

Bay Area Air Quality Management District

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**Statement of Basis
for
MAJOR FACILITY REVIEW PERMIT
ADMINISTRATIVE AMENDMENT**

**for
Keller Canyon Landfill Company
Facility #A4618**

Facility Address:
901 Bailey Road
Pittsburg, CA 94565

Mailing Address:
901 Bailey Road
Pittsburg, CA 94565

Application Engineer: Carol Allen
Site Engineer: Carol Allen

Application: 14795

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Appendix A: Engineering Evaluation for Application # 14794

STATEMENT of BASIS

Keller Canyon Landfill Company; SITE # A4618

APPLICATION # 14795

A. BACKGROUND

Site Description:

Keller Canyon Landfill Company (KCLC), a subsidiary of Allied Waste Industries, Inc., owns and operates the Keller Canyon Landfill Facility (Facility # A4618) in Pittsburg, CA. Currently, the facility name for this permit is Allied Waste Industries, Inc. However, this facility has requested to change the facility name to Keller Canyon Landfill Company (KCLC).

This facility includes an active Class II MSW landfill (S-1 Keller Canyon Landfill), which is equipped with a continuously operated landfill gas collection system. The landfill is currently permitted to accept a maximum 3500 tons/day of refuse and is permitted to dispose of 38.4 million tons of decomposable waste in the landfill. As of June 30, 2006, the landfill contained 8.48 MM tons of decomposable waste. In addition to MSW, this site is allowed to accept designated wastes including petroleum-contaminated soils. From July 2005-June 2006, KCLC reported accepting 26,682 tons of contaminated soil.

All collected landfill gas is currently abated by the A-1 Landfill Gas Flare. This flare has maximum permitted capacities of 1744.8 MM BTU/day and 636,852 MM BTU/year and can process about 2438 scfm of landfill gas. For July 2005-June 2006, KCLC reported that A-1 burned an average of 1035 scfm of landfill gas. KCLC holds an Authority to Construct for a second flare (A-2 Landfill Gas Flare) that is capable of burning up to 76 MM BTU/hour of landfill gas (about 2500 scfm), but KCLC has not commenced construction on A-2 yet.

The current permit also includes a Wipe Cleaning Operation (S-2); however, KCLC has requested to remove this source from the permit because it is no longer located at this facility.

This facility has a Yard and Green Waste Stockpile (S-3) that is permitted to accept up to 70,200 tons/year of waste material for recycling. For July 2005-June 2006, KCLC reported that S-3 accepted 0 tons/year of materials.

An independently owned facility (Ameresco, Plant # 17667) has applied for an Authority to Construct and Permit to Operate for two IC engines that will be fueled on landfill gas from the Keller Canyon Landfill and that will be located on Keller Canyon Landfill Company property near the existing flare station. This project is being evaluated pursuant to BAAQMD Permit Application # 14265.

Administrative Amendments:

Condition # 17309, Part 32 identifies landfill gas concentration limits for the most significant toxic air contaminants (TAC) that are present in landfill gas collected from Keller Canyon Landfill. These concentration levels were used to determine the maximum permitted toxic air contaminant emission rates for this facility, which were evaluated in an HRSA for the landfill and the site. Since this landfill was initially permitted after January 1, 1987, the entire landfill and all associated landfill gas control devices were previously subject to the District's Toxic Risk Management Policy and are now subject to the current Regulation 2, Rule 5 (New Source Review for Toxic Air Contaminants). These TAC emission rate limits were also used to demonstrate compliance with the AB-2588 Air Toxic Hot Spots Act. The previous HRSA (see Application # 11386) determined that the cancer risk from all sources and abatement devices at this site (S-1, A-1 and A-2) was less than 10 in a million. Therefore, neighborhood notification and risk reduction measures were not required pursuant to AB-2588. None of these District and state requirements is federally enforceable.

The October 2005 analyses on Keller Canyon Landfill's landfill gas detected a benzene concentration of 15,900 ppbv, which exceeded the benzene concentration limit of 10,000 ppbv in Part 32. As required by Part 32, KCLC submitted a permit application (Application # 14794) to request an increase in the benzene concentration limit and a new HRSA for this facility. KCLC proposed concentration limit changes for several additional toxic air contaminants and submitted detailed maps of the facility showing the final projected refuse boundaries for the landfill and the proposed facility boundaries for a proposed landfill gas energy plant that may be located on KCLC property in the future. KCLC requested that the District revise the HRSA based on this new information and requested that the District determine the maximum TAC concentration levels that would keep this site at a cancer risk of no greater than 10.0 in a million.

Pursuant to District Application # 14794, the District conducted the required HRSA and determined appropriate TAC concentration levels that maintain a facility risk of less than 10 in a million. The District approved permit condition revisions pursuant to Application 14794 on September 14, 2006. KCLC submitted Application # 14795 to reflect these TAC concentration limit revisions in the Title V Permit for Site # A4618. Since the permit condition limits are not federally enforceable, these revisions constitute an administrative amendment of the Title V permit.

In Application # 14306 for the renewal of the Title V operating permit for Site # A4618, the facility requested two administrative amendments. First, the facility requested to change the name of this facility from Allied Waste Industries, Inc. to Keller Canyon Landfill Company (KCLC). Second, the facility requested to delete the S-2 Wipe Cleaning Operation, which has been removed from this site. For convenience, these two requested administrative amendments are being handled concurrently with the administrative amendment discussed above for Application # 14795.

B. EMISSIONS

The administrative amendments discussed above will result in changes to both criteria pollutant emission rates and HAP emission rates. The removal of the S-2 Wipe Cleaning Operation will reduce maximum permitted POC emissions by 0.326 tons/year of POC. The revised facility wide maximum permitted criteria pollutant emissions are summarized in Table 1.

