*Plant No. 1 truck loading and centrifuge facilities with trickling filter clarifiers in the foreground.*

ORANGE COUNTY SANITATION DISTRICT

# BIOSOLIDS MANAGEMENT COMPLIANCE REPORT

## EPA 40 CFR Part 503

### Year 2020

OCSAN

ORANGE COUNTY SANITATION DISTRICT

ORANGE COUNTY SANITATION DISTRICT
10844 Ellis Avenue
Fountain Valley, CA 92708
714.962.2411
www.ocsan.gov

February 11, 2021

Hope Smythe, Executive Officer
California Regional Water Quality Control Board, Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3348

SUBJECT: Orange County Sanitation District Annual Compliance Report

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Enclosed please find the Orange County Sanitation District (OC San) Biosolids Management Compliance Report as required under the 40 CFR Part 503 regulations, Arizona Administrative Code Article 10, and the National Pollution Discharge Elimination System (NPDES) Permit No. CA0110604, Order No. R8-2012-0035.

OC San has uploaded this report into the EPA biosolids electronic reporting database and submitted e-mail copies to state and local regulators. A copy of OC San's EPA electronic report is included as Appendix D.

**Certification Statement**
The following certifications satisfy procedural requirements as listed in section V.B.5 of the Orange County Sanitation District NPDES Permit No. CA0110604 and 40 CFR part 503, section 503.17 for the submittal of the attached compliance report for calendar year 2020.

> ***NPDES permit:*** *I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

If you have any questions or comments regarding this packet of information or require any additional data, please contact Deirdre Bingman at (714) 593-7459. I can be reached at (714) 593-7450.

Wiborg, Lan

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Lan C. Wiborg, MPH
Director of Environmental Services

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Yorba Linda Water District

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Fountain Valley, CA 92708
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February 11, 2021

Sondra Francis
Arizona Department of Environmental Quality
Water Permits Section
1110 West Washington Street, 5415-B-3
Phoenix, AZ 85007

SUBJECT: Orange County Sanitation District Annual Compliance Report

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OC San has uploaded this report into EPA biosolids electronic reporting database and submitted e-mail copies to state and local regulators. A copy of OC San's Arizona biosolids annual reporting form is included as Appendix E, and the EPA electronic report is included as Appendix D.

**Certification Statement**
The following certifications satisfy procedural requirements as listed in Arizona Administrative Code Article 10 under section R18-9-1013 for the submittal of the attached EPA 40 CFR Part 503 Compliance Report for calendar year 2020.

> ***Arizona Class B:*** *I certify, under penalty of law, that the pollutant analyses and the description of pathogen treatment and vector attraction reduction activities have been made under my direction and supervision and under a system designed to ensure that qualified personnel properly gather and evaluate the information used to determine whether the applicable biosolids requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.*

If you have any questions or comments regarding this packet of information or require any additional data, please contact Deirdre Bingman at (714) 593-7459. I can be reached at (714) 593-7450.

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Lan C. Wiborg, MPH
Director of Environmental Services

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Yorba Linda Water District

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# 2020 BIOSOLIDS MANAGEMENT COMPLIANCE REPORT

**Introduction**
**Organization and Function**
**Accomplishments**
**Treatment Plants and Program Updates**
**Biosolids Management**
**Summary of Pollutants**
**Determination of Hazardousness**
**Biosolids Management System**

## Introduction

The Orange County Sanitation District (OC San) treats and manages its biosolids, the nutrient-rich, organic matter recovered through the treatment of wastewater. OC San's Biosolids Program consists of processes to ensure solids are treated onsite and used offsite (recycled) in accordance with all local, state, and federal regulations and best management practices.

OC San treats and manages its biosolids in accordance with OC San's National Pollutant Discharge Elimination System (NPDES) Permit No. CA0110604 (NPDES), Arizona Administrative Code Title 18, Ch. 9, Article 10 (R18-9), and EPA Code of Federal Regulations Title 40 Part 503 (503).

The following sections summarize OC San's activities and performances for the compliance-reporting period of January 1 to December 31, 2020.

