG Extraction System drawing reflecting the modifications.  
(b)Basis: Regulations 2-1-301, 8-34-301.1, 8-34-304, 8-34-305)
7. The landfill gas collection system components described in Part 6a shall be operated continuously. Wells shall not be shut off, disconnected or removed from operation without written authorization from the District, unless the owner/operator complies with all applicable requirements of Regulation 8, Rule 34, Sections 113, 116, 117, and 118. Individual wells, collectors, and adjustment valves shall not be disconnected, removed, or completely closed, without prior written authorization from the District, unless the owner/operator complies with all applicable provisions of Regulation 8, Rule 34, Sections 113, 116, 117, or with Parts 7a-d below. (Basis: Regulations 8-34-301.1, 8-34-404, 8-34-305, 8-34-414, 8-34-501.5, and 8-34-505)
- a. The owner/operator may operate the vacuum on any of the leachate collection and recovery system (LCRS) components on a less than continuous basis. LCRS components may be connected to the vacuum system as needed to prevent component or surface leaks or to abate landfill gas that has migrated into the LCRS. The LCRS components may be disconnect from the vacuum system when methane concentration in the component is less than 5.0% by volume, or when oxygen concentration in the component is 15.0% by volume or more, or when abatement is no longer necessary to maintain compliance with applicable component and surface leak limits. LCRS components are not subject to subparts 7b-c below or Regulation 8-34-305 but are subject to the alternative wellhead operating and monitoring requirements in subpart 7d below.
  - b. The owner/operator may temporarily disconnect individual landfill gas collection system vertical wells located in the Class II Waste Disposal Area from the vacuum system, provided that all requirements of this subpart are satisfied.
    - i. No more than five (5) vertical wells may be temporarily disconnected from the vacuum system at any one time pursuant to subpart 7b.
    - ii. For each individual well that is temporarily disconnected from the vacuum system pursuant to subpart 7b, the total vacuum system disconnection time shall not exceed 120 days during any 12-month period.
    - iii. Vertical wells that are temporarily disconnected from the vacuum system pursuant to this subpart are not subject to wellhead limits (Regulation 8-34-305) or monthly wellhead monitoring requirements (Regulation 8-34-505).
    - iv. Wells that are temporarily disconnected from the vacuum system pursuant to subpart 7b continue to be subject to the component leak limit

- (Regulation 8-34-301.2) and the quarterly leak testing requirement (Regulation 8-34-503) at all times. In addition, the owner/operator shall conduct the following additional component leak monitoring at each well that has been disconnected from the vacuum system pursuant to subpart 7b: test for component leaks using the procedures identified in Regulation 8-34-602 within 10 days of disconnection from vacuum and again within 30 days of disconnection from vacuum. If a component leak is detected at a component, the owner/operator 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.
- v. For each well disconnection event, the owner/operator shall record each affected well ID number, all well disconnection dates and times, all well reconnection dates and times, all related monitoring dates and monitoring results in a District approved log. This log shall also include an explanation of why the temporary well shut down was necessary and shall describe all adjustments or repairs that were made in order to allow this well to operate continuously, to reduce leaks, or to achieve compliance with an applicable limit. All records shall be retained for a minimum of five years and shall be made available to District staff upon request.
- c. The owner/operator shall operate each group of horizontal landfill gas collectors (one group of horizontal collectors is located in the Class I waste disposal area and one group of horizontal collectors is located in the Class II waste disposal area) on a continuous basis. Individual horizontal collectors within each group of horizontal collectors may be connected to or disconnected from the vacuum system in accordance with the following criteria.
- i. The owner/operator shall begin operating each horizontal collector (open the valve to the vacuum system with sufficient vacuum to generate gas flow from the collector and direct collected gases to a control device) upon detection of a gauge pressure of 1.0 inches of water or more, or upon detection of a methane concentration of 5.0% by volume or more in the collector.
  - ii. The owner/operator may temporarily disconnect a horizontal collector from the vacuum system (isolation valve completely closed) upon detection of a methane concentration in the collector of less 5.0% by volume, or upon detection of an oxygen concentration in the collector of 15.0% by volume or more.
  - iii. 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 7d alternative component limits.
  - iv. 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 owner/operator shall conduct the following component-leak monitoring at each component that has been disconnected from the vacuum system pursuant to subpart 7c: test for component leaks using the procedures

- identified in Regulation 8-34-602 within 10 days of disconnection from vacuum and again within 30 days of disconnection from vacuum. If a component leak is detected at a component, the owner/operator 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 owner/operator 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. The owner/operator shall operate any LCRS components (subject to subpart 7a) and any horizontal collectors (subject to subpart 7c) 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 each LCRS component and to each horizontal collector while it is connected to the vacuum system and required to be operating. The alternative component limits do not apply during vacuum disconnection time that is authorized by subpart 7a or 7c or Regulation 8, Rule 34.
    - 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 15.0% oxygen by volume (dry basis), except for the following circumstances. If a component must be operated pursuant to subpart 7c(i), the oxygen concentration may exceed 15% by volume from the time of detection until the component is disconnected from the vacuum system pursuant to subpart 7c(ii).
    - iv. The owner/operator shall demonstrate compliance with these alternative component limits by monitoring each LCRS component and each horizontal collector listed in subpart 6a and any LCRS components or horizontal collectors installed pursuant to subpart 6b 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 owner/operator shall compare



these monitoring results to the operating requirements in subparts 7a and 7c and the alternative component limits in subpart 7d(i-iii). The owner/operator shall identify any components that must or may undergo a change of operational status due to the pressure results or methane and oxygen concentration results. The owner/operator shall also identify any operating components where the measured gauge pressure, temperature, or oxygen concentration exceeds the applicable limit in subpart 7d(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 7a or 7c), or permanently decommissioning the component (if authorized by subpart 6b). In each 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.

9. The total combined Heat Input to all internal combustion engines and flares (S-5, S-6, S-37, A-8 and A-120) shall not exceed 780,134 MM BTU in any consecutive 12 month period. In order to demonstrate compliance with this part, the owner/operator shall calculate and record on a monthly basis the maximum daily and total monthly heat input to each flare and engine based on the landfill gas flow rate recorded pursuant to Part 14, the average methane concentration in the landfill gas based on the most recent source test, and a high heating value for methane of 1013 BTU/ft<sup>3</sup> at 60 degrees F.

$$\text{e.b. Heat Input (MM BTU/day)} = \text{Daily Fuel Flow Rate (ft}^3\text{/day at 60 }^\circ\text{F and 14.7 psia)} * \text{Methane Concentration (\%)} * \text{Gross Methane Heat Content (1013 BTU/ft}^3\text{ CH}_4\text{)} * \text{Conversion Factor (1E-8)}$$

(Basis: Cumulative Increase and Regulation 2-1-301, Regulation 8-34-301)

9. The combustion zone temperature of ~~each the A-8~~ Landfill Gas Flare ~~(A-8 and A-120)~~ shall be maintained at a minimum of 1400 degrees Fahrenheit, averaged over any 3-hour period, during any time that landfill gas is vented to the flare. The combustion zone temperature of the A-120 Landfill Gas Flare shall be maintained at a minimum of 1417 degrees Fahrenheit, averaged over any 3-hour period, during any time that landfill gas is vented to the flare. If a source test demonstrates compliance with all applicable requirements at a different temperature, the APCO may revise ~~these~~ minimum temperature limits in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415, based on the following criteria. The minimum combustion zone temperature for the flare shall be equal to the average combustion zone temperature determined during the most recent complying source test minus 50 degrees F, provided that the minimum combustion zone temperature is not less than 1400 degrees F. (Basis: Regulations 2-5-301, 8-34-301.3, and 8-34-501.3, and 40 CFR 60.756(b)(1))

10. Total reduced sulfur compounds in the collected landfill gas shall be monitored as a surrogate for monitoring sulfur dioxide in control system's exhaust. The concentration of total reduced sulfur compounds in the collected landfill gas shall not exceed 300 ppmv (dry). In order to demonstrate compliance with this part, the owner/operator shall

measure the total sulfur content in collected landfill gas on a quarterly basis using a Draeger tube or by Tedlar Bag sampled laboratory analysis. The landfill gas sample shall be taken from the main landfill gas header. The owner/operator shall follow the manufacturer's recommended procedures for using the Draeger tube and interpreting the results. (Basis: Regulation 9-1-302, Cumulative Increase)

11. In order, to demonstrate compliance with Part 4, Regulation 8, Rule 34, Sections 301.3 and 412, 40 CFR 60.8 and 60.752(b)(2)(iii)(B), and the CARB Landfill Methane Control Measure, the owner/operator shall ensure that a District approved source test is conducted annually on the A-120 Landfill Gas Flare, A-120 within 90 days of startup, followed by annual source tests thereafter. ~~The facility shall obtain prior approval from the Source Test Manager for the location of sampling ports and source testing procedures.~~—The owner/operator shall conduct a source test on the A-8 back-up flare at least once every three years. As a minimum, the source tests required by this part shall determine the following:

- a. landfill gas flow rate to the flare (dry basis);
- b. concentrations (dry basis) of carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), oxygen (O<sub>2</sub>), methane (CH<sub>4</sub>), and total non-methane organic compounds (NMOC) in the landfill gas;
- c. stack gas flow rate from the flare (dry basis);
- d. concentrations (dry basis) of NO<sub>x</sub>, CO, SO<sub>2</sub>, NMOC, and O<sub>2</sub> in the flare stack gas;
- e. NMOC and methane destruction efficiencies achieved by the flare; and
- f. the average combustion temperature in the flare during the test period.
- g. NO<sub>x</sub> and CO emission rates from the flare in units of pounds per million BTU

The Source Test Section of the District shall be contacted ~~to obtain their approval of the source test procedures~~ at least 14 days in advance of each source test to obtain approval for all source test procedures. The Source Test Section shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division within 60 days of the test date.

(Basis: Regulations 8-34-301.3 and 8-34-412 and CCR 95464(b)(2)(A)(1))

12. The owner/operator shall conduct a characterization of the landfill gas concurrent with the annual source test required by Part 11 above. The landfill gas sample shall be drawn from the main landfill gas header. In addition to the compounds listed in Part 11b, the landfill gas shall be analyzed for all the organic compounds listed below. If the owner/operator is conducting a laboratory analysis of the landfill gas to determine the total reduced sulfur content pursuant to Part 10, the landfill gas shall be analyzed for all of the sulfur compounds listed below. All concentrations shall be reported on a dry basis. The test report shall be submitted to the Compliance and Enforcement Division within 45 days of the test date. (Basis: Regulation 2 Rule 5, AB-2588 Air Toxics Hot Spots Act, and Regulation 8-34-412)

Organic Compounds

acrylonitrile  
benzene  
benzyl chloride  
1,3 butadiene  
carbon tetrachloride

chlorobenzene  
chloroform  
1,1 dichloroethane  
1,1 dichlorethene  
1,2 dichloroethane  
1,4 dichlorobenzene  
1,4 dioxane  
ethylbenzene  
ethylene dibromide  
hexane  
isopropyl alcohol  
methyl ethyl ketone  
methyl tert butyl ether  
methylene chloride  
perchloroethylene  
styrene  
toluene  
1,1,1 trichloroethane  
1,1,2,2 tetrachloroethane  
trichloroethylene  
vinyl chloride  
xylenes

Sulfur Compounds

hydrogen sulfide  
carbon disulfide  
carbonyl sulfide  
dimethyl sulfide  
ethyl mercaptan  
methyl mercaptan

- \*13. If the concentrations (dry basis) of toxic air contaminants in the collected landfill gas exceed any of the limits listed below, the owner/operator shall submit a permit application for a Change of Permit Conditions within 30 days of receiving the test results.

