
4.0 ENVIRONMENTAL IMPACT ANALYSIS

4.10 UTILITIES -- WASTEWATER

ENVIRONMENTAL SETTING

Existing Conditions

The BLRC generates wastewater in two forms: the liquid that is produced when water percolates through landfill waste, also known as leachate; and the wastewater that is generated from the landfill gas plant phase separator. Both types of wastewater are discharged to the public sanitary sewer system maintained by the City of Los Angeles Public Works Department, as permitted by Industrial Waste Permit W-430638.¹

Leachate Collection and Removal System (LCRS)

Leachate may be composed of liquids that originate from a number of sources, including the initial moisture present in the MSW, reactions associated with the decomposition of waste materials, and external water that enters the MSW, such as precipitation. The Bradley East portion of the BLRC is unlined and has no leachate collection and removal system, as such a system was not required by Federal or State regulations during its history of operation (i.e., 1958-1980). The Bradley West/West Extension portions of the BLRC are equipped with liners and leachate collection and removal systems (LCRS) intended to protect groundwater quality in accordance with Title 23, CCR, Chapter 15 (formerly Subchapter 15) requirements in effect at the time of construction. Leachate collection and removal systems are designed to prevent build-up of leachate over the liner barrier. Within the Bradley West/West Extension portions of the BLRC, radial grading contours divide the base liners into distinct drainage areas. Using a grade of three to eight percent, each drainage area drains into one of six corresponding leachate collection sumps (Sumps A through F) (see Figure 3-2 in Section 3.0 Project Description). Leachate is then removed from the sumps via 12-, 18-, or 24-inch vertical riser pipes and transported to the on-site sewer connection by landfill operations personnel.

The leachate is hard piped to a central tank located on the project site. The leachate is then collected by truck from this central location and transported via truck to a sewer manhole located on the project site. In the event of a spill during this process, the leachate is contained with either dirt berms and/or absorbent. No pretreatment of the leachate is required prior to disposal in the sanitary sewer system. However, an anti-foaming agent is added to the leachate in order to prevent foaming as it is discharged.

Leachate associated with external water sources falls into two categories: working-face contact water and leachate breakout. Contact water is defined as rainwater that falls directly on uncovered MSW in a

¹ Waste Management, Inc., *Bradley Landfill & Recycling Center's Report of Disposal Site Information*, August 2002.

sufficient amount to cause runoff. Contact water is treated as leachate, and is disposed of via a public sewer connection, which is discussed below, in accordance with the Industrial Waste Water Permit.

Under the current operation, the open waste area is kept as small as possible and waste is covered daily to minimize the amount of water that comes in contact with the waste. The operator manages the working face so that storm water is routed away from the working face. Rain that falls on the open face tends to wet the surface of the waste and be absorbed into the waste rather than running off. Using this method, no free flowing contact water is generated; therefore, no contact water control equipment or structures are needed. Free-flowing contact is rare and occurs exclusively during winter months, most commonly during and shortly after a high-intensity rainfall event. When it does occur, free-flowing contact water is covered with sufficient soil to keep the contact water within the waste area, preventing contact with the public.

Leachate breakout occurs when rainwater seeps through the landfill's surface layer and intercepts a low-permeability layer within the MSW. This low-permeability layer commonly consists of old sections of interim or daily cover that are buried in the MSW. Once it reaches this layer, leachate concentrates and seeps laterally towards the surface of a side slope. Leachate breakouts are rare and occur exclusively during winter months, most commonly during and shortly after a high-intensity rainfall event. When they do occur, leachate breakouts are covered with sufficient soil to keep the leachate within the waste area, preventing contact with the public. The occurrence of leachate breakouts can be minimized by removing interim cover prior to filling.²

Stormwater runoff is defined as rain that falls on native soil, interim cover, or daily cover in a sufficient amount to cause runoff, but does not contact open waste or commingle with leachate or contact water. Such stormwater does not enter the public sewer system, but instead is directed towards stormwater drainage courses. For further discussion on the stormwater drainage characteristics of the project site, see Section 4.8 (Hydrology and Water Quality).

