

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0077

WASTE DISCHARGE REQUIREMENTS
FOR
SOUTH KERN INDUSTRIAL CENTER, LLC
FOR
OPERATION
BIOSOLIDS STORAGE AND COMPOSTING FACILITY
KERN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. South Kern Industrial Center, LLC, a California Limited Liability Company (hereafter Discharger), plans to construct and operate a 100-acre composting facility that uses, as a feedstock, treated municipal sewage sludge meeting the requirements specified in Part 503 in Title 40 of the United States Code of Federal Regulations (hereinafter referred to as biosolids). The Discharger submitted an application form (Joint Technical Document) on 22 January 2004, and supplemental information to complete the report of waste discharge on 13 July 2004, 8 October 2004, 4 November 2004, 19 November 2004, and 22 November 2004. The proposed composting facility will be located in southwestern Kern County approximately 18 miles southwest of Bakersfield and 12 miles east of Taft on South Lake Road, in Sections 13 & 24, T32S, R25E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order.
2. When completed, the proposed 100-acre composting facility will be enclosed by a five-foot high berm. The proposed facility includes a 20-acre primary and secondary aerated static piles area; a 2-acre receiving building/mixing equipment area; 5-acre daily feedstock, additive storage and preparation areas; 5-acre on-site finished product areas; a maximum 4.0-acre process water basin, and a maximum of 1.5-acre storm water retention basin, as shown in Attachment B, which is incorporated herein and made part of this Order. The proposed composting unit has not been constructed and no wastes have been accepted. The proposed facility will be comprised of Assessor's Parcel Numbers (APN) 220-110-52, 53, 54, 55 and 56.
3. In July 1997, Title 27, California Code of Regulations (CCR), Section 20005 et seq. (Title 27 CCR) became effective. Title 27 CCR superseded Chapter 15 for the discharge of nonhazardous wastes to land.
4. The U.S. Environmental Protection Agency (USEPA) has promulgated biosolids reuse regulations in 40 CFR Part 503, *Standards for the Use or Disposal of Sewage Sludge*, 19 February 1993, which establishes management criteria for protection of ground and surface

waters, set application rates for heavy metals, and establish stabilization and disinfection criteria for biosolids reuse. These waste discharge requirements are consistent with the federal regulations.

5. The Regional Board is utilizing the standards contained in 40 CFR Part 503 as guidelines in establishing this Order, but the Regional Board is not the implementing agency for 40 CFR Part 503. The Discharger may have permitting, reporting, and other compliance responsibilities with the USEPA. Compliance with this Order does not confer either full or partial compliance with 40 CFR Part 503.
6. The proposed finished compost product would not exceed the pollutant limits identified in 40 CFR Part 503.13(a)(3), satisfies Class A pathogen requirements as required in 40 CFR Part 503.32(a), and satisfies vector attraction reduction requirements, as defined in 40 CFR Part 503.33(a) (hereafter exceptional quality compost). Processed compost that does not meet the exceptional quality compost specifications will be reprocessed.
7. According to 40 CFR Part 503, the exceptional quality compost can be sold or given away in bags, boxes, or a vehicle or trailer with a load capacity of one metric ton (1.1 tons) or less and it can be applied in bulk to agricultural land, forest land, reclamation sites, lawns, and home gardens.
8. The California Integrated Waste Management Board (CIWMB) has adopted regulations governing the composting of green material, animal material, sewage sludge and municipal solid waste under Title 14, Division 30, Chapter 3.1. There are significant differences in the scope, authority and focus of the CIWMB's regulations governing composting and the requirements necessary, under this Order, for the protection of water quality. The CIWMB regulations for green waste composting are administered by the Local Enforcement Agency under a Compostable Materials Handling Facility Permit pending concurrence by the CIWMB.
9. The Discharger's proposed average daily input capacity of biosolids and bulking agents for the composting facility is approximately 1,860 wet tons per day (680,000 tons per year).

SITE DESCRIPTION

10. The measured hydraulic conductivity of the native soils underlying the Unit ranges between 1.6×10^{-4} and 3.3×10^{-6} cm/sec.
11. The closest Holocene fault is Pleito Fault, approximately 10.5 miles to the southeast. The maximum probable earthquake for a 100-year event along this fault is estimated to be approximately 6.5 on the Richter scale. The maximum credible acceleration for the site is 0.26 g.

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12. Land uses within 1,000 feet of the facility are agricultural and heavy industrial.
13. The climate in the area is semi-arid, with hot, dry summers and cool winters. The facility receives an average of 5.95 inches of precipitation per year as measured at Station No. 045338 located in Maricopa, California, approximately 10 miles from the facility. The annual pan evaporation rate is approximately 108 inches as measured at the Lost Hills Station.
14. The 100-year, 24-hour precipitation event is estimated to be 2.37 inches, based on Kern County Planning Department data collected at Buena Vista Aquatic Recreation Area.
15. The waste management facility is within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number: 060075 1475 B.
16. There are three monitoring wells belonging to United States Geological Survey (USGS) and one industrial supply well owned by Baker Petrolite within one mile of the site. No surface springs or other sources of groundwater supply have been observed.
17. State Water Resources Control Board Order No. 97-03-DWQ, National Pollutant Discharges Elimination System (NPDES), General Permit No. CAS000001, specifies waste discharge requirements for discharges of stormwater associated with industrial activities, excluding construction activities, and requiring submission of a Notice Of Intent by industries to be covered under the permit. Waste disposal for storage and treatment, including composting facilities, is considered an industrial activity requiring submission of a Notice Of Intent for coverage under the general permit if stormwater is to be discharged off-site.
18. The Discharger must comply with the State Water Resources Control Board's General Storm Water Permit for industrial facilities and must prepare a *Storm Water Pollution Prevention Plan* and *Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWQ, or submit a *Notice of Non-Applicability* form with sufficient evidence that all stormwater will be retained without discharge from land owned or controlled by the Discharger.
19. For new construction greater than one acre, the Discharger must comply with the requirements set forth in State Water Resources Control Board Order No. 99-08-DWQ for storm water discharges associated with construction activity. This permit is needed prior to commencement of construction activities.

SURFACE AND GROUND WATER CONDITIONS

20. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
21. Surface drainage is toward the Buena Vista Lake Bed in the Kern Delta Hydrologic Area 557.10 of the Tulare Lake Basin.
22. The facility is on the floor of the southern San Joaquin Valley. The designated beneficial uses of Buena Vista Aquatic Recreation Area, as specified in the Basin Plan, are agricultural supply, industrial service and process supply, water contact and non-contact water recreation, warm fresh water habitat, preservation of rare, threatened and endangered species, and groundwater recharge.
23. The first encountered groundwater in a perched zone is about six to twelve feet below the native ground surface. Groundwater elevations range from 311 feet MSL to 317 feet MSL. The groundwater is unconfined.
24. Monitoring data indicates background groundwater quality in the perched zone has an electrical conductivity (EC) ranging between 8,600 and 22,000 micromhos/cm, with total dissolved solids (TDS) ranging between 6,100 and 19,000 mg/L.
25. Groundwater in a regional unconfined aquifer occurs at a depth of 36 feet (281 feet MSL) below ground surface.
26. Analytical results from regional aquifer indicate that the groundwater has an electrical conductivity of 2,800 micromhos/cm, a total dissolved solids concentration ranging between 2,700 mg/L and 3,100 mg/L, and a chloride concentration ranging between 20 mg/L and 43 mg/L. The groundwater from the regional aquifer exceeds California Secondary Maximum Contaminant Level (MCL) of 500 mg/l for Total Dissolved Solids. However, the samples do not exceed the California Secondary Maximum Contaminant Level (MCL) of 250 mg/L for chloride.
27. The regional groundwater flows northward toward the Buena Vista Lake Bed based on regional groundwater data.
28. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal, agricultural, and industrial supply.

