

## RESPONSIBLE AGENCY CHECKLIST

*The Department of Toxic Substances Control (DTSC) has completed the following document for this project in accordance with the California Environmental Quality Act. (California Public Resources Code, Division 13, Section 21000 et seq.,) and implementing Guidelines. (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000 et seq.)*

### I. PROJECT INFORMATION

Chemical Waste Management, Inc - Kettleman Hills Facility  
 Class 3 Permit Modification to Modify the Landfill B-19 Closure Plan, and  
 Project Name: Use of the Previous Kings County Environmental Impact Reports (EIRs) for This Purpose

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Site Address: 35251 Old Skyline Road  
 Kettleman City  
 City: (Unincorporated) State: CA Zip Code: 93239 County: Kings

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Contact Person: Ms. Carol J. Carollo

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Address: 35251 Old Skyline Road

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City: Kettleman City State: CA Zip Code: 93239 Phone Number: (559) 386-6140

### Project Description

#### **Class I Waste - Modified Closure Plan Activities**

Pursuant to title 22 of California Code of Regulations, section (22 CCR) 66270.42(c), DTSC proposes to approve the Class 3 permit modification for the revised Landfill Unit B-19 Closure Plan. The revised Landfill Unit B-19 Closure Plan will incorporate changes planned for the Class II/III waste operations and will revise the Part B Application of the Hazardous Waste Facility Permit. Specific sections that need to be changed in the Part B Application are Section 15.3(a)-(b) in Chapter 15.0 and Table 40-1 in Chapter 40.0.

The following are the primary objectives of the revised Landfill Unit B-19 Closure Plan:

1. Provide closure of the remaining Class I portion of Landfill Unit B-19 (Landfill B-19) at the Kettleman Hills Facility (KHF).
2. Amend the final closure grades of the entire B-19 unit by removing planned placement of Class II/III waste at the southern portion of Landfill B-19 and changing the Class II/III cover slope from 4:1 (horizontal to vertical) [H:V] to 2.5:1 (H:V) between drainage benches (effective 3:1 (H:V) when benches are included).
3. Address the potential impacts of converting a portion of the Class II/III waste to a bioreactor.
4. Amend the stability buttress configuration due to a revised waste fill configuration as discussed above.
5. Amend the proposed Class I waste prism closure schedule.
6. Present engineering analysis demonstrating that the landfill, with the proposed amendments, complies with requirements of the state regulations in 22 CCR and 23 CCR.

The operational and financial management of Landfill B-19 will be as a partially closed hazardous waste unit and an active solid waste unit; however, DTSC retains its authority over the entire landfill and will be contacted for any changes to the closure of the Class II/III portion of the landfill and approval may be required for changes that may impact the Class I portion of the landfill. The proposed Class II/III cover shall perform equivalently to a RCRA Subtitle C and a RCRA Subtitle D final cover.

The Class 3 permit modification request, dated December 7, 2006 and received December 11, 2006, covers the activity in a temporary authorization that allowed KHF to amend the final closure grades of landfill B-19 (as described in Item 2 above). The temporary authorization was granted on June 15, 2006 pursuant to 22 CCR 66270.42(e)(3)(C)1 and (e)(3)(C)5 and reissued on January 10, 2007 pursuant to 22 CCR 66270.42(e)(4)(C)2 to allow for the authorized activities to continue while the modification procedures for the Class 3 permit modification were conducted.

The following document, referred to herein as the “revised Landfill Unit B-19 Closure Plan,” was submitted for DTSC review and approval for the Class 3 permit modification:

- *Modification No. 2, Landfill Unit B-19 Closure Plan for Class I Portion, Kettleman Hills Facility, Kettleman City, California*, by Golder Associates, October 2005, revised November 2006.

The following Joint Technical Document was also submitted to DTSC for details on the proposed bioreactor:

- *Joint Technical Document, MSW Landfill B-19, Kettleman Hills Facility, Kings County, California*, by Shaw EMCON/OWT, Inc., August 2005, revised April 2006.

### **Class II/III Waste (Overlaying Class I Waste) - Bioreactor Activities**

Approximately 18.3 acres of the 30-acre Class II/III waste management unit (WMU) in Landfill B-19 is proposed to be converted to an anaerobic bioreactor disposal unit, in which liquids will be introduced to accelerate waste decomposition. Four acres of the bioreactor will be over the Class I separation liner. The remaining 11 acres of the Class II/III WMU, which are located over the separation liner, will be a control unit and remain a traditional dry landfill.

For the solid waste permitting requirements, a Joint Technical Document was reviewed and approved by other agencies (e.g., Regional Water Quality Control Board, Kings County Department of Public Health (the Local Enforcement Agency, LEA)) for the proposed bioreactor operation and the increase in daily tonnage limit in Landfill B-19. The project requires a new Conditional Use Permit from Kings County (Conditional Use Permit No. 03-06), a revised Solid Waste Facility Permit by the LEA (with concurrence from the California Integrated Waste Management Board), Authority to Construct and Permit to Operate from the San Joaquin Valley Unified Air Pollution Control District, and a revised Landfill Unit B-19 Closure Plan from DTSC. The bioreactor will be operated under the jurisdiction of the RQWCB and the LEA/CIWMB. The proposed bioreactor project will not alter the Class I hazardous waste operations currently permitted at KHF.

Since the bioreactor is a multi-agency project, an environmental analysis was conducted by CH2MHill for the Kings County Planning Agency with focus on the Class II/III portion of the landfill. The findings regarding the bioreactor are found in the following documents:

- *Draft Subsequent Environmental Impact Report (DSEIR), B-19 Landfill Bioreactor Project, Kettleman Hills Facility, Chemical Waste Management, Inc.*, State Clearinghouse Number (SCN) 2003091023, November 2004.
- *Final Subsequent Environmental Impact Report (FSEIR), B-19 Landfill Bioreactor Project, Kettleman Hills Facility, Chemical Waste Management, Inc.*, SCN 2003091023, May 2005.

### **Background**

Kettleman Hills Facility (KHF) is a Class I hazardous waste treatment, storage and disposal facility and a Class II/III disposal facility, owned and operated by Chemical Waste Management Inc. (CWMI) since 1979. KHF is located in unincorporated western Kings County, California approximately 1 mile north of State Route 41 (SR-41), approximately 3.5 air miles south west of Kettleman City, 6.5 air miles southeast of the City of Avenal, and approximately 3.5 miles west of Interstate 5 (I-5). The facility is approximately 1,600-acre site, of which 499 acres are currently permitted for Class 1 hazardous waste and TSCA-regulated PCB waste and Class II/III waste operations. KHF is permitted to accept most hazardous wastes as identified by Title 40 of the Code of Regulations (CFR), Part 261, and California Code of Regulations (CCR) Title 22, Division 4.5 Chapter 11. Hazardous wastes are transported to KHF by truck via I-5 to SR-41. Class II/III waste disposal operations at KHF are limited to Landfill B-19.

