

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-xxxx-xxxx

WASTE DISCHARGE REQUIREMENTS

FOR
SYNAGRO WEST, LLC AND GARY SILVA, SR
SILVA RANCH BIOSOLIDS LAND APPLICATION
SACRAMENTO COUNTY

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

1. On 1 June 2017, Synagro West, LLC submitted a Report of Waste Discharge (RWD) that describes reuse of stabilized municipal wastewater treatment plant biosolids as a soil amendment on the Silva Ranch property. A RWD Addendum was submitted on 2 October 2017.
2. The Silva Ranch property is owned by Gary Silva, Sr. Synagro West, LLC manages the application of biosolids on the Silva Ranch property. Synagro West, LLC and Gary Silva, Sr (hereafter “Discharger”) are responsible for compliance with these Waste Discharge Requirements (WDRs).
3. The Silva Ranch property is at 11540 Clay Station Road in Herald (Section S25, T6N, R7E, MDB&M). The biosolids application site is approximately 3,000 acres of agriculturally zoned land located on property designated as Silva Ranch I and Silva Ranch II. The application site consists of multiple parcels and the Assessor Parcel Numbers (APN) are summarized below. Their locations are shown on Attachment A and B, which are attached hereto and made part of this Order by reference.

Silva Ranch I	Silva Ranch II
APN 136-0280-023	APN 136-0280-024
APN 138-0060-028	APN 136-0280-025
APN 140-0030-028	APN 136-0280-039
APN 140-0030-029	APN 138-0060-025 ¹
APN 140-0050-021	APN 138-0060-030 ¹
	APN 138-0060-031
	APN 138-0060-049 ¹
	APN 138-0060-053 ¹
	APN 138-0060-059 ¹
	APN 138-0060-061 ¹
	APN 138-0060-064 ¹

¹ Parcels may be subject to the Irrigated Lands Program (IRLP), which addresses discharges of wastes (e.g., sediments, pesticides, nitrates) from commercial irrigated lands.

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4. WDRs Order 95-064, adopted by the Central Valley Water Board on 24 March 1995, prescribes requirements for the discharge of biosolids on approximately 1,200 acres referred to as Silva Ranch I.
5. WDRs Order 98-023, adopted by the Central Valley Water Board on 23 January 1998, prescribes requirements for the discharge of biosolids on approximately 1,600 acres referred to as Silva Ranch II.
6. Monitoring and Reporting Program (MRP) R5-2007-0807, issued on 25 April 2007, prescribes requirements for monitoring biosolids and biosolids land application areas that are regulated under WDRs Order 95-064 and Order 98-023.
7. WDRs Order 95-064 and Order 98-023 will be rescinded and replaced with this Order to regulate the two biosolids application sites under one permit.

Existing Facility and Discharge

8. The Discharger has been applying biosolids as a soil amendment at Silva Ranch I since 1995, and at Silva Ranch II since 1998. Class A and Class B biosolids are accepted at the property year round for use as a fertilizer for the production of durham wheat and sudan grass.
 - a. Class A Biosolids: Biosolids meeting the vector attraction and pollution concentration limits specified in 40 Code of Federal Regulations (CFR) Part 503, *Standards for the Use or Disposal of Sewage Sludge* and pathogen reduction standards specified in 40 CFR Part 503.32(a). Class A biosolids are treated sufficiently for all pathogens to be essentially eliminated.
 - b. Class B Biosolids: Biosolids meeting the vector attraction and meeting pollution concentration limits specified in 40 CFR Part 503 and pathogen reduction standards specified in 40 CFR Part 503.32(b). Class B biosolids have been treated sufficiently for the level of pathogens to be substantially reduced but not completely removed.
9. The biosolids are from municipal wastewater treatment facilities from 16 California counties, including five facilities in Sacramento County. For the most part, these facilities generate Class B biosolids. The biosolids contain about 13 percent to about 90 percent total solids, having little or no free water.
10. The biosolids application sites are divided into a number of individual fields, identified by a field number as shown on Attachment A and B. There are over 80 fields varying in shape and size. Field boundaries are not easily distinguishable.
11. Silva Ranch allows for 24 hour deliveries, seven days per week, 365 days per year weather permitting. An average load of biosolids (one truck trip) is approximately 25 wet tons. The Discharger's Conditional Use Permit 04-UPB-0427, issued by Sacramento County, allows the following:

