County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

DATE: November 5, 2024

TO: Department of Public Works and Planning, Attn: Steven E. White, Director
Department of Public Works and Planning, Attn: Bernard Jimenez, Planning and Resource Management Officer
Development Services and Capital Projects, Attn: William M. Kettler, Deputy Director
Development Services and Capital Projects, Attn: Chris Motta, Division Manager
Development Services and Capital Projects, Attn: Tawanda Mtunga, Principal Planner
Development Services and Capital Projects, Attn: Attn: James Anders, Principal Planner
Development Services and Capital Projects, Current/Environmental Planning, Attn: David Randall, Senior Planner
Development Services and Capital Projects, Policy Planning, Attn: Mohammad Khorsand, Senior Planner; Dominique Navarette
Development Services and Capital Projects, Zoning & Permit Review, Attn: Daniel Gutierrez, Senior Planner
Development Services and Capital Projects, Development Engineering, Attn: Laurie Kennedy, Office Assistant III
Water and Natural Resources Division, Attn: Augustine Ramirez, Division Manager
Water and Natural Resources Division, Attn: Roy Jimenez, Senior Planner
Water and Natural Resources Division, Transportation Planning, Attn: Hector Luna, Senior Planner/Darren Findley, Senior Engineering Technician/Brody Hines, Planner
Water and Natural Resources Division, Community Development, Attn: Yvette Quiroga, Principal Planner
Design Division, Attn: Mohammad Alimi, Division Manager; Erin Haagenson, Principal Staff Analyst
Resources Division, Attn: Daniel Amann, Division Manger
Resources Division, Special Districts, Attn: Christopher Bump, Principal Staff Analyst,
Road Maintenance and Operations Division, Attn: Wendy Nakagawa, Supervising Engineer
Department of Public Health, Environmental Health Division, Attn: Deep Sidhu, Supervising Environmental Health Specialist; Kevin Tsuda, Environmental Health Specialist;
Agricultural Commissioner, Attn: Melissa Cregan
Sheriff's Office, Attn: Captain Ryan Hushaw, Kevin Lolkus, Lt. Brandon Purcell, Kathy Curtice, Adam Maldonado
Pacific Gas and Electric, Centralized Review Team, Attn: PGEPlanReview@pge.com
U.S. Fish and Wildlife Service, San Joaquin Valley Division, Attn: Matthew Nelson
CA Regional Water Quality Control Board, Attn: centralvalleyfresno@waterboards.ca.gov

CA Department of Fish and Wildlife, Attn: R4CEQA@wildlife.ca.gov
State Water Resources Control Board, Division of Drinking Water, Fresno District, Attn: Cinthia Reyes
San Joaquin Valley Unified Air Pollution Control District (PIC-CEQA Division), Attn: Michael Corder, Senior Air Quality Specialist, Patia Siong, Air Quality Specialist
Fresno County Fire Protection District, Attn: fku.prevention-planning@fire.ca.gov
CA Highway Patrol (CHP), Attn: Captain Austin Matulonis
Kings River Conservation District, Attn: Charlotte Gallock, Director of Water Resources, Chief Engineer
North Kings GSA, Attn: Kassy D. Chauhan, P.E, KChauhan@fresnoirrigation.com

FROM: Alyce Alvarez, Planner
Development Services and Capital Projects Division

SUBJECT: Unclassified Conditional Use Permit No. 3813 & Initial Study No. 8631

APPLICANT: Danny Sozinho

DUE DATE: **November 20, 2024**

The Department of Public Works and Planning, Development Services and Capital Projects Division is reviewing the subject application proposing Unclassified Conditional Use Permit (UCUP) to allow a solid waste processing facility, consisting of four Biofiltro wastewater processing beds (total area 252,300 square feet), two lift stations, and an upgrade to the existing mechanical separator on a 159.68-acre parcel for an existing pre-October 23, 2007 dairy. The subject property is located within the AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone District.

The subject parcel is located on the southwest corner of east Elkhorn Ave., and south Highland Ave., approximately 3.7-miles from the City limits of the City of Kingsburg. (APN: 056-031-35s) (ADDRESS: 8486 E. Elkhorn Avenue) (Sup. Dist. 4).

The Department is also reviewing for environmental effects, as mandated by the California Environmental Quality Act (CEQA) and for conformity with plans and policies of the County.

Based upon this review, a determination will be made regarding conditions to be imposed on the project, including necessary on-site and off-site improvements.

If you do not have comments, please provide a "NO COMMENT" response to our office by the above deadline (e-mail is also acceptable; see email address below).

Please address any correspondence or questions related to environmental and/or policy/design issues to me, Alyce Alvarez Planner, Development Services and Capital Projects Division, Fresno County Department of Public Works and Planning, 2220 Tulare Street, Sixth Floor, Fresno, CA 93721, or call (559) 600-9669, or email alyalvarez@fresnocountyca.gov

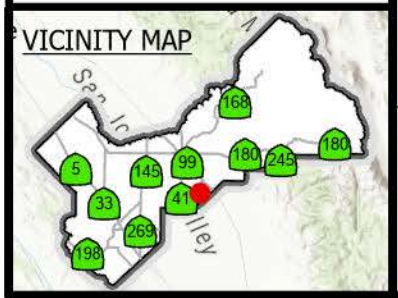
AA
G:\4360Devs&Pln\PROJSEC\PROJDOCS\CUP\3800-3899\3813\Routing\CUP 3813 Routing Ltr.doc