COMPOSTING METHODS

29. Biosolids processed at the facility will originate from wastewater treatment plants regulated by orders adopted by regional boards both outside and within Region 5. The biosolids will be tested by the generator prior to shipping to the facility. Only biosolids that meet the requirements for nonhazardous biosolids specified in Title 22, California Code of Regulations (CCR), Division 4.5, Chapter 11, Article 3, will be accepted.
30. The treated biosolids will be mixed on-site with bulking agents consisting of agricultural byproducts (manure, almond hulls, orchard trimmings, etc.), yard residues (grass clippings, leaves, etc.), and pre-consumer wood wastes. The biosolids-to-bulking agent ratio will be approximately 1.5:1, but can vary to as much as 3:1 depending on the anticipated end use of the product.
31. The Discharger will employ a composting method called the static aerated pile method, which is prescribed in 40 CFR Part 503, Appendix B, Section 1. Using the static aerated pile composting method, the temperature of the compost mixture is maintained at 55 °C or higher for three days. Air drawn negatively through the pile provides the aerobic conditions required for the compost process and the control of odors. Organic liquids are not used as a material feedstock for static aerated pile composting. The composting period generally requires 30 to 60 days to complete.

WASTE CLASSIFICATION

32. The Discharger proposes to accept wastes for composting that will consist of treated biosolids, mixed with bulking agents which include agricultural byproducts (manure, almond hulls, etc.), water treatment residues and yard residues (grass clippings, leaves, etc.). Through composting, these nonhazardous decomposable residuals from municipal wastewater treatment facilities, agricultural, commercial, and residential sources are intended for recycling as a soil amendment. These wastes may be classified as nonhazardous solid wastes in accordance with Title 27 CCR Section 20220(a).
33. Deionized water Waste Extraction Tests conducted on background native soils from the surface to a depth of five feet did not detect concentrations of persistent and bioaccumulative metals above detectable limits.
34. The State Board has adopted a body of regulations, under Title 27 CCR, consisting of requirements, waste classifications, and waste management unit (Unit) classifications designed to provide protection to the beneficial uses of waters of the state for projects involving the discharge of solid waste to land for treatment, storage, or disposal at landfills, surface impoundments, waste piles, and land treatment units. Under this scheme, a

composting operation that does not involve the processing of hazardous constituents would be a Class II waste pile for the treatment and storage of solid waste.

35. The feedstock (see Finding Nos. 29, 30 and 32) and some of the additives for composting are classified as nonhazardous solid waste or designated waste as defined in Title 27. Biosolids contain metals and high concentrations of nitrogen compounds that could cause levels of nitrates in surface or ground water to exceed applicable water quality objectives, salts that could cause dissolved solids to exceed objectives, and microorganisms, including disease-causing pathogens. Therefore, biosolid composting operations would normally be regulated under the Title 27 regulations as a Class II waste pile that treats designated waste. Therefore, this order classifies the site as a Class II waste pile in accordance with Title 27.
36. Inasmuch as many of the wastes discharged for storage and treatment at a biosolid composting facility would be classified as “designated” wastes, waste management units for storage or treatment of such wastes would have to satisfy relatively stringent containment requirements. These would include requirements for liners designed to prevent wastes or leachate from migrating from the waste management unit to waters of the state. Requirements for discharges of “designated” waste also would entail comprehensive monitoring of groundwater and the vadose zone.
37. Site specific characteristics, including low rainfall (see Finding No. 13), poor quality groundwater (see Finding No. 24), the manner in which waste will be handled (static aerated piles, see Finding No. 31), and the collection and recycling of all storm water and collected leachate, will help to protect the groundwater from degradation and the loss of designated beneficial uses. In addition, the Discharger’s design includes the construction of a low hydraulic conductivity liner system for incoming feedstock storage area(s), treatment (composting) area(s), and finished product storage area(s) to minimize downward flow to protect groundwater; the construction of a storm water retention basin that can accommodate runoff from a 25-year, 24-hour storm event to protect surface water; the construction of a lined process-water basin that will store liquid wastes such as truck wash wastewater, leachate, condensate, and any storm water that has come in contact with the feedstocks, composting piles, or finished compost to protect surface water and groundwater (see Finding Nos. 46, 47 and 48). This Order requires quarterly groundwater monitoring and annual monitoring of the surface impoundments.
38. Based on the site specific characteristics (see Finding No. 37), the threat to the beneficial uses of surface and ground water posed by the proposed composting operation is not commensurate with the stringent monitoring, siting, construction, and design standards applicable to a Class II waste pile, under the Title 27 regulations, so long as it meets, and continues to meet, the requirements of this Order.

39. Under Title 27 CCR, Division 1, Subdivision 1, Chapter 3, Subchapter 2, Article 2, Section 20200(a)-(a)(1), the State Board has declared that “[*For wastes that cannot be discharged directly to waters of the state, the waste classification system under Title 27*] shall provide the basis for determining which wastes may be discharged at each class of Unit. Waste classifications are based on an assessment of the potential risk of water quality degradation associated with each category of waste.”
40. However, Title 27 CCR Section 20200(a)(1) allows the Regional Board to make a finding that “... a particular waste constituent or combination of constituents presents a lower risk of water quality degradation than indicated by classification according to this article.” The Title 27 regulations do not provide for a waste pile of lower classification than Class II. However, based on a review of the Discharger’s Report of Waste Discharge and on the lower risk to water quality cited in Finding No. 38 of this Order, the Regional Board finds, pursuant to Title 27 CCR Section 20200(a)(1), that the operation is not subject to the Class II waste pile liner requirements contained in the Title 27 regulations so long as the operation continues to meet the requirements of this Order.
41. Composting operations may produce residual wastes, such as leachate, precipitation that has come in contact with composting material, and escaped or fugitive raw material and compost. The residual wastes, if any, would be collected in a lined retention pond and may then be recycled on to the aerated static piles for moisture control during the composting process. The discharge rate of residual waste from composting operations is unknown. Proper construction and management of the recycling operation and climatic conditions should minimize such residual waste generation.
42. As a soil amendment, the finished composted material will be exempt from Title 27 CCR, provided best management practices are established for its use pursuant to Title 27 CCR Section 20090(f).
43. The Discharger proposes to construct a lined process-water surface impoundment that will store liquid waste, such as truck wash wastewater, leachate, condensate, and any stormwater that has come in contact with the biosolids.

GROUNDWATER MONITORING

44. This Order prohibits the degradation of groundwater, and requires the submission of a work plan for the installation of a groundwater detection monitoring system, installation of the groundwater detection monitoring system in accordance with Title 27 CCR, and submission of a water quality protection standard based on background water quality pursuant to Title 27 CCR in accordance with specified dates and prior to the acceptance of wastes for composting.

45. In accordance with Section 20415(b)(1)(B) of Title 27 CCR, both the regional aquifer and the perched groundwater zone need to be monitored.

