

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY

ORDER NO. R5-2003-0180

WASTE DISCHARGE REQUIREMENTS
FOR
SYNAGRO WEST, INC.
AND
MENEFEE RIVER RANCH COMPANY
FOR
OPERATION
EL NIDO COMPOSTING FACILITY
MERCED COUNTY

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

1. SYNAGRO West, Inc. (a Delaware corporation), and Menefee River Ranch Company (a California corporation), hereafter jointly referred to as Discharger, plan to complete and operate a 35-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). SYNAGRO West, Inc., will operate the facility on land leased from the Menefee River Ranch Company, that is about one and one-half miles north of Highway 152 on Harmon Road, one mile east of the San Joaquin River and between Mariposa Slough and Eastside Bypass, in Section 4, T10S, R13E, MDB&M, as shown in Attachment A, which is incorporated herein and made a part of this Order.
2. When completed, the 35-acre El Nido facility will contain a 32-acre waste management unit (Unit) enclosed by a three to five foot high berm. The Unit will include a 27.5-acre composting area for storage and treatment of incoming wastes (including storage of finished 'Exceptional Quality' compost); a 2.5-acre wood chip and grind area; and a 2-acre storm water retention basin as shown in Attachment B, which is incorporated herein and made part of this Order. The facility is comprised of Assessor's Parcel Number APN 74-150-001.
3. On 17 August 1995, the Regional Board issued Waste Discharge Requirements Order No. 95-213. The compost unit has not been constructed and no wastes have been accepted at this site. 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 Title 27 CCR superseded Chapter 15 for the discharge of nonhazardous wastes to land, including composting operations. Some aspects of the regulation of compost facilities covered by Waste Discharge Requirements were changed in Title 27 CCR. This Order updates the Waste Discharge Requirement to conform with the current regulations for compost operations in accordance with Title 27 CCR.

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 finished compost product does 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 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 specifications is 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, reclamation sites, lawns, and home gardens.
8. The Discharger's proposed daily input capacity of biosolids and bulking agents for the composting facility is 500 tons per day (182,500 tons per year).

SITE DESCRIPTION

9. The measured hydraulic conductivity of the native soils underlying the Unit range between 3.5×10^{-4} and 2.65×10^{-6} cm/sec.
10. The closest Holocene fault zone is the Ortigalita Fault Zone, about twenty miles to the southwest. The maximum probable earthquake for a 100-year event along this fault zone is estimated to be approximately 6.9 on the Richter scale. The peak horizontal ground acceleration generated at the site from this seismic event is 0.35 g.
11. Land within 1,000 feet of the facility is used for a feedlot, agriculture crops, and grazing.

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12. The facility receives an average annual precipitation of less than 12 inches, based on California Department of Water Resources (DWR) records for the City of Merced, which is about 20 miles northeast of the site. The mean pan evaporation is approximately 88 inches per year, based on DWR records for the Los Banos field station.
13. The 100-year, 24-hour precipitation event is estimated to be 2.6 inches for the area, based on Department of Water Resources' bulletin entitled *Rainfall Depth-Duration-Frequency for California*, revised November 1982, updated August 1986.
14. The facility is within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number 060188-0600 B. A berm will be constructed around the facility perimeter to prevent washout or inundation by a 100-year storm or flood.
15. There are eighteen agricultural and two domestic groundwater supply wells within 1,000 feet of the site. No surface springs or other sources of groundwater supply have been observed.
16. 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.
17. 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.
18. 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.

COMPOSTING METHODS

19. Biosolids processed at the facility will originate from wastewater treatment plants regulated by orders adopted by regional boards outside and within Region 5. The biosolids are 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, are accepted.
20. The treated biosolids will be mixed on-site with bulking agents consisting of agricultural byproducts (manure, cotton stalks, etc.), yard residues (grass clippings, leaves, etc.), and organic liquids (residuals from animal and food processing facilities). The biosolids-to-bulking agent ratio will be approximately 1:1, but can vary depending on the anticipated end use of the product.
21. The compost mixture will be placed in windrows and mechanically aerated at specified intervals. Each windrow is treated at a minimum of 55°C for a period of 15 consecutive days. During the high temperature period, the windrow is turned and aerated at least five (5) times. The composting period generally requires 30 to 60 days to complete. The composting operation is consistent with the windrow composting method prescribed in 40 CFR Part 503, Appendix B, Section 1.
22. The Discharger may also employ an alternative composting method called the static aerated pile composting method, which is also 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. Organic liquids are not used as a material feedstock for static aerated pile composting.