## Organization and Function

OC San is a public agency that provides wastewater collection, treatment, and recycling services for approximately 2.6 million people in central and northwest Orange County, California. OC San is a special district that is governed by a Board of Directors consisting of 25 board members appointed from 20 cities, 4 special districts, and 1 representative from the Orange County Board of Supervisors. OC San has two plants that treat wastewater from residential, commercial, and industrial sources.

- During this budgetary fiscal year (2019-2020) OC San treated an average daily sewage influent flow of **188 million gallons per day (MGD).**

- During this last calendar year (2020) OC San produced **206,896 wet tons of biosolids (47,106 dry metric tons)**, which equates to an average of **567 wet tons per day of biosolids.** No digester cleaning material was managed this year.

## Accomplishments

Despite the global pandemic, OC San continued the work at hand and has several accomplishments to highlight this year including:

- Recycled 100% of OC San's biosolids.

- A pandemic contingency hauling plan was added into the Biosolids Section of the Integrated Emergency Response Plan in the case that COVID-19 impacted haulers.

- OC San issued a request for proposals for digester cleaning maintenance in June 2020 and awarded the multi-year contract to American Processing Group (APG) in October 2020. APG began cleaning digesters in January 2021.

- Food Waste Treatment Policy Initiative: As part of the implementation of the 2017 Biosolids Master Plan, 2019 Strategic Plan, and as part of the General Manager's

Work Plan goal for Fiscal Year 2020-21, OC San is conducting a market assessment of available food waste feedstock for co-digestion and securing bids to construct P2-124 “Interim Food Waste Receiving Facility” at Plant No. 2. Several prospective municipal solid waste haulers have expressed interest in providing food waste feedstock, which OC San is currently evaluating. Bid opening for P2-124 was in January 2021, and bid selection is in progress. This project is designed to receive approximately 150 wet tons of pre-processed food waste to be co-digested in OC San’s anaerobic digesters at Plant No. 2. The added organic feedstock will account for about a 10% increase of biogas production that will be used to generate electricity.

- Biosolids Management Policy Initiative – Biosolids Thermal Conversion: As directed by the 2019 Strategic Plan, a request for information (RFI) was issued for biosolids thermal conversion technologies (BTC) in April 2020. This process continues into 2021 with contract negotiations to add a BTC process that may potentially serve as a PFAS-reduction demonstration facility as a biosolids management option.

- OC San’s Research Program continues to stay abreast of advanced technologies. Participation in the International Technology Advisory Group (iTAG) is an integral part of OC San’s Research Program. The iTAG screens and evaluates potential beneficial technologies for the wastewater industry. Annually, OC San hosts the iTAG and invites other wastewater treatment agencies to learn of the most promising technologies at which time agencies may choose to pilot. OC San continues to stay current in biosolids and energy recovery technologies through this process.

- OC San’s Awards and Honors (www.ocsd.com/about-us/awards-and-honors) webpage features many 2020 awards, including:
  - National Association of Clean Water Agencies (NACWA) Platinum Award and Gold Excellence in Management Recognition,
  - Utility of the Future Today Award from the Water Environment Federation for OC San efforts in energy generation and recovery, and
  - Grand prize from the American Academy of Environmental Engineers and Scientists for the Climate Resiliency and Adaptation Plan.

**Treatment Plants and Program Updates**

Reclamation Plant No. 1, located in the city of Fountain Valley, treated an average of 119 MGD of wastewater. Treatment Plant No. 2, located in the City of Huntington Beach, treated an average of 69 MGD of wastewater during the most recent fiscal year.

The Plant No. 1 diversion of primary sludge from Plant No. 1 to Plant No. 2 via the interplant sludge line effectively ceased by March 2020 with the new thickening centrifuges providing additional capacity for solids treatment at Plant No. 1.