Gas Condensate Collection System

When waste is buried in a landfill, an oxygen-free environment is created under the capping soil layer. In this environment, anaerobic (i.e., without oxygen) microorganisms, particularly bacteria, decompose the organic waste and produce gas as a byproduct. The main gases produced through this biodegradation process include methane and carbon dioxide. Methane is the principal component of natural gas, and may therefore be harnessed and utilized as an energy source. The BLRC is equipped with a landfill gas collection and control system designed to control off-site and surface gas migration. As gas is pulled from the heated center of the landfill it cools and the vapor phase moisture in the gas condenses and becomes liquid. This liquid, known as landfill gas condensate, gravity drains to various condensate knock-out tanks along the main landfill gas header system. This condensate has been analyzed and

² *Waste Management, Inc., Bradley Landfill & Recycling Center's Report of Disposal Site Information, August 2002.*

characterized as non-hazardous. Most of it is injected into the flares and combusted or it may be discharged to the City of Los Angeles sanitary sewer system. Another part of the system includes a gas plant designed to treat the gas for off-site transport, sale, and industrial use. Part of the treatment involves additional moisture removal, generating additional landfill gas condensate. This condensate is treated in a phase separator which separates it into a hydrocarbon phase and an aqueous phase. The hydrocarbon phase is accumulated in a storage tank at the gas plant and is periodically transported off-site by Chemical Waste Management, Inc. for disposal as a hazardous waste. The aqueous phase has been analyzed and characterized as non-hazardous wastewater, and is either injected into the flares or discharged to the City of Los Angeles sanitary sewer system as authorized through Industrial Waste Permit W-430638.³

Non-Industrial Wastewater

The BLRC is currently served by wastewater transmission lines maintained by the City of Los Angeles Department of Public Works, Bureau of Sanitation, for the handling of non-industrial domestic wastewater generated onsite.

Regulatory Requirements/Permit Conditions Applicable to the Existing Landfill Operation

Wastewater handling techniques at the BLRC are governed by Waste Discharge Requirements (WDR), Order No. 94-059, issued by the Regional Water Quality Control Board (RWQCB) on June 13, 1994, and Industrial Waste Permits W-430638, issued by the City of Los Angeles Public Works Department. Provisions in the WDR which specifically apply to the handling of wastewater at the project site are listed in Table 4.10-1, below.

Wastewater disposal into the public sanitary sewer system is also governed by the abovementioned Industrial Waste Permit. The BLRC is currently in full compliance with the requirements of the Industrial Waste Permit, as well as the WDR.

Other components of the existing operations on Bradley West/West Extension and Bradley East (i.e., green and wood waste processing, materials recycling, electricity production) do not generate wastewater.

**Table 4.10-1
WDR Wastewater Provisions**

Provision Number	Description
B.4	The discharge of wastes or waste byproducts (leachate, for example) to natural surface drainage courses or to ground water is prohibited.
B.7	No septic tank pumpage of chemical toilet wastes shall be disposed of at this

³ Waste Management, Inc., Bradley Landfill & Recycling Center's Report of Disposal Site Information, August 2002.