SURFACE AND GROUND WATER CONDITIONS

23. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basins. This Order implements the Basin Plan.
24. Surface drainage is toward the Mariposa Slough about one-half mile to the west, in the Los Banos Hydrologic Area (541.20) of the San Joaquin River Basin.
25. The composting facility is on the floor of the Central San Joaquin Valley. The designated beneficial uses of the intermittent streams (which flow from the west and east into the San Joaquin River Basin), 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.

26. The designated beneficial uses of the reach of the San Joaquin River nearest the project site (Sack Dam to the Mouth of the Merced River) are municipal, industrial, and agricultural supply; recreation; aesthetic enjoyment; and preservation and enhancement of fish, wildlife, and other aquatic resources.
27. The first encountered groundwater is about 35 feet below the native ground surface. Groundwater elevation is about 82 feet MSL. This groundwater appears to be a perched zone, the extent of which is unknown. Results of sampling from a hydropunch bore hole indicates that groundwater quality has an electrical conductivity of 4,400 micromhos/cm, a total dissolved solids concentration of 2,700 mg/L, and a chloride concentration of 1,300 mg/L. This exceeds 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. These concentrations appear to represent local background groundwater quality for this perched zone beneath the El Nido facility.
28. The regional unconfined groundwater is at a depth of 60 feet (57 feet MSL) to 75 feet (42 feet MSL).
29. Results of sampling from an on-site groundwater supply well (as shown on Attachment B) in the regional unconfined zone indicates that groundwater quality has an electrical conductivity of 4,600 micromhos/cm, a total dissolved solids concentration of 3,000 mg/l, and a chloride concentration of 1,400 mg/L. This exceeds 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. These concentrations appear to represent local background groundwater quality in the regional unconfined zone beneath the El Nido facility.
30. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal, agricultural, and industrial supply.

GROUNDWATER MONITORING

31. Title 27 CCR Sections 20380(a) and 20385(a) require a discharger to institute a detection monitoring program for groundwater monitoring for facilities that store and treat wastes at waste management units. The Discharger needs to submit a detection monitoring program for the composting facility in accordance with Title 27 CCR Section 20420. The program

shall include a sufficient number of background monitoring wells installed in the uppermost aquifer that represent the quality of groundwater that has not been affected by a release from the Unit. In addition, the program needs to include a sufficient number of downgradient wells along the point of compliance, which will yield groundwater samples from the uppermost aquifer to detect a release from the Unit.

32. 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 pursuant to Title 27 CCR in accordance with specified dates.

WASTE AND SITE CLASSIFICATION

33. The wastes consist of treated biosolids, mixed with bulking agents which include agricultural byproducts (manure, cotton stalks, etc.), water treatment residues and yard residues (grass clippings, leaves, etc.). Organic liquids may be applied for moisture control during the composting process. These nonhazardous decomposable residuals from municipal wastewater treatment facilities, agricultural, commercial, and residential sources, that through composting are intended for recycling for use as a soil amendment. These wastes are classified as nonhazardous solid wastes as defined in Title 27 CCR Section 20220(a).
34. 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.
35. Deionized water Waste Extraction Tests conducted on dewatered biosolids from wastewater treatment plants that are feedstock for the compost, detected very low soluble concentrations of the general minerals and persistent and bioaccumulative metals. These concentrations are lower than background groundwater quality of both the perched aquifer and the regional unconfined aquifer. These wastes are classified as 'nondesignated', 'nonhazardous' solid wastes as defined in Title 27 CCR Sections 20210 and 20220(a) in regard to both aquifers.
36. 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, are collected in a lined retention pond and then recycled on to the windrows 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.

37. As a soil amendment, the finished composted material is exempt from Title 27 CCR, provided best management practices are established for its use pursuant to Title 27 CCR Section 20090(f).
38. The site characteristics where the Unit is located do not meet the siting criteria for a waste pile contained in Title 27 CCR Section 20250(b)(1 and 3). These siting criteria include the measured hydraulic conductivity of the native soils underlying the Unit (see Finding No. 9). These site characteristics do not ensure that the discharge of the proposed wastes (See Finding No. 33) will not cause an impairment of the designated beneficial uses of surface water or of groundwater beneath or adjacent to the Unit. This Order requires the Discharger to construct a liner system for incoming feedstock storage area(s), treatment (composting) area(s), and finished product storage area(s) with a liner system for a waste pile that complies with the siting requirements of Title 27 CCR Section 20240(a) and the construction requirements of Title 27 CCR Section 20310(d).
39. This Order requires the Discharger to construct the liner system for the compost waste piles in accordance with the 'nondesignated', 'nonhazardous' waste classification relative to both the perched aquifer and unconfined regional aquifer. In accordance with this determination, these waste discharge requirements include construction specifications for a Class III liner system.