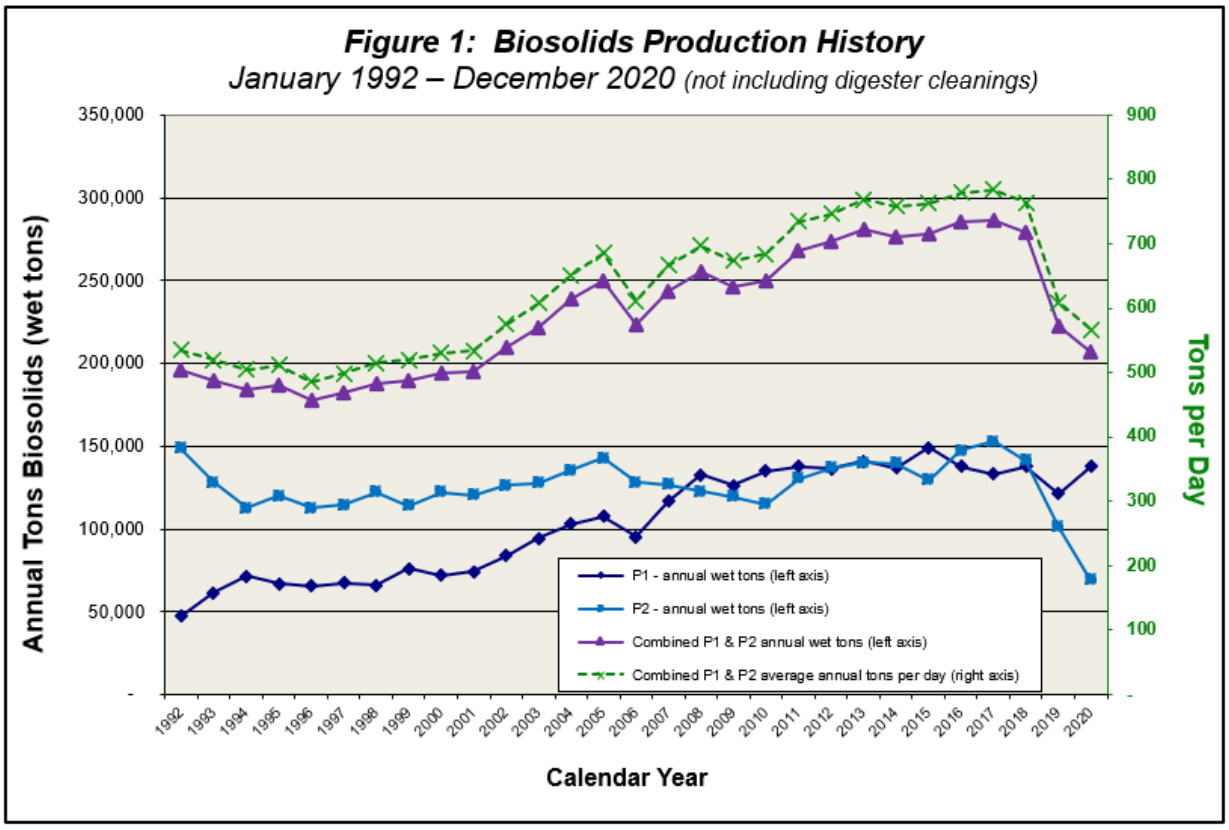
Dewatered biosolids averaged 24% total solids at Plant No. 1 and 27% total solids at Plant No. 2. The 2019 commissioning of dewatering centrifuges at both plants reduced biosolids production by about 35% (2018 vs. 2020). More detailed data, including

monthly averages, annual totals and analytical results, can be viewed in Figure 1 and Table 2 below, as well as in Appendices A, B, C, and D.

The Irvine Ranch Water District (IRWD) historically discharged its untreated solids (sludge) to OC San. IRWD is completing commissioning its new solids treatment facility and have been ramping down the volume of solids discharged to OC San as the new facilities are coming online. OC San saw a reduction in biosolids at the end of the year and anticipate an additional incremental reduction in early 2021 when the facilities are fully commissioned.