- a. The transport of biosolids to the site shall be limited to no more than 70 truck trips per day.
 - b. The amount of biosolids to be deposited on the site shall not exceed 184,000 tons annually, of which 10,000 tons may be liquid biosolids.
 - c. On-site biosolids storage shall be limited to no more than 32,000 cubic yards.
12. Biosolids are delivered to Silva Ranch in dump trailers and off-loaded to a staging area at a specific field. Within 24 hours of arrival at the site, the biosolids are loaded from the ground into surface application equipment (e.g. manure spreader, end-dump trailer, or similar) and spread onto the designated field. Disking is performed to incorporate the biosolids into the topsoil within 24 hours of application. The biosolids operation is managed so that individual fields receive biosolids on a rotational basis.
 13. Under unusual emergency circumstances (e.g. equipment breakdowns), when all of the off loaded biosolids may not be spread the same operating day, temporary on-site storage is implemented using hay bales and earth embankments, metal or plastic transfer boxes.
 14. Biosolids operations is discontinued when soils are saturated and not resumed until sufficient drying of the field has occurred to allow equipment access without damage to the soil.
 15. During inclement weather, biosolids are stored at the Pit, which consists of approximately 2.2 acres of storage area. The Pit, which is clay-lined and surrounded by 5 to 10 foot high concrete and soil berms, is considered a short-term (less than seven days consecutively) biosolids storage facility. Once inclement weather has cleared and field conditions are suitable for application, the stored biosolids are land applied at the designated fields. The Discharger operates the Pit in accordance with their *Short-Term Biosolids Storage Plan* to meet the Biosolids Storage and Transportation Specification requirements of this Order. Location of the Pit is shown on Attachment A.
 16. Biosolids are applied at an agronomic rate calculated based on the nitrogen uptake of the crop being planted. Application rates are based on agronomic recommendations for proper crop production and residual nutrients from previous application. Application vehicles used for spreading the biosolids is calibrated by measuring the amount handled on a known square footage.
 17. Durham wheat and sudan grass are grown on the Silva Ranch property.
 - a. Durham wheat is planted during the winter months from 1 September through 31 March and harvested through pasturing through the late spring. The RWD states that the recommended agronomic rate for Durham wheat in Sacramento County ranges from 250 to 370 pounds of nitrogen per acre (lb/ac). The typical rate used by the Discharger is 250 lb/ac.

- b. Sudan grass is planted during the summer months from 1 April through 31 August. Harvesting can occur every 21 to 30 days. The recommended agronomic rate for sudan grass in Sacramento County ranges from 350 to 400 lb/ac. The typical rate used by the Discharger is 350 lb/ac.
 - c. Crops are grown and harvested for the production of livestock feed or used for grazing of livestock. Crops are harvested approximately 90 days from planting. The existing WDRs restrict grazing of livestock for 30 days.
18. The RWD included an acceptable *Biosolids Management Plan* and *Biosolids Spill Response Plan* to meet the Discharge and Land Application Area Specification requirements of this Order.
19. The RWD stated that operational flood protection measures implemented by the Discharger include the following:
 - a. Bermed fields to prevent off-site discharge.
 - b. 22 storm water runoff retention ponds designed to collect runoff falling on the drainage area from a 24 hour storm with a return frequency of 25 years.
 - c. The portion of the fields that fall within a 100 year flood plain does not receive biosolids during the months of October through April. Browns Creek is located in the northern portion of the Silva Ranch I property. Hadselville Creek bisects Silva Ranch I in the southern portion of the property. Laguna Creek bisects the Silva Ranch II property.
20. Although surface waters are in close proximity to the LAAs that receive biosolids year round, the Discharger does not conduct surface water monitoring of the adjacent creeks to confirm that there is no uncontrolled runoff to drainage courses or a threat to surface water quality. Surface water monitoring is appropriate to assess whether management of the biosolids operation and storm water ponds are protective of surface water quality.

Compliance Issues

21. A revised Notice of Violation (NOV) and Inspection Report for Silva Ranch I was issued on 18 January 2017 for the discharge of green waste material on the biosolids land application areas regulated under WDRs 95-064. Green waste material is comprised mainly of yard waste including grass clippings, leaves, branches, and yard debris. Physical contaminants such as paper and plastic may also be present. This discharge of waste is in violation of Standard Provision A.4 of the WDRs, which states: "*Before making a material change in the character, location, or volume of discharge, the discharger shall file a new Report of Waste Discharge with the Regional Board.*" Since receipt of the NOV, no green waste material has been applied to the land application areas that receive biosolids.