CEQA AND OTHER CONSIDERATIONS

40. The Regional Water Quality Control Board adopted Resolution No. 95-212 approving the Initial Study and Mitigated Negative Declaration for Terra-Gro, Inc., and Menefee Ranch Company, El Nido Composting Facility, Merced County, on 17 August 1995. The Regional Water Quality Control Board filed a Notice of Determination on 8 August 1995, in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and CEQA guidelines (Title 14 CCR Section 15000 et seq.). The Regional Board incorporated mitigation measures identified in the mitigated negative declaration, into Waste Discharge Requirements Order No. 95-213 and this Order, designed to prevent potentially significant environmental impacts to the composting project. The potential environmental impacts and associated mitigations regarding the composting project were identified as follows:
 - a. Substantial air emissions or deterioration of ambient air quality (see Discharge Specifications B.5)

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- b. The creation of objectionable odors
(see Discharge Specifications B.6)
- c. Alteration of Surface water quality
(see Prohibitions A.4)
- d. Deterioration of ground water quality
(see Prohibitions A.4)
- e. Creation of any health hazard and potential health hazard
(see Discharge Specifications B.1 through B.8)
- f. Creation of potential fire hazard
(see Monitoring and Reporting Program No. R5-2003-0180,
D. Monitoring, 3. Compost Temperature Monitoring)
- g. Deterioration to existing fish or wildlife
(see Facility Specifications C. 12 and Provisions 18. Task h. Wildlife Protection Plan)

These mitigation measures are incorporated in these updated Waste Discharge Requirements.

41. This Order requires the Discharger to submit technical reports as authorized under California Water Code Section 13267(b)(1), which states in part:

“In conducting an investigation specified in subdivision (a), the Regional Board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the Regional Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

The technical reports required by this Order, and by the attached Monitoring and Reporting Program No. R5-2003-0160, are necessary to assure compliance with these WDRs.

42. This action to revise waste discharge requirements for this existing facility is exempt from the provisions of California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and the CEQA guidelines, in accordance with Title 14, CCR, Section 15301.
43. This order implements:
 - a. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition; and
 - b. The prescriptive standards and performance goals of Title 27 CCR Chapters 1 through 7, Subdivision 1, Division 2, effective 18 July 1997 and subsequent revisions.
44. 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.

PROCEDURAL REQUIREMENTS

45. 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.
46. The Regional Board notified the Discharger and interested agencies and persons of its intent to issue 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.
47. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
48. 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.swrcb.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED pursuant to California Water Code Sections 13263 and 13267, that Order No. 95-213 is rescinded by this Order, and that SYNAGRO West, Inc., and Menefee River Ranch Company, their 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 CCR Section 2510 et seq., and 'designated waste' is as defined in Title 27 CCR.
2. The discharge of solid wastes outside of a waste management unit (Unit) or portions of a Unit specifically designed for their containment is prohibited
3. The discharge of waste to a closed Unit is prohibited.
4. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.
5. The discharge shall not cause any increase in the concentration of waste constituents in soil, or other geologic materials outside of a Unit if such waste constituents could migrate to waters of the State and cause a condition of nuisance, degradation, contamination, or pollution.
6. 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.
7. 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.
8. Selling or providing a finished product other than exceptional quality compost, as described in Finding No. 7, is prohibited
9. Discharge of wastes or liquids from surface impoundments to off-site property is prohibited.

10. The ponding of water around waste storage areas, between compost windrows, 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. 33 through 37 that may contain low levels of designated waste shall be discharged to the composting unit, stockpile area of the unit, and retention pond.
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 182,500 tons.
4. Composting shall be limited to composting the sewage biosolids and bulking agents as described in Finding No. 20.
5. Airborne particles from compost and composting materials shall not be visibly emitted from the composting facility.
6. Objectionable odors originating at the composting facility shall not be perceivable beyond the limits of the ranch property boundary.
7. The composting facility shall be managed to prevent breeding of mosquitoes, flies, and other vectors.
8. Public contact with waste and compost materials shall be precluded through such means as fences, signs, and other acceptable alternatives.
9. Incoming biosolids shall not be stored or unloaded at locations other than the composting Unit.
10. Liquids removed from a surface impoundment shall either be recycled on to the waste piles, used within the Unit over the constructed liner system for dust control, or appropriately disposed of in accordance with the liquid's waste classification.