Limits on Toxic Air Contaminant Concentrations in Collected Landfill Gas:

Acrylonitrile	=	10	ppmv
Benzene	=	8.9	ppmv
Chlorobenzene	=	1.5	ppmv
Ethylbenzene	=	41	ppmv
Ethylene Chloride	=	350	ppmv
Perchloroethylene	=	4	ppmv
Toluene	=	110	ppmv
Trichloroethylene	=	0.873	ppmv
Vinyl Chloride	=	6.4	ppmv
Xylene	=	78	ppmv

(Basis: Regulation 2-5-302 and AB-2588 Air Toxics Hot Spots Act)

14. In order to demonstrate compliance with the above conditions, the owner/operator shall maintain the following records in a District approved logbook.
- a. Record of the dates, locations, and frequency per day of all watering activities on

unpaved roads. 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.

- b. Record the initial operation date for each new landfill gas well and collector.
- c. 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). Maintain a list of the wells or collectors that are venting to the control system (A-8, A-120, S-5, S-6, and S-37). This map shall be updated at least once a year to include any newly installed wells and collectors and to remove any decommissioned wells and collectors. On this map, the owner/operator shall also clearly identify each waste disposal area that contains non-decomposable waste and that is being excluded from landfill gas collection system requirements. For each excluded area, the owner/operator shall maintain records of the types and amounts of all non-decomposable waste placed in the excluded area and the percentage (if any) of decomposable waste located in the excluded area.
- d. Record the operating times and the landfill gas flow rate to the A-8 or A-120 Landfill Gas Flare on a daily basis. Summarize these records on a monthly basis. Calculate and record the heat input to each flare, pursuant to Part 8.
- e. Maintain continuous records of the combustion zone temperature for the each flare during all hours of operation of that flare.
- f. 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, Regulations 2-1-301, 2-5-302, 2-6-501, 6-1-301, 6-1-305, 8-2-301, 8-34-301, 8-34-304, and 8-34-501)

- 15. The annual report required by BAAQMD Regulation 8-34-411 shall be submitted in two semi-annual increments. The reporting periods and report submittal due dates for the semi-annual increments of the Regulation 8-34-411 report and the MSW Landfill NESHAP report, which is required pursuant to 40 CFR Part 63.1980(a), shall be synchronized with the reporting periods and report submittal due dates for the semi-annual MFR Permit monitoring reports that are required by Section I.F of the MFR Permit for this site. A single report may be submitted to satisfy the requirements of Section I.F, Regulation 8-34-411, and 40 CFR Part 63.1980(a), provided that all items required by each applicable reporting requirement are included in the single report. (Basis: Regulation 8-34-411 and 40 CFR Part 63.1980(a))
- 16. Nitrogen oxide (NO<sub>x</sub>) emissions from the A-120 Landfill Gas Flare shall not exceed 0.05 pounds of NO<sub>x</sub> per million BTU. (Basis: Cumulative Increase)
- 17. Carbon monoxide (CO) emissions from the A-120 Landfill Gas Flare shall not exceed 0.20 pounds of CO per million BTU. (Basis: Cumulative Increase)
- 18. The A-120 Landfill Gas Flare shall comply with the NMOC emission limit in Regulation 8-34-301.3. (Basis: Cumulative Increase, 8-34-301.3, and 40 CFR 60.752(b)(2)(iii)(B))

19. The owner/operator shall maintain records of all planned and unanticipated shut downs of the A-120 Flare and of any temperature excursions. The records shall include the date, time, duration, and reason for any shut down or excursion. Any unanticipated shut downs or temperature excursions shall be reported to the Enforcement Division immediately. All inspection and maintenance records, records of shut downs and excursions, gas flow records, temperature records, analytical results, source test results, and any other records required to demonstrate compliance with the above permit conditions, Regulation 8 Rule 34, or 40 CFR Part 60 Subpart WWW shall be retained on site for a minimum of five years and shall be made available to District staff upon request. (Basis: 2-6-501, 8-34-501, 40 CFR 60.758)

VIII. Recommendations

*I recommend issuing a Permit to Operate for A-120 subject to Condition # 25923, as revised above.*

**S-15 WEST CONTRA COSTA SANITARY LANDFILL (CLOSED CLASS I AND CLASS II WASTE DISPOSAL AREAS) – WASTE DECOMPOSITION PROCESS; EQUIPPED WITH LANDFILL GAS COLLECTION SYSTEM; ABATED BY A-8 AND A-120 LANDFILL GAS FLARES**

\_\_\_\_\_  
Carol Allen  
Supervising Air Quality Engineer

\_\_\_\_\_  
Date

**Engineering Evaluation Report**  
**West Contra Costa Sanitary Landfill, P#1840**  
1 Parr Blvd, Richmond  
Application #21826

**Background**

West Contra Costa Sanitary Landfill (WCCSL) is an inactive Class III municipal solid waste landfill and also contains a closed Hazardous Waste Management Facility (HWMF). The facility would like to divert the gas from source S-46 to this new flare and archive its existing flare known as A-11 Landfill Gas Flare for HWMF (S-46) which is permitted at 175 cfm. In addition, the facility would like to archive abatement device A-8 Landfill Gas Flare which has an existing 1481 scfm for S-15. The facility is requesting that emissions from both sources S-46 and S-15 have the option of being treated by either the flare A-120 or a combination of A-120 and the engines (S-5, S-6 and S-37) or only the engines. As the current permit only allows landfill gas to be diverted to the flares when one or more engines are not operating properly.

Source S-46 landfill gas collection system will be archived as it was only created when the facility installed A-11 flare. Therefore, as this abatement device will now be removed, S-46 is no longer necessary and emissions from the entire landfill gas will be associated with S-15. Total throughput reported in the 2010 annual update for S-46 (current landfill volume is 376,110 tons in place per year) and S-15 (12,330,387 current landfill volume, tons in place). The new total throughput for S-15 would be (12,706,497.00 tons in place) In addition, the annual throughput from S-46 will now have to be reported with S-15. The landfill gas that is collected from the HWMF site will be combined with S-15 landfill gas collection system.

The maximum landfill gas generated for S-46 is believed to be 60 scfm per the EPA's LANDGEM program though the flare was permitted for a maximum of 175 scfm. The maximum landfill gas generated for S-15 is believed to be no more than 2169 SCFM and A-8 has a permitted flowrate of 1481 scfm. The cumulative flow from the LandGem programs should not exceed (2229 scfm). Facility has accepted a limit based on total heat content and NMOC rather than flowrate of 2507 scfm.

The facility is requesting that this new abatement device be allowed to abate 3000 scfm. They believe that S-15 and S-46 will not increase and that the current permits that evaluated the sources under A/Ns 11375 and 8514 are accurate and no modification for throughput increases of sources S-15 and S-46 need to be made. The facility is requesting that the new flare be permitted to not exceed 3000 scfm.

***Under this application Cornerstone Environmental Group, LLC has proposed to replace the existing 5.25 MMBtu/hour flare, A-11, and 45 MM Btu/hr flare A-8, with a new flare A-120 Landfill Gas Flare 91.26 MMBtu/hour capacity flare.***

***A-120 Landfill Gas Flare 91.26 MMBtu/hour; 3000 scfm and***

***The changes will result in changes to conditions for sources S-15 (cond # 17821).***

**S-15 Landfill with Landfill Gas Collection System abated by A-120 Landfill Gas Flare 91.26 MM Btu/hr; 3000 scfm or S-5, S-6 and S-37**

***And changes to conditions 5771 and 17812 for sources S-5, S-6 and S-37.***

And archive the following source and abatement devices:

- S-46 Hazardous Waste Management Facility
- A-8 Landfill Gas Flare; 45 MM Btu/hr
- A-11 Landfill Gas Flare 5.25 MM Btu/hr

**Emission Calculations**

**Contants Used in Calculations**

Molar Volume of Gas at 70 °F, scf/lbmol:	MV	386.765
Methane Content for all Calculations, %	CH4	50%
Methane Heat Content, BTU/ft <sup>3</sup> at 60 °F	HCM	993.87
Heat Content for LFG at 50% CH <sub>4</sub> , BTU/scf at 70 °F	HCL	496.94
F-Factor at 0% O <sub>2</sub> for LFG at 50% CH <sub>4</sub> , sdcf/MM BTU	FFac	9628.4

Proposed Criteria Pollutant Emissions:

NO<sub>x</sub> and CO Emission Factors:

The facility has proposed that the flare meet a NO<sub>x</sub> emission rate of 0.05 lbs/MMBtu. The flare manufacturer has indicated that this NO<sub>x</sub> emission rate and a CO emission rate of 0.2 lbs/MMBtu can be achieved if the operating temperature is maintained at 1600 degrees F. The vendor has guaranteed compliance with these emission limits for this flare operating between 4.5 MM Btu/hr and 91.6 MM Btu/hr.

PM Emission Factors:

EPA’s AP-42, Compilation of Air Pollutant Emission Factors, Table 2.4-5 “Emission Rates for Secondary Compounds Exiting Control Devices” specifies a PM emission factor of 17 lbs/million dscf methane. West Contra Costa Sanitary Landfill gas is assumed to contain 50% methane with a heat content of 1013 BTU/dscf. Therefore, the AP-42 emission factor is equivalent to

$$(17 \text{ lbs PM}_{10}/1\text{E}6 \text{ dscf CH}_4) * (0.5 \text{ dscf CH}_4/1.0 \text{ dscf LFG}) / (496.94 \text{ BTU/dscf LFG}) * (1\text{E}6 \text{ BTU/MM BTU}) = 0.0171 \text{ lbs PM}_{10}/\text{MM BTU}$$

SO<sub>2</sub> Emission Factors:

The sulfur dioxide (SO<sub>2</sub>) emission factors are taken from the landfill gas sulfur content limits in Condition # 17821, Part 10. Assuming all the TRS in the landfill gas is converted to SO<sub>2</sub>, the proposed TRS limits are equivalent to the SO<sub>2</sub> emission factors derived below:

$$(300\text{e-}6 \text{ lb-mole S/lb-mole gas}) * (\text{lb-mole SO}_2/\text{lb-mol S}) * (64.059 \text{ lbs SO}_2/\text{lb-mol SO}_2) * (\text{lb-mol gas}/386.765\text{scf}) / (496.94 \text{ Btu/scf}) = 9.9989\text{E-}8 \text{ lb SO}_2/\text{BTU gas} = 0.100 \text{ lb SO}_2/\text{MM Btu gas}$$

The facility is complying with the limit. Source Test conducted in July 2010 show TRS less than 50 ppm (45.5 ppm) at the outlet of flare.

$$(50 \text{ scf SO}_2/10^6 \text{ scf flue gas}) * (4.785 \text{ scf flue/scf LFG}) * (1 \text{ scf H}_2\text{S}/1 \text{ scf SO}_2) * (10^6)$$

= 239 ppmv of total reduced sulfur (TRS) as H<sub>2</sub>S in landfill gas < 300 ppmv of permit condition