22. Because the application of green waste material on land receiving biosolids is a material change in the character and volume of discharge, the Central Valley Water Board issued Water Code 13267 Order on 24 January 2017, requiring the Discharger to submit a Report of Waste Discharge (RWD). The 1 June 2017 RWD was submitted for the application of biosolids to the designated fields within Silva Ranch I and II as discussed in the Findings of this Order. Green waste material will not be applied on the same fields that receive biosolids. This Order will regulate only the biosolids application activities and not allow overlapping application of biosolids and green waste material at Silva Ranch I and II.
23. The State Water Resources Control Board (State Water Board) adopted Water Quality Order No. 2004-0012-DWQ, *General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities* (Biosolids General Order), on 22 July 2004. The Silva Ranch biosolids application area does not qualify for regulatory coverage under the Biosolids General Order based on the following:
 - a. Exceeds the allowable 2,000 net acreage.
 - b. For each field that receives biosolids, the Discharger prevents grazing by animals whose products are consumed by humans for one month after biosolids application. Although this site restriction meets the minimum standards under 40 CFR Part 503.32, it does not comply with Discharge Specification B.10.b(2)(a) of the Biosolids General Order, which states:

“For at least 60 days after application of biosolids in areas with average daily (daytime) air temperatures exceeding 50 degrees Fahrenheit...Domesticated Animals are not grazed.”
24. Many of the requirements of the Biosolids General Order are appropriate for this site. The Prohibitions and Discharge Specifications of this Order are similar to those contained in the General Order.

Site-Specific Conditions

25. Silva Ranch is located on moderately flat terrain, with a site elevation of 86.9 feet, and soil slopes between 0 and 20 degrees.
26. Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Map, a portion of the Ranch property falls within a 100 year flood plain. This portion is approximately 1,000 acres located at the lowest elevations of Silva Ranch I and Silva Ranch II; south of Hadseville Creek, North of Browns Creek, and West of Laguna Creek.
27. Silva Ranch is located in rural, remote areas of southern Sacramento County. The surrounding land uses are agricultural, typically consisting of fields planted with Durham wheat and Sudan grass and grazing of cattle. Rancho Seco Nuclear

Generating Station and the Rancho Seco Regional Park are located southeast of the Silva Ranch property.

28. Based on data obtained from the nearest weather station in Sloughouse 6 SE, California (048293), the annual average total precipitation is 20.1 inches and the 100-year precipitation is approximately 33.7 inches. Silva Ranch is located within reference evapotranspiration (ET_o) Zone 14 whose annual ET_o is approximately 57.0 inches.

Groundwater Conditions

29. Soil types in the area classified by the Natural Resource Conservation Service (formerly known as the Soil Conservation Service) include Capay Clay Loam, Corning Complex, Hadselville-Pentx Complex, Hicksville Loam, Redding Gravelly Loam, and San Joaquin-Xerarents.
30. There is no groundwater monitoring network at the Silva Ranch property. Based on data from the California Department of Water Resources, nearest weather station Clay 1NW, elevation is 96 feet above sea level and depth to groundwater is approximately 150 feet.

Basin Plan, Beneficial Uses, and Regulatory Considerations

31. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition, revised June 2015* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to California Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
32. Local drainage is to Browns Creek and Hadselville Creek, tributary to Laguna Creek and the Cosumnes River. The beneficial uses of the Cosumnes River, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.
33. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.
34. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.

35. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater.
36. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
37. The narrative toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses.
38. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.
39. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot, and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less than 700 $\mu\text{mhos/cm}$. There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000 $\mu\text{mhos/cm}$ if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop. The list of crops in the Findings are not intended as a definitive inventory of crops that are or could be grown in the area where groundwater quality is potentially affected by the discharge, but it is representative of current and historical agricultural practices in the area.
40. The Central Valley Water Board is developing amendments to the Basin Plan to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the waters and soils of the Central Valley. Strategies currently under consideration may:
 - a. Alter the way the Board calculates available assimilative capacity for nitrate, which could result in new or modified requirements for nitrate management;
 - b. Require dischargers to implement actions identified under an interim salinity permitting approach; and/or
 - c. Establish alternate compliance approaches that would allow dischargers to participate in efforts to provide drinking water to local communities in consideration for longer compliance time schedules.