OC San's biosolids are digested for at least 15 days at a minimum of 95 degrees Fahrenheit, with a volatile solids destruction of at least 38%. OC San's anaerobically digested biosolids meet compliance with the "Class B Pathogen Reduction" and "Vector Attraction Reduction" definition for "Class B" biosolids as defined in 40 CFR Part 503.32(b)(3) (PSRP 3) and 503.33(b)(1). In addition, Tule Ranch-AgTech's standard operating procedure includes biosolids incorporation within six (6) hours which meets 40 CFR Part 503.33(b)(10) requirement and is a valuable redundancy in rare events when OC San experiences challenges meeting the Vector Attraction Reduction standard.

See Accomplishments section for an update on the new digester cleaning contract.



**Biosolids Management**

For this reporting period, biosolids produced at OC San's two treatment facilities were managed by the contractors listed below in Table 1.

| Table 1- Biosolids Management Contractors | |
|---|---|
| **Synagro - Nursery Products**<br>PO Box 1439<br>Helendale, CA 92342<br>Contact: Venny Vasquez<br>Phone: (760) 265-5210<br>Email: vvasquez@SYNAGRO.com | **Synagro – South Kern Compost Manufacturing Facility**<br>PO Box 265<br>Taft, CA 93268<br>Contact: Rob Rankin<br>Phone: (661) 765-2200<br>Email: rrankin@SYNAGRO.com |
| **Liberty Compost**<br>12421 Holloway Rd.<br>Lost Hills, CA 93249<br>Contact: Patrick McCarthy<br>Phone: (661) 797-2914<br>Email: patrickmccarthy@mccarthyfarms.com | **Synagro – Arizona Soils**<br>5615 S. 91st Avenue<br>Tolleson, AZ 85353<br>Contact: Craig Geyer<br>Phone: (623) 936-6328<br>Email: CGeyer@SYNAGRO.com |
| **Tule Ranch / Ag-Tech**<br>4324 E. Ashlan Ave.<br>Fresno, CA 93726<br>Contact: Shaen Magan<br>Phone: (559) 970-9432<br>Email: kurt@westexp.com | **Inland Empire Regional Composting Authority**<br>12645 6th Street<br>Rancho Cucamonga, CA 91739<br>Contact: Jeff Ziegenbein<br>Phone: (909) 993-1981<br>Email: jziegenbein@ieua.org |

These contractors provide OC San with biosolids management diversification and reliability, and are therefore important partners to OC San. These contractors submit their annual compliance reports directly to EPA, in accordance with OC San's NPDES permit requirements. For this reporting period, OC San's biosolids were beneficially reused as illustrated in Table 2. More detailed breakdowns are available in Appendices A and D.

**Table 2- Biosolids Managed Tonnage Distribution**

| Quantity Generated | Plant No. 1 | Plant No. 2 | Total | Relative % |
|---|---|---|---|---|
| Synagro - Nusery Products CA - (compost) (wet tons) | 75,410 | 0 | 75,410 | 36% |
| Synagro - Nusery Products CA - (compost) (dry metric tons) | 16,708 | 0 | 16,708 | |
| Synagro - South Kern - compost (wet tons) | 3,120 | 0 | 3,120 | 1.5% |
| Synagro - South Kern - compost (dry metric tons) | 698 | 0 | 698 | |
| Synagro - AZ Soils - compost (wet tons) | 880 | 700 | 1,580 | 0.8% |
| Synagro - AZ Soils - compost (dry metric tons) | 194 | 151 | 345 | |
| Liberty Compost CA (wet tons) | 33,398 | 6,772 | 40,170 | 19% |
| Liberty Compost CA (dry metric tons) | 7,401 | 1,597 | 8,998 | |
| Inland Empire Regional Composting (wet tons) | 0 | 7,304 | 7,304 | 3.5% |
| Inland Empire Regional Composting (dry metric tons) | 0 | 1,722 | 1,722 | |
| Tule Ranch AZ (land application) (wet tons) | 24,801 | 54,512 | 79,313 | 38% |
| Tule Ranch AZ (land application) (dry metric tons) | 5,498 | 13,137 | 18,635 | |
| **Total Wet Tons** | **137,608** | **69,288** | **206,896** | **100%** |
| **Total Dry Metric Tons** | **30,499** | **16,607** | **47,106** | |