Landfill B19 was permitted as an approximately 43-acre Class I Landfill with approximately seven million cubic yards of total capacity. Landfill B-19 consisted of four phases (IA, IB, II and III). Landfill B-19 was constructed between 1986 and 1989, and began accepting Class I waste in 1987. In 1988, after approximately one million cubic yards of Class I waste had been disposed in Phase IA, a portion of the waste and primary liner slipped, resulting in a horizontal and vertical movement of the waste prism in Phase IA. While there was movement in the waste prism, the composite liner system contained the waste so that there was no release to the environment. Subsequently, the approximately one million cubic yards of Class I hazardous waste in Phase IA (in the north) was transferred to Phase II and III (in the south) of Landfill B-19. A temporary cover was placed over the slope to the floor of Phase IA to prevent rainwater from entering the remaining liner and leachate collection materials on the floor. Through 1992, approximately three million cubic yards of Class I waste had been disposed in Phases IB, II, and III. In 1992, Landfill B-19 was placed into inactive status by CWMI and Landfill Unit B-18 became the operating Waste Management Unit (WMU) at KHF. An interim cover comprising a 40-mil thick textured high density polyethylene (HDPE) geomembrane layer was placed over the Phases IB, II, and III of Landfill B-19.

In 1997, CWMI converted the remaining unused portion of the Landfill B-19 from Class I WMU to Class II designated waste and Class III Municipal Solid Waste (MSW) unit. The final fill configuration was identical to the earlier Class I fill Plan, with the exception that the balance of the fill material was Class II/III waste. The Phase IA base liner system was designed in accordance with CCR Title 22 and Title 27. In order to reclaim the remaining airspace in Landfill B-19, a "separation liner" overlying portions of the northern half of the Class I waste was designed. The separation liner serves as part of the closure cover for the Class I waste to prevent the migration of rainfall, leachate, and landfill gas from the MSW into the hazardous waste. The separation cover consists of the following components from bottom to top:

- A 2-foot thick low permeability foundation layer (hydraulic conductivity less than  $1 \times 10^{-5}$  cm/sec);
- A 60-mil textured (on both sides) HDPE geomembrane;
- A geocomposite drainage layer (transmissivity greater than 0.3 gal/min/ft) ; and
- A 2-foot thick operations layer.

The separation liner system was designed to provide for separation of the Class I and Class II/III wastes, considering: requirements for static and seismic stability; minimizing infiltration of water or Class II/III waste leachate; minimizing landfill gas migration (e.g., from Class III municipal solid waste) into the Class I waste; and protecting the geomembrane and drainage layer from equipment operations of the overlying Class II/III fill activities.

Approximately 11 acres of Class I waste, located in the southern end of Landfill B-19, remains to be capped with the "final cover." The remaining area will not be covered with MSW; however, portions will be covered by construction of the soil stability buttress, as part of the placement of the final cover. The final cover system, as also described in the *2003 Hazardous Waste Facility Permit* consists of the following components from bottom to top:

- A 1-foot thick foundation layer;
- A 1-foot thick low permeability foundation layer (hydraulic conductivity less than  $1 \times 10^{-5}$  cm/sec);
- A 40-mil thick textured (on both sides) HDPE geomembrane;
- A 12-oz non-woven geotextile drainage layer;
- Structural fill in areas where there is buttress fill (for stability);
- A minimum of 2.5 foot thick vegetative cover.

Closure of the Class I landfill will be complete when the final cover and the separation liner are certified as complete. The 40-mil HDPE geomembrane of the final cover and the 60-mil HDPE geomembrane of the separation liner will be welded together in the sections they meet. Prior to construction of the final cover liner system, the interim 40-mil textured HDPE geomembrane cover (placed in 1992) will be removed and disposed in Landfill B-18. A Construction Quality Assurance plan meeting state requirements will be implemented during construction, under the direction of a California registered professional Civil Engineer.

The proposed cover for the Class I landfill was shown to be equivalent to a conventional RCRA Subtitle C cover. A HDPE geomembrane was incorporated as an alternative to a soil barrier layer. The HDPE will be below frost depth and effectively prevent downward entry of water into the foundation layer. The vegetative cover thickness will be adequate to prevent root penetration of the drainage layer due to the shallow-rooted nature of grass species that will be planted on the vegetative layer. The underlying infiltration barrier will be comprised of a HDPE and a 2-foot thick foundation layer which both help prevent desiccation of the foundation layer.

For the Class II/III landfill, a 4-foot evapotranspirative (ET or monolithic) soil final cover of on-site soils, which shall meet the final cover criteria for RCRA Subtitle C and Subtitle D, is proposed. Of the 4-foot ET cover, 1-foot would be used for interim cover. After significant settlement of the bioreactor has occurred, the remainder of the ET cover will be placed in accordance with an approved Construction Quality Assurance plan. A final closure plan for the Class II/III landfill will be submitted for approval prior to construction of the ET cover.

The proposed ET cover for the Class II/III landfill shall be equivalent to a conventional RCRA Subtitle D cover as described in the *Joint Technical Document*. RCRA Subtitle D covers are required to have a permeability less than or equal to the bottom liner system, a minimum 18-inch barrier layer to minimize infiltration of water into the closed landfill, and a 6-inch erosion layer capable of sustaining plant growth. Furthermore, since B-19 has a composite base liner system, the recommended equivalent percolation criteria for RCRA Subtitle D final cover systems is 3 millimeters per year. Modeling shows that for the 4-foot thick layer of ET cover, no percolation would be transmitted from the base of the ET cover if using the on-site fine sand with some clay (or soils having similar unsaturated and saturated hydraulic properties); thus, the proposed ET cover would be equivalent to the conventional RCRA Subtitle D cover.

The proposed ET cover for the Class II/III landfill shall also be equivalent to a conventional RCRA Subtitle C cover. Conventional covers rely on hydraulic impedence provided by natural and synthetic barriers with low saturated hydraulic conductivity to minimize infiltration. In contrast, ET covers consist of a thick layer of finer-textured soil used to minimize percolation since it has sufficient capacity to store water during wet periods. Water is removed during drier periods by evaporation from the soil surface and transpiration from the vegetation. The proposed ET cover will have a similar permeability to the Class I cover, prevent downward entry of water into the waste, withstand stresses, and prevent desiccation; thus, the proposed ET cover would be equivalent to the conventional RCRA Subtitle C cover.