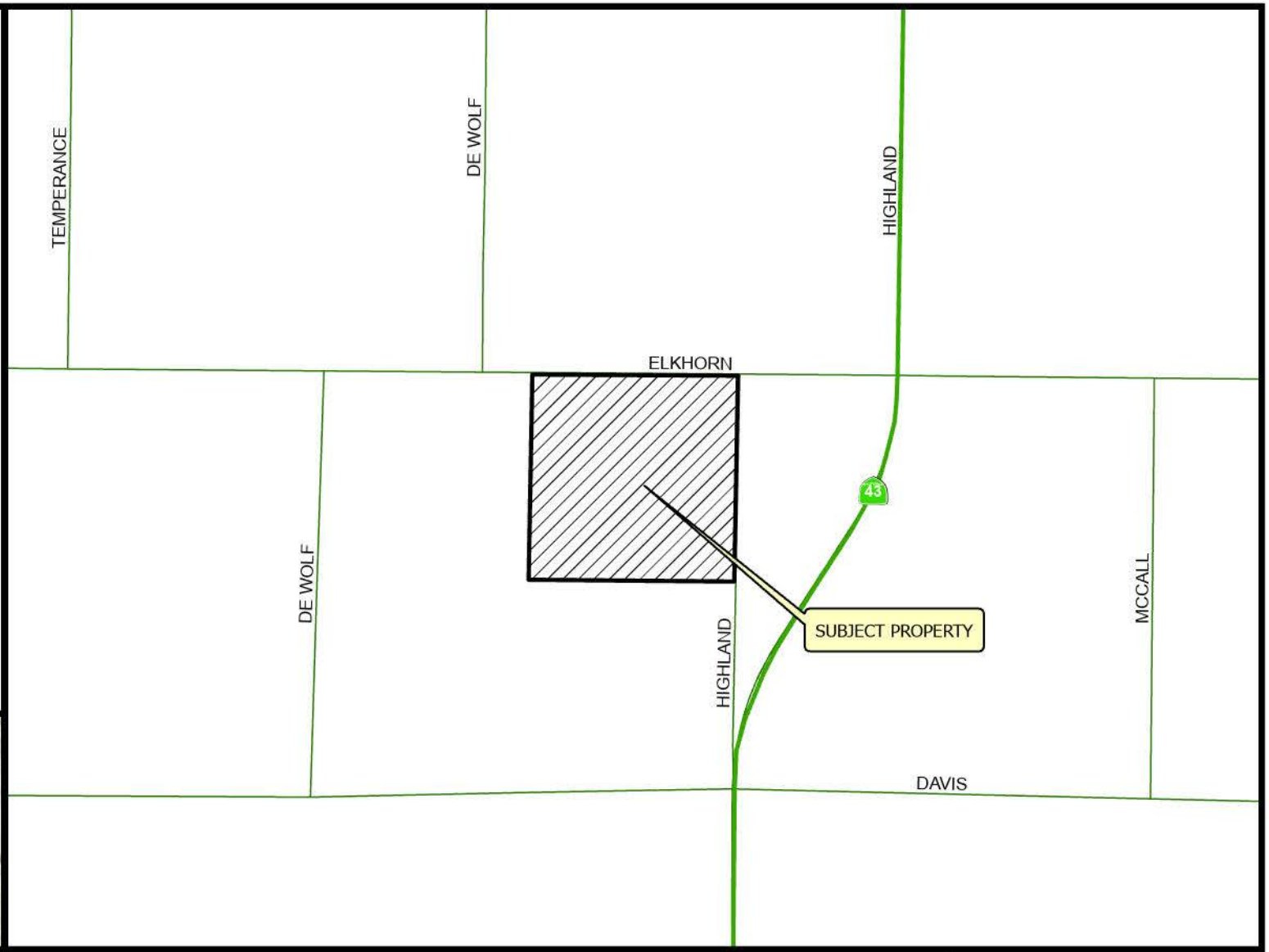
Activity Code (Internal Review): 2394

Enclosures

Legend

Subject Property





LOCATION MAP

CUP3813	2024

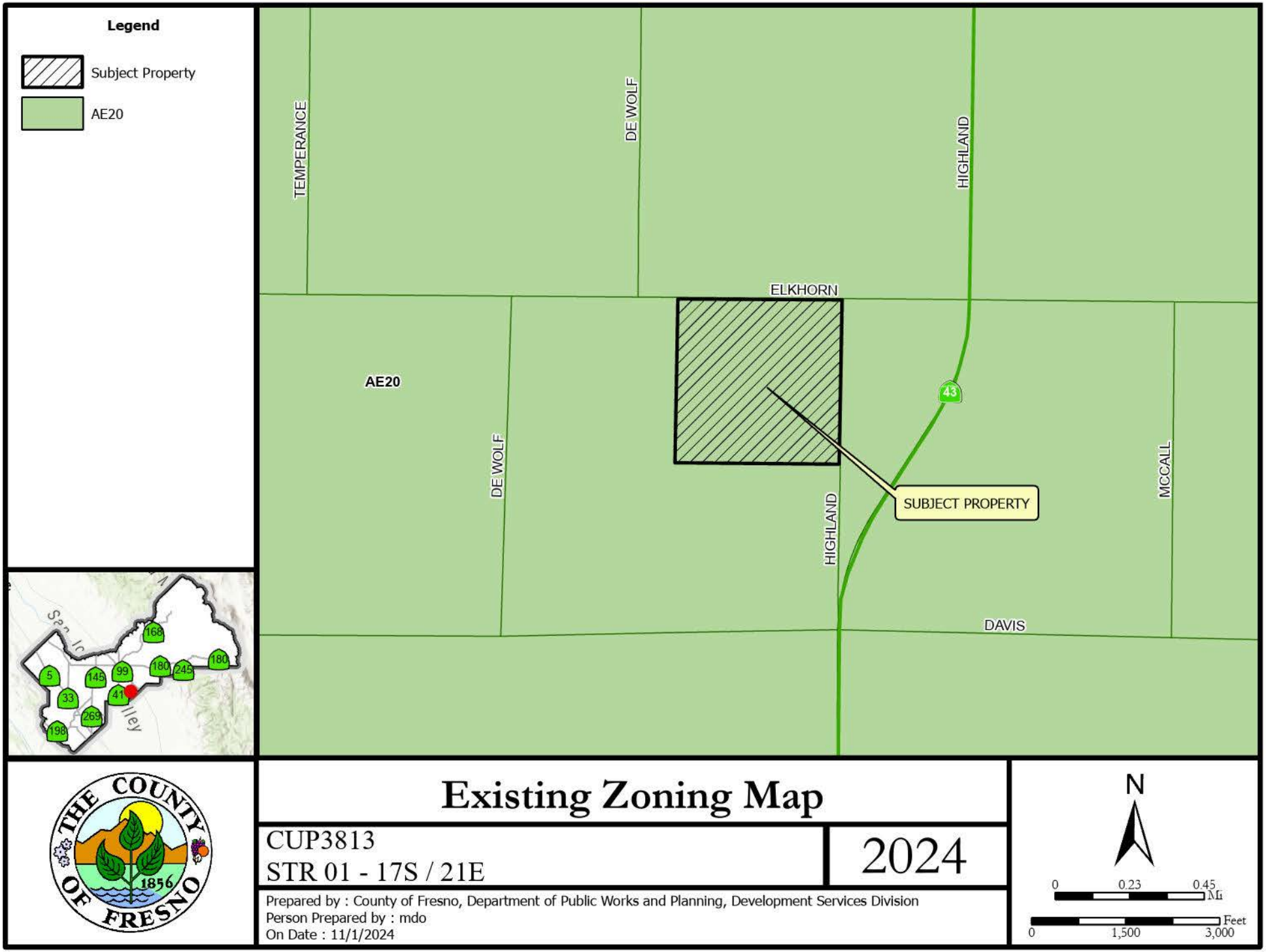
Prepared by : County of Fresno, Department of Public Works and Planning, Development Services Division
Person Prepared by : mdo
On Date : 11/1/2024

N

0 0.23 0.45 Mi

0 1,500 3,000 Feet

Path: G:\4360Devs&Pln\GIS\Completed GIS Maps\Landuse\cup3813\cup3813.aprx



Existing Zoning Map

CUP3813
STR 01 - 17S / 21E

2024

Prepared by : County of Fresno, Department of Public Works and Planning, Development Services Division
Person Prepared by : mdo
On Date : 11/1/2024

N

0 0.23 0.45 Mi

0 1,500 3,000 Feet

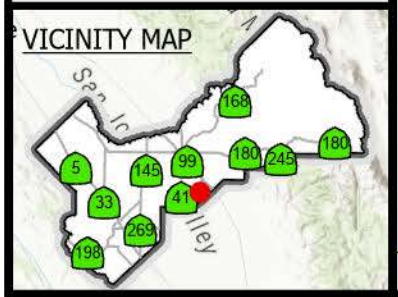
Path: G:\4360Devs&Pln\GIS\Completed GIS Maps\Landuse\cup3813\cup3813.aprx