The exhaust gas from the landfill gas landfill gas typically contains 10%-15% oxygen. Assuming the flare exhaust stream contains 10% oxygen, the outlet SO<sub>2</sub> concentration from the flare will be no more than:

$$(300 \text{ ft}^3 \text{ H}_2\text{S/MM ft}^3 \text{ LFG}) * (1 \text{ ft}^3 \text{ SO}_2 / 1 \text{ ft}^3 \text{ H}_2\text{S}) / (4.785 \text{ ft}^3 \text{ flue at 0\% O}_2 / 1 \text{ ft}^3 \text{ LFG})$$

$$= 62.7 \text{ ft}^3 \text{ of SO}_2 / \text{MM ft}^3 \text{ flue gas at 0\% oxygen} = 62.7 \text{ ppmv of SO}_2 \text{ at 0\% oxygen}$$

$$(62.7 \text{ ppmv of SO}_2 \text{ at 0\% O}_2) * (20.9 - 10) / (20.9 - 0) = 32.70 \text{ ppmv of SO}_2 \text{ at the exhaust stack with 10\% oxygen.}$$

$$(50 \times 10^{-6} \text{ lb-mole S/lb-mole gas}) * (\text{lb-mole SO}_2 / \text{lb-mol S}) * (9628.4 \text{ scf flue gas/MM BTU}) * (64.059 \text{ lbs SO}_2 / \text{lb-mol SO}_2) / (\text{lb mole} / 386.765 \text{ scf}) = 0.0797 \text{ lb SO}_2 / \text{MM Btu gas}$$

POC & NPOC Emission Factors:

Regulation 8-34-301.3 limit allows 30 ppmv of NMOC at 3% O<sub>2</sub> in the flare exhaust. All calculations will be based on a typical methane concentration in the landfill gas of 35% (34.77%), where the heat content is 347.856 BTU/scf and the theoretical flue gas factor is 10,490.8 scf flue gas at 0% O<sub>2</sub> per MM BTU. The 30 ppmv NMOC outlet concentration is equivalent to an NMOC emission rate of 1.306 E-2 lbs/MM BTU, as determined below.

$$(30 \text{ ppmv at 3\% O}_2) * (20.9 - 0) / (20.9 - 3) = 35.0279 \text{ ppmv at 0\% O}_2$$

$$(35.0279 \text{ scf NMOC} / 1 \text{ E6 scf flue}) * (9628.4 \text{ scf flue/MM BTU}) / (386.765 \text{ scf NMOC/lbmol}) * (16.04 \text{ lbs/lbmol}) = 1.3989 \text{ E-2 lbs NMOC/MM BTU}$$

Since the Regulation 8-34-301.3 outlet concentration limit will allow a higher NMOC emission rate than the destruction efficiency criteria, this outlet concentration limit will be used as the basis for the maximum POC and NPOC emission rate calculations. The NMOC in the outlet could be as much as 100% POC, but NPOCs are expected to make up no more than 5% of the total NMOC in the outlet.

$$(91.26 \text{ MM BTU/hr}) * (1.3989 \text{ E-2 lbs NMOC/MM BTU}) = 1.276658 \text{ lbs NMOC/hour}$$

$$(1.276658 \text{ lbs NMOC/hr}) * (1 \text{ lb POC} / 1 \text{ lb NMOC}) = 1.28 \text{ lbs POC/hour}$$

$$= 30.64 \text{ lbs POC/day}$$

$$= 5.592 \text{ tons POC/year}$$

$$(1.276658 \text{ lbs NMOC/hr}) * (0.05 \text{ lbs NPOC} / 1 \text{ lb NMOC}) = 0.06 \text{ lbs NPOC/hour}$$

$$= 1.53 \text{ lbs NPOC/day}$$

$$= 0.28 \text{ tons NPOC/year}$$

The proposed maximum daily emissions from the current and proposed flares are presented in Table 1. The proposed maximum annual emissions for the two flares combined are presented in Table 2. As shown in Table 5, POC and NPOC are the only pollutants that will have increases in the maximum permitted emission levels from the flares.

Assuming continuous use of the flare at the maximum capacity, the secondary pollutant emissions from A-120 will be: 799,437.60 MM BTU/yr

$$\text{NO}_x = (0.05 \text{ lb/MMBtu}) * (91.26 \text{ MMBtu/hr}) * (24 \text{ hr/day}) * (365 \text{ days/yr}) = 39,971.88 \text{ lbs/yr} = 19.986 \text{ tpy}$$



CO = (0.2 lb/MMBtu)(91.26 MMBtu/hr)(24 hr/day)(365 days/yr) = 159,887.52 lbs/yr = 79.944 tpy  
SO<sub>2</sub> = (0.10 lb/MMBtu)(91.26 MMBtu/hr)(24 hr/day)(365 days/yr) = 79,934.76 lbs/yr = 39.967 tpy  
PM = (0.01710 lb/MMBtu)(91.26 MMBtu/hr)(24 hr/day)(365 days/yr) = 13,674.2 lbs/yr = 6.837 tpy  
POCs = 11,183.52 lbs/yr = 5.592 tons/yr  
NPOCs = 559.176 lbs/yr = 0.28 tons/yr

However, the facility has accepted a limit of 780,134 MM BTU/yr (19,303.60 MM BTU/yr) Therefore, the difference is 19,303.6 MM Btu/yr

NO<sub>x</sub> = (0.05 lb/MM Btu)(19,303.60 MM Btu/yr) = 965.18 lbs/yr = 0.48259 tons/yr  
CO = (.2 lb/MM Btu)(19,303.60 MM Btu/yr) = 3860.72 lbs/yr = 1.9304 tons/yr  
SO<sub>2</sub> = (.10 lb/MMBtu)/(19,303.60 MM Btu/yr) = 1930.143 lbs/yr = 0.9651 tons/yr  
PM = 0.01710 lb/MM Btu)(19,303.60MM Btu/yr) = 330.1836 lbs/yr = 0.16509 tons/yr  
POCs (19,303.60 MM Btu/yr)(1.398E-2 lbs NMOC/MM Btu) = 270.0427 lbs/yr = 0.13502 tons/yr  
NPOCs = (270.0427 lbs yr POCs)\*.05 = 13.5021 lbs/yr = 0.00675 tons/yr

Emissions that facility will emit with limit of 780,134 MM Btu/yr for heating value

NO<sub>x</sub> = 39,006.7 lbs/yr = 19.503 tpy  
CO = 156,026.8 lbs/yr = 78.013 tpy  
SO<sub>2</sub> = 78,004.62 lbs/yr = 39.002 tpy  
POCs = 10,913.48 lbs/yr = 5.457 tpy  
NPOCs = 545.674 lbs/yr = 0.273 tpy  
PM<sub>10</sub> = 13,344.012 lbs/yr = 6.672 tpy

#### Contemporaneous Emission Reductions

Cornerstone will be removing the existing flare, A-11 and A-8, when the new flare is put online. The reduction in emissions from these abatement device will offset the emission increases from this project. The procedures for calculating emission reduction credits are defined in Regulation 2, Rule 2, Section 605. The calculation is based on a baseline period consisting of the 3 years immediately preceding the date that the application is complete or shorter period if the source is less than 3 years old. The emission reduction credits are calculated from the average baseline usage and the emission rate during the baseline period.

The existing flare, A-11 was permitted under Application 8514 and the permit to operate was issued in May 2007. The existing flare, A-8 was permitted under Application 11375 and the permit to operate was issued in May 2005. Therefore, the baseline emissions have been calculated as the average 12-month baseline usage. The facility reported that the flare A-8 has combusted 1,196,957 thousand cubic feet of landfill gas in 36 months of operation. This gives an average 12-month baseline usage of 398,985.67 thousand cubic feet of landfill gas combusted. For A-8, the average 12 month baseline usage is 300,845 (36 months) 100,281.7 thousand cubic feet of landfill gas in a 12 month baseline. Assuming the gas is 50% methane (giving a HHV of 993.87 Btu/scf), the average annual heat input to the A-8 flare during the baseline period is 198,270.92 MMBtu/yr and for A-11 flare the heat input value is 49,833.71 MM BTU/yr. This flare was required to meet RACT levels for NO<sub>x</sub> and CO. The emission reductions credits are calculated below based on the actual average baseline throughput and the RACT/BARCT emission rates charged to the device when permitted under Application 8514 for A-8:

#### A-8 Flare

PM: 0.0171 lb/MMBtu (198,270.92 MMBtu/yr) = 3390.43/yr = 1.695 tpy  
NO<sub>x</sub>: 0.06 lb/MMBtu (198,270.92 MMBtu/yr) = 11,896.25 lbs/yr = 5.948tpy

SO<sub>2</sub>: 0.0797 lb/MMBtu (198,270.92 MMBtu/yr) = 15809.43 lbs/yr = 7.905 tpy  
 CO: 0.3 lb/MMBtu (198,270.92 MMBtu/yr) = 59,481.27 lbs/yr = 29.741 tpy  
 POCs: 0.01398 lbs/MM Btu (198,270.92 MM Btu/yr)= 2,773.61 lbs/yr = 1.387 tons/yr

**A-11 Flare**

PM: 0.0171 lb/MMBtu (49,833.71MMBtu/yr) = 852.16 lbs/yr = 0.426 tpy  
 NO<sub>x</sub>: 0.06 lb/MMBtu (49,833.71 MMBtu/yr) = 2990.02 lbs/yr = 1.495 tpy  
 SO<sub>2</sub>: 0.0797 lb/MMBtu (49,833.71 MMBtu/yr) = 3973.565 lbs/yr = 1.987 tpy  
 CO: 0.3 lb/MMBtu (49,833.71MMBtu/yr) = 14,950.11 lbs/yr = 7.475 tpy  
 POCs: 0.01398 lbs/MM Btu (49,833.71 MM Btu/yr) = 697.12 lbs/yr = 0.3486 tons/yr

Cumulative from historical records are:

PM<sub>10</sub> = 2.121 tpy; NO<sub>x</sub> = 7.443 tpy; SO<sub>2</sub> =9.8915 tpy; CO 37.216 tpy; POCs = 1.735 tpy

From permit application A-8 and A-11 cumulative emission are:

PM<sub>10</sub>= 4.149 tpy; POCs = 2.346 tpy; NO<sub>x</sub> = 14.816 tpy; SO<sub>2</sub> = 20.475; CO = 74.08 tpy

Table #2

Pollutant	Emission Increases		Emission Reductions (tpy)	
	A-120, New Flare		A-8	A-11
	(lbs/day)	(tpy)	Existing Flare	Existing Flare
<b>PM10</b>	36.56	6.672	1.695	0.426
<b>POC</b>	29.90	5.457	1.3868	0.349
<b>NO<sub>x</sub></b>	106.87	19.503	5.948	1.495
<b>SO<sub>2</sub></b>	213.71	39.002	7.905	1.987
<b>CO</b>	427.47	78.013	29.741	7.475

**Cumulative Increase**

The cumulative increases for all facilities in the District were reset in 1991, so the post 4/5/1991 increases are shown below as the current cumulative increase for this facility. The cumulative emission increases for this proposed project are included below. Since the historical throughput for A-8 and A-11 are less than permit application throughput numbers, historical calculations will be used as they are the lesser of the two.