Table 1. Maximum Permitted Criteria Pollutant Emissions for Site # A4618

Device Number and Description	Emissions (Tons/Year)				
	CO	SO ₂	POC	NO _x	PM ₁₀
S-1 Keller Canyon Landfill			40.59		8.41
S-3 Yard and Green Waste Stockpiles					0.13
A-1 Landfill Gas Flare	95.53	31.82	4.44	19.11	5.45
A-2 Landfill Gas Flare	66.58	33.26	4.64	19.97	11.16
Facility Wide Permitted Emissions	162.10	65.08	49.67	39.08	25.15

As discussed in detail in the attached Engineering Evaluation for Application # 14794, the revision of TAC concentration limits will result in changes to maximum permitted emission levels for several toxic air contaminants. These TACs are also hazardous air pollutants (HAPs) as defined by EPA. This administrative amendment will result in an overall reduction of the maximum permitted HAP emission rate by 0.4 tons/year. The HAP emission changes are summarized in Table 2.

Table 2. Summary of HAP Emission Changes for Site # A4618

	Increases (Pounds/Year)	Decreases (Pounds/Year)	Net Change (Tons/Year)
Benzene	1317		+ 0.6585
Methylene Chloride		1661	- 0.8305
Perchloroethylene		84	- 0.0420
Trichloroethylene		380	- 0.1900
Vinyl Chloride	11		+0.0055
Total HAPs			- 0.3985

C. PROPOSED MFR PERMIT MODIFICATIONS

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Title 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review, because it is a major facility as defined by BAAQMD Regulation 2-6-212.1. It is a major facility because it has the “potential to emit,” as defined by BAAQMD Regulation 2-6-218, of more than 100 tons per year of a regulated air pollutant (in this case, carbon monoxide). Therefore, this facility is required to have an MFR permit pursuant to Regulation 2-6-301.

In addition, it is a designated facility as defined by BAAQMD Regulation 2-6-204. The Standards of Performance for Municipal Solid Waste Landfills (40 CFR Part 60, Subpart WWW) require the owner or operator of a landfill that is subject to this part and that has a design capacity of greater than or equal to 2.5 million megagrams and 2.5 million cubic meters to obtain an operating permit pursuant to Part 70. This facility is subject to this NSPS because it commenced construction after May 30, 1991 and has design capacities that are larger than 2.5 million Mg and larger than 2.5 million m³. Therefore, this facility is required to have an MFR permit pursuant to Regulation 2-6-304.

The initial MFR Permit for this facility was issued on September 20, 2001 and was revised on December 17, 2003 and March 16, 2006. A proposed significant revision has recently completed the public notice process. The District expects to issue this final revision shortly (in September 2006). This current application (#14795) will require an administrative revision of the current MFR permit. This revision is administrative because it involves only the following: non-federally enforceable permit condition changes, a facility name change, and the deletion of a source. The proposed MFR permit revisions for this administrative amendment are described below. All proposed changes are clearly marked in strikeout and underline format.

Title Page and Header:

Change the facility name from Allied Waste Industries, Inc. to Keller Canyon Landfill Company.

...

Final

MAJOR FACILITY REVIEW PERMIT

Issued To:

~~Allied Waste Industries, Inc.~~ Keller Canyon Landfill Company |
Facility #A4618

...

Section I:

The District is not proposing any changes to this section.

Section II:

Per the facility's request, the District is proposing to delete the S-2 Wipe Cleaning Operation from the MFR Permit for Site # A4618. Changes to Table II-A are shown below.

Table II A - Permitted Sources

Each of the following sources has been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. The capacities in this table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J. and Regulation 2-1-301.

S-#	Description	Make or Type	Model	Capacity
S-1	Keller Canyon Landfill with Active Gas Collection System:	Class II Disposal Operations (MSW, commercial, industrial, construction, designated, and special wastes)		Max. Design Capacity (waste and cover, excluding final cover) = 75 million yd ³ (57.3 million m ³) Max. Waste Acceptance Rate = 3500 tons/day Max. Cumulative Waste In-Place = 38.4 million tons (34.8 million Mg)
	Gas Collection Wells			50 vertical wells
S-2	Wipe Cleaning Operation	Mineral Spirits		100 gallons/year
S-3	Yard and Green Waste Stockpiles	Yard and Green Waste		225 tons/day

Section III:

The District is not proposing any changes to this section.

Section IV:

As discussed in the Engineering Evaluation for Application # 14794, the District is proposing to correct the bases for Permit Condition # 17309, Parts 23, 31, and 32. These corrections are necessary because BAAQMD Regulation 2, Rule 5 has replaced the District's Toxic Risk Management Policy and because the AB-2588 Air Toxics Hot Spots Act was inadvertently omitted from the bases of Parts 31 and 32. These bases changes will be reflected in Table IV-A as shown below. In addition, the District is deleting Table IV-B, because S-2 is being removed from this permit. Table IV-C for the S-3 Yard and Green Waste Stockpiles will be renumbered as Table IV-B.

Table IV – A
Source-Specific Applicable Requirements
S-1 KELLER CANYON LANDFILL,
A-1 LANDFILL GAS FLARE, AND A-2 LANDFILL GAS FLARE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
...			
BAAQMD Condition #17309			
...			
Part 23	Minimum Temperature Requirement for Flares (RACT, Toxic Risk Management Policy , Regulations <u>2-5-301</u> and 8-34-301, and 40 CFR 60.758(c)(1)(i))	Y	
...			
Part 31	Annual Landfill Gas Characterization Test (Toxic Risk Management Policy <u>Air Toxics Hot Spots Act</u> , Regulations <u>2-5-501</u> , 8-34-301 and 9-1-302, and NSPS)	Y	
Part 32	Limits on Toxic Air Contaminants in Landfill Gas (Toxic Risk Management Policy <u>Air Toxics Hot Spots Act and Regulation 2-5-302</u>)	N	
...			