LEGEND:

Subject Property

Ag Contract Land

LEGEND
SF#- SINGLE FAMILY RESIDENCE
ORC - ORCHARD
DAIRY
FC - FIELD CROP
VIN - VINEYARD
V - VACANT



Existing Land Use Map

CUP3813

2024

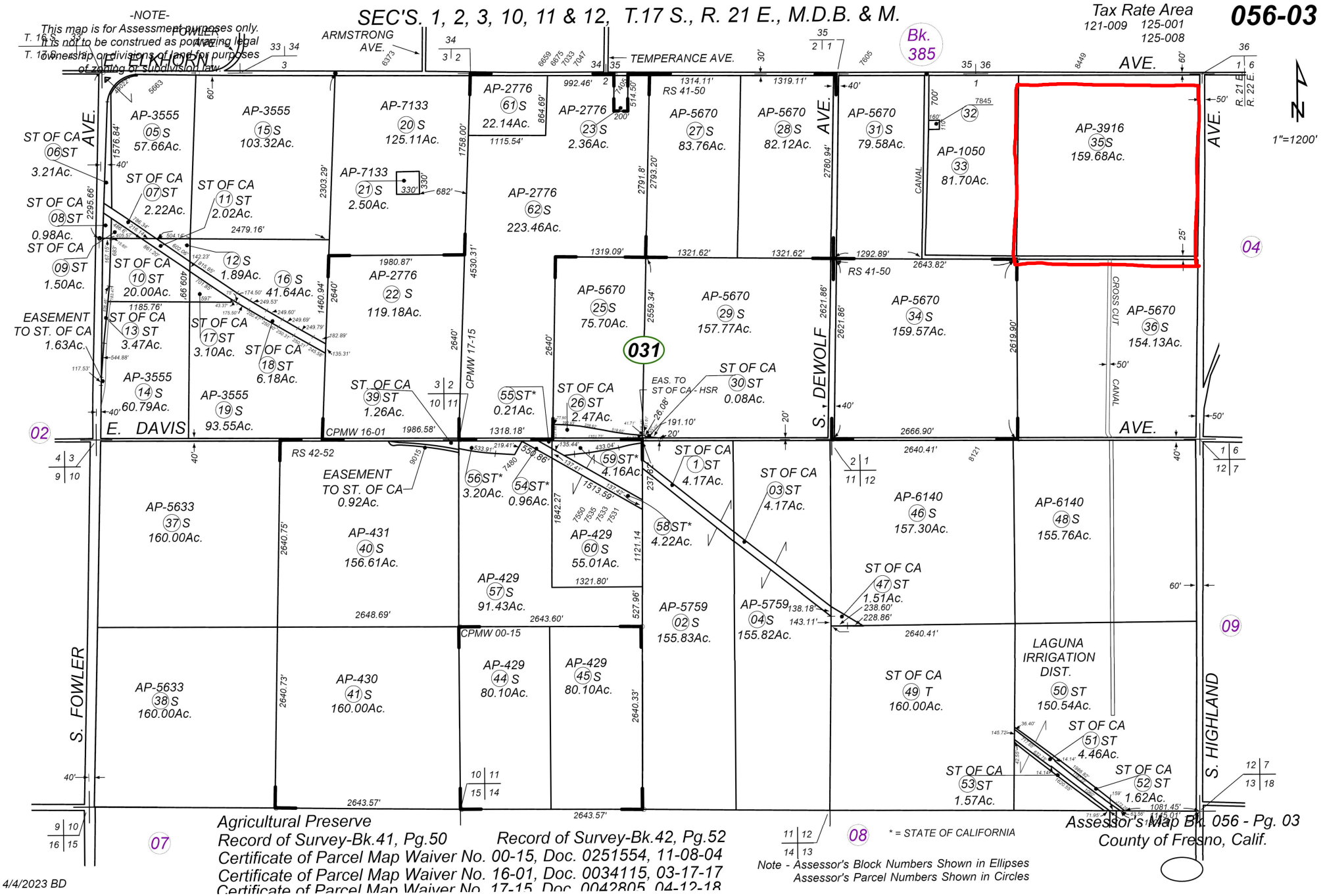
Prepared by : County of Fresno, Department of Public Works and Planning, Development Services Division
Person Prepared by : mdo
On Date : 11/1/2024

N

0 0.17 0.35 Mi

0 1,000 2,000 Feet

Path: G:\4360Devs&Pln\GIS\Completed GIS Maps\Landuse\cup3813\cup3813.aprx


-NOTE-
This map is for Assessment purposes only.
It is not to be construed as portraying legal ownership or divisions of land for purposes of zoning or subdivision law.
SEC'S. 1, 2, 3, 10, 11 & 12, T.17 S., R. 21 E., M.D.B. & M.
Tax Rate Area
121-009 125-001
125-008
056-03
Bk. 385
1"=1200'
ARMSTRONG AVE.
TEMPERANCE AVE.
E. ELKHORN AVE.
E. DAVIS AVE.
S. FOWLER AVE.
S. DEWOLF AVE.
S. HIGHLAND AVE.
CANAL
CROSS CUT CANAL
LAGUNA IRRIGATION DIST.
RS 41-50
RS 42-52
CPMW 16-01
CPMW 17-15
CPMW 00-15
EASEMENT TO ST. OF CA 0.92Ac.
EASEMENT TO ST. OF CA 1.63Ac.
EAS. TO ST OF CA - HSR
031
AP-3555 05 S 57.66Ac.
AP-3555 15 S 103.32Ac.
AP-7133 20 S 125.11Ac.
AP-2776 61 S 22.14Ac.
AP-2776 23 S 2.36Ac.
AP-5670 27 S 83.76Ac.
AP-5670 28 S 82.12Ac.
AP-5670 31 S 79.58Ac.
AP-3916 35 S 159.68Ac.
AP-1050 33 81.70Ac.
ST OF CA 06 ST 3.21Ac.
ST OF CA 07 ST 2.22Ac.
ST OF CA 11 ST 2.02Ac.
AP-7133 21 S 2.50Ac.
AP-2776 62 S 223.46Ac.
ST OF CA 08 ST 0.98Ac.
ST OF CA 09 ST 1.50Ac.
ST OF CA 10 ST 20.00Ac.
12 S 1.89Ac.
16 S 41.64Ac.
AP-2776 22 S 119.18Ac.
AP-5670 25 S 75.70Ac.
AP-5670 29 S 157.77Ac.
AP-5670 34 S 159.57Ac.
AP-5670 36 S 154.13Ac.
ST OF CA 13 ST 3.47Ac.
ST OF CA 17 ST 3.10Ac.
ST OF CA 18 ST 6.18Ac.
ST OF CA 30 ST 0.08Ac.
AP-3555 14 S 60.79Ac.
AP-3555 19 S 93.55Ac.
ST. OF CA 39 ST 1.26Ac.
55 ST* 0.21Ac.
ST OF CA 26 ST 2.47Ac.
56 ST* 3.20Ac.
54 ST* 0.96Ac.
59 ST* 4.16Ac.
58 ST* 4.22Ac.
ST OF CA 1 ST 4.17Ac.
ST OF CA 03 ST 4.17Ac.
AP-6140 46 S 157.30Ac.
AP-6140 48 S 155.76Ac.
AP-5633 37 S 160.00Ac.
AP-431 40 S 156.61Ac.
AP-429 60 S 55.01Ac.
AP-429 57 S 91.43Ac.
ST OF CA 47 ST 1.51Ac.
AP-5759 02 S 155.83Ac.
AP-5759 04 S 155.82Ac.
AP-5633 38 S 160.00Ac.
AP-430 41 S 160.00Ac.
AP-429 44 S 80.10Ac.
AP-429 45 S 80.10Ac.
ST OF CA 49 T 160.00Ac.
LAGUNA IRRIGATION DIST. 50 ST 150.54Ac.
ST OF CA 51 ST 4.46Ac.
ST OF CA 53 ST 1.57Ac.
ST OF CA 52 ST 1.62Ac.
02
04
07
08
09
* = STATE OF CALIFORNIA
Agricultural Preserve
Record of Survey-Bk.41, Pg.50
Record of Survey-Bk.42, Pg.52
Certificate of Parcel Map Waiver No. 00-15, Doc. 0251554, 11-08-04
Certificate of Parcel Map Waiver No. 16-01, Doc. 0034115, 03-17-17
Certificate of Parcel Map Waiver No. 17-15, Doc. 0042805, 04-12-18
Note - Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles
Assessor's Map Bk. 056 - Pg. 03
County of Fresno, Calif.
4/4/2023 BD