Below summarizes composition of the proposed covers (from top to bottom):

| <b>RCRA Subtitle C Requirements</b>             | <b>Proposed Class I Final Cover</b>       | <b>RCRA Subtitle D Requirements</b> | <b>Proposed Class II/III Final Cover</b>                              |
|---|---|-------------------------------------|---|
| 6-in. vegetative cover soil (erosion resistant) | 30-in. vegetative cover                   | 6-in. erosion layer                 | 48-in. ET cover<br><br>(with Landfill Gas Collection system in place) |
| 18-in. cover soil                               |   |                                     |   |
| Drainage layer (geocomposite)                   | 12-oz non-woven geotextile drainage layer |                                     |   |
| 60-mil Geomembrane                              | 40-mil HDPE geomembrane                   | Geomembrane                         |   |
| Gas collection layer (geocomposite)             |   |                                     |   |
| 24-in foundation layer                          | 24-in foundation layer                    | 18-in barrier layer                 |   |
| Existing waste                                  | Existing waste                            | Existing waste                      | Existing waste  |
| Base Liner                                      | Composite liner                           | Base liner                          | Composite liner   |

## Technical Review

### 1. Slope Stability

A slope stability evaluation was conducted to address the static and seismic stability of the revised landfill slopes. The evaluation includes the effects of converting part of the landfill to a bioreactor unit. The data indicated that the proposed new landfill design (new final fill plan geometry and conversion of part of the landfill MSW to bioreactor waste) results in a stable configuration under both static and seismic loading conditions in compliance with applicable regulations.

- Computed static factors of safety were higher than 1.5 for all analyzed cross-sections. The current state of practice in California for static design is to require a minimum factor of safety of 1.5 for final waste slopes and any cut or fill slopes which would impact the integrity of waste containment, affect off-site property, or endanger life.
- The stability design criteria were developed to satisfy the requirements of CCR title 22, which includes an evaluation of the Maximum Credible Earthquake (MCE). The computed maximum seismically induced permanent displacement during an MCE is approximately 6-inches for the base and separation liner and 8-inches for the cover system, which fall below the industry accepted allowable maximum displacement of 12 inches for final cover systems. A small allowable displacement is intended to prevent the possibility of large displacements that might disrupt the geosynthetic liner/cover materials.

### 2. Settlement

The new grades have been designed to accommodate anticipated settlement. The pre- and post-settlement grades were evaluated to demonstrate compliance with CCR title 22, which requires that a minimum of 3 percent grade be maintained on the final cover. The main consideration for post-closure grades will be secondary settlement of the existing Class I fill (after closure of Class II/III waste operations in B-19). Additionally, some minor uniform long-term consolidation of the bedrock and liner system is anticipated to occur. The results of settlement calculations indicate that a minimum grade of 3 percent in the direction of flow is maintained for the final cover and separation liner.

### 3. Surface Water Impact

Closure and post-closure of the landfill will not result in significant impacts to surface water quality or an increase in downstream water flow because:

- Surface water drainage facilities have been designed to accommodate estimated flows from the Probable Maximum Precipitation (PMP) storm event, a 7.4 inch rainfall in a 24-hour duration storm, as required by CCR title 22. Collector ditches and swales, installed around the perimeter of the landfill, will prevent run-on and run-off from eroding or otherwise damaging the final cover.
- The storm water management system for KHF is designed to meet the Class I hazardous waste regulatory requirements in accordance with CCR title 22, which meet or exceed the Class II/III requirements for storm water management.
- The separation liner and final cover are designed to prevent ponding of liquids and provide long term minimization of liquids infiltrating through Class I waste.
- Any runoff that comes in contact with the Class II/III waste will be managed as leachate.

### 4. Soil Loss

The new grades will minimize erosion. A review of the amended Class I grading plan and soil loss calculations prepared by Golder Associate, Incorporated in April 11, 2006 indicates that once vegetation is established on the landfill final cover, the erosion rate is expected to be less than 1 ton/acre/year. The U.S. EPA recommends a maximum soil loss of 2 tons per acre per year for hazardous (Class I) waste landfill covers.

## 5. Ground Water Impact

Closure of the Class I portion of Landfill B-19 will not affect the cover or approved Groundwater Monitoring Program for KHF.

## 6. Transportation and Traffic Impact

Transportation and traffic will not be impacted since import of borrow soil is not necessary to implement closure of the Class I portion of Landfill B-19.

## 7. Air Quality

The revised Landfill Unit B-19 Closure Plan will not affect the approved Air Permit Requirements for Landfill B-19. The Class I wastes within Landfill B-19 are not prone to generate landfill gas. The Class II/III wastes within Landfill B-19 are likely to generate landfill gas. However, the design of the separation liner (use of a geomembrane) incorporates measures to prevent landfill gas migration into the Class I area of the landfill. Furthermore, the Class II/III area of the landfill will incorporate an active gas collection system (to be approved by the San Joaquin Valley Unified Air Pollution Control District) which will minimize gas pressure within the Class II/III area of the landfill.

## 8. Liner System and Integrity

There are multiple detection and liner systems to protect groundwater quality. Earliest leachate detection would occur in the primary leachate collection and removal system (LCRS), where leachate would be quickly collected and transmitted to sumps to be efficiently removed in order to maintain leachate levels on the primary liner at a regulatory depth of 12 inches or less. A major part of the primary LCRS is the collection sumps. There are four sumps in B-19. Three sumps are for Class I waste and the fourth sump is for Class II/III waste, to be shared by the proposed control and bioreactor units. The secondary leachate collection system monitors the performance of the primary liner system and removes any liquids that may accumulate. The vadose zone monitoring system is a secondary detection system that monitors the performance of the entire liner system. The secondary leachate and collection system and the vadose zone monitoring system each have riser pipes (within gravel) in which leachate can be removed from if necessary.

### EFFECTS OF BIOREACTOR TEMPERATURE AND CHEMISTRY ON LINER

For significant heat to be generated within the underlying Class I waste from the proposed bioreactor above, a significant amount of leachate would have to penetrate the separation liner and interact with a large quantity of waste that is reactive with water. The Class I portion received only minor amounts of reactive waste that was packaged in labpacks. Therefore, only minor amounts of heat are expected, which should not impact the separation liner. Current information indicates the pH of bioreactors ranges from 6 to 8, the same range as the leachate from the dry operated Class II/III portion in B-19. USEPA tests have shown that liner properties are not impacted by pH at this range. Furthermore, the leachate from the dry operated Class II/III portion in B-19 contains inorganic and low levels of organic constituents at concentrations that have been demonstrated to not affect the liner. The chemical makeup of the leachate is not expected to significantly change due to bioreactor operations.

### LEACHATE MONITORING

Leachate levels are checked daily, and the sumps are checked annually. If there was an unlikely overabundance of leachate detected from the proposed bioreactor, operations would temporarily halt until the waste is allowed to dry.

Furthermore, the quantity of leachate extracted from the LCRS sumps and pumping systems for the Class I and Class II/III portions of the landfill will be recorded at least weekly to evaluate leachate production fluctuations. Leachate will also be sampled and analyzed by a California-certified laboratory and then reported at the frequency and for constituents specified by the Regional Water Board.