Table #3

Pollutant	Current, tpy	Project Increases, tpy	Contemporaneous Reductions, tpy	Post-Project, tpy
<b>PM10</b>	10.709	6.672	-2.121	15.26
<b>POC</b>	0.005	5.457	-1.735	3.727
<b>NO<sub>x</sub></b>	0.00	19.503	-7.443	12.060
<b>SO<sub>2</sub></b>	18.756	39.002	-9.8915	47.867
<b>CO</b>	53.190	78.013	-37.216	93.987

NMOC

Table #4 - Potential to Emit for the facility

Description	NMOC/POCs tons/yr	NO <sub>x</sub> , tons/yr	CO, tons/yr	PM <sub>10</sub> , tons/yr	SO <sub>x</sub> , tons/yr	Estimated Under A/N
Class II Landfill, S-15	12.44					A/N 11375

Flare for S-15, A3	2.01-2.01 =0	13.44-13.44=0	67.22-67.22=0	3.76-3.76 =0	19.33-19.33 =0	A/N 11375; abatement device A-3 to be archived.
IC Engine, S-5	2.61	11.93	43.33	2.3	4.65	A/N 11375
IC Engine, S-6	2.61	11.93	43.33	2.3	4.65	A/N 11375
IC Engine, S-37	2.3	10.52	31.4	2.25	4.10	A/N 11375
HWMF Landfill, S-46	1.43-1.43 =0					A/N 2789 & 8514- to be archived
Flare for S-46, A-11	0.34 -.34 =0	1.37-1.37 = 0	6.86-6.86=0	0.39-.39 =0	1.14-1.14 = 0	A/N 2789 & 8514 Abatement to be archived
Transfer Station, S-50				142.39 <sup>(1)</sup>		A/N 13247
Inlet Storage Tanks S-69 and S-70	.017					A/N 14848
Air Stripper S-48	(0.59 -.59)=0					A/N 14622 – archive with this application
Leachate System S-71,S-72, S-73, S-74 S-75 and S-76 (including exempt oil tanks = 0.142)	(0.17 - .0237)= 0.142					A/N 14966 (some permitted sources will be archived other sources modified in A/N 20621) need to verify if S-21 also needs to be archived
Leachate System S-24, S-26, S-27, S-28, S-29, S-33, S-40, S-42, S-43 and S-45	(.04 -.04) = 0					A/N 14769 (all sources archived)
Concrete/Asphalt Recycling (S111, S112, S113, S114, S118) and Composting (S115, S116, S117) formerly permitted under facility number A0198 <sup>(2)</sup>	16.9			8.37 <sup>(3)</sup>		A/N 14621 (S-117 windrow 16.9 tons/yr)
Modified Leachate System	0.7577					A/N 20621
Flare A-120	5.457	19.503	78.013	6.672	39.002	A/N 21826
PTE Totals	43.234	53.883	196.073	164.282	52.402	

- (3) Value includes 142.2 tpy of fugitive vehicle traffic emissions.
- (4) 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.
- (5) Value includes 5.59 tpy of fugitive vehicle traffic PM10 emissions.

Table 5. Residual TAC Emissions from A-120

Max. Emissions	Risk Screen Trigger Level	
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Significant TACs in LFG	Emitted LFG lbs/M scf	lbs/hour	lbs/year	Acute lbs/hour	Chronic lbs/yr
Acrylonitrile (353)	2.742E-05	5.036E-03	4.411E+01	NA	5.000E+00
Benzene (41)	3.593E-05	6.598E-03	5.780E+01	1.300E+03	6.000E+01
Carbon Disulfide	3.934E-07	7.225E-05	6.329E-01	6.200E+03	8.000E+02
Carbon Tetrachloride (60)	3.975E-07	7.299E-05	6.394E-01	1.900E+03	4.000E+01
Chlorobenzene	8.725E-06	1.602E-03	1.404E+01	NA	1.000E+03
Chloroform (390)	8.822E-06	1.620E-03	1.419E+01	1.500E+02	3.000E+02
1,1 DCA	6.291E-05	1.155E-02	1.012E+02	NA	NA
1,1 DCE	4.103E-06	7.535E-04	6.601E+00	1.800E+05	NA
1,4 Dichlorobenzene	1.998E-06	3.669E-04	3.214E+00	NA	8.000E+02
Ethyl Benzene	2.249E-04	4.131E-02	3.619E+02	NA	2.000E+03
Benzyl Chloride	3.271E-07	6.006E-05	5.262E-01	2.400E+02	NA
Ethylene Dibromide (420)	4.854E-07	8.914E-05	7.809E-01	NA	8.000E-01
Ethylene Dichloride (107) 1,2 DCA	5.779E-06	1.061E-03	9.297E+00	NA	4.000E+02
Hexane	3.385E-04	6.216E-02	5.445E+02	NA	7.000E+03
Hydrogen Sulfide (acute) (5020)	2.289E-03	4.204E-01	3.683E+03	4.200E+01	1.000E+01
TRS Hydrogen Sulfide (annual average)	2.289E-03	4.204E-01	3.683E+03	4.200E+01	1.000E+01
Methylene Chloride (396)	1.536E-03	2.821E-01	2.471E+03	1.400E+04	4.000E+02
MEK	3.727E-06	6.844E-04	5.995E+00	1.300E+04	NA
MTBE	3.052E-07	5.605E-05	4.910E-01	NA	8.000E+03
Perchloroethylene (210)	3.428E-05	6.295E-03	5.515E+01	2.000E+04	3.500E+01
1,1,2,2 Tetrachloroethane	4.337E-07	7.965E-05	6.977E-01	NA	NA
Toluene	5.238E-04	9.619E-02	8.426E+02	3.700E+04	3.000E+02
Trichloroethylene (295)	2.444E-05	4.489E-03	3.932E+01	NA	6.000E+02
1,1,1 TCA	8.480E-06	1.557E-03	1.364E+01	6.800E+04	1.000E+03
Vinyl Chloride (518)	4.845E-04	8.897E-02	7.794E+02	1.800E+05	NA
Xylene	4.279E-04	7.859E-02	6.884E+02	2.200E+04	7.000E+02
IPA	1.917E-06	3.520E-04	3.083E+00	3.200E+03	7.000E+03

Secondary TAC emissions are summarized in Table 6. Secondary formaldehyde emissions are calculated using a CATEF emission factor of 0.18 pounds of formaldehyde per million scf of landfill gas burned. This factor was established for landfill gas turbines based on source test data. There is a CATEF factor for formaldehyde emissions from landfill gas flares, but this factor included detection limits that result in an unrealistically high formaldehyde emission factor. Therefore, the District assumes the formaldehyde factor for landfill gas turbines is applicable to well operated enclosed landfill gas flares. Secondary acid gas emissions are calculated using the total concentration on chlorine compounds that were measured during the July 2010 source test. The District assumes that all chlorine is converted to hydrogen chloride (HCl).

Table 6. Secondary TAC Emissions from A-120

Secondary TACs	Emitted lbs/M scf	Max. Emissions		Risk Screen Trigger Levels	
		lbs/hour	lbs/year	lbs/hour	lbs/year
Formaldehyde	1.800 E-4	3.306E-2	289.57	1.2 E-1	18
Hydrogen Chloride	1.2154E-02	2.232	19551.36	4.6 E+0	350
Hydrogen Fluoride	3.334E-3	6.123E-1	5363.97	5.3 E-1	540

## **Compliance Determination**

### **Regulation 1, "General Provisions and Definitions"**

The facility is subject to Regulation 1, Section 301, which prohibits discharge of air contaminants resulting in public nuisance. The replacement flare will be subject to operating limits designed to ensure adequate combustion of the landfill gas and landfill condensate. It is not expected to be a source of public nuisance.

### **Public Notice Requirements, Regulation 2, Rule 1**

This site is a major facility, because CO emissions have the potential to exceed 100 tons/year of CO, but this application is not for a new major facility. The landfill and flares are subject to source-specific MACT requirements instead of the Regulation 2-2-317 MACT requirement. As shown in Tables 2 & 3, the cumulative emission increases for this application are less than the Regulation 2-2-221 major modification levels (40 tons/year of POC, NO<sub>x</sub>, or SO<sub>2</sub>, 15 tons/year of PM<sub>10</sub>, and 100 tons/year of CO). Therefore, this application will not be subject to the Regulation 2-2-405 publication and public comment requirements.

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

### **California Environmental Quality Act (CEQA) Requirements, Regulation 2, Rule 1**

This project involves only the proposed installation of a larger landfill gas flare, A-120 with no modification of the landfill source. The flare is an abatement device, which is one of the specified control options for compliance with District Regulation 8, Rule 34 for the abatement of landfill gas. In accordance with Regulation 2, Rule 1, Section 312.2, permit application involving the installation of abatement equipment and there is no possibility that this device will have any significant adverse environmental impact, are categorically exempt from CEQA review. Therefore, the proposed installation of A-120 is exempt from CEQA review.

### **Best Available Control Technology (BACT) Requirements, Regulation 2, Rule 2**

*Per Regulation 2, Rule 2, Section 112, BACT review does not apply to emissions of secondary pollutants that are the direct result of operation of an abatement device that complies with the BACT or BARCT requirements for the control of another pollutant. Since the proposed flare meets the BARCT requirements of Regulation 8-34-301.3 for control of organic compounds, BACT does not apply to the secondary pollutants from this flare. However, Regulation 2, Rule 2, Section 112 does require secondary pollutants meet the Reasonably Available Control Technology Requirements (RACT). RACT for enclosed landfill gas flares is an emission rates of 0.06 lb NO<sub>x</sub>/MMBtu and an emission rate of 0.30 lb CO/MMBtu. The proposed flare, A-120, meets RACT for NO<sub>x</sub> and CO as it is BACT.*

*RACT for NO<sub>x</sub>: The District's BACT/TBACT Workbook (Document # 80.1 12/16/91), the RACT limit for NO<sub>x</sub> emissions from a landfill gas flare is 0.06 pounds NO<sub>x</sub>/MM BTU. The District has permitted numerous other new landfill gas fired flares at this emission limit. While it may be feasible to achieve a lower NO<sub>x</sub> emission level, the proposed NO<sub>x</sub> limit allows a reasonable compliance margin and is accepted as RACT for landfill gas fired flares.*

*RACT for CO: RACT for CO is the same as the BACT requirements for POC and includes the use of an enclosed ground flare with (1) a minimum retention time of 0.6 seconds, (2) a minimum combustion zone temperature of 1400 °F, and (3) automatic controls for combustion air, gas shut-off, and flare restart. To ensure adequate POC destruction, permit conditions will require that the new A-120 Flare be maintained at a minimum combustion zone temperature of at least 1400 °F and will require WCCSL to demonstrate compliance with this*

***temperature limit by continuously monitoring and recording the combustion zone temperature. The District typically issues a CO limit of 0.20 pounds CO/MM BTU for new landfill gas flares. Permit conditions will require the A-120 Flare to meet this CO RACT limit. WCCSL will demonstrate compliance with this limit by conducting an annual source test. Annual source testing is a standard method of demonstrating compliance with CO RACT limits.***

RACT for PM<sub>10</sub>: PM<sub>10</sub> emissions from landfill gas flares are low with emission rates that are similar to natural gas combustion. The use of fuel pretreatment systems to remove large particles and excess water are considered RACT for PM<sub>10</sub> emissions from landfill gas fired flares. Since A-120 will be equipped with a fuel pretreatment system, it will comply with RACT for PM<sub>10</sub> emissions. PM<sub>10</sub> emissions monitoring is not justified for this flare, because the emissions are low (less than 10 tons/year) and the expected grain loading rate of 0.0124 gr/dscf (see discussion for Regulation 6, Rule 1 below for calculations) is less than 10% of the limit (0.15 gr/dscf).