## Summary of Pollutants

OC San's Biosolids Monthly Compliance Reports (Appendix A) compare the concentration limits of the pollutants listed in 40 CFR 503 to OC San's average biosolids concentrations for each plant. The average concentrations of all pollutants in OC San's biosolids are typically an order of magnitude below the conservative *Table-1 Ceiling Limits* and *Table 3 Exceptional Quality Limits* found in 40 CFR Part 503, which were based on an extensive health risk assessment to ensure that biosolids are safe for recycle to build healthy soil.

Since 1976, OC San's Pretreatment Program has been effective in lowering the average mass of metals discharged to the marine environment by 99% and the total mass of metals in the influent sewage by 84%, thereby ensuring OC San's biosolids can be recycled to farm fields with low metals concentrations. Furthermore, OC San's influent wastewater meets drinking water standards for metals. Appendix B contains the biosolids chapter excerpt of the OC San Pretreatment Program Annual Report (ocsd.com/PreTreatAnnual, Chapter 8) that includes graphs of metals in OC San's biosolids.

In accordance with OC San's NPDES permit, biosolids are also tested semi-annually for all pollutants listed under Section 307(a) of the Clean Water Act. Appendix C contains the summary of the priority pollutants analyzed in the plants' biosolids.

## Determination of Hazardousness

OC San's biosolids' pollutant concentrations are significantly below the state and federal maximum contaminant concentrations for determining a hazardous waste. See OC San's biosolids monitoring data in Appendix C, Summary of Priority Pollutants and Trace Constituents Analysis.

### Legal Definitions

OC San's 2012 Ocean Discharge NPDES permit requires OC San to test its biosolids annually for hazardousness in accordance with 40 CFR Part 261. Hazardous waste is also defined under the provisions of California Code of Regulations, Title 22, Chapter 11, Article 5, and Arizona Revised Statutes, Title 49, Chapter 5, Article 2.

### Determination Summary

OC San's biosolids are determined to be non-hazardous based on the following evaluation:

- OC San's biosolids are not ignitable, corrosive, reactive, nor toxic in accordance with the federal regulatory definitions in 40 CFR Part 261.
- OC San performs semi-annual testing of an extensive list of organic and inorganic compounds to verify the continued non-hazardousness of our biosolids.
- When the results are non-detectable, OC San enters the method detection limit in the evaluation spreadsheet that compares the data to regulatory limits.

## Biosolids Management System

OC San continues to utilize a biosolids management system approach to effectively administer its biosolids program. The following sections highlight OC San's continued commitment to the biosolids management system.

### Communications

OC San has continued transparent communications during this reporting period. OC San shares timely updates including biosolids news, annual compliance reports, biosolids videos, updated OC San resources such as the biosolids allocation map and Biosolids Contractor Requirements document. In 2020 the following items were posted or updated on OC San's biosolids website:

- Monthly compliance reports and data (ocsd.com/nani),
- Annual compliance reports (ocsd.com/503), and
- Biosolids allocation map (ocsd.com/map).

### Contractor Oversight Program

OC San has continued our strong contractor oversight program:

- No Notice of Violations (NOVs) were issued for OC San's active biosolids contractors,

- Performed 9 contractor site inspections,
- No contractor issues,
- No inspection findings,
- No odor complaints, and
- Performed 55 hauling inspections, which reached 38 out of 39 regular drivers (97%) this year. There are 27 active drivers (69%) who are currently on OC San's "Honor Roll" for excellence in their truck cleanliness, knowledge of biosolids and emergency protocol by successfully passing three consecutive hauler inspections.

Goals and Targets

The 2019 Strategic Plan is a guiding document that provides a framework that directs our work. Every two years, the Strategic Plan is reviewed, updated, and submitted for approval by the Board of Directors. Two initiatives are related to biosolids (Food Waste Treatment Policy and Biosolids Management Policy) and updates are provided in the Accomplishments section. The Strategic plan is available on the OC San Strategic Planning website (https://www.ocsd.com/services/strategic-planning).