In the event of a pump failure, procedures will be in place to assure that backup pumps can be installed in the time frame needed to maintain compliance. Quantities of leachate generated in the Class I portion of the landfill will be monitored. An abrupt and prolonged increase in the quantity of leachate could indicate a breach in the separation liner and infiltration of leachate from the bioreactor. Quantity trends and quality of the leachate will be evaluated to

determine the source of the leachate. Bioreactor operations will be evaluated and possibly discontinued if it is determined that the separation liner is breached.

#### 9. Leachate Generation Rate and Infiltration Through the Separation Liner Overlying the Class I Waste

##### ORIGINAL DESIGN (DRY LANDFILL)

In 1998, the base liner and existing leachate collection and removal system (LCRS) were constructed to allow for Class II/III waste disposal in Landfill B-19. The design capacity of the LCRS is approximately 260,000 gallons per day (gpd) assuming a maximum depth of 12 inches of head on the base liner per regulatory requirements. Computer simulations using the Hydrologic Evaluation of Landfill Performance (HELP) Model, used to estimate the leachate generation (from storm water) and infiltration through the separation liner, estimated that the “worst case” peak daily head (pressure) on the liner would be less than 12 inches. HELP calculated the peak daily production (from storm water) to be 17,209 gpd. The actual leachate collection from the Class II/III LCRS has been much less than in modeling; the maximum monthly leachate collection from the primary LCRS was 9,886 gallons. The leachate collection from the Class I LCRS is less than 1,000 gallons per year.

##### PROPOSED DESIGN (BIOREACTOR LANDFILL)

For the proposed Class II/III bioreactor, aside from storm water, liquids will be added on a regular basis to increase the moisture content of the waste: from 8-20% moisture (dry) to 40-45% moisture (bioreactor). These liquids will be re-circulated leachate or non-hazardous liquids and high moisture content waste from off-site sources. Wastes with high moisture content include: biosolids, oil field brine, treated and untreated wastewater, beverage waste, decaying liquids, winery waste, cannery wastes, and food processing liquids. Only wastes near neutral pH will be accepted. No liquids will be added to the control unit of the proposed Class II/III bioreactor or the inactive Class I portion of Landfill B-19.

The goal of the bioreactor operation is to maintain the moisture content of the waste to the point at which liquid begins to leach out due to gravity (field capacity). Based on experience with other bioreactor projects, field capacity promotes the most rapid decomposition of waste. Leachate will percolate from the upper injection zones to lower portions of the waste in the lower portions of the Class II/III cell and ultimately to the LCRS once the field capacity is reached. Some liquid may find preferential pathways and migrate to the LCRS sooner than field capacity. The maximum amount of liquids which can be delivered from off-site to be injected into the bioreactor unit is approximately 170,000 gpd (based on permitted maximum acceptance of 2,000 tons per day Class II/III waste with about 60 gallons of liquid per cubic yard).

##### *Control Unit*

In 2006, the HELP model was revised for the proposed control unit of the bioreactor, which includes the separation liner that acts as a cover of the Class I waste. The 2006 model used climate data from Bakersfield and was run for a 30-year simulation. The results indicated that for the control unit, the peak daily production rate in the LCRS drainage layer above the separation liner will be 16,700 gpd, causing approximately 0.05 inches of peak head on the separation liner and an average 1.3 gallons per year leachate to the Class I waste. The adequacy of the drainage layer over the separation liner was further evaluated using manufacturer and construction quality assurance. It was concluded that the separation liner can transmit leachate flow to the base liner (and subsequently to the Class II/III sump) without generating excessive head greater than the thickness of the geocomposite drainage layer.

##### *Bioreactor Unit*

Calculations were also done for the bioreactor unit in 2006. The analysis used recharge rates of 3,000 and 10,000 gallons per acre per day (gpad). An assumed figure of 3,000 gpad was used because perching of liquids is possible at 3,000 to 5,000 gpad. An assumed figure of 10,000 gpad of recharge is judged as a “worst case” because of the potential for preferential pathways as liquid migrates through the waste at this rate.

The results indicated that with a “worst case” of 10,000 gpad recharge, peak leachate generation rate is 182,300 gpd (which is less than the design capacity of the LCRS of 260,000 gpd). It is expected that the leachate depth over the base liner system in the bioreactor unit is estimated to not exceed approximately 6.74 inches (peak head).

### *Sump Capacity*

The capacity of flow through the drainage layer in the sump shared by the control and bioreactor units was also analyzed. The results indicated a flow capacity (extraction rate) of approximately 220,000 gpd. Thus, the sump is capable of removing the expected maximum leachate flow rate from the HELP modeling (182,300 gpd).

### SUMMARY

Based on analysis, the amount of leachate from the Class II/III waste to the Class I waste is minimal, and the LCRS and sump are capable of handling the liquids generated by the proposed bioreactor. The design capacity of the LCRS is approximately 260,000 gpd, and the sump flow capacity is approximately 220,000 gpd. The maximum amount of liquids which can be delivered from off-site to be injected into the bioreactor unit is approximately 170,000 gpd (based on permitted maximum acceptance of 2,000 tons per day Class II/III waste with about 60 gallons of liquid per cubic yard).

Modeling estimates a “worse case” peak leachate generation rate of 182,300 gpd which will not generate head exceeding the regulatory 12 inches: the control unit was calculated to have a peak of 0.05 inches on the separation liner, and the bioreactor unit was calculated to have a peak of 6.74 inches on the base liner. However, if this amount is to be exceeded, the sump is still capable of removing liquid. In the past, modeling has over-estimated the amount of leachate produced and leaked through the liner. The “worse case” estimation stated above is a conservative value.

Liquid pumped from the sump shared by the control and bioreactor units will be monitored daily. Liquid will be more difficult to move through the waste as the waste decomposes and compresses. If the leachate infiltration flow rates (recharge rate) increase or becomes too high, perching of liquids may occur which could lead to lateral movement of liquid, reduction in the actual recharge rate, and leachate seeps appearing. KHF will closely monitor these conditions to limit their occurrence.

Should the quantity of leachate pumped from the sump exceed 220,000 gpd or the depth of the sump indicates that greater than 12 inches of leachate head has built up on the liner, addition of liquid to the landfill should cease until liquid can be evacuated and the head reduced. Currently, KHF personnel check the LCRS sumps daily for the occurrence and level of leachate. When leachate amounts reach action levels, it is pumped to a tank. For the bioreactor project, KHF proposes to automate the leachate removal and recirculation systems for the Class II/III sump to be shared by the control and bioreactor units.

The bioreactor will operate until settlement subsides and it is no longer feasible to place additional wastes. Once the Class II/III portion of the landfill is closed (by placement of the final cover), the amount of leachate and subsequently the amount of leakage through the separation liner will diminish.