RACT for SO<sub>2</sub>: The District determined that landfill gas sulfur treatment systems do not constitute a “reasonably” available control measure. Instead, RACT for SO<sub>2</sub> emissions from landfill gas combustion operations was determined to be compliance with reasonable landfill gas sulfur content limits. Initially, the Regulation 9-1-302 limit was used to establish a reasonable peak landfill gas sulfur content limit of 1300 ppmv as H<sub>2</sub>S. The District has determined that a TRS limit of 300 ppmv is a reasonable limit

#### **Emission Offsets and Prevention of Significant Deterioration (PSD), Regulation 2, Rule 2**

Regulation 2-2-302 currently requires offsets for NO<sub>x</sub> and POC emission increases if facility-wide emissions of that pollutant are greater than 10 tons/year. If facility-wide emissions are greater than 35 tons/year of NO<sub>x</sub> or POC, the facility must usually provide their own offsets. However, H&S Code 42301.2 supercedes this District requirement, if the emission increases are due to secondary emissions from abatement devices, and if the capacity of the source being abated is not increasing.

- 42301.2.** A district shall not require emission offsets for any emission increase at a source that results from the installation, operation, or other implementation of any emission control device or technique used to comply with a district, state, or federal emission control requirement, including, but not limited to, requirements for the use of reasonably available control technology or best available retrofit control technology, unless there is a modification that results in an increase in capacity of the unit being controlled.

Since this application does not involve any increases to the landfill source S-15 and the A-120 flare is necessary for compliance with BARCT requirements, H&S Code 42301.2 applies to the emission increases from the flare in this application. Per Brian Bateman’s direction and to ensure that no net increase requirements are fully satisfied, the District will provide the necessary emission reduction credits from an account created for projects subject to this H&S Code and funded from the small facility banking account.

From Table 3, this application will result in net cumulative increase of 3.727 tons/yr of POCs and 12.06 tons/yr of NO<sub>x</sub>. The offset ratio is 1.15 to 1.0 Therefore, this application requires 4.286 tons/yr POCs and 13.869 tons/yr NO<sub>x</sub>. Offsets will be provided from the H&S Code 42301.2 account. as emissions from POCs and NO<sub>x</sub> are greater than 10 tons/yr. If West Contra Costa Sanitary Landfill is modified in the future, any emission increases associated with this modification, including secondary emissions from the flare may be subject to reimbursement.

Regulation 2-2-303 requires offsets for SO<sub>2</sub> and PM<sub>10</sub> emission increases if (a) the site is a major facility and (b) facility-wide emissions of SO<sub>2</sub> or PM<sub>10</sub> are greater than 100 tons/year. Since this site is not a major facility of SO<sub>2</sub> or PM<sub>10</sub> emissions, SO<sub>2</sub> and PM<sub>10</sub> offsets are not required.

The facility is not subject to offsets per section 303 for PM10 and SOX, as this facility is not listed as one of the 28 PSD source categories in section 169(l) of the federal Clean Air Act. Thus for unlisted category it can not exceed 250 tons/yr of PM10, SOx, CO and NOx and it is below this level. Facility not subject to PSD requirements per section 304.

The facility is not subject to Regulation 2-2-317 (Maximum Achievable Control Technology): As total HAP pollutants do not exceed 25 tons per year with no single HAP emissions exceeding 10 tons per year. Thus WCCSL is not a major facility of HAPs and Regulation 2-2-317 does not apply.

#### **Health Risk Assessment Requirements, Regulation 2, Rule 5**

**The District's regulation concerning toxic air contaminant emissions is codified in Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants. All TAC emissions from new and modified sources are subject to risk assessment review, if emissions of any individual TAC exceed either the acute or chronic emission thresholds defined in Table 2-5-1.**

*Since the proposed flare A-120 has a larger capacity than the existing flares, A-11 and A-8, operation of A-120 will result in higher levels of emissions, and the possible increased risk associated with these emissions must be evaluated. As previously discussed, there is no increase in landfill gas (organic) emissions assessed for a flare replacement, since the landfill is not being modified and the landfill gas emissions were evaluated at the time the landfill was permitted. Therefore, any increased health risk associated with installation of a larger capacity flare will result from secondary pollutant emissions.*

*To estimate the secondary air pollutants from combusted landfill gas, the constituents of the landfill gas were reviewed for possible TAC emissions. Acid gases, hydrogen chloride, hydrogen fluoride, , are TACs and will be emitted due to combustion of chlorinated, fluorinated, compounds. The landfill gas itself contains numerous halogenated compounds that will result in higher acid gas emissions.*

*Secondary formaldehyde emissions from the new landfill gas flares are expected to be similar to the formaldehyde emissions measured for landfill gas fired turbines. From the CATEF database, the mean formaldehyde emission factor for landfill gas fired turbines is 0.18 lbs/MM scf of LFG burned.*

*The secondary emission factors for acid gases (HCL, and HF) are based on the following maximum expected landfill gas concentrations: 129000 ppbv of chloride, 64,500 ppbv of fluorine. These ion concentration levels were derived from on-site test data or concentration limits for individual halogenated compounds.*

*The calculations are based on the assumptions that complete combustion occurs and that the flare is operated continuously at maximum capacity. These assumptions generate a worst-case emission estimate, summarized below with the acute and chronic emission thresholds published in Table 2-5-1 of Regulation 2, Rule 5:*

The ISCST3 air dispersion computer model was used to estimate annual average ambient air concentrations. The model was run with Chevron Refinery meteorological data, Elevated terrain was considered using 10m DEM input from the USGS Richmond, San Quentin, Mare Island and Petaluma Point areas. Model run

was made with rural dispersion coefficient as Urban/Rural classification was determined based on the typing scheme proposed by Auer. Stack and building parameters for the analysis were based on information provided by the applicant

Estimates of residential risk assume potential exposure to annual average TAC concentrations occur 24 hours per day, 350 days per year, for a 70-year lifetime. Risk estimates for offsite workers assume potential exposure occurs 8 hours per day, 245 day per year, for 40 years. Cancer risk adjustment factors (CRAFs) were used to calculate all cancer risk estimates. The CRAFs are age-specific weighting factors used in calculating cancer risks from exposures of infants, children and adolescents, to reflect their anticipated special sensitivity to carcinogens. The estimated health risks for this permit application are presented in the table below. TAC emissions from A-51 and A-60 are presented in Table 7.

Table 7. Health Impacts Due to Secondary TACs from A-120 Flare

<i>Receptor</i>	<i>Cancer Risk in a Million</i>	<i>Chronic Hazard Index</i>	<i>Acute Hazard Index</i>
<i>Industrial</i>	<i>0.0870</i>	<i>0.0047</i>	<i>0.0523</i>
<i>Residential</i>	<i>0.0035</i>	<i>0.00062</i>	<i>0.0523</i>

Since the health risk from A-120 was less than TBACT trigger levels of 1 in a million cancer risk and 0.2 chronic HI, TBACT is not required for the secondary emissions from A-120. Project health risks are less than the Regulation 2-5-302 limits of 10 in a million cancer risk, 1.0 chronic HI, and 1.0 acute HI. Therefore, this project will satisfy all Toxic NSR requirements.

**Major Facility Review, Regulation 2, Rule 6**

**This facility is subject to MFR Permit requirements pursuant to Regulation 2-6-301, because it has the potential to emit more than 100 tons per year of any regulated air pollutant (CO and PM10). It is also subject to MFR Permit requirements pursuant to Regulation 2-6-304, because it is a designated facility that is subject to the requirements of 40 CFR, Part 60, Subpart WWW. As a designated facility, this facility was required to obtain a Title V Federal Operating Permit. The requirements of this program have been codified in District Regulation 2, Rule 6.**

*The facility was issued the initial Title V permit on May 29, 2002 and was recently has undergone five revisions since issuance. The renewal for this facility was completed on December 20, 2010. This evaluation report serves as the statement of basis for the MFR permit renewal.*

**Regulation 6, "Particulate Matter and Visible Emissions"**

*The new landfill gas flare will be subject to the Ringelmann 1 limit and visible emissions prohibition in Sections 301 and 305. Visible particulate emissions are normally not associated with combustion of gaseous fuels, such as natural gas and landfill gas, so compliance with these sections is expected. The flare is also subject to the Section 310 filterable particulate emissions limit of 0.15 grains per dry standard cubic foot of exhaust volume. EPA's AP-42 emission factor for landfill gas combustion in a flare (0.0171 lbs PM10/MMBtu) is equivalent to 0.012 grains/dscf t 0% oxygen. Therefore, the proposed flare is expected to comply with Section 310.*



$$(17 \text{ lbs PM}_{10}/10^6 \text{ ft}^3 \text{ CH}_4) * (0.50 \text{ ft}^3 \text{ CH}_4/\text{ft}^3 \text{ LFG}) / (4.78469 \text{ ft}^3 \text{ flue}/1 \text{ ft}^3 \text{ LFG}) * (7000 \text{ grains}/\text{lb})$$

= 0.0124 grains PM<sub>10</sub>/dscf flue gas

**Regulation 8, Rule 34, "Organic Compounds – Solid Waste Disposal Sites"**

*The facility is expected to comply with Regulation 8, Rule 34, Section 301. This section requires the flare to meet a non-methane organic compound (NMOC) destruction efficiency of at least 98% by weight or meeting an outlet NMOC concentration of less than 30 ppmv, dry as methane, corrected to 3% oxygen. The flare is expected to comply with these limits, which will be included in the permit conditions and enforced through a minimum temperature limit.*

The manufacturer indicated that A-120 will comply with these NMOC destruction efficiency and outlet concentration limits. Continuous temperature monitoring (pursuant to Regulation 8-34-507) will ensure that this flare complies with 8-34-301.3 on an on-going basis. The flare will also be equipped with a data recording system that will maintain all records required pursuant to Sections 501.2 and 501.3.

**Regulation 9, Rule 1, "Inorganic Gaseous Pollutants – Sulfur Dioxide"**

The new flare will be subject to Regulation 9, Rule 1, Section 9-1-301 and Section 9-1-302. Section 9-1-302 limits sulfur dioxide emissions to no more than 300 ppmv in the exhaust. Therefore, this permit condition will ensure compliance with the Regulation 9-1-302 limit. Source test of the landfill gas has demonstrated compliance with this TRS concentration limit. Levels have been reported at 46.95 ppm at the outlet for TRS. Permit condition has limit of 300 ppm at the inlet which is equivalent to around 62 ppm at the outlet at 0% oxygen. Facility can easily comply with 9-1-302

**Regulation 9, Rule 2, "Inorganic Gaseous Pollutants – Hydrogen Sulfide"**

The ground level concentration limit on hydrogen sulfide in Section 9-2-301 is 0.06 ppm averaged over 3 minutes or 0.03 ppm averaged over 60 minutes. Hydrogen sulfide is generally identified by its characteristic rotten egg smell and can be detected by its odor at concentrations as low as 0.0005 ppmv. Therefore, H<sub>2</sub>S emissions are usually detected by smell well before the concentrations approach the limits in Section 9-2-301. Hydrogen sulfide complaints are rarely received in association with Bay Area landfills, therefore area monitoring to demonstrate compliance with this rule has not been required.

**Federal Requirements**

West Contra Costa Sanitary Landfill is subject to the federal NSPS and NESHAPs for MSW Landfills (40 CFR Part 60, Subpart WWW and 40 CFR Part 63 Subpart AAAA). These federal requirements are similar to the Regulation 8, Rule 34 requirements discussed above, except that the federal requirements allow a higher outlet NMOC concentration limit (20 ppmv as hexane, which equals 120 ppmv as methane at 3% O<sub>2</sub>, dry basis). In this case, compliance with Regulation 8, Rule 34 ensures compliance with all applicable requirements of the NSPS and NESHAPs.