Table IV – B
Source-Specific Applicable Requirements
S-2 WIPE CLEANING OPERATION

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD-Regulation 8, Rule 16	Organic Compounds – Solvent Cleaning Operations (10/16/02)		
8-16-501	Solvent Records		
8-16-501.2	Facility wide, annual records of makeup solvent use	N	
8-16-501.5	Record retention	N	
SIP-Regulation 8, Rule 16	Organic Compounds – Solvent Cleaning Operations (6/15/94)		
8-16-501	Solvent Records		

Table IV—B
Source-Specific Applicable Requirements
S-2 WIPE CLEANING OPERATION

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
8-16-501.2	Facility-wide, quarterly records of makeup solvent use	Y ¹	
BAAQMD-Condition #9527			
Part 1	Solvent Usage Limits (Cumulative Increase and Regulation 2-1-301)	Y	
Part 2, subparts a-b	Record Keeping Requirements (Cumulative Increase and Regulations 8-16-501 and 2-6-501)	Y	

¹ ~~This section has been removed from BAAQMD Regulations because it has been superseded. Nevertheless, the source must comply with this regulation until US EPA has reviewed and approved (or disapproved) the District's revision of the regulation.~~

Table IV – CB
Source-Specific Applicable Requirements
S-3 YARD AND GREEN WASTE STOCKPILES

Section V:

The District is not proposing any changes to this section.

Section VI:

Since S-2 is no longer at this facility, The District is proposing to delete Condition # 9527 that applied to S-2. In addition to the permit condition bases modifications discussed above (see Section IV), the District is proposing to revise the TAC concentration limits listed in Condition # 17309, Part 32 based on the HRSA that was conducted for Application # 14794. All proposed modification to these permit conditions are identified below.

Condition # 9527

~~For S-2 WIPE CLEANING OPERATION:~~

- ~~1. The net solvent usage at this source shall not exceed 100 gallons during any consecutive 12-month period nor 0.75 gallons during any day. (Basis: Cumulative Increase and Regulation 2-1-301)~~
- ~~2. In order to ensure compliance with this condition, the following records shall be maintained on-site and made available for District inspection for 5 years from the date a record is made:~~

- a. ~~The type, VOC content and amount of solvent used monthly.~~
 - b. ~~The monthly quantities shall be totaled on an annual basis.~~
- ~~(Basis: Cumulative Increase and Regulations 8-16-501 and 2-6-501)~~

Condition # 17309

For S-1 KELLER CANYON LANDFILL, A-1 LANDFILL GAS FLARE, AND A-2 LANDFILL GAS FLARE:

(no changes to Parts 1 through 22)

23. The combustion zone temperature of the A-1 Flare shall be maintained at a minimum temperature of 1504 degrees F, averaged over any 3-hour period. The combustion zone temperature of the A-2 Flare shall be maintained at a minimum temperature of 1400 degrees F, averaged over any 3-hour period. If a source test demonstrates compliance with all applicable requirements at a different temperature, the APCO may revise these minimum temperature requirements in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415 and 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 and 8-34-301, ~~Toxic Risk Management Policy~~, RACT, and 40 CFR 60.758(c)(1)(i))

(no changes to Parts 24 through 31)

31. The Permit Holder shall conduct a characterization of the landfill gas concurrent with the annual source test required by Part 30 above. The landfill gas sample shall be drawn from the main landfill gas header. In addition to the compounds listed in Part 30b, the landfill gas shall be analyzed for the organic and sulfur compounds listed below. All concentrations shall be reported on a dry basis. The sulfur compound data collected pursuant to this part may be used to determine the total reduced sulfur compound concentration expressed as H₂S (TRS) and the ratio (R) of total reduced sulfur content versus hydrogen sulfide content, where $R = \text{TRS} / \text{H}_2\text{S}$. This ratio (R) may be used in Part 34 below (in place of the default value of $R = 1.2$) to calculate TRS based on H₂S measured by the Draeger tube method. The test report shall be submitted to the Compliance and Enforcement Division and the Source Test Section within 60 days of the test date. (Basis: ~~Toxic Risk Management Policy~~, Air Toxics Hot Spots Act, Regulations 2-5-501, 8-34-301, and 9-1-302, and NSPS40 CFR 60.754(d))

Organic Compounds

Sulfur Compounds

Modify Landfill Gas TAC Concentration Limits, Change Facility Name, and Delete S-2 Wipe Cleaning Operation

Acrylonitrile	Carbon Disulfide
Benzene	Carbonyl Sulfide
Carbon Tetrachloride	Dimethyl Sulfide
Chloroform	Ethyl Mercaptan
Ethylene Dibromide	Hydrogen Sulfide
Ethylene Dichloride	Methyl Mercaptan
Methylene Chloride	
Perchloroethylene	
Trichloroethylene	
Vinyl Chloride	

- *32. If concentrations of toxic air contaminants (TACs) are above the levels listed below, an additional risk screen run at actual concentrations will be required. Depending on the results of such screen, additional permit conditions may be required if health risks are deemed unacceptable.
(Basis: Air Toxics Hot Spots Act and Regulation 2-5-302)

<u>Compound</u>	<u>Concentration (ppbv)</u>
Acrylonitrile	500
Benzene	10,000 20,000
Carbon Tetrachloride	100
Chloroform	100
Ethylene Dibromide	100
Ethylene Dichloride	400
Methylene Chloride	27,600 16,000
Perchloroethylene	3,600 3,300
Trichloroethylene	2,300 1,500
Vinyl Chloride	1,600 1,700

(Basis: ~~Toxic Risk Management Policy~~)

(no changes to Parts 33 through 37)

Section VII:

The TAC concentration limit modifications described above for Part 32 will be reflected in Table VII-A as described below. The District is also proposing to delete Table VII-B for S-2, because S-2 is no longer at this facility. Table VII-C for S-3 will be renumbered as Table VII-B.