**Agencies Having Jurisdiction Over the Project/Types of Permits Required**

|  | <b>Kings County (County)</b>                 | <b>Kings County Department of Public Health, Local Enforcement Agency (LEA)</b> | <b>California Integrated Waste Management Board (CIWMB)</b> | <b>California Regional Water Quality Control Board – Central Valley Region (RWQCB)</b> | <b>California Department of Toxic Substances Control (DTSC)</b>             | <b>San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD)</b>   | <b>United States Environmental Protection Agency (EPA)</b>                  |
|--|--|---|---|--|---|---|---|
| <b>Construction (footprint, contours) and operation of bioreactor unit</b> | Modification of the current CUP for the site | Revision of the Solid Waste Facility Permit (SWFP)                              | Concurrence in revision to SWFP                             | Modification of Waste Discharge Requirements (WDRs)                                    | Review pertaining to revised closure of the hazardous waste portion of B-19 | Review pertaining to Authority to Construct (ATC) and Permit to Operate (PTO) | Review pertaining to revised closure of the hazardous waste portion of B-19 |
| <b>Revised closure and closure grades of B-19</b>                          |  | Revision of the SWFP  | Concurrence in revision to SWFP                             |  | Revised closure of the hazardous waste portion of B-19                      |   | Revised closure of the hazardous waste portion of B-19                      |
| <b>Increased daily tonnage</b>   |  | Revision of the SWFP  | Concurrence in revision to SWFP                             |  |   |   |   |
| <b>Saturday operations</b>   |  | Revision of the SWFP  | Concurrence in revision to SWFP                             |  |   |   |   |
| <b>Landfill gas collection and flare system</b>                            |  |   |   |  |   | ATC and PTO   |   |

County - Approved CUP on June 6, 2005.  
 LEA / CIWMB - Approved SWFP on August 23, 2006.  
 RWQCB - Approved WDRs on October 27, 2006.  
 SJVUAPCD – Public noticed on April 9, 2007.

II. DISCRETIONARY APPROVAL ACTION BEING CONSIDERED BY DTSC

- Initial Permit Issuance
- Closure Plan
- Removal Action Workplan
- Permit Renewal
- Regulations
- Interim Removal
- Permit Modification
- Removal Action Plan
- Other (Specify)

Program/Region Approving Project: DTSC - HWMP - Region 1 - Sacramento Cal Center Office

Contact Person: Ruth Cayabyab

Address: 8800 Cal Center Drive

City: Sacramento State: CA Zip Code: 95826 Phone Number: (916) 255-3601

III. LEAD AGENCY ENVIRONMENTAL DOCUMENT RELIED UPON

Lead Agency: Kings County Planning Agency

Title and Date of the Lead Agency Environmental Document: \_\_\_\_\_ Date i) Aug. 2003  
ii) Nov. 2004  
iii) May 2005

Title: i) Initial Study (IS)  
ii) Draft Subsequent Environmental Impact Report (DSEIR)  
iii) Final Subsequent Environmental Impact Report (FSEIR)

State Clearinghouse Number: i)  
ii) 2003091023  
iii) 2003091023

IV. LEAD AGENCY CONCLUSIONS/ DTSC ANALYSIS

The following provides a brief summary of the lead agency's conclusions regarding the environmental impacts of DTSC's proposed project and the DTSC analysis of whether or not the lead agency's environmental document adequately addresses DTSC's project. A page reference to the Lead Agency document is provided for the discussion of each environmental category.

Mitigation measures which are made a part of the project (e.g: permit condition) or which are required under a separate Mitigation Monitoring Plan which either avoid or reduce impacts to a level of insignificance are identified in the analysis within each section

**1. Aesthetics** *Page reference to Lead Agency environmental document:* page 7 of IS

**Summary of Lead Agency Conclusions:**

**No impact.**

The existing privately owned landfill is isolated. It is surrounded by grazing and open space for miles around. The landfill facility can be seen from Highway 41. The nature of the operations and activities will not substantially change from the descriptions in the previous environmental impact reports and documents identified in the Reference section.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

- a. Have a substantial adverse effect on a scenic vista?

**No impact.**

- b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway?

**No impact.**

- c. Substantially degrade the existing visual character or quality of the site and its surroundings?

**No impact.**

- d. Create a new source of substantial light of glare that would adversely affect day or nighttime views in the area?

**No impact.**

**Findings:**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC concurs if the following conditions are incorporated:

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**2. Agriculture Resources**      *Page reference to Lead Agency environmental document:*      page 8 of IS

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**Summary of Lead Agency Conclusions:**

**No impact.**

KHF is located on agricultural land (as a conditional use), and the proposed bioreactor will be operated in a portion of the existing Landfill B-19. No land under the Williamson Act will be affected.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

- a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

**No impact.**

- b. Conflict with existing zoning or agriculture use, or Williamson Act contract?

**No impact.**

- c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural uses?

**No impact.****Findings:**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC concurs if the following conditions are incorporated:

**3. Air Quality**

Page reference to Lead Agency environmental document: page 9 of IS  
Table 1-1 of FSEIR

**Summary of Lead Agency Conclusions:****IS:****Less than significant impact with mitigation incorporation.**

Air emissions will change because of the proposed anaerobic landfill operations. The bioreactor unit will decompose municipal solid waste at a faster rate than the current unit because of the addition of moisture. The increased decomposition rate for the municipal solid waste in the bioreactor unit will result in a significant increase in the production rate of landfill gas. This increase in the rate of production of landfill gas will occur over a shorter timeframe compared to the current (dry) unit. However, the overall amount of landfill gas ultimately produced will be similar for the bioreactor unit and the current unit assuming that the current unit will undergo complete decomposition in the long-term.

Emissions of concern from landfills include methane and non-methane organic compounds (NMOC) which include volatile organic compounds (VOCs). Secondary pollutant emissions from landfill gas flares include undestroyed NMOC, VOCs, nitrogen oxides, sulfur oxides, carbon monoxide, and particulate matter less than 10 micrometers (PM10). The San Joaquin Valley Air Pollution Control District includes Kings County as a “non-attainment” area for ozone and PM10 for federal and state standards.

Under New Source Performance Standards, Landfill B-19 will be required to install a landfill gas control and flare system when the landfill reaches a threshold emission concentration of 50 Mg/yr NMOC. Because of the accelerated landfill gas production for the bioreactor, Chemical Waste Management, Inc. (CWMI) proposes to install a landfill gas control and flare system for the bioreactor project within the first year of bioreactor operations. This will include a gas control system for both the bioreactor unit and control (dry) unit. Simulations were done using a NSPS calculation and EPA model. The results show that under the current “dry cell” conditions, Landfill B-19 may not reach the NMOC of 50 Mg/yr threshold and would therefore not be required to install a gas control system. If no control system is required or installed, the landfill methane and NMOC emissions would enter the atmosphere.

After the gas control system and flare are installed, the control system and surface emissions of methane and NMOC from the landfill must be monitored to demonstrate compliance with title 40 of Code of Federal Regulations Part 60 Subpart WWW. Results of surface emission testing (methane gas) will be used to determine if additional mitigations measures are required.