CONSTRUCTION

46. The primary and secondary aerated static pile composting areas and other pad areas will have a liner system consisting of the following in ascending order:
- a. A minimum six-inch thick layer of scarified and recompactd (to 95% relative compaction) soil;
 - b. LCRS (piping or blanket);
 - c. A minimum eight inches thick aggregate base layer;
 - d. A minimum four inches thick asphaltic concrete layer.
47. The feedstock storage areas where the wastes would be processed or stored will have a liner system consisting of the following in ascending order:
- a. A minimum six-inch thick layer of scarified and recompactd (to 95% relative compaction) soil;
 - b. LCRS (blanket-type)
 - c. A minimum six inches thick aggregate base layer; and
 - d. A minimum eleven inches thick Portland cement concrete layer that will be used as a working surface.
48. The process-water impoundment will have a composite liner system consisting of the following in ascending order:
- a. Engineered Subgrade: Prepared subgrade layer will be 6 inches thick with a gradation of at least 80 percent soils finer than #60 sieve (0.250 mm) with a 1-inch maximum particle size, compacted to 95 percent;
 - b. GCL (equivalent to a clay layer meeting 1×10^{-6} cm/sec): Needle punched GCL with a uniform layer of granular sodium bentonite encapsulated between a woven and nonwoven geotextile, with a maximum permeability of 5×10^{-9} cm/sec.;
 - c. FML: 40-mil thick, smooth-sided LLDPE geomembrane (double-sided textured for side slopes);

- d. LCRS: Geocomposite geonet (double sided geotextile/geonet);
 - e. FML: 40-mil thick, smooth-sided LLDPE geomembrane (double-sided textured for side slopes);
 - f. Geotextile: 16 oz/sq. yd. nonwoven cushion geotextile; and
 - g. A maintenance working surface layer installed in accordance with a design plan approved by the Executive Officer prior to construction.
 - h. Asphaltic Concrete (minimum of 4 inches).
49. The wastewater from the process water impoundment may be used on compost piles for moisture conditioning.
50. The Discharger proposes to construct an unlined stormwater retention basin for rainwater that has not come in contact with biosolids. The water from this basin can be used for landscaping irrigation, dust control and compost moisture conditioning.

CEQA AND OTHER CONSIDERATIONS

51. The Kern County Board of Supervisors certified the final environmental impact report for the facility on 22 October 2002, and filed a Notice of Determination on 30 October 2002 in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and CEQA guidelines (14 CCR Section 15000 et seq.). The Regional Board considered the environmental impact report and incorporated mitigation measures from the environmental impact report into these waste discharge requirements designed to prevent potentially significant impacts to the environment and to water quality. The potential environmental impacts and associated mitigations regarding the composting project and where the pertinent mitigation measures are addressed in these Waste Discharge Requirements are identified as follows:
- a. Deterioration of ground water quality (see Prohibitions A.4, and Construction Specifications D.3, 4, 5, 6 and 7).
 - b. Alteration of surface water quality (see Prohibitions A.5, Discharge Specification B.2, and Construction Specifications D.7).
 - c. Creation of any health hazard and potential health hazard (see Facility Specifications C.2, C.13, C14, C15).
 - d. Substantial air emissions or deterioration of ambient air quality (see Facility Specifications C.8).

- e. The creation of objectionable odors (see Facility Specifications C.9).
- f. Deterioration to existing fish or wildlife (see Facility Specifications C. 16).

52. This order implements:

- a. *The Water Quality Control Plan for the Tulare Lake Basin, Second Edition*;
- b. The prescriptive standards and performance goals of Chapters 1 through 7, Subdivision 1, Division 2, Title 27, of the California Code of Regulations, effective 18 July 1997, and subsequent revisions.

53. The USEPA is the enforcing agency for 40 CFR Part 503. The Discharger needs to comply with all applicable provisions of 40 CFR Part 503.

54. Section 13267(b) of California Water Code provides that in conducting an investigation specified in subdivision (a), the Regional Board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The monitoring and reporting program required by this Order and the attached Monitoring and Reporting Program No. R5-2005-0077 are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

PROCEDURAL REQUIREMENTS

- 55. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
- 56. The Regional Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
- 57. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

58. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Sections 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.waterboards.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 that the South Kern Industrial Center, LLC, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of 'hazardous waste' is prohibited. For the purposes of this Order, the term 'hazardous waste' is as defined in Title 23, California Code of Regulations, Section 2510 et seq.
2. The discharge and storage of biosolids, feedstocks, and other additives and wastes at locations other than the designated locations within the composting Unit specifically designed for their containment is prohibited.
3. The landfilling of any waste at the facility is prohibited.
4. The discharge shall not cause the release of pollutants, or waste constituents in a manner that could cause a condition of nuisance, degradation, contamination, or pollution of surface or ground water.
5. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.
6. The discharge shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of the Unit if such waste constituents could migrate to waters of the State — in either the liquid or the gaseous phase — and cause a condition of nuisance, degradation, contamination, or pollution.
7. Discharge of wastes or composting, stockpiling, storing, or placing raw composting materials or compost within 100 feet of surface waters or surface water drainage courses is prohibited.

8. Composting, stockpiling, or otherwise accepting raw (untreated) sewage, septic tank pumpings, incinerator ash, grit or screenings generated from primary treatment of domestic sewage, is prohibited.
9. Selling or providing a finished product other than exceptional quality compost, as described in Finding Nos. 6 and 7, is prohibited.
10. Discharge of wastes or liquids from surface impoundments to off-site property is prohibited.
11. The ponding of water around waste storage areas, between compost aerated static piles, adjacent to interior roads, and within the composting Unit(s) precipitation runoff collection channels, is prohibited.

B. DISCHARGE SPECIFICATIONS

1. Only nonhazardous feedstock wastes shall be discharged to the composting Unit and stockpile areas of the Unit. Only residual wastes as described in Finding Nos. 29, 30, 32 and 41 shall be discharged to the composting unit, stockpile area of the unit.
2. The discharge shall remain within the designated disposal area at all times.
3. The annual input/capacity of biosolids and bulking agents for composting shall not exceed 670,000 wet tons.
4. Composting shall be limited to composting the sewage biosolids and bulking agents as described in Finding Nos. 29, 30 and 32.
5. The wastewater removed from the process water impoundment may be recycled on compost piles for moisture conditioning or appropriately disposed of in accordance with the liquid's waste classification. The Discharger may not use process wastewater for dust control over unlined areas.
6. Solids, which accumulate in the surface impoundment(s), shall be periodically removed to maintain minimum freeboard requirements and to maintain sufficient capacity for waste pile pad runoff of residual wastes and stormwater.
7. Materials that are screened out of the finished compost, commonly referred to as 'overs', and that are not recycled into the compost, shall be disposed of at an appropriate waste management unit.

C. FACILITY SPECIFICATIONS

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.
2. Public contact with waste and compost materials shall be precluded through such means as fences, signs, and other acceptable alternatives.
3. The Discharger shall immediately notify the Regional Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
4. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control (biosolids aerated static piles and unpaved roads) and construction.
5. The Discharger may use water removed from an unlined stormwater retention basin for landscaping irrigation, dust control, and compost moisture conditioning.
6. The duration of finished product storage on-site shall not exceed six months.
7. Airborne particles from compost and composting materials shall not be visibly emitted from the composting facility.
8. Objectionable odors originating at the composting facility shall not be perceivable beyond the limits of the facility property boundary.
9. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with these waste discharge requirements.
10. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.
11. The Discharger shall maintain a *Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWQ, or retain all storm water on-site.
12. No composting or storage of compost shall occur within 100 feet of any domestic water well.
13. The on-site water supply well shall be posted “not for domestic consumption”

14. Surface impoundments and composting operations shall be managed to prevent breeding of mosquitoes, flies, and other vectors.
15. The Discharger shall submit a plan and monitoring schedule for the periodic inspection of the Portland cement concrete layer of the feedstock area and other pad areas liner system (see Construction Specification D. 4.) to the Executive Officer for review and approval prior to the acceptance of any wastes or feedstocks for composting or storage. Any cracks or damage to the Portland cement concrete layer that could allow fluids to pass through shall be repaired within 30 days, and a report of the repairs shall be submitted to the Regional Board within 15 days of completion of the repairs.