Should the Board adopt amendments to the Basin Plan to effectuate such strategies, these waste discharge requirements may be amended or modified to incorporate any newly-applicable requirements.

41. The stakeholder-led Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative has been coordinating efforts to implement new salt and nitrate management strategies. The Board expects dischargers that may be affected by new salt and nitrate management policies to coordinate with the CV-SALTS initiative.

Antidegradation Analysis

42. State Water Resources Control Board Resolution 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
 - a. The degradation is consistent with the maximum benefit to the people of the state.
 - b. The degradation will not unreasonably affect present and anticipated future beneficial uses.
 - c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives, and
 - d. The discharger employs best practicable treatment or control (BPTC) to minimize degradation.
43. Degradation of groundwater by some of the typical waste constituents associated with the application of biosolids as a soil amendment, when applied at agronomic rates and using best management practices, is consistent with the maximum benefit to the people of the state. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and provides sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order.
44. The Discharger does not monitor groundwater quality at the site. Based on data from the California Department of Water Resources, nearest weather station Clay 1 NW, elevation is 96 feet above sea level, and depth to groundwater is approximately 150 feet. Based on the data available, it is not possible to determine pre-1968 groundwater quality. The Discharger is not required to provide groundwater monitoring because groundwater at the biosolids application area is at depths greater than 25 feet.
45. Constituents of concern that have the potential to degrade groundwater include pathogens, heavy metals, and nitrogen, which can be present in the biosolids.
 - a. Pathogens can cause water quality problems that could result in public health problems. Public access control; crop use and site restrictions; and buffer zones

around water supply wells, surface water drainage courses, and public areas are control measures to prevent and reduce the threat to water quality and transmission of pathogens to the public.

- b. Over-application of heavy metals can cause water quality and/or public health problems. Establishing application rates for specific metals will minimize groundwater degradation.
- c. Biosolids are a significant source of nitrogen. Over-application of nitrogen can result in the buildup of nitrogen in the soils. Excess nitrogen can eventually convert to nitrate, which can migrate to groundwater causing degradation. Establishing application rates that meet the agronomic rates of the crops to be grown will minimize groundwater degradation.

46. This Order establishes biosolids quality limitations and groundwater limitations for the application areas that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan. Based on the depth to shallow groundwater, biosolids character, and application loading rate, the discharge of biosolids does not pose a threat to groundwater quality. The requirements of this Order do not allow any degradation to occur.

47. The Discharger provides the following biosolids operation and control measures:

- a. Biosolids meet the EPA 40 CFR Part 503 Rule criteria for land application.
- b. Biosolids application area is on private property and secured by various fencing and gates to prevent public access.
- c. Approximately 3,000 acres is available for biosolids application.
- d. Nutrient loading from the biosolids is a calculated rate, specific to the nitrogen uptake for the crop to be planted. The rate is determined based on agronomic recommendations for proper crop production and residual nutrients from previous applications.
- e. Application areas within the 100 year flood plain will not receive biosolids during the months of October through April.
- f. The Discharger maintains setback distances for the staging, storage, and biosolids application areas as defined in the Discharge Specifications of this Order.
- g. Biosolids application area includes berms and 22 storm water runoff retention ponds to collect any runoff from the application fields. Routine storm water monitoring is performed when water is present in the ponds.
- h. The Discharger maintains the biosolids storage area (Pit) in accordance with their *Short-Term Biosolids Storage Plan*. The Pit is clay-lined and surrounded by 5 to 10 foot high concrete and soil berms to prevent run-off and run-on into the area.
- i. The Discharger maintains a *Biosolids Management Plan* that describes the operational procedures regarding biosolids application and storage activities,

including procedures for spill prevention and responses plans and adverse weather plans.

- j. The Discharger maintains a *Biosolids Spill Response Plan* and a copy of the plan is maintained in all transport vehicles carrying biosolids.

Other Regulatory Considerations

- 48. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
- 49. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2B as defined below:
 - a. Category 2 threat to water quality: "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."
 - b. Category B complexity, defined as: "Any discharger not included [as Category A] that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units."
- 50. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt domestic sewage, wastewater, and reuse. Title 27, section 20090 states in part:

The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed: (...)