There will also be increased traffic for the proposed delivery of liquids and additional solid waste to the bioreactor from the existing average of 55 trucks per day. The additional truck traffic from waste deliveries will increase air emissions compared to current conditions. The proposal to add hours of waste acceptance in Landfill B-19 on Saturdays will also create emissions from new trucks to Landfill B-19. This will include both Class II/III waste deliveries and delivery of additional liquid waste for the bioreactor unit. Saturday traffic is planned to be up to the same level as other days of operations, which could result in a peak of 168 trucks per day.

**FSEIR:**

Potentially significant air quality impacts before mitigation will be minimized by landfill design and operational procedures that comply with federal and state regulations and with permit conditions. Because the San Joaquin Valley Air Basin is in non-attainment for the federal and state standards for ozone and PM<sub>10</sub>, the Project is found to have a project-specific and cumulatively significant impact on air quality. After mitigation, this environmental issue/impact is significant and unavoidable.

Emissions of PM<sub>10</sub> in a non-attainment area would result in a Project-specific and cumulatively significant impact. After mitigation, this environmental issue/impact is significant and unavoidable.

Onsite odors would not affect offsite areas. No mitigation is required.

Onsite air emissions would not result in health risks to employees or the public. No mitigation is required.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

- a. Conflict with or obstruct implementation of the applicable air quality plan?

**Less than significant impact with mitigation incorporation.**

- b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

**Less than significant impact with mitigation incorporation.**

- c. Result in cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

**Less than significant impact with mitigation incorporation.**

- d. Expose sensitive receptors to substantial pollutant concentrations?

**Less than significant impact.**

- e. Create objectionable odors affecting a substantial number of people?

**Less than significant impact.**

- f. Result in human exposure to Naturally Occurring Asbestos (see also Geology and Soils, f.).

**Less than significant impact.**

**Findings:**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC **concur**s if the following conditions are incorporated:

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**4. Biological Resources** Page reference to Lead Agency environmental document: page 11 of IS

**Summary of Lead Agency Conclusions:****No impact.**

There will be no biological impacts as cited in the following:

CH2M Hill, "Final Environmental Impact Report, Chemical Waste Management, Inc. Kettleman Hills Hazardous Waste Facility," prepared for Kings County Planning Agency, October 1985.

TRC Environmental Solutions Inc., "Draft Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, July 1997.

TRC Environmental Solutions Inc., "Final Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, November 1997.

TRC, "Addendum to Final Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, February 26, 2001.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

- a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

**No impact.**

- b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

**No impact.**

- c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

**No impact.**

- d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

**No impact.**

- e. Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

**No impact.**

- f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?

**No impact.**

**Findings:**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC concurs if the following conditions are incorporated:

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**5. Cultural Resources** Page reference to Lead Agency environmental document: page 12 of IS

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**Summary of Lead Agency Conclusions:**

**No impact.**

No significant cultural resources have been found at KHF. Information on cultural, paleontological, and historical resources were noted and cited in the following:

CH2M Hill, "Final Environmental Impact Report, Chemical Waste Management, Inc. Kettleman Hills Hazardous Waste Facility," prepared for Kings County Planning Agency, October 1985.

TRC Environmental Solutions Inc., "Draft Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, July 1997.

TRC, "Addendum to Final Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, February 26, 2001.

No items of cultural interest were found at KHF and no impacts are anticipated.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

- a. Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?

**No impact.**

- b. Cause a substantial adverse change in the significance of an archeological resource pursuant to 15064.5?

**No impact.**

- c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

**No impact.**

- d. Disturb any human remains, including those interred outside of formal cemeteries?

**No impact.**

**Findings:**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC concurs if the following conditions are incorporated:

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**6. Geology and Soils** Page reference to Lead Agency environmental document: page 13 of IS  
Table 1-1 of FSEIR

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**Summary of Lead Agency Conclusions:**

**IS:**

**Less than significant impact.**

The impacts of geology and geotechnical hazards have been discussed in detail in the Final EIR. Impacts were determined to be less than significant as it related to geological issues: geology, soils, and seismicity.

**FSEIR:**

**Not significant after mitigation.**

Ground shaking due to seismic activity could result in the possibility of slope instability or failure and/or damage to other landfill structures and systems. The design of the landfill would take into account the peak horizontal ground acceleration (PHGA) from an earthquake on the North Dome Ramp Thrust fault segment (near-field) or San Andreas-slack Canyon-Cajon Pass fault (far-field). Nonseismic geologic conditions will not result in significant impacts to the proposed Project. However, to assure that the potential impacts remain below a level of significance, a mitigation measure will be implemented.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

- a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

**Less than significant impact.**

- Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)

**Less than significant impact.**

- Strong seismic ground shaking?

**Less than significant impact.**

- Seismic-related ground failure, including liquefaction?

**Less than significant impact.**

- Landslides?

**Less than significant impact.**

- b. Result in substantial soil erosion or the loss of topsoil?

**Less than significant impact.**

- c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

**Less than significant impact.**

- d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

**Less than significant impact.**

- e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of water?

**Less than significant impact.**

- f. Be located in an area containing naturally occurring asbestos (see also Air Quality, f.).

**Less than significant impact.**

**Findings:**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC concurs if the following conditions are incorporated:

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|---|--|--|
| <b>7. Hazards and Hazardous Materials</b> | <i>Page reference to Lead Agency environmental document:</i> | page 14 of IS<br>Table 1-1 of<br>FSEIR |
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**Summary of Lead Agency Conclusions:**

**IS:**

**Less than significant impact.**

The waste being delivered to Landfill B-19 will not be hazardous waste. Landfill B-19 is listed as a hazardous materials disposal site because it accepted hazardous waste up until November 1992. Issues related to hazardous materials and the release of hazardous materials were addressed in the following:

CH2M Hill, "Final Environmental Impact Report, Chemical Waste Management, Inc. Kettleman Hills Hazardous Waste Facility," prepared for Kings County Planning Agency, October 1985.

TRC Environmental Solutions Inc., "Draft Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, July 1997.

TRC Environmental Solutions Inc., “Final Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028),” prepared for Kings County Planning Department, November 1997.

TRC, “Addendum to Final Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028),” prepared for Kings County Planning Department, February 26, 2001.

**FSEIR:**

The proposed Project will not create a substantial hazard to public health and safety. Potential health and safety concerns will be minimized by adherence to site procedures, federal and state regulations, and permit conditions for landfill design, operation, and closure/post-closure to a point where impacts are not significant. Thus, mitigation measures will not be required for this environmental issue.

The proposed Project will not create new or different hazards that could require specialized mitigation measures to prevent upset conditions, or new specialized response in the event of an upset condition. Thus, mitigation measures will not be required for this environmental issue.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

- a. Create a significant hazard to the public or the environment throughout the routine transport, use or disposal of hazardous materials?

**No impact.**

- b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

**No impact.**

- c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?

**No impact.**

- d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to public or the environment?

**Less than significant impact.**

- e. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

**No impact.**

**Findings:**

- DTSC **concur** with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.