	site.
B.11	The spray disposal of any wastewater will not be permitted at this site without waste discharge requirements.
B.13	The existing gas monitoring system and any proposed gas collection system and/or expansion of the systems at this waste management unit shall be designed so that gas condensate is not returned to the waste management unit.
D.12	Any leachate collection and removal systems (LCRS) installed at this site shall comply with Chapter 15, Section 2543 and Section 7 of Order No. 93-062. An adequate supply of replacement parts for any LCRS shall be maintained so that in case of failure of any part of the systems, no adverse water quality effects will result.
D.13	All leachate from this waste management unit shall be intercepted, pumped out when detected, and properly disposed of.
E.2	The effectiveness of all monitoring wells, monitoring devices, and leachate and gas collection systems shall be maintained for the active life of this site. If any of these wells and/or monitoring devices, etc., are damaged, destroyed or abandoned for any reason, the discharger shall provide a substitute to meet the monitoring requirements of this Order. For the purpose of this requirement, "active life" shall mean the entire period during which waste material will be deposited at the site, plus the closure and post-closure maintenance periods.
F.5	This site shall have containment structures which are capable of preventing degradation of waters of the state as a result of additional wastes (or their byproducts such as leachate or landfill gas) discharged to this landfill.
F.8	Bradley Landfill shall maintain an Operation Plan, approved by the Executive Officer, describing the landfill operation which shall include: <ul style="list-style-type: none"> a. A description of current or proposed treatment, storage, and disposal methods; b. Contingency plans for the failure or breakdown of waste handling facilities which could have any potential water quality effects, including notice of any such failure or any detection of waste or leachate in monitoring facilities, to the Regional Board, appropriate local governments, and water users downgradient of the landfill; c. A description of inspection and maintenance programs which will be undertaken regularly during disposal operations, the closure, and the post-closure maintenance period of facilities or equipment which could have any potential water quality effects.
F.9	Bradley Landfill shall submit detailed preliminary and as-built plans, specifications, and descriptions for all containment structures, leachate collection and removal system components, leak detection system components, precipitation and drainage control facilities, gas migration control and recovery systems, and interim covers which will be installed or used at the site. Bradley Landfill shall submit location data and a description of ancillary facilities including roads, waste handling areas, buildings, and equipment cleaning facilities. These plans, specifications, etc., shall be updated as the site is expanded and completed. Preliminary plans and specifications shall be submitted at least 60 days prior to construction, and as-built plans and specifications shall be submitted within 30 days after completion of construction. If the preliminary plans and specifications, and as-built plans, are virtually identical, only change sheets need be submitted in lieu of complete as-built plans.
F.21	This Board considers the property owner to have a continuing responsibility for correcting any problems which may arise in the future as a result of this waste

	discharge, and from gases and leachate that may be caused by infiltration of precipitation or drainage waters into the waste disposal areas, or by infiltration of water applied to this property during subsequent use of the land for other purposes.
<i>Source: California Regional Water Quality Control Board, Waste Discharge Requirements for Waste Management Disposal Services of California, Inc., Bradley Landfill & Recycling Center, Order No. 94-059, File No. 78-27, May 13, 1994.</i>	

ENVIRONMENTAL IMPACTS

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, a significant impact could occur if the Proposed Project would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- 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;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Appendix G of the CEQA Guidelines also contains thresholds pertaining to water supply and solid waste which are not applicable to the Proposed Project.

Project Impacts and Mitigation

Phase I – Transitional Vertical Expansion

Bradley West/West Extension – Ongoing Landfill Operation

Proposed Phase I activities on the Bradley West/West Extension portion of the BLRC would include a transitional 43-foot vertical landfill expansion that would provide additional short term disposal capacity

within the boundaries of the existing landfill. The vertical expansion would occur within approximately 70 acres of the approximately 126-acre landfill refuse footprint located on the Bradley West/West Extension portion of the BLRC. No vertical expansion would occur over the Bradley East portion of the BLRC. The height increase would create an additional 4.7 million cubic yards of disposal capacity and allow the landfill to operate until the currently permitted closure date of April 14, 2007.

Impact 4.10-1: The proposed transitional vertical expansion would increase the amount of MSW accepted and could potentially increase the amount of leachate and gas condensate requiring disposal. (Less Than Significant)

As Phase I of the Proposed Project would not alter the amount of precipitation that would enter the landfill, the amount of leachate in the landfill that is related to precipitation would not change as compared to existing conditions. However, assuming a worst-case scenario in which the BLRC would accept the additional maximum of 5,500 tpd of additional MSW (or a total of 7,000 tpd), Phase I of the Proposed Project would increase the amount of trash that is disposed of in the landfill and therefore could increase the amount of leachate and LFG generated. An analysis was undertaken to estimate potential leachate generation resulting from the additional waste that would be permitted for disposal in the landfill under the proposed transitional vertical expansion. This analysis demonstrated (see Section 4.8, Hydrology and Water Quality, and Appendix I-1 to this EIR) that peak daily leachate production for the vertical expansion, for the 10-year period modeled, would be less than under existing conditions. Leachate would continue to be processed by the existing LCRS in accordance with the provisions of the WDRs described above and as revised to accommodate the Proposed Project. The LCRS would therefore, have the capacity to accommodate the additional leachate that would be produced. In addition, since leachate generation under the proposed transitional vertical expansion would not exceed existing conditions, the amount of leachate discharged in the sewer system would remain the same and would therefore be accommodated by the sewer system already serving the project site. According to the City of Los Angeles Department of Public Works, “there are no existing or known sewer service problems/deficiencies in the project area”.⁴ Therefore, impacts relating to leachate under the proposed project would be less than significant.