**40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS):**

**Subpart A, Standards of Performance for New Stationary Sources – General Provisions**

**Subpart Cc, Standards of Performance for New Stationary Sources – Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills**

40 CFR Part 60, Subpart Cc, Emission Guidelines (EG) for Municipal Solid Waste (MSW) Landfills applies to MSW landfills that have had no design capacity modification since May 30, 1991, but that have accepted waste since November 8, 1987. The facility has had design modifications in May 2005 and is therefore not subject to Subpart Cc

**Subpart A, Standards of Performance for New Stationary Sources – General Provisions**  
**Subpart WWW, Standards of Performance for New Stationary Sources –Municipal Solid Waste Landfills**

Subpart WWW applies to municipal solid waste landfills that commenced construction, reconstruction, or modification or began accepting waste on or after May 30, 1991. For the purposes of Subpart WWW, modification is defined as

*“an increase in the permitted volume design capacity of the landfill by either horizontal or vertical expansion based on its permitted design capacity as of May 30, 1991. Modification does not occur until the owner or operator commences construction on the horizontal or vertical expansion.”*

This facility increased its design capacity in May 2005 which occurred after the May 30, 1991 date. Therefore the facility is subject to Subpart WWW.

NSPS for MSW Landfills: The landfill at this facility is subject to the 40 CFR Part 60, Subpart WWW, the NSPS for Municipal Solid Waste (MSW) Landfills. The A-51 Landfill Gas Flare is subject to 40 CFR 60.752(b)(2)(iii)(B), which requires landfill gas control systems to either meet 98% NMOC destruction efficiency or emit no more than 20 ppmv of NMOC as hexane (120 ppmv of NMOC as methane) at 3% O<sub>2</sub>. The NSPS monitoring requirements (40 CFR 60.756(b)(1) and 60.758(b)(2)(i-ii)) include continuous monitoring of the combustion zone temperature and an initial compliance demonstration test. In the BAAQMD, the Regulation 8, Rule 34 standards and monitoring requirements are at least as stringent as the NSPS for Municipal Solid Waste (MSW) Landfills (40 CFR Part 60, Subpart WWW). Therefore, compliance with Regulation 8, Rule 34 constitutes compliance with the NSPS requirements.

**40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAPs):**  
**Subpart M, National Emission Standard for Asbestos**

Subpart M applies to a number of asbestos related operations and handling activities, including active waste disposal sites that receive asbestos-containing waste material from sources subject to §61.149 (asbestos mills), 61.150 (manufacturing, fabricating, demolition, renovation, and spraying operations, and/or 61.155 (operations that convert asbestos-containing material into asbestos-free material).

Asbestos-containing waste material is defined to include filters from control devices, friable asbestos waste, and bags or other packaging contaminated with commercial asbestos. This site accepts only non-friable asbestos and is therefore not subject to Subpart M.

**40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories/Maximum Achievable Control Technology (MACT) Standards:**

**Subpart A, National Emission Standards for Hazardous Air Pollutants – General Provisions**  
**Subpart AAAA, National Emission Standards for Hazardous Air Pollutants – Municipal Solid Waste Landfills**

Subpart AAAA applies to municipal solid waste landfills that have accepted waste since November 8, 1987 or have additional capacity to accept waste and that meets any of the following:

- The landfill is a major source as defined in 40 CFR Part 63.2 of Subpart A (has the potential to emit, considering controls, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants);
- The landfill is co-located with a major source as defined in 40 CFR Part 63.2 of Subpart A; or
- The landfill is area source with a design capacity of 2.5 million megagrams and 2.5 million cubic meters or more and which has estimated uncontrolled non-methane organic compound emissions of 50 megagrams or more, as calculated according to Part 60, Subpart WWW.

This site has accepted waste until 2008 and has a design capacity greater than 2.5 million cubic meters and is therefore subject to this regulation. This regulation requires subject landfills to meet the requirements of 40 CFR Part 60, Subpart Cc or WWW (addressed above). In addition, subject facilities are required to develop, maintain, and comply with a written startup, shutdown, and malfunction (SSM) plan per §63.1960 and Subpart A of this part. §63.1980 of the rule also requires semiannual submittal of the reports required by 40 CFR 60.757(f) (instead of annually). Table 1 requires compliance with certain sections of 40 CFR Part 63, Subpart A which are mirrored in 40 CFR Part 60, Subpart A and the following sections of 40 CFR Part 63, Subpart A:

- §63.5(b), Requirements for existing, newly constructed, and reconstructed sources: This application does not constitute reconstruction of the affected source.
- §63.6(e), Operation and maintenance requirements: This section requires operation of the affected source in a manner consistent with safety and good control practices for minimizing emissions, including during any periods of startup, shutdown, or malfunction. The facility is expected to continue to comply with these requirements.
- §63.10(b)(2)(i) – (v), General recordkeeping requirements: This section requires maintenance of records pertaining to startup, shutdown, and malfunction of the source, as well as maintenance on control and monitoring equipment. This must include all information necessary to demonstrate compliance with the SSM plan and documentation of actions taken that are different from the procedures in the SSM plan. The facility is expected to continue to comply with these requirements.
- §63.10(d)(5), General reporting requirements: Periodic reports of actions taken in compliance with the SSM plan must be reported if there was an exceedance of an emission limit. These reports must be submitted semiannually. If there was an exceedance of an emission limit and the actions taken are inconsistent with the SSM plan, an immediate report is required. The report must include a summary of the actions taken, must be reported within 2 working days, and a summary must follow within 7 working days after the event ends. The facility is expected to continue to comply with these requirements.

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

#### **40 CFR Part 70, State Operating Permit Programs (Title V):**

**This facility is a designated facility, as it is currently subject to the requirements of 40 CFR Part 70. As a designated facility, this facility is subject to the requirements of 40 CFR Part 70. The requirements of this program have been codified in District Regulation 2, Rule 6. See discussion of Rule 2-6 above.**

Permit Condition # 17821  
P# 1840; West Contra Costa Sanitary landfill

Any condition that is preceded by an asterisk is not federally enforceable.

#### **Condition # 5771**

**For: S-5, INTERNAL COMBUSTION LEAN BURN ENGINE; and**

**S-6, INTERNAL COMBUSTION LEAN BURN ENGINE:**

1. The Internal Combustion Engines (S-5 and S-6) shall be fired exclusively on landfill gas. (basis: Cumulative Increase)
2. The facility has the option of venting landfill gas to either the engines S-5, S-6, S-37 or the flare A-120 or any combination of engines and/or flare. An automatically controlled landfill gas valve shall be installed and maintained to insure that landfill gas is immediately made available for flaring to the Flare, A-120. Under no circumstances shall raw landfill gas be vented to the atmosphere. This limitation does not apply to unavoidable landfill gas emissions that occur during control system installation, maintenance, or repair that is performed in compliance with Regulation 8, Rule 34, Sections 113, 116, 117, or 118 or to inadvertent component leaks that do not exceed the limits specified in 8-34-301.2. (basis: Regulation 8-34-301)
3. District approved flow meters, to measure landfill gas flow into each engine, shall be installed prior to any operation and maintained in good working condition. (basis: Cumulative Increase and Regulation 8-34-508)
4. Nitrogen Oxide (NO<sub>x</sub>) emissions from each Internal Combustion Engine (S-5 and S-6) shall not exceed 63 ppmv, corrected to 15% O<sub>2</sub>, dry basis. (basis: BACT, Offsets)
5. Carbon Monoxide (CO) emissions from each Internal Combustion Engine (S-5 and S-6) shall not exceed 376 ppmv, corrected to 15% O, dry basis. (basis: BACT)
6. Each engine shall comply with the NMOC limit in Regulation 8-34-301.4. (basis: BACT and Regulation 8-34-301.4)
7. In order to demonstrate compliance with parts #4, #5, and #6 above, Regulation 8, Rule 34, Section 301.4, and Regulation 9, Rule 8, Sections 302.1 and 302.3, the Permit Holder shall ensure that a District approved source test is conducted annually on each Internal Combustion Engine (S-5 and S-6). The Source Test Section of the District shall be contacted to obtain their approval of the source test procedures at least 14 days in advance of each source test. The Source Test Section shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division within 60 days of the test date. The annual source tests shall determine the following:
  - a. landfill gas flow rate to each engine (dry basis);
  - b. concentrations (dry basis) of carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), oxygen (O<sub>2</sub>), methane (CH<sub>4</sub>), and non-methane organic compounds (NMOC) in the landfill gas;
  - c. exhaust gas flow rate from each engine (dry basis);
  - d. concentrations (dry basis) of NO<sub>x</sub>, CO, NMOC, SO<sub>2</sub> and O<sub>2</sub> in the exhaust gas from each engine;
  - e. NMOC destruction efficiency achieved by each engine; and
  - f. average cylinder temperature range (or exhaust temperature range measured at an APCO approved location) for each engine that is required to maintain compliance with Parts 4, 5, and 6 above and Regulation 8-34-301.4.(basis: BACT, Regulations 8-34-301.4, 8-34-412, 9-8-302.1, and 9-8-302.3)
8. The heat input to each internal combustion engine shall not exceed 285.6 million BTU per day nor 104,250 million BTU in any consecutive 12 month period. (basis: Regulation 2-1-301, Offsets)
9. Daily records shall be maintained, in a District approved logbook, for the hours of operation of the engines and total amount of landfill gas flow through each engine. On a monthly basis, summarize all daily records for each engine. On a monthly basis, calculate and record the maximum daily and total monthly heat input rate (in BTU) to each engine based on the average methane concentration in the landfill gas (as measured during the most recent source test), a high heating value for

methane of 1013 BTU/ft<sup>3</sup> at 60 degrees F, and the amount of landfill gas burned in each engine. The logbook shall be kept on site and shall be made available to the District staff upon request. All records shall be retained for at least 5 years from the date of entry.

$$\text{Heat Input (MM BTU/day)} = \text{Daily Fuel Flow Rate (ft}^3\text{/day at 60 }^\circ\text{F and 14.7 psia)} \\ * \text{Methane Concentration (\%)} * \text{Gross Methane Heat} \\ \text{Content (1013 BTU/ft}^3\text{ CH}_4\text{)} * \text{Conversion Factor} \\ \text{(1E-8)}$$

(basis: Offsets and Cumulative Increase and Regulations 2-1-301, 2-6-501, and 8-34-301)

10. The average cylinder temperature for each Internal Combustion Engine shall be maintained at the temperature determined by the most recent source test, plus or minus 20 degrees F (or other appropriate range established by the source test) and averaged over 3 hours, during all times that the engine is operated. In order to demonstrate compliance with this condition, each engine shall be equipped with at least one thermocouple that will continuously monitor engine cylinder temperature (or engine exhaust temperature at an APCO approved location). The engine cylinder temperature (or average cylinder temperature if more than one thermocouple is used) shall be continuously recorded. The appropriate temperature range for each engine that is established by the source tests shall be added to this part in accordance with the procedures identified in Regulations 2-6-414 or 2-6-415. (basis: Regulations 8-34-301, 8-34-501.11 and 8-34-509)

**Condition # 17812**

**For: S-37, INTERNAL COMBUSTION LEAN BURN ENGINE**

1. The S-37 Internal Combustion Engine shall be fired on landfill gas exclusively. (basis: Offsets and Cumulative Increase)
2. The heat input to S-37 shall not exceed 251.9 million BTUs per day nor 91,951 million BTUs during any consecutive 12-month period. (basis: Offsets and Cumulative Increase)
3. The S-37 Internal Combustion Engine shall operate continuously during all times that landfill gas is vented to the engine. (basis: Regulation 8-34-301.1)
4. The facility has the option of venting landfill gas to either the engines S-5, S-6, S-37 or the flare A-120 or any combination of engines and/or flare . An automatically controlled landfill gas valve shall be installed and maintained to insure that landfill gas is immediately made available for flaring to the Flare, A-120. Raw landfill gas shall not be vented to the atmosphere, except for unavoidable landfill gas emissions that occur during control 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 leaks that do not exceed the limits specified in 8-34-301.2. (basis: Regulation 8-34-301)
5. S-37 shall emit no more than 63 ppmv of nitrogen oxides on dry basis, corrected to 15% oxygen. (basis: BACT, Offsets)
6. S-37 shall emit no more than 309 ppmv of carbon monoxide, dry basis, corrected to 15% oxygen. (basis: BACT)
7. In order to demonstrate compliance with part 2, the IC Engine shall be equipped with a gas flow meter and recorder that records the gas flow rate at least every 15 minutes. (basis: Offsets and Cumulative Increase)
8. In order to demonstrate compliance with parts 5 and 6 above and Regulations 8-34-301.4, 9-8-302.1, and 9-8-302.3, the Permit Holder shall ensure that a District approved source test is conducted annually on the S-37 Internal Combustion Engine. The Source Test Section of the

District shall be contacted to obtain their approval of the source test procedures at least 14 days in advance of each source test. They shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division within 60 days of the test date.