 - (f) Soil Amendments - Use of nonhazardous decomposable waste as a soil amendment pursuant to applicable best management practices, provided that RWQCBs may issue waste discharge or reclamation requirements for such use. (...)
 - (h) Reuse - Recycling or other use of materials salvaged from waste, or produced by waste treatment, such as scrap metal, compost, and recycled chemicals, provided that discharges of residual wastes from recycling or treatment operations to land shall be according to applicable provisions of this division. (...)
- 51. The discharge authorized herein and the storage facilities associated with the discharge, are exempt from the requirements of Title 27 as follows:

- a. The Central Valley Water Board is issuing WDRs.
- b. The discharge is in compliance with the Basin Plan, and;
- c. The biosolids do not need to be managed as hazardous waste.

52. The U.S. EPA published *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (hereafter "Unified Guidance") in 2009. As stated in the Unified Guidance, the document:

...is tailored to the context of the RCRA groundwater monitoring regulations ... [however, t]here are enough commonalities with other regulatory groundwater monitoring programs ... to allow for more general use of the tests and methods in the Unified Guidance... Groundwater detection monitoring involves either a comparison between different monitoring stations ... or a contrast between past and present data within a given station... The Unified Guidance also details methods to compare background data against measurements from regulatory compliance points ... [as well as] techniques for comparing datasets against fixed numerical standards ... [such as those] encountered in many regulatory programs.

The statistical data analysis methods in the Unified Guidance are appropriate for determining whether the discharge complies with Groundwater Limitations of this Order.

53. The State Water Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The Silva Ranch property is farm lands where biosolids is beneficially reused and not physically located in the confines of a wastewater treatment facility. Therefore, Silva Ranch is not required to be regulated under NPDES General Permit CAS000001.

54. Water Code section 13267(b)(1) states:

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 ... 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. 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 the attached Monitoring and Reporting Program (MRP) R5-xxxx-xxxx are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

55. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.
56. A Negative Declaration was approved by Sacramento County on 12 October 2005 for the project known as the Silva Ranch Biosolids Land Application Use Permit (Control Number: 2004-UPB-0427) in accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The project consists of renewing three use permits to allow the application of biosolids on approximately 3,000 acres at the Silva Ranch property. The county has determined that the project will not have a significant effect on the environment and therefore, preparation of an environmental impact report is not required. An Initial Study has been performed by the Sacramento County Department of Environmental Review and Assessment in support of the Negative Declaration.
57. The application of biosolids at the site is an existing operation. The action to update WDRs for this existing operation is exempt from the provisions of CEQA in accordance with California Code of Regulations, title 14, section 15301, which exempts the "operation, repair, maintenance, [and] permitting ... of existing public or private structures, facilities, mechanical equipment, or topographical features" from environmental review.
58. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in 40 CFR 503, *Standard for the Use or Disposal of Sewage Sludge*, which establishes management criteria for protection of ground and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria.
59. The Central Valley Water Board is using the Standards in 40 CFR 503 as guidelines in establishing this Order, but the Central Valley Water Board is not the implementing agency for 40 CFR 503 regulations. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to the EPA.
60. Pursuant to Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Public Notice

61. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.

62. The Discharger(s) and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.
63. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that Order 95-064 and Order 98-023 are rescinded and, pursuant to Water Code sections 13263 and 13267, Synagro West, LLC and Gary Silva, Sr., their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. The discharge of biosolids at a location or in a manner different from that described in the Findings is prohibited.
2. The discharge of biosolids shall not cause or threaten to cause pollution, as defined in California Water Code section 13050.
3. The application of any material that results in a violation of the Safe Drinking Water and Toxic Enforcement Act (Health and Safety Code section 25249.5) is prohibited.
4. The storage, transport, or application of biosolids shall not cause a nuisance, as defined in California Water Code section 13050.
5. The discharge of biosolids from the storage or application areas to adjacent land areas not regulated by this Order, to surface waters, or to surface water drainage course is prohibited.
6. From the permitted site, storm water and/or irrigation water runoff is prohibited for 30 days after application of biosolids if vegetation in the application area and along the path of runoff does not provide 33 feet of unmowed grass or similar vegetation to prevent the movement of biosolids from the application site.
7. Application of biosolids at rates in excess of the nitrogen requirements of the vegetation or at rates that would degrade ground water is prohibited.
8. The discharge of biosolids except as allowed for authorized storage, processing, and application sites is prohibited.
9. The application of "hazardous waste," as defined in Chapter 11, Division 4.5, Title 22 of the CCR, is prohibited.