By increasing the amount of MSW that would be in the landfill on any given day, Phase I of the Proposed Project could also increase the amount of gas that would be produced by the biodegradation of the MSW. Therefore, more gas would be processed each day by the gas plant, and more gas condensate would be created. As described above, the aqueous phase of the gas condensate is treated as wastewater and is either injected into the flares for combustion or discharged into the City’s sanitary sewer system. The hydrocarbon phase is trucked off-site and handled in accordance with hazardous waste regulations. Phase I of the Proposed Project would, therefore, also have potential wastewater impacts related to the

⁴ Adel Hagekhalil, Division Manager, Wastewater Engineering Services Division, Bureau of Sanitation, letter regarding Bradley Landfill and Recycling Center Project – Request for Sewer Services Information, April 14, 2005.

generation of landfill gas. The additional wastewater would be processed by the gas condensate collection system, according to the provisions of the Industrial Waste Permits and the WDR described above. As discussed in Section 4.4, Air Quality and Section 4.9, Hazards and Hazardous Materials, of this EIR, the landfill gas collection system would have the capacity to accommodate the additional landfill gas that would be produced. The Industrial Waste Water permit for BLRC permits discharge of up to 20,000 gallons per day to the sewer system. Increased processing of gas would not produce gas condensate that would exceed this permitted amount. In addition, the sewer system serving the project site has sufficient capacity to accommodate the wastewater generated by the Proposed Project. Therefore, impacts with respect to increased wastewater attributable to gas condensate would be less than significant.

Mitigation: No mitigation measures are required.

Impact 4.10-2: No wastewater would be generated from the construction of the TS/MRF or the green/wood waste operations that would require disposal. (Less Than Significant)

Transfer Station/MRF Construction

Construction of the proposed 4,000 tpd TS and the 1,000 tpd MRF adjacent to the existing landfill would include the importation of dirt for the foundation of the TS/MRF, associated grading activities, installation of paving and curbing, and erection of the pre-engineered metal building for the TS/MRF. No demolition would be required as part of this phase. Construction activities would not generate wastewater that would be discharged into the public sanitary sewer system. As such, construction-related wastewater impacts would be less than significant.

Bradley East

Proposed Phase I activities on the Bradley East portion of the BLRC would include expansion of the existing green and wood waste operation, and changes to the MRF operation. The proposed change to the green and wood waste operation would be an increase in the permitted operation to 2,500 tpd, an increase of 1,240 tpd over the existing level of operation. Under existing conditions, green and wood waste, which is mainly composed of brush and wood material, is processed in a grinder and converted to wood chips which are used as fuel for electricity and steam generation at an off-site facility, as well as for erosion control purposes. Material from the green and wood waste operation is processed within 48 hours and is transported to the consumer within seven days of delivery. Therefore, unlike the MSW described above, waste products from this portion of the BLRC are not deposited in the landfill and covered for an extended period of time. As such, the gradual processes of gas production from biodegradation and leachate collection do not occur. Increasing the amount of green and wood waste processed at this facility would, therefore, not result in the generation of any additional wastewater, since wastewater is not produced from these activities under existing conditions. In addition, rain water falling on green and wood waste at the project site is absorbed by the waste material and generally does not result in free-flowing contact water that needs to be treated. In the rare event that free-flowing contact water is generated in the greenwaste area, it is covered with soil or otherwise contained with temporary earthen

berms or sandbags to keep the water within the lined area and prevent contact with the public. Likewise, recyclable materials are not stored in the landfill, but are shipped off-site. Therefore, the proposed changes to existing MRF operations would not have wastewater impacts.

Mitigation: No mitigation measures are required.