Biosolids Program Policy

The Biosolids Program Policy, originally adopted in 1999 and amended several times over the years, is a policy committing the agency to support biosolids beneficial reuse (organics recycling). The most recent commitments, OC San Resolution 13-03 (www.ocsd.com/policy), and OC San's performance relative to these commitments are reported below.

**Table 3 – Policy Performance**

| Policy Commitment | 2020 Performance |
|---|---|
| 1. Commit to sustainable biosolids program.<br><br>Support the recycling of biosolids. | OC San has demonstrated effective pretreatment, water and solids treatment operations, compliance, capital improvements, technology research and planning, and biosolids contractor oversight programs.<br><br>See the Accomplishments at the beginning of this report. |
| 2. Strive to balance financial, environmental, and societal considerations when making biosolids decisions. | OC San weighs these considerations and watches for issues that would alter the balance on a daily basis. See Ten Tenets reporting table below and the most current allocation map(www.ocsd.com/map), which demonstrate how OC San balances these considerations. |
| 3. Utilize a biosolids management system to maintain a sustainable and publicly supported biosolids program. | OC San continues to maintain our biosolids management system as outlined in this section. |
| 4. Diversify portfolio of offsite biosolids management options with multiple biosolids contractors, markets, facilities, and maintaining fail-safe | See Table 2 for breakdown of our active biosolids management options.<br><br>See Table 4 for the Ten Tenets. |

| Table 3 – Policy Performance | |
|---|---|
| **Policy Commitment** | **2020 Performance** |
| back-up capacity of at least 100% of its daily biosolids production. | |
| 5. Research and implement ways to reduce the volume of biosolids at the treatment plants to minimize the need for offsite management. | As mentioned in the "Treatment Plants and Program Updates" section above, OC San's production of biosolids has reduced by 35% since the centrifuges fully commissioned in 2019 (2018 vs. 2020).<br><br>OC San's Research program actively seeks opportunities for process area improvements, including solids (see Accomplishments section).<br><br>OC San is continuing to monitor the Supercritical Water Oxidation technology (www.scfi.eu) and the progress towards a feasible pilot plant. |
| 6. Support continuing research of biosolids benefits and potential safety concerns. | In July 2020, the California State Water Resource Control Board issued OC San and most other treatment plants an order to sample our wastewater and biosolids for a list of polyfluoroalkyl constituents (abbreviated as PFAS). The quarterly sampling will start in the first quarter of 2021 and will conclude with the Summer 2021 sampling event. The State regulators will use this data to determine presence and absence of the constituents that will help in future policy or regulatory planning. In addition, OC San is supporting several PFAS research projects.<br><br>OC San has access to the Northwest Biosolids' library (www.nwbiosolids.org). The library contains references to over 2,600 biosolids-related research articles references. Northwest Biosolids sends a monthly theme-based, relevant summary of research to its members, so we can easily digest pertinent scientific information and better communicate with interested parties. Northwest Biosolids also has a free monthly e-Bulletin for non-members.<br><br>See Research Program in Accomplishments. |
| 7. Demonstrate the benefits of biosolids compost by using it at the District's facilities. | OC San maintains compost piles at each plant. This compost is available to our employees and our landscape contractor to demonstrate the benefits of compost. OC San encourages employees to share their compost use photos.<br><br>OC San continues long-term monitoring of our composted biosolids demonstration planter that contains drought-tolerant and native species. |

## Ten Tenets of OC San's Biosolids Management Plan

Read more on OC San's Ten Tenets and the Biosolids Master Plan at ocsd.com/bmp.