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 KELLER CANYON LANDFILL;
A-1 LANDFILL GAS FLARE; AND A-2 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
...							
Acrylonitrile	BAAQMD Condition # 17309, Part 32	N		Concentration in Landfill Gas: ≤ 500 ppbv	BAAQMD Condition # 17309, Part 31	P/A	Annual Laboratory Analysis
Benzene	BAAQMD Condition # 17309, Part 32	N		Concentration in Landfill Gas: ≤ 10,000 20,000 ppbv	BAAQMD Condition # 17309, Part 31	P/A	Annual Laboratory Analysis
Carbon Tetrachloride	BAAQMD Condition # 17309, Part 32	N		Concentration in Landfill Gas: ≤ 100 ppbv	BAAQMD Condition # 17309, Part 31	P/A	Annual Laboratory Analysis
Chloroform	BAAQMD Condition # 17309, Part 32	N		Concentration in Landfill Gas: ≤ 100 ppbv	BAAQMD Condition # 17309, Part 31	P/A	Annual Laboratory Analysis
Ethylene Dibromide	BAAQMD Condition # 17309, Part 32	N		Concentration in Landfill Gas: ≤ 100 ppbv	BAAQMD Condition # 17309, Part 31	P/A	Annual Laboratory Analysis
Ethylene Dichloride	BAAQMD Condition # 17309, Part 32	N		Concentration in Landfill Gas: ≤ 400 ppbv	BAAQMD Condition # 17309, Part 31	P/A	Annual Laboratory Analysis
Methylene Chloride	BAAQMD Condition # 17309, Part 32	N		Concentration in Landfill Gas: ≤ 27,600 16,000 ppbv	BAAQMD Condition # 17309, Part 31	P/A	Annual Laboratory Analysis
Perchloroethylene	BAAQMD Condition # 17309, Part 32	N		Concentration in Landfill Gas: ≤ 3,600 3,300 ppbv	BAAQMD Condition # 17309, Part 31	P/A	Annual Laboratory Analysis

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 KELLER CANYON LANDFILL;
A-1 LANDFILL GAS FLARE; AND A-2 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Trichloro-ethylene	BAAQMD Condition # 17309, Part 32	N		Concentration in Landfill Gas: ≤ 2,300 <u>1,500</u> ppbv	BAAQMD Condition # 17309, Part 31	P/A	Annual Laboratory Analysis
Vinyl Chloride	BAAQMD Condition # 17309, Part 32	N		Concentration in Landfill Gas: ≤ 1,600 <u>1,700</u> ppbv	BAAQMD Condition # 17309, Part 31	P/A	Annual Laboratory Analysis
Heat Input	BAAQMD Condition # 17309, Part 35	Y		For A-1 Flare: ≤ 1744.8 MM BTU per day and ≤ 636,852 MM BTU per year For A-2 Flare: ≤ 1824 MM BTU per day and ≤ 665,760 MM BTU per year	BAAQMD Condition # 17309, Part 35	P/M	Records

Table VII – B
Applicable Limits and Compliance Monitoring Requirements
S-2 WIPE CLEANING OPERATION

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Solvent Usage	BAAQMD Condition # 9527, Part 1	Y		0.75 gallons per day and 100 gallons per 12 month period	BAAQMD Condition # 9527, Part 2	P/M	Records
					BAAQMD 8-16-501.2	P/A	Records
					SIP 8-16-501.2 ¹	P/Q	Records

¹ This section has been removed from BAAQMD Regulations because it has been superseded. Nevertheless, the source must comply with this regulation until US EPA has reviewed and approved (or disapproved) the District's revision of the regulation.

Table VII – ~~€~~B
Applicable Limits and Compliance Monitoring Requirements
S-3 YARD AND GREEN WASTE STOCKPILES

Sections VIII-IX:

The District is not proposing any changes to these sections.

Section X:

The revisions discussed above for Sections II, IV, VI, and VII will be summarized in the revision history section, as shown below for Application # 14795.

X. REVISION HISTORY

...

Administrative Amendments (Application # 14795): **[insert approval data]**

- On the title page and headers, change the facility from Allied Waste Industries, Inc. to Keller Canyon Landfill Company.
- Delete the S-2 Wipe Cleaning Operation from the permit by amending Table II-A and by deleting Table IV-B, Condition # 9527, and Table VII-B.
- For the S-3 Yard and Green Waste Stockpiles, renumber Tables IV-C and VII-C as Tables IV-B and VII-B.
- For the S-1 Keller Canyon Landfill, modify the TAC concentration limits in Condition # 17309, Part 32 and Table VII-A.
- For S-1, modify the condition bases in Table IV-A and Condition # 17309, Parts 23, 31, and 32.
- Update the Section X Revision History.

Sections XI-XII:

The District is not proposing any changes to these sections.

D. SUMMARY OF PROPOSED ACTIONS

The District recommends approval of the following administrative amendments of the MFR Permit for Site # A4618:

- Change the facility name to Keller Canyon Landfill Company.
- Remove the S-2 Wipe Cleaning Operation by amending Table II-A and by deleting Condition # 9527, Table IV-B, and Table VII-B.
- Renumber Tables IV and VII for the S-3 Yard and Green Waste Stockpiles.
- For the S-1 Keller Canyon Landfill, amend non-federally enforceable TAC concentration limits identified in Condition # 17309, Part 32, correct the bases for related Parts 23, 31, and 32, and reflect these amendments in Tables IV-A and VII-A.