11. 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.
12. 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. Discharger shall immediately notify the Regional Board of any flooding, unpermitted discharge of waste off-site, equipment failure, or other change in site conditions which could impair the integrity of waste containment facilities or precipitation and drainage control structures.
3. All clearing, grading, earth moving, and excavation activities will cease when wind speeds are equal to or greater than 20 mph; and all on-site vehicles will be limited to speeds of no more than 15 mph.
4. The Discharger shall water biosolids windrows and unpaved roads. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control (biosolids windrows and unpaved roads) and construction.
5. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with these waste discharge requirements.
6. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.
7. 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-DWG, or retain all storm water on-site.
8. No composting or storage of compost shall occur within 100 feet of any domestic water well.

9. The onsite agriculture supply well shall be posted “not for domestic consumption”
10. Surface impoundments and composting operations shall be managed to prevent the breeding of mosquitoes.
11. Public contact with the waste and compost shall be precluded through such means as fences and signs, or other acceptable alternatives.
12. The Discharger shall submit a wildlife protection plan that protects the San Joaquin kit fox from possible impacts from the composting operation.

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 meeting 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 Discharger shall construct a liner system beneath the Unit which consists of a compacted native soil layer that is a minimum of one foot thick with a maximum hydraulic conductivity of 1×10^{-6} cm/sec and compacted to 90 percent of maximum dry density and zero percent to four percent wet of optimum moisture content, graded to obtain a uniform, smooth working surface, free of pockets and depressions, and to inhibit the vertical migration of wastes.

4. New surface impoundments shall have a liner system consisting, at a minimum, of the following, in ascending order:
 - a. A minimum one-foot thick native soil layer exhibiting a maximum hydraulic conductivity of 1×10^{-6} cm/sec, compacted to 90 percent of maximum dry density and zero percent to four percent wet of optimum moisture content;
 - b. A synthetic flexible membrane component, consisting of a minimum 30-mil thickness (or a minimum 60-mil thickness if high density polyethylene) in direct and uniform contact with the compacted soil layer; and
 - c. A protective soil cover layer placed in a manner that does not damage the synthetic membrane.
5. 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.
6. 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.
7. The Discharger may propose changes to a liner system design specified in Construction Specification D.3 and D.4 prior to construction, provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and a proposed liner system results in the protection of water quality equal to or greater than the design prescribed by Title 27 CCR and this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation as an engineered alternative and approval by the Regional Board.
8. Construction shall proceed only after all applicable construction quality assurance plans and design report have been approved by Executive Officer.
9. Following the completion of construction of a liner system or portion of a liner system, and **within 90 days prior to discharge** to 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, and with the prescriptive standards and performance goals of Title 27 CCR.

10. 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.

E. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection monitoring program provisions of Title 27 CCR for groundwater, and in accordance with Monitoring and Reporting Program No. R5-2003-0180. **By 31 January 2004**, the Discharger shall submit, for Executive Officer review and approval, an adequate work plan for installation of a groundwater detection monitoring system, and a Sample Collection and Analysis Plan, in accordance with Title 27 CCR.
2. **By 30 April 2004**, the Discharger shall have installed the groundwater detection monitoring system approved by the Executive Officer in accordance with Title 27 CCR and Monitoring and Reporting Program No. R5-2003-0180 and collected the first samples for analysis.
3. **By 31 May 2005**, 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 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.
5. The Discharger shall comply with the Water Quality Protection Standard (as defined in Title 27 CCR Section 20390) which is specified in Monitoring and Reporting Program No. R5-2003-0180 and the Standard Provisions and Reporting Requirements, dated April 2000.

6. 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. R5-2003-0180.
7. 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. R5-2003-0180 and Title 27 CCR Section 20415(e).
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.
9. 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.
10. 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.
11. 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.
12. **“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.

13. **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.
14. 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.
15. 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.
16. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.
17. 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, California Code of Regulations, 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".