| Table 4 – Ten Tenets of Biosolids Management Performance | |
|---|---|
| **Tenet Commitment** | **2020 Performance** |
| 1. Allocate up to 50 percent of biosolids per biosolids contractor. | Each contractor received **less than 50%** of OC San's biosolids. See Table 2 for relative tonnage distribution this year. See OC San's current map of where OC San's biosolids are allocated at ocsd.com/map. |
| 2. Allocate up to 50 percent of biosolids to each geographic end use market. | **Sixty two percent (62%)** of OC San's biosolids were turned into **compost at five (5) regional facilities**. Combined, these facilities distributed **221,561 tons** of composted biosolids in the following **11 geographic markets** (almost doubling counties from 2019):<br><br>• 28.7% to San Bernardino County (**7% decrease** over last year),<br>• 24.9% to Riverside County (**8% decrease** over last year),<br>• 13.8% to Kern County (**2% decrease** over last year),<br>• 11.8% to Los Angeles County (**3% increase** over last year),<br>• 5.3% to Orange County (**4% increase** over last year),<br>• 4.2% to Madera County (**4.2% increase** over last year),<br>• 3.5% to San Diego County (**4% increase** over last year),<br>• 2.7% to Maricopa County, Arizona (**3% decrease** over last year),<br>• 2.2% to Fresno County (**2% increase** over last year),<br>• 1.9% Kings County (**2% increase** over last year),<br>• 0.9% Tulare County (**1% increase** over last year), and<br>• 0.2% Clark County, Nevada (**0.2% increase** over last year).<br><br>The remaining **38%** of OC San's biosolids were used to raise crops, producing **7,975 tons of sudan, oats, sorghum, and alfalfa for use in Arizona, California, and New Mexico**. |
| 3. Maintain at least three (3) different biosolids management facilities at any time. | OC San maintained **five (5)** different management facilities. See Table 2 for relative tonnage distribution this year. See OC San's current map of where OC San's biosolids are allocated at ocsd.com/map. |
| 4. Maintain at least two (2) different biosolids management practices at any time. | OC San maintained **two (2)** different management practices, composting and land application (direct farming of feed crops with biosolids). See Table 2 for relative tonnage distribution this year. See OC San's current map of where OC San's biosolids are allocated at ocsd.com/map. |
| 5. Maintain at least two (2) different hauling companies within the biosolids management portfolio. | OC San and its biosolids management contractors utilized **three (3)** different hauling companies (GIC, Tule Ranch/Western Express, and Denali Water Solutions). |

| Table 4 – Ten Tenets of Biosolids Management Performance | |
|---|---|
| **Tenet Commitment** | **2020 Performance** |
| 6. Maintain at least 200 percent (2 times daily production) contingency capacity at end use sites. | OC San maintained biosolids management site contingency capacity of at least **1250% (12.5 times daily production)**. |
| 7. Maintain 20 percent (1.2 times daily production) fail-safe hauling capacity. | OC San maintained a range of **42-92% (1.4-1.9 times daily production)** fail-safe hauling capacity. |
| 8. Track and encourage development of emerging markets and/or end uses for biosolids, especially for local end use options. | The 2019 Strategic Plan developed by the Board of Directors and staff defines the strategic initiatives to be pursued by OC San and provides a basis for long-term financial, capital, and operational planning. The Biosolids Management Policy initiative in the document includes commitments to educate and advocate with the local, state, and federal agencies to assure biosolids will continue to be safely and legally used as a soil amendment and monitor and research constituents of emerging concern such as PFAS and microplastics that may impact biosolids. See the Accomplishments section for an update on OC San's efforts this year on the Food Waste Treatment Policy and Biosolids Management Policy. |
| 9. Allocate up to 10 percent of total biosolids production for participation in emerging markets, including participation in pilot or demonstration projects. | See the Accomplishments section for an update on OC San's efforts this year on the Biosolids Management Policy Initiative, which included a 2020 RFI for biosolids thermal conversion facilities. |
| 10. Explore partnerships with area soil blenders to allow incorporation of OC San's Class A product into local markets. | OC San is following the work being done by San Francisco Public Utilities Commission on their research and development of their temperature-phase anaerobically digested biosolids soil blend product. In particular, the blend and product distribution to local markets. OC San's efforts will follow suit at the appropriate time since OC San facilities are expected to be commissioned in about 2030. |

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OC SAN
ORANGE COUNTY SANITATION DISTRICT

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