DTSC concurs if the following conditions are incorporated:

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**8. Hydrology and Water Quality** Page reference to Lead Agency environmental document: page 15 of IS  
Table 1-1 of FSEIR

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**Summary of Lead Agency Conclusions:**

**IS:**

**Less than significant impact with mitigation incorporation.**

The water resources (existing conditions and impact) were discussed in the following:

CH2M Hill, "Final Environmental Impact Report, Chemical Waste Management, Inc. Kettleman Hills Hazardous Waste Facility," prepared for Kings County Planning Agency, October 1985.

TRC Environmental Solutions Inc., "Draft Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, July 1997.

TRC Environmental Solutions Inc., "Final Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, November 1997.

TRC, "Addendum to Final Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, February 26, 2001.

These impact documents addressed the existing system of leachate collection and removal. The proposed anaerobic bioreactor study will place added weight on the liners from the introduction of recirculated leachate and wastewater. Landfill gas production rate will increase in the bioreactor cell, however, the length of time that landfill gas will be generated in the unit will decrease. These landfill gas conditions together with the landfill gas control system proposed would decrease the overall threat to groundwater quality from landfill gas compare to the current Waste Discharge Requirements that do not allow addition of outside moisture to the unit to create bioreactor conditions. The proposed bioreactor cell will require issuance of new Waste Discharge Requirements from the Central Valley Regional Water Quality Control Board.

Groundwater recharge impacts - The KHF is located in an area that has low rainfall (6.12 inches annually) and the current liners prevent groundwater recharge. The KHF area is not a source of drinking water because of the naturally occurring poor quality. The depth of the groundwater is 290+ to 500+ feet below ground surface based on current groundwater monitoring system data. The proposed bioreactor will not increase the current landfill footprint. Impacts on the groundwater recharge are less than significant. The proposed bioreactor cell will be within the currently permitted Landfill B-19 area. Drainage at the landfill is contained; there are no surface waters that are affected by the KHF; the nearest body of water is the California Aqueduct Canal about 3 miles east of KHF.

KHF is not within a 100-year flood zone.

KHF is located inland and is not subject to seiche and tsunamis. It is not affected by mudflow.

**FSEIR:**

**Not significant after mitigation.**

Seepage of leachate from landfill through vadose (unsaturated) zone to groundwater. Landfill gas migration into vadose zone, resulting in dissolution of trace gases into underlying groundwater. The proposed Project will not result in significant impacts to groundwater or surface water quality due to the design of the proposed Project, which will assure that impacts to surface and groundwater resources from the proposed Project will remain below a level of significance.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

- a. Violate any water quality standards or waste discharge requirements?

**No impact.**

- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficient in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

**Less than significant impact.**

- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site?

**No impact.**

- d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site?

**No impact.**

- e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

**No impact.**

- f. Otherwise substantially degrade water quality?

**No impact.**

- g. Place within a 100-flood hazard area structures which would impede or redirect flood flows?

**No impact.**

- h. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

**No impact.**

- i. Inundation by seiche, tsunami or mudflow?

**No impact.**

**Findings:**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC concurs if the following conditions are incorporated:

**9. Land Use and Planning** Page reference to Lead Agency environmental document:

page 17 of IS  
Table 1-1 of FSEIR

**Summary of Lead Agency Conclusions:**

**IS:**

**No impact.**

KHF is an agricultural zoned area and has a conditional use permit that requires amendment for the proposed bioreactor. KHF and the proposed bioreactor are consistent with the General Plan land use designation of solid waste disposal.

**FSEIR:**

**Not significant after mitigation.**

The proposed Project is consistent with the current General Plan designation of the site. Solid waste disposal is a conditional use within the site’s AG-40 zone. The proposed Project will require modification to the existing conditional use permit (CUP) to allow the operation of the bioreactor, to increase the hours of waste acceptance to include Saturday operations from 8:00 a.m. to 6:00 p.m., and to increase the permitted tonnage from 1,400 tons per day (tpd) to 2,000 tpd. No specific mitigation measures are required for land use.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

- a. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

**Less than significant impact.**

- b. Conflict with any applicable habitat conservation plan or natural community conservation plan?

**No impact.**

**Findings:**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC concurs if the following conditions are incorporated:

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**10. Mineral Resources** Page reference to Lead Agency environmental document: page 18 of IS

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**Summary of Lead Agency Conclusions:**

**No impact.**

There are no known mineral resources in the KHF area. No impact to mineral resources was identified in the following:

CH2M Hill, “Final Environmental Impact Report, Chemical Waste Management, Inc. Kettleman Hills Hazardous Waste Facility,” prepared for Kings County Planning Agency, October 1985.

TRC Environmental Solutions Inc., “Draft Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028),” prepared for Kings County Planning Department, July 1997.



**DTSC Analysis of Lead Agency Conclusions:**

Would the project result in:

- a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

**Less than significant impact.**

- b. Exposure of persons to or generation of excessive groundbourne vibration or groundbourne noise levels?

**Less than significant impact.**

- c. A substantial permanent increase in ambient noise levels in the vicinity above levels existing without the project?

**Less than significant impact.**

- d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

**Less than significant impact.**

**Findings:**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC concurs if the following conditions are incorporated:

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**12. Population/Housing/Recreation** Page reference to Lead Agency environmental document: page 21 and 23 of IS

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**Summary of Lead Agency Conclusions:**

**No impact.**

Based on the isolation from nearby towns and people activities and the conformance with the agricultural zoning, no impacts on housing or people are anticipated. This information is also cited in the following:

CH2M Hill, "Final Environmental Impact Report, Chemical Waste Management, Inc. Kettleman Hills Hazardous Waste Facility," prepared for Kings County Planning Agency, October 1985.

TRC Environmental Solutions Inc., "Draft Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, July 1997.

TRC Environmental Solutions Inc., "Final Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, November 1997.

TRC, "Addendum to Final Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, February 26, 2001.

The proposed additional trucks delivering waste to the proposed bioreactor will be made by employees of existing truck companies currently hauling these existing waste streams. The bioreactor operations and increase in solid waste will require five additional employees. Therefore new impacts on housing and population are expected from the additional waste deliveries for the bioreactor.

Also, the proposed landfill bioreactor and the change of daily tonnage and hours will not have an impact on recreational areas/facilities.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

- a. Induce substantial population growth in area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

**No impact.**

- b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

**No impact.**

- c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

**No impact.**

- d. Would the project increase the use of existing neighborhood and recreational parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

**No impact.**

- e. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

**No impact.**

**Findings:**

- DTSC **concur** with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC **concur** if the following conditions are incorporated:

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**13. Public Services** Page reference to Lead Agency environmental document: page 22 of IS

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**Summary of Lead Agency Conclusions:**

**No impact.**

No additional impacts on public services and utilities should occur due to construction and operation of a bioreactor unit in Landfill B-19 because KHF has little or no impacts on these public facilities; reference to the following:

CH2M Hill, "Final Environmental Impact Report, Chemical Waste Management, Inc. Kettleman Hills Hazardous Waste Facility," prepared for Kings County Planning Agency, October 1985.