18. 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. REPORTING REQUIREMENTS

1. 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.
2. 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. Type of record or log, units of measurement, and frequency of observation. 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 observation and 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 method detection limit (MDL) and practical quantitation limit (PQL) for each analysis.
3. 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.
 4. 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 date and time (as required) of measurement;
 - 2) The type of device used for obtaining the sample;

- 3) For groundwater measurements 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;
 - 4) 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;
 - 5) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
 - 6) 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.
- 5. The Discharger shall report by telephone any seepage from the Unit **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, 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.
- 6. 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 acceptable to the Executive Officer. The Regional Board regards the submission 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.

G. 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 CCR that are not specifically referred to in this Order.
- 3. The Discharger shall comply with Monitoring and Reporting Program No. R5-2003-0180, 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 CCR 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. Biosolids which 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.
6. 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.
7. Upon ceasing composting operations at the facility, all wastes (as described in Finding No. 33), natural geologic materials contaminated by wastes (as determined pursuant to Provision G.6), and surplus or unprocessed composting materials shall be completely removed from the site and disposed of in a manner approved by the Executive Officer.
8. The composting operation shall comply with the windrow composting or static aerated pile composting requirements specified in 40 CFR Part 503, for the production of compost.
9. 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.”

10. 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.
11. 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 post-closure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
12. 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.
13. 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 G.9 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.

14. 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 2004**, 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.
15. The Discharger shall maintain financial assurance for clean closure (See Provisions No. G.6 and No. G.7) as required by Title 27 California Code of Regulations, Division 2, Chapter 6. The Discharger shall, **by 30 April 2004**, 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.
16. The Discharger shall conduct an annual review of the financial assurances specified in Provisions G.14 and G.15, 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.
17. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2003-0180
 SYNAGRO WEST, INC.
 AND MENELEE RIVER RANCH COMPANY
 FOR OPERATION
 EL NIDO COMPOSTING FACILITY
 MERCED COUNTY

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<u>Task</u>	<u>Compliance Date</u>
a. Construction Plans Submit construction, design plans, and specifications for Executive Officer review and approval. (Construction Specifications D.1 and D.2)	Within 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. (Construction Specification D.9)	Within 90 days Prior to discharge
c. Detection Monitoring Program Work Plan Submit a work plan for the installation of a groundwater detection monitoring system. (Detection Monitoring Specification E.1)	31 January 2004
d. Detection Monitoring System Installation Complete installation of the groundwater monitoring detection monitoring system. (Detection Monitoring Specification E.2)	30 April 2004
e. Water Quality Protection Standard Submit a proposed water quality protection standard for Executive Officer review and approval based on background groundwater quality. (Detection Monitoring Specification E.3)	31 May 2005

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2003-0180
SYNAGRO WEST, INC.
AND MENEFEE RIVER RANCH COMPANY
FOR OPERATION
EL NIDO COMPOSTING FACILITY
MERCED COUNTY

27

	<u>Task</u>	<u>Compliance Date</u>
f.	Financial Assurance	
	Submit a detailed cost estimates and financial responsibility for corrective action, and closure. (Provisions G.14 and G.15)	30 April 2004
g.	Financial Assurance Review	
	Annual Review of Financial Assurance for initiating and completing corrective action and closure. (Provision G.16)	30 April each year
h.	Wildlife Protection Plan	
	Submit a wildlife protection plan that protects the San Joaquin kit fox from possible impacts from the composting operation. (Facility Specifications C.12)	30 March 2003

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 5 December 2003.

RTT:rtt/rac

THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2003-0180

FOR
SYNAGRO WEST, INC.
AND
MENEFEE RIVER RANCH COMPANY
FOR
OPERATION
EL NIDO COMPOSTING FACILITY
MERCED COUNTY

Compliance with this Monitoring and Reporting Program, with Title 27, California Code of Regulations (CCR), Section 20005, et seq. (hereafter Title 27 CCR), 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. R5-2003-0180.

A. REQUIRED MONITORING REPORTS

<u>Report</u>	<u>Due</u>
1. Groundwater Monitoring (Section D.1)	See Table I
2. Annual Monitoring Summary Report (Order No. R5-2003-0180, F.6)	Annually
3. Surface Impoundment Monitoring (Section D.2)	Annually
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.7)	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. R5-2003-0180 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 acceptable to the Executive Officer.**

Each monitoring report shall include a compliance evaluation summary as specified in F. Reporting Requirements, of Order No. R5-2003-0180.

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>
Daily/Monthly	Semiannually	30 June 31 December	31 July 31 January
Semiannually	Semiannually	30 June 31 December	31 July 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 F. Reporting Requirements, of Order No. R5-2003-0180, 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 be 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 Title 27 CCR Section 20405.
- 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 Table I. The Discharger shall monitor all constituents of concern each year, 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 Table 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 SanitasTM 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. R5-2003-0180. 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 Title 27 CCR Section 20415 and Section 20420 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 annually, 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 are to be 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 total concentrations of metals in Title 22 CCR Section 66261.24.