10. Discharge of biosolids with pollutant concentrations greater than those shown below is prohibited.

Constituent	Ceiling Concentration, mg/kg dry weight
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

11. The application of biosolids to water-saturated or frozen ground or during periods of precipitation that induces runoff from the permitted site is prohibited.
12. The application of Class B biosolids containing a moisture content of less than 50 percent is prohibited.
13. The application of biosolids in areas where biosolids are subject to gully erosion or washout off site is prohibited.
14. Unless expressly approved in writing by the Executive Officer, the application of biosolids to slopes exceeding 10 percent is prohibited.
15. Application of biosolids to any area without adequate runoff control and/or 30 days of storm water detention capacity is prohibited.
16. The application of green waste material in areas designated to receive biosolids is prohibited.

B. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.
2. The discharge shall remain within the permitted waste containment structures and land application areas at all times.
3. Public contact with biosolids at the application site shall be prevented through such means as fences, signs, or acceptable alternatives.
4. Objectionable odors shall not be perceivable beyond the limits of the site boundary at an intensity that creates or threatens to create nuisance conditions.

5. All staging, storage, and biosolids application areas shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
6. All storm water runoff retention ponds shall be designed to collect the runoff falling on the drainage area from a 24-hour storm with a return frequency of 25 years.
7. All storm water runoff retention ponds shall be empty prior to **15 September of each year**.
8. All storm water runoff retention ponds shall be emptied as frequently as conditions allow during the rainy season (**15 October to 15 April**) to maintain maximum containment capabilities. The ponds shall be emptied by applying the stored water as irrigation to seeded biosolids application areas.
9. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:
 - a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
 - d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
10. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.
11. Wastewater contained in any unlined pond shall not have a pH less than 6.0 or greater than 9.0.

12. All biosolids for land application shall comply with the applicable pathogen reduction standards listed in 40 CFR Part 503.32. In addition to those standards, all biosolids meeting Class A standards shall not have a maximum fecal coliform concentration greater than 1,000 most probable number (MPN) per gram of biosolids; or the density of salmonella, sp.¹ shall not be greater than three MPN per four grams.
13. All biosolids subject to this Order shall comply with one of the applicable vector attraction reduction requirements specified in 40 CFR Part 503.33.
14. Biosolids less than 75% moisture shall not be applied during periods when the surface wind speed exceeds 25 miles per hour as determined by the nearest calibrated regional weather station (e.g., airport, CIMS).
15. If biosolids are applied to a site where the soil will be tilled, biosolids shall be incorporated within 24 hours after application in arid areas and in non-arid areas during the time period beginning May 1 and ending October 31 and within 48 hours in non-arid areas during the remaining time period.
16. Prior to biosolids application to ground surfaces having a slope greater than 10 percent, the Discharger shall submit a *Conditional Biosolids Application Site Report* for approval by the Executive Officer.
17. Structures conveying tail water shall be designed and maintained to minimize any field erosion. Tail water structures shall be boarded and wrapped with plastic prior to any biosolids application but removed after biosolids incorporation into the soil.
18. Biosolids distinguished as "Class B" in 40 CFR Part 503 must comply with the following:
 - a. The discharge of tail water or field runoff is prohibited within 30 days after application of biosolids for areas where biosolids have not been incorporated into the soil and where there is not a minimum of 33 feet² of unmowed grass or similar vegetation bordering the application area and along the path of runoff to prevent movement of biosolids particles from the application site.
 - b. After an application of biosolids in any field, the Discharger shall ensure the following:

¹ As determined by a USEPA approved method other than a method in "Standard Methods for the Examination of Water and Wastewater" 18th Edition, 1992, American Public Health Association, 1015 15th Street, NW., Washington, DC 20005; and other than the method found in Kenner, B.A. and H.P. Clark, "Detection and Enumeration of Salmonella and Pseudomonas aeruginosa," Journal of Water Pollution Control Federation, Vol. 46, No. 9, September 1974, pp. 2163-2171. Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314.