SOZINHO DAIRY #2
BIOFILTRO PROJECT
SITE PLAN

OWNER/OPERATOR	DANNY SOZINHO
MAILING ADDRESS	10795 6TH AVENUE HANFORD, CA 93230
FACILITY ADDRESS	8489 E. ELKHORN AVENUE SELMA, CA 93662
A.P.N. PARCEL SIZE	056-031-35S 159.68 ACRES

LEGEND

- PROPOSED CONCRETE
- PROPOSED WASTEWATER PROCESSING BEDS
- PROPOSED GRAVEL/DG
- PROPERTY LINE
- EXISTING CONCRETE
- EXISTING FENCELINE
- EXISTING SHADE/STRUCTURE

1323' TO PROPERTY LINE
A.P.N. 056-031-35S
A.P.N. 385-190-40S
PROPERTY LINE
100' SETBACK
EXISTING IRRIGATION WELL
20' TYP.
PROPOSED CONTROL UNIT
PROPOSED LIFT STATION
MANURE STACKING PAD
SETTLING CELL 2
SETLLING CELL 1
RECEPTION PIT
SILAGE STORAGE
HAY BARN
WASTEWATER RETENTION POND 1
PROPOSED LIFT STATION
EXISTING MECHANICAL SEPARATOR TO BE UPGRADED
MANURE DRYING AREA
OPEN LOT CORRALS
DEAD ANIMAL MANAGEMENT AREA
A.P.N. 056-031-36S
810'
PROPERTY LINE
PROPOSED WASTEWATER PROCESSING BEDS (TYP. 4)
60'
20'
OPEN LOT CORRALS
OPEN LOT CORRALS
100' SETBACK
EXISTING DOMESTIC WELL (UTILIZED FOR FIRE PROTECTION)
FREESTALL BARN
MILK BARN
EXISTING IRRIGATION WELL
20' TYP.
100' SETBACK
FREESTALL BARN
2309' TO PROPERTY LINE
OPEN LOT CORRALS
OPEN LOT CORRALS
RESIDENCES
2330' TO CENTER OF ROAD
100' SETBACK
446' TO PROPERTY LINE
PROPERTY LINE
S. HIGHLAND AVE.
EXISTING IRRIGATION WELL
461' TO CENTER OF ROAD
A.P.N. 385-190-32S
A.P.N. 385-190-08S
A.P.N. 056-040-24S
A.P.N. 056-040-01S
E. ELKHORN AVE.

NORTH
300' 0' 300'

JOB NO. 240341
APPENDIX A
07/03/2024
SCALE: AS SHOWN

PROPOSED SITE PLAN
SOZINHO DAIRY #2
FRESNO COUNTY, CA

324 S. Santa Fe, Ste. A
Visalia, CA 93292
(559) 802-3052
www.4-creeks.com
4CREEKS

1. **Nature of operation – what do you propose to do? Describe in detail.**

   Sozinho Dairy #2 (Facility) is an existing dairy facility located in Selma, California, consisting of 1,150 milking cows and 1,000 non-milking cows. The owners of the Facility would like to propose the construction, installation, and operation of BioFiltro vermifiltration beds on the existing dairy facility. This includes the construction of four (4) vermifiltration processing beds, two (2) lift stations, and an upgrade to the existing mechanical separator. The vermifiltration beds treat wastewater produced on site and produce higher quality water for reuse, storage, and land application. The wastewater is sprinkled onto a bed full of woodchips and worms, where the worms live and feed off the wastewater by removing contaminates.

2. **Operational time limits:**

   The operation of the Facility remains consistent throughout the year. The Facility operates 24 hours per day, 7 days per week. The milk cows are milked twice per day, and this routine governs the milkers' schedule. There are two shifts for milkers, per 24 hours, each approximately 10 hours. Feeders, herdsmen, maintenance, and other employees work between the hours of 4:00AM and 6:00PM. The proposed facility improvements and vermifiltration processing beds will be operated within the facilities' existing operating hours. The vermifiltration beds will be operated 24 hours a day treating wastewater on site.

3. **Number of customers or visitors:**

   The number of visitors per day range depending on the day of week and the time of year. On average, about 15 visitors (which include family members of employees, consultants to the dairy, or salesman) visit per week day, between the hours of 6:00AM and 5:00PM. The proposed project will not affect the number of customers or visitors on-site.

4. **Number of employees:**

   The current total number of employees is approximately 15 people. The proposed project will include 2 additional employees on-site to operate the vermifiltration beds.

5. **Service and delivery vehicles:**

   Service and Delivery vehicles occur regularly at the dairy to provide feed, pick up the milk, haul animals, provide mechanical services, provide veterinary services and breeding services, and fuel deliveries. With the addition of the proposed facility improvements, a minor amount of limited additional maintenance and service vehicles will visit the site. Annually, the vermifiltration beds will be cleaned out requiring additional service vehicles to haul woodchips from the vermifiltration processing beds to the facilities stacking area for processing and land application.

6. **Access to the site:**

   The Facility is located south of E. Elkhorn Avenue between De Wolf Avenue and S. Highland Avenue. There is one (1) paved access points to the Facility from E. Elkhorn Avenue.

7. **Number of parking spaces for employees, customers, and service/delivery vehicles.**
   There are twenty (20) marked parking spaces, one of which is marked for ADA Accessibility. Majority of parking occurs adjacent to the milk barn as well as adjacent to the shop. Adjacent to the milk barn is approximately thirty (50) marked and unmarked parking spaces. The proposed project will not impose the need for additional parking spaces.