Impact 4.10-3: Phase I of the Proposed Project would marginally increase the amount of non-industrial wastewater generated on the project site. (Less Than Significant)

Phase I of the Proposed Project would also increase the number of daily employees at the project site by 28 employees (nine employees at Bradley West/West Extension, and 19 employees at Bradley East). The 28 additional employees could cause a marginal increase in the amount of non-industrial wastewater generated at the project site, which would not be expected to exceed the capacity of existing on-site wastewater facilities. Wastewater impacts in this respect would also be less than significant.

Mitigation: No mitigation measures are required.

Phase II – Transfer Station/Materials Recycling Facility

Impact 4.10-4: The amount of leachate generated by the landfill during and after closure activities would gradually decrease producing a net beneficial impact on the local wastewater system. (Less Than Significant)

Landfill Closure

Phase I of the Proposed Project would involve the construction of a 4,000 tpd TS and a 1,000 tpd MRF adjacent to the existing landfill. As the landfill capacity is depleted, the applicant proposes to transition the existing landfill operation into a TS/MRF operation where MSW and recyclable materials would be received, sorted, consolidated, and transported to other regional landfills and recycled materials processing facilities. Unlike the MSW that is received by the existing landfill, the MSW that would be processed by the proposed TS would not be deposited into the landfill and covered for an extended period of time. As such, the gradual processes of gas production from biodegradation and leachate collection would not be associated with this phase of the Proposed Project. Furthermore, after MSW collection and disposal is discontinued and the landfill is closed, the amount of leachate that will be produced by the landfill will gradually decrease as well. Therefore, this component of Phase II of the Proposed Project would in fact have net beneficial impacts on the local wastewater system, as less wastewater would be

produced as compared to existing conditions. It should also be noted that the importation of dirt to provide for the four-foot soil cap and the installation of landscaping would not generate wastewater.

Mitigation: No mitigation measures are required.

Impact 4.10-5: Small amounts of wastewater would be generated during operation of the new TS/MRF from incidental liquid. (Less Than Significant)

Transfer Station/MRF Operations

As described above, the MSW that would be processed by the proposed TS/MRF would not be deposited into the landfill and covered for an extended period of time. The MSW would instead be received, sorted, consolidated and transported to other regional landfills and recycled materials processing facilities. As such, a leachate collection system would not be installed at the proposed facilities, nor would a gas collection system. Any incidental liquid in the MSW or recyclables received at the facility would drain onto the TS/MRF or loading tunnel floor. This small amount of contact water would be collected, sent through a clarifier for reduction of oil and grease and sediments, and then discharged into the sanitary sewer system. A permit will be required from the City of Los Angeles Department of Public Works prior to discharge. The small amount of wastewater generated by this facility will be more than off-set by the reduction in discharges from the landfill. Therefore, no net wastewater impacts would occur.

Mitigation: No mitigation measures are required.

Impact 4.10-6: The increase of employees during Phase II of the Proposed Project would generate a marginal increase in non-industrial wastewater. (Less Than Significant)

Lastly, upon completion of Phase II of the Proposed Project, 87 additional employees would occupy the BLRC on a daily basis. However, at certain times during the landfill closure process, up to 117 additional employees may occupy the BLRC. The 117 additional employees could cause a marginal increase in the amount of non-industrial wastewater generated at the project site, which would not be expected to exceed the capacity of existing on-site wastewater facilities. Wastewater impacts in this respect would also be less than significant.

Mitigation: No mitigation measures are required.

CUMULATIVE IMPACTS

Industrial Waste Discharge permits, which allow for the discharge of wastewater to the City's sanitary sewer system, are issued on a case-by-case basis during which a project's expected wastewater generation is compared to the sewer system's available capacity. The sewer lines serving the project site presently have excess capacity over peak flows that can handle expected flows from the Proposed Project and related projects that utilize the same lines. As such, implementation of the Proposed Project would not combine

with any other sources of industrial wastewater discharge to exceed the capacity of the City of Los Angeles sanitary sewer system, and cumulative impacts would thus be less than significant.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Wastewater impacts for the Proposed Project would be less than significant.