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	°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 SYNAGRO WEST, Inc., and Menefee River Ranch Company, and made available for inspection by staff at the offices of SYNAGRO WEST, Inc., and Menefee River Ranch Company.

³ Based on measurements recorded at the nearest rain gauging station operated by a governmental 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 Test (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. Air

The Discharger shall monitor and maintain a daily record for temperature (C⁰/F⁰), wind velocity (mph) and wind direction. The information shall be reported **Semiannually**.

b. 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, and shall include the Standard Observations contained in section F.4.f of Order No. R5-2003-0180. 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.

c. 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.

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

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

5 December 2003
(Date)

RTT:rtt/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	
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		mg/L	Quarterly
Inorganics (dissolved)			
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

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SYNAGRO West, Inc. (a Delaware corporation), and Menefee River Ranch Company (a California corporation), hereafter jointly referred to as Discharger, plan to complete and operate a 35-acre municipal biosolids composting facility, on land owned by the Menefee River Ranch Company, about one and one-half miles north of Highway 152 on Harmon Road, one mile east of the San Joaquin River and between Mariposa Slough and Eastside Bypass.

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.); organic liquids (residuals from animal and food processing facilities); and use it as a soil amendment on Menefee River Ranch Company property and for sale to commercial markets.

When completed, the 35-acre El Nido facility will contain a 32-acre waste management unit (Unit) enclosed by a three to five foot high berm. The Unit will include a 27.5-acre composting area for storage and treatment of incoming wastes (including storage of finished 'Exceptional Quality' compost); a 2.5-acre wood chip and grind area; and a 2-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 regional boards and transported to the composting facility. The biosolids will be received and unloaded in the compost area. Windrows will be constructed with the biosolids and bulking agents.

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, will be accepted at the composting site.

The designated beneficial uses of the reach of the San Joaquin River near the project site (Sack Dam to the Mouth of the Merced River) are municipal, industrial, and agricultural supply; recreation; aesthetic enjoyment; and preservation and enhancement of fish, wildlife, and other aquatic resources.

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

The first encountered groundwater is about 35 feet below the native ground surface at an elevation of about 82 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 of 4,400 micromhos/cm, a total dissolved solids concentration of 2,700 mg/L, and a chloride concentration of 1,300 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 60 feet (57 feet MSL) to 75 feet (42 feet MSL). Results of sampling from an on-site groundwater supply well in the regional unconfined aquifer indicates that groundwater quality has an electrical conductivity of 4,600 micromhos/cm, a total dissolved solids concentration of 3,000 mg/l, and a chloride concentration of 1,400 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.

Deionized water Waste Extraction Tests conducted on dewatered biosolids from wastewater treatment plants that are feedstock for the compost, detected very low soluble concentrations of the general minerals and persistent and bioaccumulative metals. These concentrations are lower than background groundwater quality of the perched and regional unconfined aquifers. As such the wastes are classified as 'nondesignated', 'nonhazardous' solid wastes as defined in Title 27 Title 27 CCR Sections 20210 and 20220(a) in regards to both the perched the regional aquifers.

This Order requires the Discharger to construct the liner system for the compost waste piles in accordance with the 'nondesignated', 'nonhazardous' waste classification. In accordance with this determination, these waste discharge requirements include construction specifications for a Class III liner system.

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 Regional Water Quality Control Board adopted a mitigated negative declaration on

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17 August 1995, in accordance with the California Environmental Quality Act (CEQA), (Public Resources Code, Section 21000, et seq.) and the State CEQA Guidelines. The potential environmental impacts from the composting project were identified as: substantial air emissions or deterioration of ambient air quality; the creation of objectionable odors; alteration of surface water quality; deterioration of ground water quality; creation of any health hazard and potential health hazard; creation of potential fire hazard; and deterioration to existing fish or wildlife. The Regional Board incorporated these mitigation measures from the negative declaration into this Order. The mitigation measures are designed to prevent potentially significant environmental impacts due to the composting project.

The action to revise waste discharge requirements for this existing facility is exempt from 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. Revision of the waste discharge requirements updates the requirements to conform with the California Water Code and Title 27, California Code of Regulations, Section 20005 et seq.

RTT:rtt/rac:12/5/2003