D. CONSTRUCTION SPECIFICATIONS

1. The Discharger shall submit, for Executive Officer review and approval, either prior to or concurrent with, submission of the Construction Quality Assurance Plan as per Construction Specification D.2.a. below, a Design Report for the proposed unit that includes detailed plans, specifications, and descriptions for the liner components. The Design Report shall incorporate design rationale, with supporting calculations, for all components of the proposed containment system.
2. The Discharger shall submit, for Executive Officer review and approval at least **90 days prior** to construction, design plans and specifications for the unit that include the following:
 - a. A Construction Quality Assurance Plan that meets the requirements of Title 27 CCR Section 20324; and
 - b. A geotechnical evaluation of the area soils, evaluating their use as the base layer; and
 - c. A grading and drainage plan to prevent ponding and infiltration.
3. The primary and secondary aerated static pile composting areas and other pad areas shall be constructed with a liner system comprised of the following components, in ascending order:
 - a. A minimum six-inch thick engineered soil foundation layer that shall be scarified and re-compacted to 95% of maximum dry density and within $\pm 2\%$ of optimum moisture content;
 - b. A minimum eight-inch thick aggregate base layer; and

- c. A minimum four-inch thick asphaltic concrete layer, which shall be graded and maintained to provide a uniform, smooth working surface free of pockets and depressions, and to inhibit the vertical migration of wastes.

A series of aeration/air distribution lateral pipes and gates shall be imbedded within the liner system, which shall serve as the liner's leachate collection and removal system.

4. The feedstock area shall be constructed with a liner system comprised of the following components, in ascending order:
 - a. A minimum six-inch thick engineered soil foundation layer that shall be scarified and re-compacted to 95% of maximum dry density and within $\pm 2\%$ of optimum moisture content;
 - b. A minimum six-inch thick aggregate base layer;
 - c. A minimum eleven-inch thick Portland cement concrete layer, which shall be graded and maintained to provide a uniform, smooth working surface free of pockets and depressions, and to inhibit the vertical migration of wastes; and
 - d. The top surface of the liner system shall be sloped, and shall serve as the blanket type leachate collection and removal system.
5. New surface impoundments shall have a liner system consisting, at a minimum, of the following, in ascending order:
 - a. A minimum six-inch thick engineered soil foundation layer that shall be scarified and re-compacted to 95% of maximum dry density and within $\pm 2\%$ of optimum moisture content;
 - b. A geosynthetic clay liner (GCL) that shall exhibit appropriate strength characteristics to accommodate stresses associated with specific landfill design parameters, with particular attention to interface, long-term creep shear, and bearing capacity;
 - c. A secondary minimum 40-mil thick linear low density polyethylene (LLDPE) smooth-sided geomembrane (double-textured for side slopes);
 - d. A geocomposite drainage layer that shall be of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the Unit;
 - e. A primary minimum 40-mil thick linear low density polyethylene (LLDPE) smooth-sided geomembrane (double-textured for side slopes);

- f. A minimum sixteen-ounce-per-square yard (16 oz/yd²) nonwoven cushion geotextile;
 - g. A maintenance working surface layer installed in accordance with a design plan approved by the Executive Officer prior to construction.
6. Surface impoundments shall be designed, constructed, and operated to maintain a freeboard of two (2) feet plus the rainfall and residual waste produced from a 100 year, 24 hour precipitation event or 2 feet plus the 100 year wet season precipitation, whichever is greater. At no time shall the freeboard of an impoundment be less than two feet.
 7. Surface impoundments shall be designed, constructed, and maintained to prevent scouring and/or erosion of the liner(s) and other containment features at points of discharge to the impoundment and by wave action at the waterline.
 8. The Discharger may propose changes to the liner system design prior to construction, provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed liner system results in the protection of water quality equal to or greater than the design prescribed by this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation and approval by the Regional Board.
 9. Construction shall proceed only after all applicable construction quality assurance plans have been approved by Executive Officer.
 10. Following the completion of construction of a Unit or portion of a Unit, and prior to discharge onto the newly constructed liner system, the final documentation required in Title 27 CCR Section 20324(d)(1)(C) shall be submitted to the Executive Officer for review and approval. The report shall be certified by a registered civil engineer or a certified engineering geologist. It shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications of this Order.
 11. A third party independent of both the Discharger and the construction contractor shall perform all of the construction quality assurance monitoring and testing during the construction of a liner system.
 12. Closure shall not proceed in the absence of closure waste discharge requirements.

E. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, and in accordance with Monitoring and Reporting Program No. R5-2005-0077. A detection monitoring program for a new Unit shall be installed, operational, and adequate monitoring data collected prior to the discharge of wastes [Title 27 CCR Section 20415(e)(6)] to develop a Water Quality Protection Standard pursuant to Detection Monitoring Specifications E.3. The detection monitoring program shall include groundwater monitoring of both the regional aquifer and the perched zone.
2. The Discharger shall provide Regional Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices, and a minimum 48 hour notification prior to the collection of samples associated with a detection monitoring program, evaluation monitoring program, or corrective action program.
3. **By 1 December 2006**, the Discharger shall submit, for Executive Officer review and approval, a Water Quality Protection Standard based on the collection and analysis of background groundwater samples.
4. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, Monitoring and Reporting Program No. R5-2005-0077, and the Standard Provisions and Reporting Requirements, dated April 2000.
5. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program No. R5-2005-0077.
6. For each monitoring event, the Discharger shall determine whether the composting facility is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No. R5-2005-0077 and Title 27 CCR Section 20415(e).
7. The Discharger shall submit for Executive Officer review and approval a Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:
 - a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
 - b. Sample preservation information and shipment procedures;

- c. Sample analytical methods and procedures;
 - d. Sample quality assurance/quality control (QA/QC) procedures; and
 - e. Chain of Custody control.
8. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken **within a span not to exceed 30 days**, unless the Executive Officer approves a longer time period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan.
 9. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval by the Executive Officer prior to use.
 10. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., “trace” or “ND”) in data from background monitoring points for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.
 11. **“Trace” results** - results falling between the MDL and the practical quantitation limit (PQL) - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.
 12. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.

13. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The **MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.
14. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
15. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required.
16. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27 CCR Section 20415(e)(7) that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Title 27 CCR Section 20415(e)(7), shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, CCR, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".

17. The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval by the Executive Officer. Upon receiving written approval from the Executive Officer, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Board staff.

F. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in this Order.
3. The Discharger shall comply with Monitoring and Reporting Program No. ____, which is incorporated into and made part of this Order.
4. The Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (Title 27 CCR Section 20005 et seq. and 40 CFR 258 et seq.), dated April 2000, which are hereby incorporated into this Order.
5. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the appropriate Regional Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
6. Biosolids that have not undergone adequate active composting shall be physically isolated from other site activities to prevent cross contamination of feedstocks, composting materials, and finished product.
7. At least **90 days** prior to the cessation of composting operations at the facility, the Discharger shall submit a work plan, subject to approval of the Executive Officer, for assessing the extent, if any, of contamination of natural geologic materials. By **120 days**

following work plan approval, the Discharger shall submit an engineering report presenting the results of the contamination assessment.

8. Upon ceasing composting operations at the facility, all wastes, natural geologic materials contaminated by wastes (as determined pursuant to Provision F.7), and surplus or unprocessed composting materials shall be completely removed from the site and disposed of in a manner approved by the Executive Officer.
9. The composting operation shall comply with the static aerated pile composting or windrow composting requirements specified in 40 CFR Part 503, for the production of exceptional quality compost.
10. All reports and transmittal letters shall be signed by persons identified below:
 - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
 - c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
 - d. A duly authorized representative of a person designated in a, b or c above if;
 - 1) The authorization is made in writing by a person described in a, b, or c of this provision;
 - 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - 3) The written authorization is submitted to the Regional Board.
 - e. Any person signing a document under this Section shall make the following certification:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are

significant penalties for submitting false information, including the possibility of fine and imprisonment.”

11. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
12. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and postclosure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
13. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger’s violations of the Order.
14. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity’s full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Board, and a statement. The statement shall comply with the signatory requirements contained in Provision F.10 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Regional Board.
15. All financial assurances must be submitted and in effect **prior to the acceptance of any** composting feedstock at the South Kern Industrial Center facility.
16. Discharger shall maintain financial assurance for corrective action as required by Title 27 California Code of Regulations, Division 2, Chapter 6. The Discharger shall, **by 30 April 2006**, and prior to receiving any wastes or feedstocks, submit for approval by the Executive Officer, a report with detailed cost estimates and a demonstration of assurances of financial responsibility for initiating and completing corrective action for all known and reasonably foreseeable releases from the waste management unit. The assurances of financial responsibility shall name the Regional Board as beneficiary and shall provide that funds for corrective action shall be available to the Regional Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The

Discharger shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.

17. The Discharger shall maintain financial assurance for clean closure (see Provisions F.7 and F.8) as required by Title 27 California Code of Regulations, Division 2, Chapter 6. The Discharger shall, **by 30 April 2006**, and prior to receiving any wastes or feedstocks, submit for approval by the Executive Officer, a report with detailed cost estimates and a demonstration of assurances of financial responsibility to ensure closure of each waste management unit. The assurances of financial responsibility shall provide that funds for closure with respect to water quality shall name the Regional Board as beneficiary and shall be available to the Regional Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Discharger shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.
18. The Discharger shall conduct an annual review of the financial assurances specified in Provisions F.16 and F.17, and **by 30 April each year**, submit a report for Executive Officer review and approval. If a single mechanism of financial assurance is used for both corrective action and closure, the financial assurance must be sufficient for both requirements.
19. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
a. Construction Plans	
Submit construction and design plans for Executive Officer review and approval. (see Construction Specification D.1)	At least 90 days Prior to construction
b. Construction Report	
Submit a construction report upon completion demonstrating construction was in accordance with approved construction plans for Executive Officer review and approval. (see Construction Specification D.10)	At least 90 days Prior to discharge

<u>Task</u>	<u>Compliance Date</u>
c. Detection Monitoring System Installation Complete installation of the groundwater monitoring detection monitoring system. (see Detection Monitoring Specification E.1)	1 November 2005
d. Water Quality Protection Standard Submit a proposed water quality protection standard for Executive Officer review and approval based on background groundwater quality. (see Detection Monitoring Specification E.3)	1 December 2006
e. Financial Assurance Submit a detailed cost estimates and financial responsibility for corrective action, and closure. (see Provisions F.16 and F.17)	30 April 2006
f. Financial Assurance Review Annual Review of Financial Assurance for initiating and completing corrective action and closure. (see Provisions F.18)	30 April each year

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provision of this Order, the Executive Officer may apply to the Attorney General for judicial enforcement or issue a complaint for Administrative Civil Liability.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 24 June 2005.

THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2005-0077
FOR
SOUTH KERN INDUSTRIAL CENTER, LLC
FOR
OPERATION
BIOSOLIDS STORAGE AND COMPOSTING FACILITY
KERN COUNTY

Compliance with this Monitoring and Reporting Program, with Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27), and with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258)*, dated April 2000, is ordered by Waste Discharge Requirements Order No. R5-2005-0077.

A. REQUIRED MONITORING REPORTS

<u>Report</u>	<u>Due</u>
1. Groundwater Monitoring (Section D.1)	See Table I
2. Annual Monitoring Summary Report (Section E. 5)	Annually
3. Surface Impoundment Monitoring (Section D.2)	Semiannually
4. Compost Temperature Monitoring (Section D.3)	Semiannually
5. Quantities (Section D.4)	Semiannually
6. Sludge Monitoring (Section D.5)	Semiannually
7. Facility Monitoring (Section D.6)	As necessary
8. Response to a Release (Standard Provisions and Reporting Requirements)	As necessary

B. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order No. R5-2005-0077 and the Standard Provisions and Reporting Requirements. Reports which do not comply with the

required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format (Geotracker) acceptable to the Executive Officer.

Each monitoring report shall include a compliance evaluation summary as specified in E. Reporting Requirements, of this Monitoring and Reporting Program.

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semiannual, and annual monitoring reports shall be submitted to the Regional Board in accordance with the following schedule for the calendar period in which samples were taken or observations made.

<u>Sampling Frequency</u>	<u>Reporting Frequency</u>	<u>Reporting Periods End</u>	<u>Report Date Due</u>
Monthly	Quarterly	Last Day of Month	by Semiannual Schedule
Quarterly	Quarterly	31 March	30 April
		30 June	31 July
		30 September	31 October
		31 December	31 January
Semiannually	Semiannually	30 June	31 July
		31 December	31 January
Annually	Annually	31 December	31 January

The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the previous monitoring year. The annual report shall contain the information specified in E. Reporting Requirements of this Monitoring and Reporting Program, and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.

The results of **all monitoring** conducted at the site shall reported to the Regional Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. **Water Quality Protection Standard Report**

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the constituents of concern, the concentration limits, and the point of compliance and all monitoring points. The Executive Officer shall review and approve the Water Quality Protection Standard, or any modification thereto, for each monitored medium.

The report shall:

- a. Identify **all distinct bodies of surface and ground water** that could be affected in the event of a release from a Unit or portion of a Unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points for the groundwater monitoring program. The map shall include the point of compliance in accordance with §20405 of Title 27.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).

If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

2. **Constituents of Concern**

The constituents of concern include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The constituents of concern for all Units at the facility are those listed in Tables I through IV for the specified monitored medium, and Table VI. The Discharger shall monitor all constituents

of concern every five years, or more frequently as required in accordance with a Corrective Action Program.

a. **Monitoring Parameters**

Monitoring parameters are constituents of concern that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The monitoring parameters for all Units are those listed in Tables I for the specified monitored medium.

3. Concentration Limits

Pursuant to Title 27 CCR Section 20415(e)(10)(B), for each naturally occurring inorganic constituent of concern, the concentration limit (applicable suite of background data) for that constituent shall be redetermined each semiannual monitoring period according to the following “moving window” formula, and the Discharger shall use the resulting concentration limit to apply the parametric Interwell Upper Prediction Limit analysis method featured in the Sanitas™ for Groundwater statistical software package, unless the software indicates that a different method (e.g., the nonparametric version of the same method) is more appropriate. For each reporting period subsequent to the initial reporting period, the Discharger shall create the new concentration limit, for that constituent, by taking the prior reporting period’s background data, adding the newest datum, for that constituent, from background monitoring wells.

4. Point of Compliance

The point of compliance for the water standard at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

5. Compliance Period

The compliance period for each Unit shall be the number of years equal to the active life of the Unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program.

D. MONITORING

The Discharger shall comply with the detection monitoring program provisions of Title 27 CCR for groundwater, in accordance with E. Detection Monitoring Specifications of

Waste Discharge Requirements, Order No. R5-2005-0077. The detection monitoring system shall be installed, operational, and one year of monitoring data collected to establish a Water Quality Protection Standard. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, which includes quality assurance/quality control standards, that is acceptable to the Executive Officer.

All point of compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Table I.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those which cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in Table I.

The Discharger may, with the approval of the Executive Officer, use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

1. Groundwater

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of §20415 and §20420 of Title 27 in accordance with a Detection Monitoring Program approved by the Executive Officer. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

The Discharger shall determine the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Hydrographs of each well shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and

the elevation of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table I.

The monitoring parameters shall also be evaluated each reporting period with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schueller plot. Samples for the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table I.