² For sites where the topography slopes are greater than 10 percent, the minimum width of vegetative border shall be proposed in accordance to Discharge Specification B.16 above.

- i. For at least 30 days, feed crops are not harvested.
- ii. For at least 12 months, public access to the site is restricted for sites with a high potential for public exposure.
- iii. For at least 12 months, turf is not to be harvested if the harvested turf is placed on land with a high potential for contact by the public as defined in 40 CFR Part 503.11.
- iv. For at least 12 months, grazing of milking animals used for producing unpasteurized milk for human consumption is prevented if the field is used as pasture.
- v. For at least 14 months, food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface are not harvested.
- vi. For at least 20 months, food crops with harvested parts below the land surface are not harvested when the biosolids remain exposed on the surface for four months or longer prior to incorporation.
- vii. For at least 38 months, food crops with harvested parts below the land surface are not harvested when the biosolids remained exposed on the ground surface for less than four month prior to incorporation into the soil.

19. The setback distances for the staging, storage, and biosolids application areas shall be the following:

Staging and Biosolids Application Areas	Setback Distance (feet)
Edge from property line	25
Edge from domestic water supply wells or occupied dwelling	500
Edge from public roads and occupied onsite residences	50
Edge from the high water line of Laguna and Hadselville Creeks and their tributaries, and any ponds, lakes, wetlands, underground aqueducts, or vernal pools	100

C. Mass Loading Limitations

- 1. Biosolids application rates shall not exceed the agronomic rate for nitrogen for the crop being grown.
- 2. Biosolids shall not be applied in amounts exceeding the risk-based cumulative loading rates (adjusted to account for background metals concentrations) as defined below:

$$BC = CP - 1.8 (BS)$$

Where: BC = Background Adjusted Cumulative Loading Rate (lb/ac)
CP = 40 CFR Part 503 Cumulative Pollutant Loading Rate (lb/ac)
BS = Actual Background Site Soil Concentration (mg/kg)

And where the values for CP for each metal are given below:

Pollutant	Cumulative Pollutant Loading Rate (lb/ac)
Arsenic	36
Cadmium	34
Copper	1,336
Lead	267
Mercury	15
Molybdenum	16
Nickel	374
Selenium	89
Zinc	2,494

D. Land Application Area Specifications

1. The Discharger shall land apply biosolids in accordance with their 1 June 2017 *Biosolids Management Plan* or subsequent Plan following approval by the Executive Officer.
2. Each field within the designated land application areas that receives biosolids shall be planted with durham wheat, sudan grass, or similar crop.
3. Biosolids may be applied to any area within the designated land application areas where slopes exceed 10 percent only if all of the following conditions are met:
 - a. Executive Officer approval of a *Conditional Biosolids Application Site Report*.
 - b. The soil depth is sufficient to support the crop;
 - c. The slope will allow safe operation of spreading and tilling equipment;
 - d. The slope can be tilled, planted, and grazed without causing or exacerbating soil erosion; and
 - e. Implementation of an approved erosion control plan submitted to the Regional Board.

4. The Dischargers shall comply with the following site restrictions:
 - a. Grazing of animals whose products are for human consumption shall be prevented for at least one month after biosolids application;
 - b. Public access to the application areas shall be prevented for at least 12 months after biosolids application;
 - c. Planting of unprocessed food chain crops shall be prevented for at three years after biosolids application.
5. Biosolids application to the designated land application areas shall not be performed during rainfall or when the ground is saturated.
6. Biosolids application to the portion of the fields that fall within a 100 year flood plain is prohibited between 1 October and 30 April.
7. Discharge of storm water runoff from the LAAs to off-site land or surface water drainage courses is prohibited except as allowed by Discharge Prohibition A.6.
8. All storm water runoff from the land application areas shall be captured and recycled for irrigation or allowed to percolate within the designated land application areas.
9. Public contact with the biosolids land application areas shall be controlled using fences, signs, and other appropriate means.

E. Biosolids Storage and Transportation Specifications

Biosolids shall be considered to be “staged” if placed on the ground for brief periods of time solely to facilitate transfer of the biosolids between transportation and application vehicles. Biosolids shall be considered to be “stored” if they are placed on the ground or in non-mobile containers (i.e., not in a truck or trailer) at the application site or an intermediate storage location away from the generator/processing for more than 48 hours. A “long-term storage facility” is a site which holds biosolids for more than seven consecutive days. A “short-term storage facility” is a site used as a temporary biosolids holding facility for less than or equal to seven days.