- a. landfill gas flow rate to the engine (dry basis);
- b. concentrations (dry basis) of carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), oxygen (O<sub>2</sub>), methane (CH<sub>4</sub>), and non-methane organic compounds (NMOC) in the landfill gas;
- c. exhaust gas flow rate from the engine (dry basis);
- d. concentrations (dry basis) of NO<sub>x</sub>, CO, NMOC, SO<sub>2</sub> and O<sub>2</sub> in the exhaust gas from the engine;
- e. the NMOC destruction efficiency achieved by the engine; and
- f. the average cylinder temperature range (or exhaust temperature range measured at an APCO approved location) for each engine that is required to maintain compliance with parts 5 and 6 above and Regulation 8-34-301.4.

(basis: BACT, and Regulations 8-34-301.4, 8-34-412, 9-8-302.1, and 9-8-302.3)

9. The Permit Holder shall maintain the following records:
  - a. Records of all start up and shut down dates and times and the reason for any shut downs for S-37.
  - b. Records of landfill gas throughput to S-37.
  - c. On a monthly basis calculate and record the maximum daily and total monthly heat input rate (in BTU) to each engine based on the average methane concentration in the landfill gas (as measured during the most recent source test), a high heating value for methane of 1013 BTU/ft<sup>3</sup> at 60 degrees F, and the amount of landfill gas burned in each engine.
  - d. Records of all compliance demonstration test data.

$$\text{Heat Input (MM BTU/day)} = \text{Daily Fuel Flow Rate (ft}^3\text{/day at 60 }^\circ\text{F and 14.7 psia)} \\ * \text{Methane Concentration (\%)} * \text{Gross Methane Heat Content (1013 BTU/ft}^3\text{ CH}_4\text{)} * \text{Conversion Factor (1E-8)}$$

All records shall be retained on site for a minimum of 5 years and shall be made available to District staff upon request. (basis: BACT, Offsets, Cumulative Increase, Regulation 2-1-301, 2-6-501 and Regulation 8-34-501)

10. The average cylinder temperature for the S-37 Internal Combustion Engine shall be maintained at the temperature determined by the most recent source test, plus or minus 20 degrees F (or other appropriate range established by the source test) and averaged over 3 hours, during all times that the engine is operated. In order to demonstrate compliance with this condition, the engine shall be equipped with at least one thermocouple that will continuously monitor engine cylinder temperature (or engine exhaust temperature at an APCO approved location). The engine cylinder temperature (or average cylinder temperature if more than one thermocouple is used) shall be continuously recorded. The appropriate temperature range for the engine that is established by the source tests shall be added to this part via an administrative amendment. (Basis: Regulations 8-34-301, 8-34-501.11 and 8-34-509)

**Condition # 17821**

**FOR: S-15, INACTIVE CLASS 1 AND CLASS 2 LANDFILL WITH LANDFILL GAS COLLECTION SYSTEM; ABATED BY ANY COMBINATION OF INTERNAL COMBUSTION ENGINES AND/OR A-120 LANDFILL GAS FLARE**

1. The facility stopped accepting waste for disposal at the Class 2 landfill in 2008. The total cumulative amount of all wastes placed in the landfill shall not exceed 13.0 million tons; the facility placed 12.3 million tons in the Class 2 landfill at time of closure. The maximum design capacity of the landfill (total volume of all wastes and cover materials placed in the landfill, excluding final cover) shall not exceed 21.47 million cubic yards. The maximum capacity of all

decomposable wastes placed in the Class 1 landfill was 376,110 tons. (basis: Regulation 2-1-301, Cumulative Increase)

- \*2. This facility is not subject to Regulation 8, Rule 40 because the landfill does not accept contaminated soil (soil containing more than 50 ppmw of volatile organic compounds, VOCs). The following types of materials may be accepted:
- a. Materials for which the Permit Holder has appropriate documentation demonstrating that either the organic content of the soil or the organic concentration above the soil is below the "contaminated" level (as defined in Regulation 8, Rule 40, Sections 205, 207, and 211).
  - b. Materials for which the Permit Holder has no documentation to prove that soil is not contaminated, but source of the soil is known and there is no reason to suspect that the soil might contain organic compounds.
  - ~~d.c.~~ c. Materials which the Permit Holder plans to test in order to determine the VOC contamination level in the soil, provided that the material is sampled within 24 hours of receipt by this site and is handled as if the soil were contaminated until the Permit Holder receives the test results. The Permit Holder shall collect soil samples in accordance with Regulation 8-40-601. The organic content of the collected soil samples shall be determined in accordance with Regulation 8-40-602.
    - i. If these test results indicate that the soil is still contaminated or if the soil was not sampled within 24 hours of receipt by the facility, the Permit Holder must continue to handle the soil in accordance with Regulation 8, Rule 40, until the soil has been removed from this site or has completed treatment. Storing soil in a temporary stockpile or pit is not considered treatment. Co-mingling, blending, or mixing of soil lots is not considered treatment.
    - ii. If these test results indicate that the soil, as received at this site, has an organic content of 50 ppmw or less, then the soil may be considered to be not contaminated and need not be handled in accordance with Regulation 8, Rule 40 any longer.

(basis: Regulations 2-1-403 and 8-40-301)

3. The Permit Holder shall limit the quantity of low VOC soil (soil that contains 50 ppmw or less of VOCs) disposed of per day so that no more than 15 pounds of total carbon could be emitted to the atmosphere per day. In order to demonstrate compliance with this condition, the Permit Holder shall maintain the following records in a District approved log.
- a. Record on a daily basis the amount of low VOC soil disposed of in the landfill or used as cover material in the landfill. This total amount (in units of pounds per day) is Q in the equation in subpart c. below.
  - b. Record on a daily basis the VOC content of all low VOC soils disposed of or used as cover material. This VOC Content (C in the equation below) should be expressed as parts per million by weight as total carbon (or C<sub>1</sub>).
  - c. Calculate and record on a daily basis the VOC Emission Rate (E) using the following equation:

$$E = Q * C / 1 E 6$$

(basis: Regulation 8-2-301)

4. Water and/or dust suppressants shall be applied to all unpaved roadways and active soil removal and fill areas associated with this landfill as necessary to prevent visible particulate emissions. Paved roadways at the facility shall be kept sufficiently clear of dirt and debris as necessary to prevent visible particulate emissions from vehicle traffic or wind. (basis: Regulations 2-1-403, 6-1-301, and 6-1-305)
5. S-15 shall be equipped with a landfill gas collection system, which shall be operated continuously as defined in Regulation 8-34-219, unless the Permit Holder complies with all applicable provisions of Regulation 8, Rule 34, Section 113. All collected landfill gas shall be vented to

properly operating abatement equipment including the Internal Combustion Engines (S-5, S-6, and S-37) and/or the Landfill Gas Flare ( A-120) or both. 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)

6. The Permit Holder shall apply for and receive a Change of Condition from the District before altering the landfill gas collection system described in Part 6a below. 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 alterations that are subject to this requirement. 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 1b(i) limits; the numbers of replacement wells and replacement collectors are not limited. Alterations, repairs, or replacements of non-perforated piping sections (such as risers, laterals, or header pipes), piping connectors, or valves are not subject to the Authority to Construct requirement.

- a. The Permit holder has been issued Change of Condition for the landfill gas collection system components listed below. Well and collector locations, depths, and lengths are as described in detail in the Republic Services West Contra Costa Sanitary Landfill Updated Landfill Gas Collection and Control System Design Plan Class II dated March 3, 2008 and in Table 2 Class II Landfill Gas Extraction Well List submitted August 11, 2008.

	Required Components
Total Number of Vertical Wells:	67
Total Number of Horizontal Collectors:	23
Total Number of leachate sump wellheads	3

- b. The permit holder is authorized to make the landfill gas collection system alterations described below:
- i. install up to 94 new vertical wells;
  - ii. install up to 20 new horizontal collectors;
  - iii. decommission up to 27 vertical wells;
  - iv. decommission up to 9 horizontal collectors;
  - v. connect the leachate collection and recovery system (LCRS) to the landfill gas collection unit. LCRS is comprised of (5 vaults, 13 wells and 13 sumps)
- Wells installed pursuant to this subpart shall be added to or removed from subpart a in accordance with the procedures identified in Regulations 2-6-414 or 2-6-415.
- c. The Permit Holder shall submit a start-up/shutdown notification to the District at least three days before the installation of a new well or the decommissioning of an existing well. The notification shall include:
- i. an updated well list that includes the well name, installation date, well type, well status (active/not active) well depth and decommission date (if applicable)
  - ii. an updated LFG Extraction System drawing reflecting the modifications.

(basis: Regulations 2-1-301, 8-34-301.1, 8-34-304, 8-34-305)

7. The landfill gas collection system described in Part 6a 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. Individual wells, collectors, and adjustment valves shall not be disconnected, removed, or completely closed, without prior written authorization from the District, unless the Permit Holder complies with all applicable provisions of Regulation 8, Rule 34, Sections 113, 116, 117, or with Part 1c below. (basis: Regulation 8-34-301.1)

10. The facility has the option of venting landfill gas to either the engines S-5, S-6, S-37 or the flare A-120 or any combination of engines and/or flare. In order to assure compliance with this condition, A-120 shall be equipped with local and remote alarms and auto restart capabilities. The total combined Heat Input to all internal combustion engines and flare (S-5, S-6, S-37 and A-120) shall not exceed 780,134 MM BTU in any consecutive 12 month period. In order to demonstrate compliance with this part, the Permit Holder shall calculate and record on a monthly basis the maximum daily and total monthly heat input to the flare and engines based on the landfill gas flow rate recorded pursuant to part 14, the average methane concentration in the landfill gas based on the most recent source test, and a high heating value for methane of 1013 BTU/ft<sup>3</sup> at 60 degrees F.

$$\begin{aligned} \text{d.c. Heat Input (MM BTU/day)} &= \text{Daily Fuel Flow Rate (ft}^3\text{/day at 60} \\ &\text{ }^\circ\text{F and 14.7 psia)} * \text{Methane} \\ &\text{Concentration (\%)} * \text{Gross Methane} \\ &\text{Heat Content (1013 BTU/ft}^3\text{ CH}_4\text{)} * \\ &\text{Conversion Factor (1E-8)} \end{aligned}$$

e.d. Fugitive NMOC shall not exceed 15.8 tons/yr in any consecutive 12 month period.