8. **Are there any goods to be sold on-site? If so, are these goods grown or produced on-site or at some other location?**
   Milk is produced on-site, and picked up by California Dairies, Inc. several times each day. The proposed facility improvements will not increase nor add additional goods sold on-site.

9. **What equipment is used?**
   Tractors and feed trucks are used on-site for feeding the animals. In the milk barn, vacuum pumps, plate coolers, and other milk handling equipment are used in compliance with the California Code of Regulations. The proposed vermifiltration processing beds will utilize a linear move irrigation system and a tilling machine to provide water and maintain the beds. Additional dump trucks and loaders will be used annually to clean out the beds.

10. **What supplies or materials are used and how are they stored?**
    Various supplies and materials are stored and used within the milk barn for milk tank sanitation. Wood chips are used within the proposed vermifiltration beds to aid in the treatment of the wastewater.

11. **Does the use cause an unsightly appearance?**
    There is an existing buffer of 300 feet between the paved street and the extents of the Facility production area, which reduces any aesthetic impacts of the Facility. The proposed project will not affect the impacts on dust, odor, or any aesthetics near the Facility. The wood chips will be placed in a pile at a maximum height of 3 feet not disturbing any bypassing appearance.

12. **List any solid or liquid wastes to be produced.**
    Solid manure is produced on-site, stored, and applied to contiguous farmland at agronomic rates. Liquid wastewater is also produced, stored, and applied similarly. Some solid manure is also delivered off-site, which is monitored by the Facility as required by the Regional Water Quality Control Board. The proposed project will further treat wastewater produced on-site which will result in higher quality water for reuse, storage, and land application. No additional wastewater will be produced from facility operations following construction. Processed woodshavings will be the resultant from the vermifiltration beds, for land application following use.

13. **Estimated volume of water to be used (gallons per day).**
    The estimated volume of water to be used at the dairy Facility will remain the same as existing conditions. The vermifiltration processing beds will neither generate nor use more water than the Facility currently utilizes, which ranges throughout the various seasons of the year between 50 gallons per day per cow to 100 gallons per day per cow. All wastewater generated at the Facility will continue to be recycled agronomically for crop use. The proposed project will not affect the estimated volume of water to be used at the Facility.

14. **Describe any proposed advertising including size, appearance, and placement.**
    Not applicable to this operation.

15. **Will existing buildings be used or will new buildings be constructed?**
    All existing buildings of the Facility will remain intact, and there will not be any new buildings constructed.

16. **Explain which buildings or what portion of buildings will be used in the operation.**
    There will not be any buildings utilized for this proposed project.

17. **Will any outdoor lighting or an outdoor sound amplification system be used?**
    All outdoor lighting is existing. The proposed project does not include the addition of outdoor lighting, nor outdoor sound amplification systems.

18. **Landscaping or fencing proposed?**
    There will not be any proposed fencing for this project.

19. **Any other information that will provide a clear understand of the project or operation.**
    The proposed modification to the Facility will not modify the number of animal units approved under the existing CUP. The purpose of the project is to generate clean wastewater in order to be reused for facility operations. The project will also create a high nutrient fertilizer that can be used on the owner's cropland. The project has positive impacts to existing operations on the dairy Facility once constructed and operational.

20. **Identify all Owners, Officers, and/or Board Members for each application submitted.**
    The owner of the dairy is Sozinho Family Trust, which is overseen by Danny Sozinho.

Date Received:

(Application No.)

Fresno County Department of Public Works and Planning

MAILING ADDRESS:
Department of Public Works and Planning
Development Services Division
2220 Tulare St., 6th Floor
Fresno, Ca. 93721

LOCATION:
Southwest corner of Tulare & "M" Streets, Suite A
Street Level
Fresno Phone: (559) 600-4497
Toll Free: 1-800-742-1011 Ext. 0-4497

APPLICATION FOR:

- ☐ Pre-Application (Type) _____
- ☐ Amendment Application
- ☐ Amendment to Text
- ■ Conditional Use Permit
- ☐ Variance (Class)/Minor Variance
- ☐ Site Plan Review/Occupancy Permit
- ☐ No Shoot/Dog Leash Law Boundary
- ☐ General Plan Amendment/Specific Plan/SP Amendment)
- ☐ Time Extension for _____
- ☐ Director Review and Approval
- ☐ for 2nd Residence
- ☐ Determination of Merger
- ☐ Agreements
- ☐ ALCC/RLCC
- ☐ Other _____

DESCRIPTION OF PROPOSED USE OR REQUEST:

The construction of two (2) lift stations, four (4) Biofiltro wastewater processing beds with a total area of (850' x 320'), and an upgrade to the existing mechanical separator. The improvements will further treat wastewater generated by facility operations.

CEQA DOCUMENTATION: ■ *Initial Study* ☐ *PER* ☐ *N/A*

PLEASE USE FILL-IN FORM OR PRINT IN BLACK INK. Answer all questions completely. Attach required site plans, forms, statements, and deeds as specified on the Pre-Application Review. **Attach Copy of Deed, including Legal Description.**

LOCATION OF PROPERTY: South side of E. Elkhorn Avenue
between S. Highland Avenue and De Wolf Avenue
Street address: 8489 E. Elkhorn Avenue, Selma, CA 93662

APN: 056-031-35S Parcel size: 159.68 acres Section(s)-Twp/Rg: S 01 - T 17 S/R 21 E

ADDITIONAL APN(s): _____

I, _____ (*signature*), declare that I am the owner, or authorized representative of the owner, of the above described property and that the application and attached documents are in all respects true and correct to the best of my knowledge. The foregoing declaration is made under penalty of perjury.

Danny Sozinho	10795 6th Avenue	Hanford	93230	(559) 381-5485
Owner (Print or Type)	Address	City	Zip	Phone
Same as Owner				
Applicant (Print or Type)	Address	City	Zip	Phone
Tyler Esteves	324 S. Santa Fe St., Ste. A	Visalia	93292	(559) 802-3052
Representative (Print or Type)	Address	City	Zip	Phone

CONTACT EMAIL: tylere@4-creeks.com

OFFICE USE ONLY (*PRINT FORM ON GREEN PAPER*)

Application Type / No.: Fee: $
Application Type / No.: Fee: $
Application Type / No.: Fee: $
Application Type / No.: Fee: $
PER/Initial Study No.: Fee: $
Ag Department Review: Fee: $
Health Department Review: Fee: $
Received By: _____ Invoice No.: TOTAL: $

UTILITIES AVAILABLE:

WATER: Yes ☐ / No ■
Agency: _____

SEWER: Yes ☐ / No ■
Agency: _____

STAFF DETERMINATION: This permit is sought under Ordinance Section: _____

Related Application(s): _____

Zone District: _____

Parcel Size: _____

Sect-Twp/Rg: ____ - T____ S /R____ E

APN # ___ - ___ - ____
APN # ___ - ___ - ____
APN # ___ - ___ - ____
APN # ___ - ___ - ____

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

INITIAL STUDY APPLICATION

INSTRUCTIONS

Answer all questions completely. An incomplete form may delay processing of your application. Use additional paper if necessary and attach any supplemental information to this form. Attach an operational statement if appropriate. This application will be distributed to several agencies and persons to determine the potential environmental effects of your proposal. Please complete the form in a legible and reproducible manner (i.e., USE BLACK INK OR TYPE).