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APPENDIX A

ENGINEERING EVALUATION

for

APPLICATION # 14794

ENGINEERING EVALUATION

Keller Canyon Landfill Company; PLANT # A4618

APPLICATION # 14794

A. BACKGROUND

Keller Canyon Landfill:

Keller Canyon Landfill Company (KCLC), a subsidiary of Allied Waste Industries, Inc., owns and operates the Keller Canyon Landfill Facility (Facility # A4618) in Pittsburg, CA. This facility includes an active Class II MSW landfill (S-1), which is equipped with a landfill gas collection system. The landfill is currently permitted to accept a maximum 3500 tons/day of refuse and is permitted to dispose of 38.4 million tons of decomposable waste in the landfill. As of June 30, 2006, the landfill contained 8.48 MM tons of decomposable waste. In addition to MSW, this site is allowed to accept designated wastes including petroleum-contaminated soils. From July 2005-June 2006, KCLC reported accepting 26,682 tons of contaminated soil.

Landfill Gas Control Systems:

All collected landfill gas is currently abated by the A-1 Landfill Gas Flare. This flare has maximum permitted capacities of 1744.8 MM BTU/day and 636,852 MM BTU/year and can process about 2438 scfm of landfill gas. For July 2005-June 2006, KCLC reported that A-1 burned an average of 1035 scfm of landfill gas. KCLC holds an Authority to Construct for a second flare (A-2) capable of burning up to 76 MM BTU/hour of landfill gas (about 2500 scfm), but KCLC has not commenced construction on A-2 yet.

An independently owned facility (Ameresco, Plant # 17667) has applied for two IC engines that will burn landfill gas from the Keller Canyon Landfill. This project is being evaluated pursuant to Application # 14265.

Current Project:

Condition # 17309, Part 32 identifies landfill gas concentration limits for the most significant toxic air contaminants (TAC) that are present in landfill gas collected from Keller Canyon Landfill. These concentration levels were used to determine the maximum permitted toxic air contaminant emission rates for this facility, which were evaluated in an HRSA for the landfill and the site. Since this landfill was initially permitted after January 1, 1987, the entire landfill and all associated landfill gas control devices were previously subject to the District's Toxic Risk Management Policy and are now subject to the current Regulation 2, Rule 5 (New Source Review for Toxic Air Contaminants). These TAC emission rate limits were also used to demonstrate compliance with the AB-2588 Air Toxic Hot Spots Act. The most recent HRSA (see Application # 11386) determined that the cancer risk from all sources and abatement devices at this site (A-1, A-1 and A-2) was less than 10 in a million. Therefore, neighborhood notification and risk reduction measures were not required pursuant to AB-2588.

The October 2005 analyses on Keller Canyon Landfill's landfill gas detected a benzene concentration of 15,900 ppbv, which exceeded the benzene concentration limit of 10,000 ppbv in

Modify Benzene and Other TAC Concentration Limits for the Keller Canyon Landfill (S-1)

Part 32. As required by Part 32, KCLC submitted this application (Application # 14794) to request an increase in the benzene concentration limit and a new HRSA for this facility. KCLC proposed concentration limit changes for several additional toxic air contaminants and submitted detailed maps of the facility showing the final projected refuse boundaries for the landfill and the proposed facility boundaries for a proposed landfill gas energy plant that may be located on KCLC property in the future. KCLC requested that the District revise the HRSA based on this new information and requested that the District determine the maximum TAC concentration levels that would keep this site at a cancer risk of no greater than 10.0 in a million.

B. EMISSIONS

Toxic Air Contaminant Concentration Limits:

As discussed above, KCLC has requested to modify the TAC concentration limits for landfill gas that are identified in Condition # 17309, Part 32. The current concentration limits, minimum limits requested by the applicant, and proposed limits for this project are identified in Table 1 below.

Table 1. Current, Requested, and Proposed Landfill Gas Concentration Limits for TACs			
Compound in LFG	Current Limit from Part 32 (ppbv)	Limit Requested by Applicant (ppbv)	Limit Proposed by BAAQMD (ppbv)
Acrylonitrile	500	100	500
Benzene	10,000	16,500	20,000
Carbon Tetrachloride	100	25	100
Chloroform	100	25	100
Ethylene Dibromide	100	25	100
Ethylene Dichloride	400	250	400
Methylene Chloride	27,600	15,000	16,000
Perchloroethylene	3,600	1,000	3,300
Trichloroethylene	2,300	750	1,500
Vinyl Chloride	1,600	750	1,700

Toxic Air Contaminant Emissions:

The maximum permitted chronic toxic air contaminant (TAC) emissions from the S-1 Keller Canyon Landfill (due to waste decomposition) are based on the current landfill gas concentration limits in Condition # 17309, Part 32 and the peak 70-year average landfill gas generation rate for the landfill (4568 scfm). The peak 70-year average landfill gas generation is more appropriate for the evaluation of chronic health impacts than the overall peak generation rate, because the landfill gas generation rate varies considerably from year to year and the overall peak gas generation rate will only occur for one year. Since chronic health impacts are based on a lifetime exposure of 70 years, the District uses the highest 70-year average generation rate to calculate chronic TAC emission rates for the chronic health impact analyses. For this application, the District will continue to base emission calculations on the 70-year average landfill gas generation rate of 4568 scfm and the BAAQMD proposed TAC concentration limits in Table 1. Fugitive TAC emissions from the landfill will be determined based on an assumed landfill gas collection system capture efficiency of 75%. This capture efficiency assumption is consistent with the procedures described in AP-42 Chapter 2.4 and remains unchanged from the previous HRSA analysis.

Modify Benzene and Other TAC Concentration Limits for the Keller Canyon Landfill (S-1)

Residual TAC emissions from the flares (A-1 and A-2) will be based on the maximum permitted landfill gas flow rates to the flares (2438 scfm for A-1 and 2549 scfm for A-2), the proposed concentration limits in Table 1, and an assumed destruction efficiency of 98% by weight for each TAC in the landfill gas. This destruction efficiency assumption is also consistent with AP-42 and is not being revised. Secondary TAC emissions from the flares include formaldehyde, hydrogen chloride, hydrogen bromide, and hydrogen fluoride. No changes are proposed to the secondary TAC emission rates from the flares, which were discussed in detail in Application # 11386.