(basis: Cumulative Increase and Regulation 2-1-301, Regulation 8-34-301)

9. The combustion zone temperature of the A-120 Landfill Gas Flare shall be maintained at a minimum of 1400 degrees Fahrenheit, averaged over any 3-hour period. If a source test demonstrates compliance with all applicable requirements at a different temperature, the APCO may revise this minimum temperature limit in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415, based on the following criteria. The minimum combustion zone temperature for the flare shall be equal to the average combustion zone temperature determined during the most recent complying source test minus 50 degrees F, provided that the minimum combustion zone temperature is not less than 1400 degrees F. (basis: Regulation 2 Rule 5 and Regulation 8-34-301.3 and 8-34-501.3, and 40 CFR 60.756(b)(1))10. Total reduced sulfur compounds in the collected landfill gas shall be monitored as a surrogate for monitoring sulfur dioxide in control system's exhaust. The concentration of total reduced sulfur compounds in the collected landfill gas shall not exceed 300 ppmv (dry). In order to demonstrate compliance with this part, the Permit Holder shall measure the total sulfur content in collected landfill gas on a quarterly basis using a Draeger tube or by Tedlar Bag sampled laboratory analysis. The landfill gas sample shall be taken from the main landfill gas header. The Permit Holder shall follow the manufacturer's recommended procedures for using the Draeger tube and interpreting the results. The Permit Holder shall conduct the first sulfur test no later than 3 months after the issue date of the MFR Permit and quarterly thereafter. (basis: Regulation 9-1-302, Cumulative Increase)
11. In order, to demonstrate compliance with Regulation 8, Rule 34, Sections 301.3 and 412, and 40 CFR 60.8 and 60.752(b)(2)(iii)(B), the Permit Holder shall ensure that a District approved source test is conducted on the Landfill Flare, A-120 within 90 days of startup, followed by annual source tests thereafter. The facility shall obtain prior approval from the Source Test Manager for the location of sampling ports and source testing procedures. The owner/operator shall ensure that

source tests continue to be performed annually on the Landfill Gas Flare (A-120). As a minimum, the annual source test shall determine the following:

- a. landfill gas flow rate to the flare (dry basis);
- b. concentrations (dry basis) of carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), oxygen (O<sub>2</sub>), total hydrocarbons (THC), methane (CH<sub>4</sub>), and total non-methane organic compounds (NMOC) in the landfill gas;
- c. stack gas flow rate from the flare (dry basis);
- d. concentrations (dry basis) of NO<sub>x</sub>, CO, SO<sub>2</sub>, NMOC, Benzene, Formaldehyde, Vinyl Chloride, and O<sub>2</sub> in the flare stack gas;
- e. NMOC destruction efficiency achieved by the flare; and
- f. the average combustion temperature in the flare during the test period.
- g. NO<sub>x</sub> and CO emission rates from the flare in units of pounds per MM BTU

The Source Test Section of the District shall be contacted to obtain their approval of the source test procedures at least 14 days in advance of each source test. They shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division within 60 days of the test date. (basis: Regulations 8-34-301.3 and 8-34-412)

12. The Permit Holder shall conduct a characterization of the landfill gas concurrent with the annual source test required by part 11 above. The landfill gas sample shall be drawn from the main landfill gas header. In addition to the compounds listed in part 11b, the landfill gas shall be analyzed for all the organic compounds listed below. All concentrations shall be reported on a dry basis. The test report shall be submitted to the Compliance and Enforcement Division within 45 days of the test date. (basis: Regulation 2 Rule 5, AB-2588 Air Toxics Hot Spots Act, and Regulation 8-34-412)

Organic Compounds

acrylonitrile  
 benzene  
 benzyl chloride  
 1,3 butadiene  
 carbon tetrachloride  
 chlorobenzene  
  
 chloroform  
 1,1 dichloroethane  
 1,1 dichlorethene  
 1,2 dichloroethane  
 1,4 dichlorobenzene  
  
 1,4 dioxane  
 Carbon disulfide

Organic Compounds

ethylbenzene  
 ethylene dibromide  
  
 hexane  
 isopropyl alcohol  
 methyl ethyl ketone  
 methyl tert butyl ether  
 methylene chloride  
 perchloroethylene  
 styrene  
 toluene  
 1,1,1 trichloroethane  
 1,1,2,2 tetrachloroethane  
 trichloroethylene  
 vinyl chloride  
 xylenes

13. If the concentrations (dry basis) of toxic air contaminants in the collected landfill gas exceed any of the limits listed in Parts 13a or 13bbelow, the Permit Holder shall submit a permit application for a Change of Permit Conditions within 30 days of receiving the test results.

b.a. Total Non-Methane Organic Compounds: 392 ppmv  
 (Calculated as Hexane equivalent)

*	b.	Benzene	=	8.9	ppmv
		Chlorobenzene	=	1.5	ppmv
		Trichloroethylene	=	0.873	ppmv

Ethylbenzene	=	41	ppmv
Vinyl Chloride	=	6.4	ppmv
Xylene	=	78	ppmv
Toluene	=	110	ppmv
Perchloroethylene	=	4	ppmv
Acrylonitrile	=	10	ppmv
Methylene Chloride	=	350	ppmv

(basis: Regulation 2 Rule 5 and AB-2588 Air Toxics Hot Spots Act)

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). Maintain a list of the wells or collectors that are venting to either the -A-120 flare or the landfill gas fired engines. 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, 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-120 Landfill Gas Flare on a daily basis. Summarize these records on a monthly basis. Calculate and record the heat input to A-120, pursuant to part 8.
  - i. Maintain continuous records of the combustion zone temperature for the A-120 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, Regulations 2-1-301, 2-5-302, 2-6-501, 6-1-301, 6-1-305, 8-2-301, 8-34-301, 8-34-304, and 8-34-501)

15. The annual report required by BAAQMD Regulation 8-34-411 shall be submitted in two semi-annual increments. The reporting periods and report submittal due dates for the semi-annual increments of the Regulation 8-34-411 report and the MSW Landfill NESHAP report, which is required pursuant to 40 CFR Part 63.1980(a), shall be synchronized with the reporting periods and report submittal due dates for the semi-annual MFR Permit monitoring reports that are required by Section I.F of the MFR Permit for this site. A single report may be submitted to satisfy the requirements of Section I.F, Regulation 8-34-411, and 40 CFR Part 63.1980(a), provided that all items required by each applicable reporting requirement are included in the single report.

(Basis: Regulation 8-34-411 and 40 CFR Part 63.1980(a))

16. Nitrogen oxide (NO<sub>x</sub>) emissions from the A-120 Landfill Gas Flare shall not exceed 0.05 lbs/MM BTU of NO<sub>x</sub>.  
(Basis: Cumulative Increase)
17. Carbon monoxide (CO) emissions from the A-120 Landfill Gas Flare shall not exceed 0.20 lbs/MMBTU of CO  
(Basis: Cumulative Increase)
18. The A-120 Landfill Gas Flare shall comply with the NMOC emission limit in Regulation 8-34-301.3. (Basis: Cumulative Increase, 8-34-301.3, and 40 CFR 60.752(b)(2)(iii)(B))
19. The Permit Holder shall maintain records of all planned and unanticipated shut downs of the A-120 Flare and of any temperature excursions. The records shall include the date, time, duration, and reason for any shut down or excursion. Any unanticipated shut downs or temperature excursions shall be reported to the Enforcement Division immediately. All inspection and maintenance records, records of shut downs and excursions, gas flow records, temperature records, analytical results, source test results, and any other records required to demonstrate compliance with the above permit conditions, Regulation 8 Rule 34, or 40 CFR Part 60 Subpart WWW shall be retained on site for a minimum of five years and shall be made available to District staff upon request. (Basis: 2-6-501, 8-34-501, 40 CFR 60.758)

### **Recommendations**

*I recommend issuing a Change of Conditions to Condition #17821 for the following source:*

**S-15 Landfill with Landfill Gas Collection System abated by A-120 Landfill Gas Flare 91.26 MM Btu/hr; 3000 scfm or S-5, S-6 and S-37**

*I recommend issuing an Authority to Construct for the following new abatement device:*

**A-120, Landfill Gas Flare 91.26 MM Btu/hr; 3000 scfm**

**After the commissioning of the new flare is complete, the existing flares, A-8 and A-11, and S-46 will be removed from service the source and abatement devices will be archived.**

\_\_\_\_\_  
Irma Salinas  
Senior Air Quality Engineer

\_\_\_\_\_  
Date

# **APPENDIX G**

## **ENGINEERING EVALUATION**

**Change of Condition for source S-117**

**APPLICATION # 23888**

Engineering Evaluation  
West Contra Costa Sanitary Landfill  
A/N 23888

Plant # 1840

I. Background

This facility has applied for a change in condition # 23356 for S-117. The facility would like the option to use water as a dust suppressant as an alternative to either a chemical or a petroleum resin dust suppressant. This will be allowed so long as frequent watering is done to ensure that the efficiency is a minimum of 75%. According to AP-42 chapter 13.2.2 Unpaved Roads, the moisture ratio needs to be a minimum of 2% to ensure control efficiency of at least 75%.

II. Calculations- none

III. Plant Cumulative Increase- none. The sources evaluated in this application are existing sources that have already been permitted. There is no increase in emissions.

III. Toxics Screening Analysis- none. The sources evaluated in this application are existing sources that have already been permitted.

IV. Compliance

Regulation 2 Rule 1

CEQA

This application is considered to be ministerial under the District's Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 11.5 for concrete batch plants. This facility also falls under the category of other categories of exempt projects per 2-1-312.1 where permit condition is modified and there will be no increase in emissions.

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.

Regulation 2 Rule 2

There is no increase in emissions, BACT is not applicable. Facility not subject to Regulation 2-2 Section 301.

Per 2-2-421 Offset Deferral will be required in the amount of 0.005 tons/yr from A/N 20621. Facility's renewal date is April 2012.

The facility is not subject to Regulation 2-2-317 (Maximum Achievable Control Technology): As total HAP pollutants do not exceed 25 tons per year with no single HAP emissions exceeding 10 tons per year. Thus WCCSL is not a major facility of HAPs and Regulation 2-2-317 does not apply.

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. Facility not subject to Regulation 2-2-304-PSD Requirements as facility is not a major facility.

Regulation 2, Rule 5

Since there is no increase in toxic emissions, facility is not subject to New Source Review of Toxic Air Contaminants per Regulation 2, Rule 5.

Regulation 2, Rule 6 Major Facility Review

This facility is subject to the operating 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 because it is a designated and major facility defined by the BAAQMD Regulation 2, Rule 6, Section 204, Regulation 2-6-304 and Regulation 2-6-212. The facility has been issued a Title V permit. The modification of permit conditions will require a minor revision to the MFR Permit pursuant to Regulation 2-6-201. This application serves as the Statement of Basis for the minor MFR permit revision.

Regulation 6, Rule 1 General Requirements

The facility is in compliance with Regulation 6 Rule 1. The facility is in compliance with Regulation 6-1-305 and will continue to be in compliance.

V. Conditions

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 6-1-301 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. As an alternative, the owner/operator may apply water for dust control at a frequency that achieves equivalent control.
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 Rule 6)

VI. Recommendation

Recommend that a change in condition be issued for S-117.

S-117 Composting Operation

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Irma C. Salinas

March 16, 2017