2. Surface Impoundment Monitoring

Water in the storm water surface impoundment collected as a result of precipitation runoff shall be sampled and analyzed semiannually for the Monitoring Parameters and Constituents of Concern listed in Table I.

The freeboard on the storm water surface impoundments shall be measured **monthly** from April through October and **weekly** from November through March. Measurements shall be to the nearest one-tenth of a foot. Permanent markers shall be placed in each surface impoundment with calibrations indicating the water level at design capacity and available operational freeboard. This information shall be **reported annually**.

3. Compost Temperature Monitoring

Windrow temperatures shall be measured and recorded on a daily basis. Temperature monitoring will be done in accordance with USEPA and CIWMB composting guidelines and requirements.

The following information shall be reported **Semiannually**:

<u>Constituent</u>	<u>Units</u>	<u>Frequency</u>
Temperature Monitoring	--	Daily ¹
Windrow Temperatures	⁰ C	Daily ¹
Length of Windrow	Feet	Daily ¹

¹ Each operating day, but not less than 5 days per calendar week.

4. Quantities

Quantities of the following shall be reported **semiannually**:

<u>Constituent</u>	<u>Units</u>	<u>Frequency</u>
Sludge Received	Tons (wet)	Monthly
Bulking Agents Received	Tons (wet)	Monthly
Exceptional Quality Compost Shipped Off-site ²	Tons (wet)	Monthly
Precipitation	Inches ³	Monthly
Organic Liquids	Tons ⁴	Monthly

² Information including the name of the Discharger, and amount (tons) shipped. These records are to be maintained by South Kern Industrial Center, LLC., and made available for inspection by staff at the offices of South Kern Industrial Center, LLC.

³ Based on measurements recorded at the nearest rain gauging station operated by a government entity.

⁴ Based on approximately 7.4 gallons/pound.

5. Sludge Monitoring

For each source of municipal sludge received and for each load check performed, the Discharger shall provide analytical results for the following constituents:

Total Kjeldahl Nitrogen
 Nitrogen
 Nitrates
 Title 22, CCR, Priority Pollutant Metals⁵
 Total Dissolved Solids
 Percent Solids
 Ph
 Total Coliform Organism

⁵ Waste Extraction Tests (WET)

For each source of municipal sludge, the above analyses shall be performed at least on a semi-annual basis, and **reported semiannually**. Accompanying the analytical results shall be verification of sludge as nonhazardous in accordance with Title 22, California Code of Regulations (CCR), Division 4.5, Chapter 11, Article 3, Section 66261.24(a)(2)(A) Table II (Priority Pollutant Metals), or by other tests approved by the Executive Officer. This verification shall include a statement from the generator stating that sludge has been tested and meets criteria for nonhazardous sludge specified in Title 22, CCR, Division 4.5, Chapter 11, Article 3, Section 66261.24(a)(2)(A) Table II (Priority Pollutant Metals).

6. Facility Monitoring

a. **Facility Inspection**

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in Section E.3.f. of this Monitoring and Reporting Program. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented, including photographs of the problem and the repairs.

b. **Storm Events**

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events*. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

E. REPORTING REQUIREMENTS

1. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the postclosure period.

Such legible records shall show the following for each sample:

- a. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
- b. Date, time, and manner of sampling;
- c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;

- d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
 - e. Calculation of results; and
 - f. Results of analyses, and the MDL and PQL for each analysis.
2. A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report.
3. Each monitoring report shall include a compliance evaluation summary. The summary shall contain at least:
- a. For each monitoring point and background monitoring point addressed by the report, a description of:
 - 1) The time of water level measurement;
 - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
 - 3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all portions of the water that was in the well bore while the sample was being taken;
 - 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
 - 5) A statement that the sampling procedure was conducted in accordance with the approved Sampling and Analysis Plan.
 - b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.

- c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit, and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.
 - d. Laboratory statements of results of all analyses evaluating compliance with requirements.
 - e. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities.
 - f. A summary and certification of completion of all **Standard Observations** for the Unit(s), for the perimeter of the Unit, and for the receiving waters. The Standard Observations shall include:
 - 1) For the Unit:
 - a) Evidence of ponded water at any point on the facility (show affected area on map);
 - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
 - c) Evidence of erosion.
 - 2) Along the perimeter of the Unit:
 - a) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);
 - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
 - c) Evidence of erosion.
 - g. The quantity and types of wastes discharged and the locations in the Unit where waste has been placed since submittal of the last such report.
4. The Discharger shall report by telephone any seepage from the compost area **immediately** after it is discovered. A written report shall be filed with the Regional Board **within seven days**, containing at least the following information:
 - a. A map showing the location(s) of seepage;

- b. An estimate of the flow rate;
 - c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
 - d. Verification that samples have been submitted for analyses of the Constituents of Concern and Monitoring Parameters, and an estimated date that the results will be submitted to the Regional Board; and
 - e. Corrective measures underway or proposed, and corresponding time schedule.
5. The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the reporting period of the previous monitoring year. This report shall contain:
- a. All monitoring parameters and constituents of concern shall be graphed so as to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
 - b. Unless otherwise exempted by the Executive Officer, all monitoring analytical data obtained during the previous two six-month reporting periods, shall be submitted in tabular form as well as in a digital file format (Geotracker) acceptable to the Executive Officer. The Regional Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27 CCR Section 20420(h)], in that this facilitates periodic review by the Regional Board.
 - c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
 - d. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.

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The Discharger shall implement the above monitoring program on the effective date of this Program.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

_____ 24 June 2005
(Date)

CMM:cmm/rac

TABLE I
GROUNDWATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Quarterly
Temperature	°C	Quarterly
Electrical Conductivity	µmhos/cm	Quarterly
pH	pH units	Quarterly
Turbidity	Turbidity units	Quarterly

Monitoring Parameters

Total Dissolved Solids (TDS)	mg/L	Quarterly
Total Coliform Organisms	MPN/100 ml	Quarterly
Nitrate (NO ₃)	mg/L	Quarterly
Nitrate (NO ₃ -N)	mg/L	Quarterly
Nitrite (NO ₂ -N)	mg/L	Quarterly
Total Kjeldahl Nitrogen	mg/L	Quarterly
Total Nitrogen	mg/L	Quarterly
Ammonia (NH ₃ -N)	mg/L	Quarterly
Chloride	mg/L	Quarterly
Carbonate	mg/L	Quarterly
Bicarbonate	mg/L	Quarterly
Phosphorous	mg/L	Quarterly
Sulfate	mg/L	Quarterly
Calcium	mg/L	Quarterly
Magnesium	mg/L	Quarterly
Potassium	mg/L	Quarterly
Sodium	mg/L	Quarterly

Constituents of Concern

<u>Parameter</u>	<u>USEPA Method</u>	<u>Units</u>	<u>Frequency</u>
Total Organic Carbon Inorganics (dissolved)		mg/L	Quarterly
Aluminum	6010	mg/L	Quarterly
Antimony	6010	mg/L	Quarterly
Barium	6010	mg/L	Quarterly
Beryllium	6010	mg/l	Quarterly
Boron	6010	mg/L	Quarterly
Chromium	6010	mg/L	Quarterly
Cobalt	6010	mg/L	Quarterly
Copper	6010	mg/L	Quarterly

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<u>Parameter</u>	<u>USEPA Method</u>	<u>Units</u>	<u>Frequency</u>
Manganese	6010	mg/L	Quarterly
Silver	6010	mg/L	Quarterly
Vanadium	6010	mg/L	Quarterly
Zinc	6010	mg/L	Quarterly
Arsenic	7062	mg/L	Quarterly
Cadmium	7131A	mg/L	Quarterly
Lead	7421	mg/L	Quarterly
Mercury	7470A	mg/L	Quarterly
Nickel	7521	mg/L	Quarterly
Selenium	7742	mg/L	Quarterly
Thallium	7841	mg/L	Quarterly
Cynide	9010	mg/L	Quarterly
Sulfide	9030	mg/L	Quarterly

INFORMATION SHEET

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South Kern Industrial Center, LLC., a California Limited Liability Company, hereafter referred to as Discharger, plans to construct and operate a 100-acre municipal biosolids composting facility. The proposed composting facility will be located in southwestern Kern County approximately 18 miles southwest of Bakersfield and 12 miles east of Taft on South Lake Road.