The District has not evaluated acute health impacts for this facility before. Maximum hourly or acute emission rates from the S-1 Landfill were determined are based on the peak landfill gas generation rate of 6705 scfm, the proposed concentration limits in Table 1, and 75% capture efficiency for the collection system. Since the flares are permitted to operate continuously, maximum permitted acute emissions from the flares are the same as the chronic residual and chronic secondary emissions discussed above. Flare emissions are discussed in detail in Application # 11386.

Maximum proposed emissions from the landfill and flares (resulting from waste decomposition only) are summarized in Tables 2a and 2b below. The proposed permit condition change will result in several changes to current maximum permitted TAC emission rates for the landfill and flares. In particular, benzene emissions will increase by 1317 pounds/year, and vinyl chloride emissions will increase by 11 pounds/year. Methylene chloride emissions will decrease by 1661 pounds/year. Perchloroethylene emission will decrease by 84 pounds/year. Trichloroethylene emissions will decrease by 380 pounds/year. Acute emissions were not evaluated previously.

Table 2a. Proposed Emissions Resulting From Waste Decomposition and LFG Control				
	Chronic Emissions (at highest 70-year avg. LFG generation), Pounds/Year			
Compound	Fugitive Emissions from S-1	Residual and Secondary from A-1	Residual and Secondary from A-2	Total Waste Decomposition Emissions
Acrylonitrile	41.1	1.8	1.8	44.7
Benzene	2422.7	103.5	108.2	2634.3
Carbon Tetrachloride	23.9	1.0	1.1	25.9
Chloroform	18.5	0.8	0.8	20.1
Ethylene Dibromide	27.0	1.2	1.2	29.3
Ethylene Dichloride	61.4	2.6	2.7	66.7
Methylene Chloride	2107.6	90.0	94.1	2291.7
Perchloroethylene	848.7	36.2	37.9	922.8
Trichloroethylene	305.7	13.1	13.6	332.4
Vinyl Chloride	164.8	7.0	7.4	179.2
Formaldehyde		230.7	241.1	471.8
Hydrogen Bromide		4829.5	5048.7	9878.2
Hydrogen Chloride		5358.7	5601.9	10960.6
Hydrogen Fluoride		331.2	346.3	677.5

Table 2b. Proposed Emissions Resulting From Waste Decomposition and LFG Control	
	Acute Emissions (at peak LFG generation rate), Pounds/Hour

Modify Benzene and Other TAC Concentration Limits for the Keller Canyon Landfill (S-1)

Compound	Fugitive Emissions from S-1	Residual and Secondary from A-1	Residual and Secondary from A-2	Total Waste Decomposition Emissions
Acrylonitrile	0.007	0.000	0.000	0.007
Benzene	0.406	0.012	0.012	0.430
Carbon Tetrachloride	0.004	0.000	0.000	0.004
Chloroform	0.003	0.000	0.000	0.003
Ethylene Dibromide	0.005	0.000	0.000	0.005
Ethylene Dichloride	0.010	0.000	0.000	0.011
Methylene Chloride	2.657	0.077	0.081	2.815
Perchloroethylene	0.353	0.010	0.011	0.374
Trichloroethylene	0.142	0.004	0.004	0.151
Vinyl Chloride	0.051	0.001	0.002	0.054
Formaldehyde	0.028	0.001	0.001	0.029
Hydrogen Bromide		0.026	0.028	0.054
Hydrogen Chloride		0.551	0.576	1.128
Hydrogen Fluoride		0.612	0.639	1.251

Plant Cumulative Increase Emissions:

This application will not impact any criteria pollutant emission rates. Therefore, this application will not result in any changes to the plant cumulative emission increase inventory for Plant # 4618.

C. STATEMENT OF COMPLIANCE

Regulation 2, Rule 1:

This application involves a change of permit conditions at the S-1 Keller Canyon Landfill that modifies the maximum permitted TAC emissions for the existing landfill and flares. This application results in increases for benzene and vinyl chloride and decreases for methylene chloride, perchloroethylene, and trichloroethylene. The project does not result in any changes for criteria pollutants. The updated HRSA determined that the maximum cancer risk for the project is no greater than the current permitted cancer risk of 9.8 in a million. Due to the proposed Ameresco engine facility (see Application 14265), the maximum chronic HI for workers will increase from 0.2 (from Application # 11386) to 0.4. Acute emissions were not previously evaluated, but proposed acute emission rates will comply with Regulation 2-5-302.3.

This project concerns only existing permitted equipment and does not involve any physical modifications of this equipment. This project constitutes a minor alteration of existing equipment that results in no expansion of the current capacity and that causes only a negligible change in the impacts from this existing equipment. This project will have no possibility of any significant adverse environmental impacts other than air quality, and air quality impacts from the landfill and flares are less than significant (less than 10 in a million cancer risk and less than 1.0 hazard index). Since this project will satisfy the requirements of Regulations 2-1-312.6 and 2-1-312.11, it is categorically exempt from CEQA review.

Modify Benzene and Other TAC Concentration Limits for the Keller Canyon Landfill (S-1)

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:

This application does not trigger new source review (NSR) for criteria pollutants, because the permit condition changes will not result in any emission increases for criteria pollutants. Therefore, BACT, Offsets, and PSD are not triggered by this application.