OFFICE USE ONLY

IS No. _____

Project No(s). _____

Application Rec'd.: _____

GENERAL INFORMATION

1. ***Property Owner :*** Danny Sozinho ***Phone/Fax*** (559) 381-5485

   Mailing Address: 10795 6th Avenue (***Street***) Hanford (***City***) CA / 93230 (***State/Zip***)

2. ***Applicant :*** Same as Owner ***Phone/Fax:*** _____

   Mailing Address: _____ (***Street***) _____ (***City***) _____ (***State/Zip***)

3. ***Representative:*** Tyler Esteves ***Phone/Fax:*** (559) 802-3052

   Mailing Address: 324 S. Santa Fe St., Ste. A (***Street***) Visalia (***City***) CA / 93292 (***State/Zip***)

4. ***Proposed Project:*** The construction of two (2) lift stations, four (4) Biofiltro wastewater processing beds with a total area of (850' x 320'), and an upgrade to the existing mechanical separator. The improvements will further treat wastewater generated by facility operations.

5. ***Project Location:*** South side of E. Elkhorn Avenue between S. Highland Avenue and De Wolf Avenue.

6. ***Project Address:*** 8489 E. Elkhorn Avenue, Selma, CA 93662

7. ***Section/Township/Range:*** 01 /17S /21E **8. *Parcel Size:*** 159.68

9. ***Assessor's Parcel No.*** 056-031-35S

OVER.....

10. ***Land Conservation Contract No. (If applicable):*** _____

11. ***What other agencies will you need to get permits or authorization from:***

☐	*LAFCo (annexation or extension of services)*	☑	*SJVUAPCD (Air Pollution Control District)*
☐	*CALTRANS*	☐	*Reclamation Board*
☐	*Division of Aeronautics*	☐	*Department of Energy*
☑	*Water Quality Control Board*	☐	*Airport Land Use Commission*
☐	*Other* _____		

12. ***Will the project utilize Federal funds or require other Federal authorization subject to the provisions of the National Environmental Policy Act (NEPA) of 1969?*** ◯ *Yes* ☑ *No*

If so, please provide a copy of all related grant and/or funding documents, related information and environmental review requirements.

13. ***Existing Zone District[1]:*** AE-20

14. ***Existing General Plan Land Use Designation[1]:*** Agriculture

ENVIRONMENTAL INFORMATION

15. ***Present land use:*** Existing Dairy Facility

Describe existing physical improvements including buildings, water (wells) and sewage facilities, roads, and lighting. Include a site plan or map showing these improvements:

All existing and proposed improvements are identified on the site plan.

Describe the major vegetative cover: N/A

Any perennial or intermittent water courses? If so, show on map: None

Is property in a flood-prone area? Describe:

.02% Annual Chance Flood Hazard

FEMA Panel #06019C295J, Zone X

16. ***Describe surrounding land uses (e.g., commercial, agricultural, residential, school, etc.):***

North: Row Crops

South: Row Crops

East: Row Crops

West: Row Crops

17. ***What land use(s) in the area may be impacted by your Project?:*** None

18. ***What land use(s) in the area may impact your project?:*** None

19. ***Transportation:***

NOTE: The information below will be used in determining traffic impacts from this project. The data may also show the need for a Traffic Impact Study (TIS) for the project.

A. Will additional driveways from the proposed project site be necessary to access public roads?
_____ ***Yes*** 4 ***No***

B. Daily traffic generation:

I.	***Residential - Number of Units***	N/A
	Lot Size	
	Single Family	
	Apartments	
II.	***Commercial - Number of Employees***	80
	Number of Salesmen	15
	Number of Delivery Trucks	8
	Total Square Footage of Building	272,000

III. Describe and quantify other traffic generation activities: A minor amount of limited additional maintenance vehicles will visit the site, but only a few times per month. Bi-annually the BIDA beds will be cleaned out using 2 trucks per day for 14 days moving processed wood chips on site for land application.

20. ***Describe any source(s) of noise from your project that may affect the surrounding area:*** None

21. ***Describe any source(s) of noise in the area that may affect your project:*** None

22. ***Describe the probable source(s) of air pollution from your project:*** Minimum air pollution will result from the proposed project. Overall, the project will improve air quality due to the improved quality of wastewater entering the retention ponds on site. An air study is currently being completed with the SJVAPCD.

23. ***Proposed source of water:***
(✓) ***private well***
( ) ***community system[3]--name:*** *OVER.....*

24. ***Anticipated volume of water to be used (gallons per day)[2]:*** 76,663 (current)

25. ***Proposed method of liquid waste disposal:***
☑ ***septic system/individual***
( ) ***community system[3]-name*** _____

26. ***Estimated volume of liquid waste (gallons per day)[2]:*** Same as current

27. ***Anticipated type(s) of liquid waste:*** Animal wastewater to be land applied (current)

28. ***Anticipated type(s) of hazardous wastes[2]:*** Same as current

29. ***Anticipated volume of hazardous wastes[2]:*** Same as current

30. ***Proposed method of hazardous waste disposal[2]:*** Same as current

31. ***Anticipated type(s) of solid waste:*** Animal waste (current)

32. ***Anticipated amount of solid waste (tons or cubic yards per day):*** Same as current

33. ***Anticipated amount of waste that will be recycled (tons or cubic yards per day):*** Same as current

34. ***Proposed method of solid waste disposal:*** Land application (current)

35. ***Fire protection district(s) serving this area:*** Fresno County Fire Protection District

36. ***Has a previous application been processed on this site? If so, list title and date:*** _____

37. ***Do you have any underground storage tanks (except septic tanks)? Yes_____ No_____***

38. ***If yes, are they currently in use? Yes_____ No_____***

TO THE BEST OF MY KNOWLEDGE, THE FOREGOING INFORMATION IS TRUE.

_____ 3/12/24
SIGNATURE ***DATE***

[1]***Refer to Development Services and Capital Projects Conference Checklist***
[2]***For assistance, contact Environmental Health System, (559) 600-3357***
[3]***For County Service Areas or Waterworks Districts, contact the Resources Division, (559) 600-4259***

(Revised 12/14/18)

NOTICE AND ACKNOWLEDGMENT

INDEMNIFICATION AND DEFENSE

The Board of Supervisors has adopted a policy that applicants should be made aware that they may be responsible for participating in the defense of the County in the event a lawsuit is filed resulting from the County's action on your project. You may be required to enter into an agreement to indemnify and defend the County if it appears likely that litigation could result from the County's action. The agreement would require that you deposit an appropriate security upon notice that a lawsuit has been filed. In the event that you fail to comply with the provisions of the agreement, the County may rescind its approval of the project.

STATE FISH AND WILDLIFE FEE

State law requires that specified fees (effective January 1, 2019: $3,271.00 for an EIR; $2,354.75 for a Mitigated/Negative Declaration) be paid to the California Department of Fish and Wildlife (CDFW) for projects which must be reviewed for potential adverse effect on wildlife resources. The County is required to collect the fees on behalf of CDFW. A $50.00 handling fee will also be charged, as provided for in the legislation, to defray a portion of the County's costs for collecting the fees.