The Discharger plans to compost treated municipal biosolids with bulking agents consisting of agricultural byproducts (manure, cotton stalks, etc.); yard residue (grass clippings, leaves, etc.); and use it as a soil amendment for sale on commercial markets. The maximum annual receipt of composting feedstocks will be 670,000 cubic yards.

When constructed, the 100-acre composting facility will be enclosed by a five-foot berm. The facility will include a 20-acre primary and secondary aerated static piles (ASPs) area; a 2-acre receiving building/mixing equipment area; a 5-acre daily feedstock, additive storage and preparation areas; a 5-acre onsite finished product areas; a maximum 4.0-acre process water basin, and a maximum of 1.5-acre storm water retention basin. Precipitation drainage from the Unit will be collected in the retention basin and recycled onto the composting windrows for moisture control.

The biosolids will be collected from wastewater treatment plants regulated by Orders adopted by various regional boards and transported to the composting facility. The biosolids will be received and unloaded in the compost area and composted in aerated static piles.

Biosolids used for composting will be tested by the generator prior to shipment to the composting facility. Only biosolids that meets the requirements for non-hazardous biosolids specified in Title 22 CCR, Division 4, Chapter 11, Article 3, California Code of Regulations (CCR), and complies with 40 CFR 503 for exceptional quality compost, will be accepted at the composting site.

The composting facility is on the floor of the southern San Joaquin Valley. Surface drainage is toward the Buena Vista Lake Bed, which contains the Buena Vista Aquatic Recreation Area in the Kern Delta Hydrologic Area 557.10 of the Tulare Lake Basin. The designated beneficial uses of Buena Vista Aquatic Recreation Area, as specified in the Basin Plan, are agricultural supply, industrial service and process supply, water contact and non-contact water recreation, warm fresh water habitat, preservation of rare, threatened and endangered species, and groundwater recharge.

The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal, agricultural, and industrial supply.

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The first encountered groundwater in a perched zone is about six to twelve feet below the native ground surface. Groundwater elevations range from 311 feet MSL to 317 feet MSL. This groundwater appears to be a perched zone. Results of sampling from the perched groundwater indicates that groundwater quality has an electrical conductivity (EC) ranging between 8,600 and 22,000 micromhos/cm, with total dissolved solids (TDS) ranging between 6,100 and 19,000 mg/L, and a chloride concentration ranging between 1,700 mg/L and 2,800 mg/L. These exceed the California and the Federal Drinking Water Standards for Secondary Maximum Contaminant Level (MCL) of 500 mg/L for Total Dissolved Solids and 250 mg/L for chloride.

Regional unconfined groundwater occurs at a depth of 36 feet (281 feet MSL) below ground surface. Results of groundwater sampling from this aquifer indicate that the groundwater has an electrical conductivity of 2,800 micromhos/cm, a total dissolved solids concentration ranging between 2,700 mg/L and 3,100 mg/L, and a chloride concentration ranging between 20 mg/L and 43 mg/L. The groundwater from the regional aquifer exceeds California Secondary Maximum Contaminant Level (MCL) of 500 mg/l for Total Dissolved Solids. However, the samples do not exceed the California Secondary Maximum Contaminant Level (MCL) of 250 mg/L for chloride.

The measured hydraulic conductivity of the native soils underlying the Unit range between 1.6×10^{-4} and 3.3×10^{-6} cm/sec.

The feedstock and some of the additives for composting are classified as nonhazardous solid waste or designated waste as defined in Title 27. Biosolids contain metals and high concentrations of nitrogen compounds that could cause levels of nitrates in surface or ground water to exceed applicable water quality objectives, salts that could cause dissolved solids to exceed objectives, and microorganisms, including disease-causing pathogens. Therefore, biosolid composting operations would normally be regulated under the Title 27 regulations as a Class II waste pile that treats designated waste.

Site specific characteristics, including low rainfall, poor quality groundwater, the manner in which waste will be handled (static aerated piles), and the collection and recycling of all storm water and collected leachate, will help to protect the groundwater from degradation and the loss of designated beneficial uses.

Additionally, this Order requires the Discharger to construct a low hydraulic conductivity liner system for incoming feedstock storage area(s), treatment (composting) area(s), and finished product storage area(s) to minimize downward flow to protect groundwater; the construction of a storm water retention basin that can accommodate runoff from a 25-year, 24-hour storm event to protect surface water; the construction of a lined process-water basin that will store liquid wastes such as truck wash wastewater, leachate, condensate, and any storm water that has come in contact with the feedstocks, composting piles, or finished compost to protect surface water and

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groundwater. This Order also requires quarterly groundwater monitoring and annual monitoring of the surface impoundments.

Based on the site specific characteristics, the threat to the beneficial uses of surface and ground water posed by the proposed composting operation is not commensurate with the stringent monitoring, siting, construction, and design standards applicable to a Class II waste pile, under the Title 27 regulations, so long as it meets, and continues to meet, the requirements of this Order.

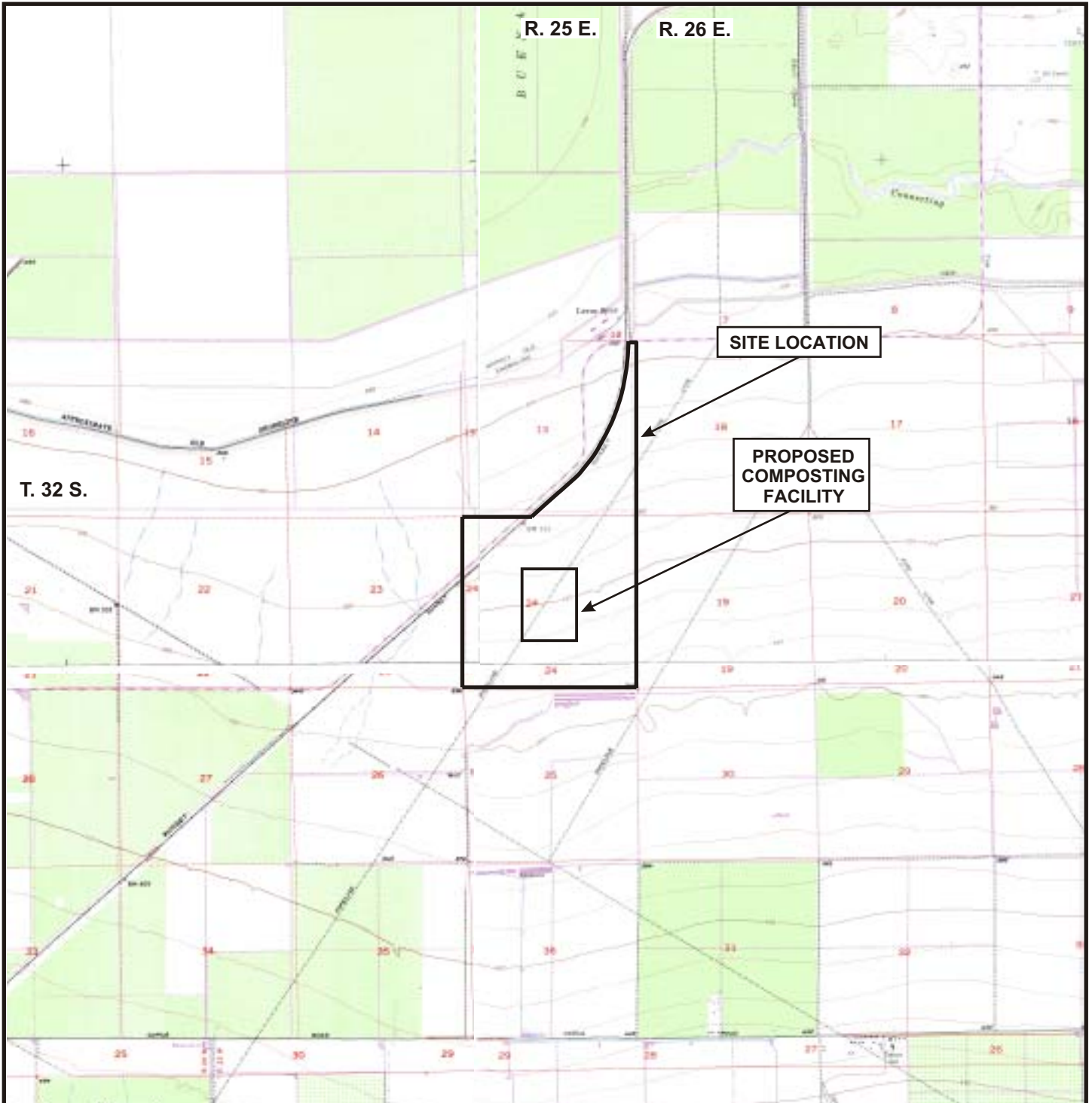
Section 20200(a)(1) of Title 27 CCR allows the Regional Board to make a finding that "... a particular waste constituent or combination of constituents presents a lower risk of water quality degradation than indicated by classification according to this article." The Title 27 regulations do not provide for a waste pile of lower classification than Class II. However, based on a review of the Discharger's Report of Waste Discharge and on the lower risk to water quality cited in this Order, the Regional Board finds, pursuant to Title 27 CCR Section 20200(a)(1), that the operation is not subject to the Class II waste pile liner requirements contained in the Title 27 regulations so long as the operation continues to meet the requirements of this Order.