1. Only biosolids with at least 15 percent solids shall be stored at the storage facility.
2. Biosolids shall not be stored for more than seven (7) consecutive days prior to application.
3. Biosolids containing free liquids shall not be placed on the ground prior to application on an approved site, excluding equipment cleaning operations.

4. Biosolids shall not be stored directly on the ground at any one location with the exception of a permitted long-term storage facility for more than seven consecutive days.
5. Sites for the storage of Class B biosolids shall be located, designed, and maintained to restrict public access to the biosolids.
6. Biosolids storage facilities that contain biosolids between 1 October and 30 April shall be designed and maintained to prevent washout or inundation from a storm or flood with a return frequency of 100 years.
7. Biosolids storage facilities shall be designed and maintained to contain all storm water falling on the biosolids storage area during a 100-year rainfall year.
8. Biosolids staged or stored on site for more than 24 hours shall be covered.
9. Biosolids storage facilities shall be designed, maintained, and operated to minimize the generation of leachate and the effects of erosion.
10. The Discharger shall operate the biosolids storage facilities in accordance with an approved *Biosolids Storage Management Plan*.
11. The Discharger shall immediately remove and relocate any biosolids stored or applied on site in violation of this Order.
12. All biosolids shall be transported in covered vehicles capable of containing the designated load.
13. No application of Class B biosolids shall be permitted within an area defined as having a high potential for public exposure unless the biosolids are injected into the soil. A high potential for public exposure is land located within one-mile of educational facilities; facilities designed for recreational activities other than hunting, fishing, or wildlife conservation; places of public assembly; hospitals; or similar sensitive receptors.
14. All biosolids capable of generating free liquids shall be transported in leak proof vehicles.
15. Each biosolids transport driver shall be trained as to the nature of its load and the proper response to accidents or spill events and shall carry a copy of an approved spill response plan.
16. The Discharger shall avoid the use of haul routes near residential land uses to the extent possible. If the use of haul routes near residential land uses cannot be avoided, the Discharger shall limit project-related truck traffic to daylight hours.

F. Groundwater Limitations

Release of waste constituents from any portion of the application site shall not cause groundwater to:

1. Exceed a total coliform organism level of 2.2 MPN/100 mL over any seven-day period.
2. For constituents identified in Title 22, contain constituents in concentrations that exceed either the Primary or Secondary MCLs established therein.
3. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

G. Provisions

1. The following reports shall be submitted pursuant to Water Code 13267 and shall be prepared as described in Provision G.2:
 - a. **At least 120 days** prior to anticipated application, if biosolids are applied to ground surfaces having a slope greater than 10 percent, the Discharger shall submit for approval by the Executive Officer a *Conditional Biosolids Application Site Report*. This report shall include an erosion control plan, describe the site conditions that justify application of biosolids to the steeper slopes, and specify the application and management practices necessary (a) to assure containment of the biosolids on the application site and (b) to prevent soil erosion. The report shall be prepared by a Certified Soil Scientist, Certified Agronomist, Registered Agricultural Engineer, Registered Civil Engineer, or a Certified Professional Erosion and Sediment Control Specialist.
2. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.
3. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly

stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.

4. If a long-term biosolids storage facility is to be constructed, the Discharger shall submit a Report of Waste Discharge that includes the design of the biosolids storage facility in accordance with Class II surface impoundment or waste pile standards contained in Chapter 15, a construction management plan and schedule, and a Long-Term Biosolids Storage Plan. The storage facility shall be designed and maintained to prevent washout or inundation from a storm or flood with a return frequency of 100 years. The storage facility shall be designed and maintained to contain all storm water falling on the biosolids storage area during a 100-year rainfall year.
5. The Discharger shall comply with Monitoring and Reporting Program (MRP) R5-xxxx-xxxx, which is part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.
6. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
7. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
8. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger when the operation is necessary to achieve compliance with the conditions of this Order.
9. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.

10. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
11. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
12. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.
13. **At least 90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
14. In the event of any change in control or ownership of the biosolids application areas, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
15. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. 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 Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 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 Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
16. A copy of this Order including the MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
17. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, 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 on ___

PAMELA C. CREEDON, Executive Officer