Regulation 2, Rule 5:

As discussed in the emissions section, this application results in emission increases for benzene and vinyl chloride. The changes in maximum permitted emission levels (+1317 pounds/year for benzene and +11 pounds/year for vinyl chloride) will exceed the risk screen trigger levels listed in Table 2-5-1 (6.4 pounds/year for benzene and 2.4 pounds/year for vinyl chloride). Therefore, a health risk screening analysis (HRSA) was required. Since this landfill was initially permitted after 1/1/87, all emissions from the landfill and flares are part of the project.

A risk screening analysis was conducted for the proposed emission rates in Tables 2a in 2b using ISCST3 (rural land use option) with SCREEN3 met data. Simple and complex terrain was considered. The flares were modeled as point sources, and the landfill was modeled as an area source with a final elevation of 1050 feet. The results of this HRSA are summarized below in Table 3.

Table 3. Health Risk Screening Analysis Results			
	Cancer Risk (per million)	Chronic Hazard Index	Acute Hazard Index
S-1 Landfill			
Residential Receptor	9.76	0.15	No Applicable Standard
Worker Receptor	2.82	0.05	
A-1 Flare			
Residential Receptor	0.08	0.01	No Applicable Standard
Worker Receptor	2.00	0.37	
A-2 Flare			
Residential Receptor	0.09	0.01	No Applicable Standard
Worker Receptor	0.06	0.01	
Total Project			
Residential Receptor	9.76	0.15	0.51
Worker Receptor	2.82	0.37	0.74

As illustrated in Table 4, the S-1 Keller Canyon Landfill and the A-1 Landfill Gas Flare will exceed a Regulation 2-5-301 TBACT threshold (1.0 in a million cancer risk or 0.2 chronic HI). Consequently, TBACT is required for carcinogenic emissions from S-1 and for carcinogenic and non-carcinogenic emissions from A-1. For carcinogenic emissions, the most significant contributors to residential cancer risk are benzene, vinyl chloride, and acrylonitrile emissions from the landfill and the most significant contributors to worker cancer risk are benzene and formaldehyde emissions from the A-1 Flare. For non-carcinogenic emissions, the most significant contributors to the chronic HI for workers are hydrogen chloride and hydrogen bromide emissions from the A-1 Flare. Compliance with TBACT is discussed below.

Modify Benzene and Other TAC Concentration Limits for the Keller Canyon Landfill (S-1)

For landfills, TBACT includes the use of an active landfill gas collection system that is meeting, at a minimum, the requirements of the NSPS and NESHAPs for MSW Landfills (40 CFR Part 60, Subpart WWW and Part 63, Subpart AAAAA, respectively) and the requirements of Regulation 8, Rule 34. The S-1 Keller Canyon Landfill is equipped with a continuously operating landfill gas collection system that is designed to achieve surface leaks of no more than 500 ppmv methane at 2 inches from the surface, which satisfies the requirements of Regulation 8, Rule 34, the NSPS, and the NESHAP. As required by these District and federal regulations, KCLC monitors the landfill surface and the individual wellheads on a monthly basis to ensure that the gas collection system is operating properly and monitors for surface leaks on a quarterly basis to verify compliance with the surface leak limit. The District has not identified any more stringent methods of reducing the existing fugitive emissions, which are occurring from decomposing waste that has already been disposed of in the landfill, that are technologically feasible to implement. Good gas collection system design, proper and continuous operation of the gas collection system, and vigilant repair of the landfill surface will minimize fugitive landfill emissions. KCLC is complying with these good operating practices. Future emission reductions may be possible by limiting the types of wastes that will be accepted and placed in the landfill in the future. For instance, benzene emissions from the landfill could be reduced by prohibiting the acceptance of petroleum contaminated soils at this site. However, such a prohibition would have region-wide impacts and would impair this facility's ability to comply with waste diversion requirements from other agencies. Therefore, a prohibition against the acceptance of certain wastes is not feasible at this time.

For flares, TBACT includes properly operating the flare at a minimum temperature of at least 1400 °F. This minimum operating temperature will ensure that 98% of all inlet toxic compounds are destroyed and that products of incomplete combustion, such as formaldehyde, are minimized. Based on source test data, the minimum operating temperature for the A-1 flare was set to 1550 °F. Therefore, A-1 is complying with this TBACT requirement.

For non-carcinogenic emissions, TBACT was triggered by A-1 only. The primary contributions to the maximum chronic HI for A-1 are: hydrogen chloride (61%), hydrogen bromide (21%), formaldehyde (8%), and hydrogen sulfide (7%). The acid gases are byproducts of the combustion of chlorinated and brominated contaminants in the landfill gas. Combustion of the landfill gas is required to reduce the emissions of these toxic halogenated compounds into the atmosphere from the landfill. Therefore, it is not feasible to reduce the emissions acid gases without a corresponding increase in the emission rates other more toxic compounds. Formaldehyde and hydrogen sulfide emissions from A-1 are minimized by operating the flare at a minimum temperature of 1400 °F or higher. As discussed above, A-1 is complying with this TBACT requirement, because permit conditions require A-1 to operate at a minimum temperature of 1550 °F.

In conclusion, the current operation of the S-1 Keller Canyon Landfill and the A-1 and A-2 Flares in compliance with all permit conditions, Regulation 8, Rule 34, Part 60 Subpart WWW, and Part 63 Subpart AAAAA satisfies the TBACT requirement of Regulation 2-5-301. As shown in Table 3, the health impacts for the total project will not exceed a cancer risk of 10.0 in a million, will not exceed a chronic hazard index of 1.0, and will not exceed an acute hazard index of 1.0. Therefore, this project complies with the Regulation 2-5-302 project risk requirements, because the landfill and flares are also complying with TBACT requirements.