This Order requires the submission of a work plan for the installation of a groundwater detection monitoring system, installation of the groundwater detection monitoring system, and submission of a water quality protection standard based on background water quality in accordance with Title 27 CCR.

The Board of Supervisors of the County of Kern certified and adopted the Environmental Impact Report (EIR) for this project on 22 October 2002 in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and CEQA guidelines (14 CCR Section 15000 et seq.). The pertinent mitigation measures contained in the EIR were incorporated into the tentative Waste Discharge Requirements and the attached Monitoring and Reporting Program No. R5-2005-0077.

The action to issue waste discharge requirements for this new facility is complies with the provisions of the California Environmental Quality Act (CEQA), Public Resource Code Section 21000, et seq., and the CEQA guidelines, in accordance with Title 14, CCR, Section 15301.

CMM:cmm/rac:6/24/2005



SITE LOCATION

PROPOSED COMPOSTING FACILITY

T. 32 S.

R. 25 E.

R. 26 E.

LEGEND



APPROXIMATE SITE BOUNDARY

Map Source: MOUTH OF KERN, MILLUX, PENTLAND, & CONNER SW
7.5 Minute USGS Quadrangles
Section 24, T32S, R25E, MDB&M

MILE



QUADRANGLE LOCATION



(RKW)

ATTACHMENT A

ORDER NO. R5-2005-0077

WASTE DISCHARGE REQUIREMENTS

FOR

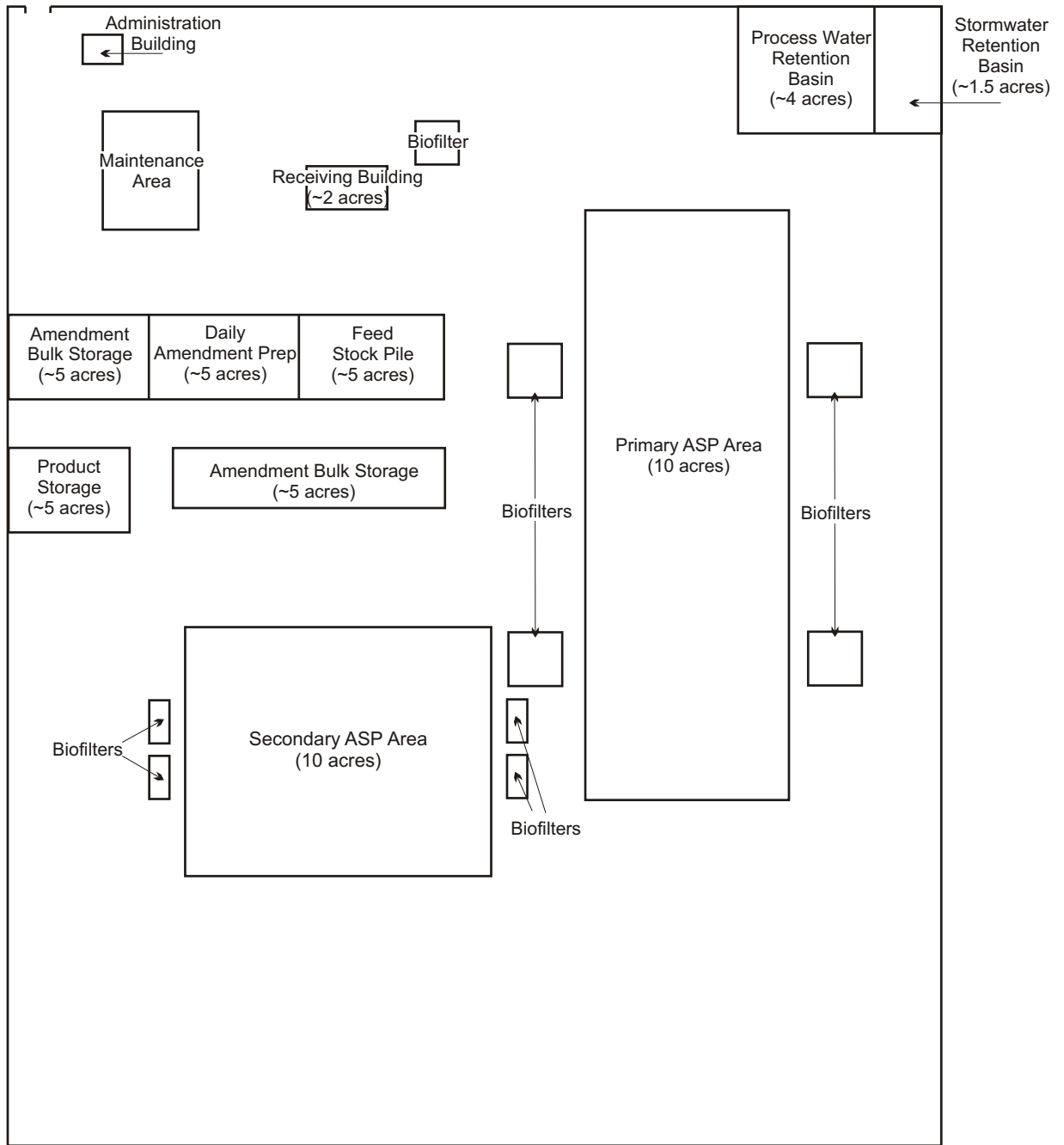
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LOCATION MAP



LEGEND

*** NOT TO SCALE**



ATTACHMENT B

ORDER NO. R5-2005-0077

WASTE DISCHARGE REQUIREMENTS

FOR

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SITE MAP