The following projects are exempt from the fees:

1. *All projects statutorily exempt from the provisions of CEQA (California Environmental Quality Act).*

2. *All projects categorically exempt by regulations of the Secretary of Resources (State of California) from the requirement to prepare environmental documents.*

A fee exemption may be issued by CDFW for eligible projects determined by that agency to have "no effect on wildlife." That determination must be provided in advance from CDFW to the County at the request of the applicant. You may wish to call the local office of CDFW at (559) 222-3761 if you need more information.

Upon completion of the Initial Study you will be notified of the applicable fee. Payment of the fee will be required before your project will be forwarded to the project analyst for scheduling of any required hearings and final processing. The fee will be refunded if the project should be denied by the County.

Applicant's Signature

7/13/21
Date

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

Figure 7

Figure 8

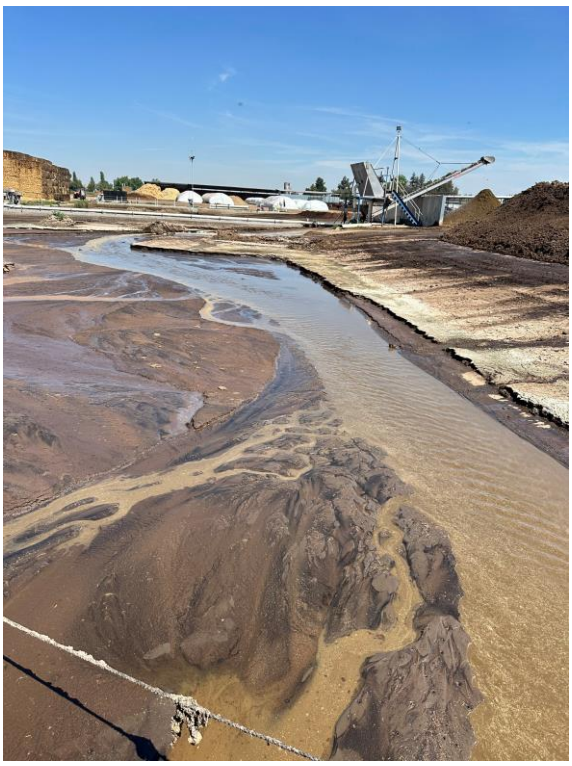


Figure 9

Figure 10

2

RECORDING REQUESTED BY:
Chicago Title Company
Escrow No.: 07-**41001830**-MS
Locate No.: CACTI7710-7754-4410-0044104264
Title No.: 07-**44104264**-JB

When Recorded Mail Document and Tax Statement To:
Joe S. Sozinho
11447 8 1/2 Avenue
Hanford, CA 93230

FRESNO County Recorder
Robert C. Werner
DOC- 2007-0028608
Acct 2-Chicago Title Company
Friday, FEB 09, 2007 14:50:06
NPC $20.00
Ttl Pd $7,730.00 Nbr-0002423308
JZG/R3/1-2

APN: 056-030-08s, 056-030-48s

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned grantor(s) declare(s)
Documentary transfer tax is $7,700.00
[X] computed on full value of property conveyed, or
[ ] computed on full value less value of liens or encumbrances remaining at time of sale,
[X] Unincorporated Area City of

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Dutch Valley Farms, a California General Partnership, formerly known as DeGroot & Visser Dairy, a General Partnership

hereby GRANT(S) to FRE 369, LLC, a Delaware limited liability company

the following described real property in the County of **Fresno**, State of **California**:
SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

DATED: February 2, 2007

Dutch Valley Farms, a California General Partnership, formerly known as DeGroot & Visser Dairy, a General Partnership
By: Teresa Visser
Teresa Visser, Partner
By: Daniel Visser
Daniel Visser, Partner

STATE OF New Mexico)
COUNTY OF Curry)
ON February 6, 2007 before me,
Chi-ann Robb, Notary Public
(here insert name and title of the officer), personally appeared Teresa Visser and Daniel Visser,
~~personally known to me~~ (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

(S)

Witness my hand and official seal.

Signature Chi-ann Robb (Seal)

MAIL TAX STATEMENTS AS DIRECTED ABOVE

Escrow No.: 07-**41001830**-MS
Locate No.: CACTI7710-7754-4410-0044104264
Title No.: 07-**44104264**-JB

EXHIBIT "A"

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS:

UNINCORPORATED AREA

PARCEL 1:

The fractional Northeast quarter of Section 1, Township 17 South, Range 21 East, Mount Diablo Base and Meridian, according to the Official Plat thereof.

EXCEPTING THEREFROM an undivided 1/2 interest in all oil, gas, minerals and hydrocarbon substances in or under said land as reserved by Pakchoian Farms Inc. in Deed recorded January 8, 1988 as Document No. 88-2346 and re-recorded February 19, 1988 as Document No. 88-18810 of Official Records.

APN: 056-030-08s

PARCEL 2:

The Southeast quarter of Section 1, Township 17 South, Range 21 East, Mount Diablo Base and Meridian, according to the Official Plat thereof.

EXCEPTING THEREFROM an undivided 1/2 interest in all the minerals, gas, oils, petroleum, naphtha and other hydrocarbon substances in, on or under said land, as reserved by Security-First National Bank of Los Angeles, in Deed recorded December 6, 1941 in Book 1961 Page 268 of Official Records.

APN: 056-030-48s

2

4CREEKS

FRESNO COUNTY ZONING ORDINANCE

TECHNICAL REPORT

FOR

SOZINHO DAIRY #2

JULY 2024

VISALIA - HQ
324 S Sante Fe St, Suite A
Visalia, CA 93292
559-802-3052
info@4-creeks.com

CLOVIS
180 W Bullard Ave, Suite 101
Clovis, CA 93612
559-802-3052
info@4-creeks.com

DENVER
9540 Maroon Circle, Suite 110
Englewood, CO 80112
720-210-9488
info@4-creeks.com

HANFORD
308 N Irwin St.
Hanford, CA 93230
559-802-3052
info@4-creeks.com

SAN LUIS OBISPO
605 Santa Rosa St, Suite A
San Luis Obispo, CA 93401
805-904-4394
info@4-creeks.com

TULARE
132 S N St.
Tulare, CA 93274
559-802-3052
info@4-creeks.com

TABLE OF CONTENTS

1. INTRODUCTION

This Technical Report has been prepared for the improvements of Sozinho Dairy #2 (Facility). The following studies, plans and programs were prepared per the requirements outlined within the Fresno County Zoning Ordinance.

The existing facility is located within Fresno County as described below. Floor plans, elevation plans, and a site plan of the proposed expansion are provided in *Project Description*.

Address:	8489 East Elkhorn Avenue, Selma, CA 93662
Facility APN's:	056-031-35s
Owned Land Application APN's:	056-031-36s, 056-040-19s
Township, Range, Section:	Township 17 South, Range 21 East, Section 1
Baseline Meridian:	Mount Diablo Base and Meridian
Zoning:	AE20
FEMA Flood Designation:	Zone A

The existing permitted facility consists of a herd level of 2,150 Holstein bovines. The existing permitted herd level consists of approximately 1,150 milk cows in freestall barns and scrapped corrals, and 1,000 non-milking cows in scraped corrals. The proposed modification to the Facility will not increase the Facility footprint or number of animal units approved under the existing CUP.