Modify Benzene and Other TAC Concentration Limits for the Keller Canyon Landfill (S-1)

Regulation 2, Rule 6:

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a designated facility as defined by BAAQMD Regulation 2-6-204. The NSPS for Municipal Solid Waste Landfills (40 CFR Part 60, Subpart WWW) requires the owner or operator of a landfill that is subject to this part and that has a design capacity of greater than or equal to 2.5 million megagrams and 2.5 million cubic meters to obtain an operating permit pursuant to Part 70. As discussed in more detail in Application # 11385, this facility is subject to this NSPS and meets the designated facility criteria listed in 40 CFR § 60.32c(c). Therefore, a Title V permit is required pursuant to Regulation 2-6-304.

In addition, this site is permitted to emit up to 162.1 tons/year of CO from the two flares. Consequently, this site is a Title V major facility for CO emissions (Regulation 2-6-212), because facility-wide maximum permitted CO emissions exceed 100 tons/year, and a Title V permit is required pursuant to Regulation 2-6-301 as well as Regulation 2-6-304.

The initial MFR Permit for this facility was issued on September 20, 2001 and was revised on December 17, 2003 and March 16, 2006. A proposed significant revision has recently completed the public notice process. The District expects to issue this final revision shortly (in September 2006). This current application will require an administrative revision of the current MFR permit. This revision is administrative because it involves only non-federally enforceable permit condition changes. The proposed MFR permit revisions associated with Application # 14794 will be described in the Statement of Basis for Application # 14795.

Other Requirements:

This application will not impact the applicability or compliance of any District, State, or Federal regulations. All requirements that are described in the current and proposed Title V operating permits for this facility remain in effect with no changes.

D. PERMIT CONDITION REVISIONS

The District is proposing to make the following revisions to Condition # 17309. The basis of Parts 23, 31, and 32 will be revised for consistency with the District's recently adopted rule: Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants, which replaced the District's Toxic Risk Management Policy. For Part 31, the District is proposing to identify the particular NSPS section that this annual landfill gas testing requirement is satisfying. In addition, the District is clarifying the basis for Parts 31 and 32 by including the AB-2588 Air Toxic Hot Spots Act. The concentration limits in Part 32 and testing required by Part 31 will ensure that this facility does not trigger any notification or toxic risk reduction measures pursuant to AB-2588. And finally, the District is proposing to replace the concentration limits in Part 32 with the proposed concentration limits from Table 1, column 4.

Condition # 17309

For S-1 KELLER CANYON LANDFILL, A-1 LANDFILL GAS FLARE, AND A-2 LANDFILL GAS FLARE:

(no changes to Parts 1-22)

Modify Benzene and Other TAC Concentration Limits for the Keller Canyon Landfill (S-1)

23. The combustion zone temperature of the A-1 Flare shall be maintained at a minimum temperature of 1504 degrees F, averaged over any 3-hour period. The combustion zone temperature of the A-2 Flare shall be maintained at a minimum temperature of 1400 degrees F, averaged over any 3-hour period. If a source test demonstrates compliance with all applicable requirements at a different temperature, the APCO may revise these minimum temperature requirements in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415 and 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 and 8-34-301, Toxic Risk Management Policy, RACT, and 40 CFR 60.758(c)(1)(i)]

(no changes to Parts 24-30)

31. The Permit Holder shall conduct a characterization of the landfill gas concurrent with the annual source test required by Part 30 above. The landfill gas sample shall be drawn from the main landfill gas header. In addition to the compounds listed in Part 30b, the landfill gas shall be analyzed for the organic and sulfur compounds listed below. All concentrations shall be reported on a dry basis. The sulfur compound data collected pursuant to this part may be used to determine the total reduced sulfur compound concentration expressed as H₂S (TRS) and the ratio (R) of total reduced sulfur content versus hydrogen sulfide content, where $R = TRS/H_2S$. This ratio (R) may be used in Part 34 below (in place of the default value of $R=1.2$) to calculate TRS based on H₂S measured by the Draeger tube method. The test report shall be submitted to the Compliance and Enforcement Division and the Source Test Section within 60 days of the test date. (Basis: Air Toxics Hot Spots Act, Toxic Risk Management Policy, Regulations 2-5-501, 8-34-301, and 9-1-302, and NSPS 40 CFR 60.754(d))

Organic Compounds

Acrylonitrile
Benzene
Carbon Tetrachloride
Chloroform
Ethylene Dibromide
Ethylene Dichloride
Methylene Chloride
Perchloroethylene
Trichloroethylene
Vinyl Chloride

Sulfur Compounds

Carbon Disulfide
Carbonyl Sulfide
Dimethyl Sulfide
Ethyl Mercaptan
Hydrogen Sulfide
Methyl Mercaptan

Modify Benzene and Other TAC Concentration Limits for the Keller Canyon Landfill (S-1)

- *32. If concentrations of toxic air contaminants (TACs) are above the levels listed below, an additional risk screen run at actual concentrations will be required. Depending on the results of such screen, additional permit conditions may be required if health risks are deemed unacceptable. (Basis: Air Toxics Hot Spots Act and Regulation 2-5-302-Toxic Risk Management Policy)

<u>Compound</u>	<u>Concentration (ppbv)</u>
Acrylonitrile	500
Benzene	10,000 <u>20,000</u>
Carbon Tetrachloride	100
Chloroform	100
Ethylene Dibromide	100
Ethylene Dichloride	400
Methylene Chloride	27,600 <u>16,000</u>
Perchloroethylene	3,600 <u>3,300</u>
Trichloroethylene	2,300 <u>1,500</u>
Vinyl Chloride	1,600 <u>1,700</u>

(no changes to Parts 33-37)

E. RECOMMENDATION

Issue a Change of Permit Conditions for the following equipment:

- S-1 Keller Canyon Landfill; abated by A-1 Landfill Gas Flare and A-2 Landfill Gas Flare (future).**

By: signed by Carol S. Allen
Carol S. Allen
Senior Air Quality Engineer

September 14, 2006
Date