TRC Environmental Solutions Inc., "Draft Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, July 1997.

TRC Environmental Solutions Inc., "Final Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, November 1997.

TRC, "Addendum to Final Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, February 26, 2001.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a. Fire protection?

**No impact.**

b. Police protection?

**No impact.**

c. Schools?

**No impact.**

d. Parks?

**No impact.**

e. Other public facilities?

**No impact.**

**Findings:**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC **concur**s if the following conditions are incorporated:

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| <b>14. Transportation and Traffic</b> Page reference to Lead Agency environmental document. | page 24 of IS<br>Table 1-1 of<br>FSEIR |
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**Summary of Lead Agency Conclusions:**

**IS:**

**Less than significant impact.**

The maximum daily truck count due to increasing tonnage limit to 2,000 tons per day (tpd), liquid waste deliveries, and daily cover is projected to be 168 trucks. During permitting of landfill B-19 to take Class II/III waste in 1998, the environmental analysis completed for that project analyzed that an increase in traffic of 86 trucks per day through Kettleman City along SR 41 would not result in a reduction in the Level of Service (LOS). At the proposed levels of waste delivery, CWMI estimates that a maximum of 85 trucks per day would travel through Kettleman City. All additional trucks will travel to the site from the south on SR-41 or from Interstate-5. The proposal to add hours of waste acceptance in Landfill B-19 on Saturdays will also increase truck traffic on Saturdays. Saturday traffic is planned to be up to the same level as the other days of operation.

Reference to the following:

TRC Environmental Solutions Inc., "Draft Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, July 1997.

TRC, "Addendum to Final Subsequent Environmental Impact Report, Municipal Solid Waste Disposal Project Kettleman Hills Facility Chemical Waste Management, Inc (State Clearinghouse No. 97042028)," prepared for Kings County Planning Department, February 26, 2001.

**FSEIR:****Not significant after mitigation.**

Project impacts are not significant because they do not result in a reduction of level of service (LOS) below "C," which meets the Kings County General Plan, the Regional Transportation Plan standards, and the Caltrans standard. Therefore, no traffic-related mitigation measures are required for the proposed Project or for cumulative traffic-related impacts. However, to assure that the traffic levels remain below a level of significance, the following mitigation measures will be implemented: KHF will track daily and record the number of waste transported trucks that go to the B-19 landfill. If the number through Kettleman City approaches the maximum allowable limit of 86 truck round-trips per day, some trucks will be rerouted to maintain the allowable limit of waste transport trucks.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

- a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

**Less than significant impact.**

- b. Exceed, either individually or cumulatively, a level of service standard established by the country congestion management agency for designated roads or highway?

**Less than significant impact.**

- c. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

**No impact.**

- d. Result in inadequate emergency access?

**No impact.**

e. Result in inadequate parking capacity?

**No impact.**

f. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

**No impact.**

**Findings:**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC concurs if the following conditions are incorporated:

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**15. Utilities and Service Systems** Page reference to Lead Agency environmental document: page 26 of IS

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**Summary of Lead Agency Conclusions:**

**Less than significant impact.**

The construction and operation of a bioreactor unit in Landfill B-19 should not require new facility construction for water, wastewater, or disposal. The water to be used to supplement moisture in Landfill B-19 will be liquid that would otherwise be disposed of at other wastewater or disposal facilities if the bioreactor project were not implemented. The implementation of a bioreactor unit at the KHF would reduce the needs for wastewater or disposal facilities in the region to the extent that supplemental liquids being applied to the bioreactor unit will not need to be processed at another regional facility. No additional water, wastewater, or landfill disposal needs will be generated by the project. Thus, the project will have no impact on public utilities.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

**No impact.**

b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

**No impact.**

c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

**No impact.**

d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

**No impact.**

e. Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the provider's existing commitments?

**No impact.**

- f. Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs?

**No impact.**

- g. Comply with federal, state, and local statutes and regulations related to solid waste?

**No impact.**

**Findings:**

- DTSC concurs with the Lead Agency findings.*
- DTSC does not concur with the Lead Agency findings.*
- DTSC concurs if the following conditions are incorporated:*

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**16. Cumulative Effects** Page reference to Lead Agency environmental document: page 27 of IS

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**Summary of Lead Agency Conclusions:**

**Less than significant impact with mitigation incorporation.**

Air Quality impacts will occur from enhanced landfill gas generation from the bioreactor and additional trucks traffic for deliveries of wastewater to the bioreactor. The landfill gas generation will be mitigated by the incorporation of a landfill gas control system; however, the increase in landfill gas emissions will include an increase in fugitive methane emissions and non-methane organic compound emissions, which may potentially have a significant environmental impact if not mitigated by a landfill gas control system.

**DTSC Analysis of Lead Agency Conclusions:**

Would the project:

- a. Increase the need for developing new technologies, especially for managing any hazardous or nonhazardous wastes that the project generates?

**Less than significant impact with mitigation incorporation.**

- b. Increase the need for developing new technologies for any other aspects of the projects?

**Less than significant impact with mitigation incorporation.**

- c. Leads to a larger project or leads to a series of projects, or is a step to additional projects? (Examples of DTSC projects include Interim Corrective measures and Removal Actions that are not final remedies for a site or facility)

**Less than significant impact with mitigation incorporation.**

- d. Alters the location, distribution, density or growth rate of the human population of an area?

**Less than significant impact with mitigation incorporation.**

- e. Affect existing housing, public services, public infrastructure, or creates demands for additional housing?

**Less than significant impact with mitigation incorporation.**

f. Be cumulatively considerable on the environments with cumulative adverse effects on air, water, habitats, natural resources, etc.?

**Less than significant impact with mitigation incorporation.**

**Findings**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC concurs if the following conditions are incorporated:

**17. Mandatory Findings of Significance.** Page reference to Lead Agency environmental document: page 27 of IS

**Summary of Lead Agency Conclusions:**

**No impact.**

**DTSC Analysis of Lead Agency Conclusions:**

Could the project potentially unearth any of the following:

- a. Prehistoric archeological resources? **No impact.**
- b. Historic resources? **No impact.**
- c. Ethnographic resources? **No impact.**
- d. Paleontological resources? **No impact.**

**Findings:**

- DTSC **concur**s with the Lead Agency findings.
- DTSC **does not** concur with the Lead Agency findings.
- DTSC concurs if the following conditions are incorporated:

|                                |                  |
|--------------------------------|------------------|
| DTSC Project Manager Signature | Date             |
| Ruth Cayabyab                  | ( 916 ) 255-3601 |
| DTSC Project Manager Name      | Phone #          |

|                                  |                  |
|----------------------------------|------------------|
| DTSC Branch/Unit Chief Signature | Date             |
| James M. Pappas                  | ( 916 ) 255-3572 |
| DTSC Branch/Unit Chief Name      | Phone #          |