The improvements will include the upgrading of the existing mechanical separator, the construction of two (2) lift stations and four (4) vermifiltration processing beds. The entire footprint of the expanded facility will include approximately 55 acres and the facility has been designed to conform with all applicable Fresno County Fire District minimum standards for dairy developments.

The vermifiltration beds will be used on a year-round basis to treat wastewater produced from dairy facility operations through a microbial process prior to reusing, storing, and land applying the treated wastewater. The wastewater treatment occurs by pumping wastewater from a proposed lift station to a linear irrigation system which equally distributes wastewater across the bed as it moves east/west. Within the woodchips, worms live and feed off the wastewater by consuming nutrients, thus removing contaminants. The treated water percolates down the wood chips and through a permeable textile material. Below the wood chips and permeable textile material, plastic drainage cells are sloped to allow the treated wastewater to flow to drainage channels on the outer edge of the beds. Underneath the plastic cells is an HDPE geomembrane liner. The beds are designed with a crowned point and a cross-sectional slope of 3% or greater to drain water away from the center. Wastewater is then conveyed through drainage channels, drain inlets, and pipelines to be collected at a lift station to pump back to the existing wastewater retention pond on site for land application, storage, and recirculation throughout the facility.

The facility is both flushed and scraped for milk cows, as well as a scraped facility for dry cows and young stock. The milk cows are housed in freestall corrals, which are flushed, and in scraped open lot corrals, the rest of the animals are housed in scraped open lot corrals. All dry manure and wastewater produced by the facility is available to associated farmland. All process wastewater and flush water is separated by the mechanical separation system and settling basins. The process water and flush water is stored within the retention ponds prior to land application. Any wastewater generated from a rain event, including the 25 year, 24 hour event, is stored within the existing retention pond. From the retention pond, the wastewater is applied over approximately 259 gross acres (See *Appendix G*).

Following is a brief summary of the additional studies and reports prepared in accordance with the requirements of Section 869.3 of the Fresno County Zoning Ordinance, most of which are included within the Appendices to this report.

2. VERMIFILTRATION PROCESSING BEDS REQUIREMENTS

The proposed expansion of the existing dairy facility includes the construction of four (4) vermifiltration processing beds. Plans for the design, structure, and maintenance of the retention ponds will be designed and signed by a California Registered Civil Engineer, and submitted to the Regional Water Quality Control Board. All processing beds are surrounded by lanes at least twenty feet in width. No fencing is proposed to surround the new processing beds.

The facility is responsible for keeping vegetative growth from all areas around and near the processing beds. More information on the operation and maintenance of the processing beds is mentioned in Appendix F.

3. FEDERAL AND STATE REGULATIONS

This proposed project complies with the effluent limitations established by the Federal Clean Water Act and any applicable terms of the National Pollution Discharge Elimination System Permit. The project adheres to the provisions set under the California Code of Regulations, Title 27, Division 2, Chapter 7, Subchapter 2, Article 1, the requirements set by the Regional Water Quality Control Board, and the rules and regulations of the San Joaquin Valley Air Pollution Control District (SJQAPCD).

4. APPLICATION REQUIREMENTS

4.1 Department of Public Works & Planning Documents

This application packet for the Classified Conditional Use Permit has been submitted pursuant to the requirements specified by the Department of Public Works and Planning Pre-Application Review process, in addition to requirements specified in Section 869.2.E.1 of the Fresno County Zoning Ordinance. These items include the following:

Application Forms:

- Application Form
- Initial Study Application
- Pre-Application Review Application

Project Description:

- Operational Statement
- Photographs
- Legal Description / Grant Deeds
- Site Plans, Floor Plans, and Elevations

All of these required documents for the Planning Department have been prepared in accordance with the provided requirements. Each of these documents can be found in their respective files as listed above.

4.2 Operational Management Plan

The facility will implement operational methods and practices to control nuisances such as flies, dust, and odors. In example, dairy wastewater discharged for irrigation purposes shall be managed so that it does not stand for more than three days. Other necessary methods and practices are described in the following subsections:

4.2.1 Emergency Action Plan

The purpose of the Emergency Action Plan is to establish procedures for safely and effectively managing an emergency event for the facility. All employees, supervisors, and managers are expected to follow the procedures outlined in the plan to ensure that all persons in the production area are protected from any further harm during an emergency situation. The Emergency Action Plan is prepared in accordance with California Code of Regulations, Title 8, Sections 3220, 3203, 6184, and NFPA 1 Uniform Code, Section 10.9. The site-specific Emergency Action Plan for the facility is included in *Appendix A*.

4.2.2 Odor Management Plan

The facility will make reasonable efforts to reduce the potential for odor impacts to any nearby receptors. The following are the standard operating procedures for vermifiltration beds, manure collection, treatment, storage, and land application:

A. Vermifiltration Beds
- The beds are tilled bi-weekly to ensure the woodchips and wastewater are not stagnant and there is constant exposure of air.
- The drainage channels will be cleaned out regularly so the beds drain properly, which will reduce the amount of odor released.

B. Manure Collection Areas
- The corrals will be cleaned out and scraped a minimum of every 90 days to minimize odors.
- The animals at the facility will be kept as dry as feasible by corral shades. In addition, the facility is maintained to divert any run-off to the wastewater retention pond within 72 hours of a rain event to minimize any ponding on-site that could produce odors.

C. Manure Treatment and Application
- Minimize the moisture levels in stockpile manure during storage. If possible, the manure will be exported off-site at the time it is scraped. The stockpiled manure will be stored on graded areas that divert the wastewater from the piles away from the manure to the wastewater retention ponds.
- Well irrigation water will be mixed with wastewater at the time of application, per rates identified in the Nutrient Management Plan, to minimize odors and maintain appropriate nutrient content in the effluent.
- Apply process water containing ammonia so that it minimizes exposure to air.
- Clean up manure spills at time of each occurrence.
- Maintain wastewater retention pond to prevent solids build-up to minimize odor levels.
- Avoid exporting any dry manure or applying wastewater during windy conditions.
- Apply wastewater uniformly in a thin layer to that it will dry quickly.

D. General
- Implement dust suppression measures to prevent the release of odorous compound-carrying fugitive dust.
- During project operations, the facility shall respond to neighbors who have odor complaints from odors generated at the facility and take prompt action to address the complaint.

E. Record Keeping
- The facility will keep a complaint register at the facility. The register shall include each complaint received, who received the complaint, and the date of the complaint (See *Appendix B*). In addition, the documentation will indicate what action was taken to determine the cause of the odor, action taken to resolve the odor problem, the results of the action, and whether additional action is required to eliminate the problem from re-occurring. The complaint register shall be available to the Code Compliance personnel upon request.

Any amendments to the Odor Management Plan shall be submitted to the Zoning Administrator for approval.

4.2.3 Dust Emissions Control Plan

The facility shall follow all required procedures to ensure that potential dust emissions created at the facility are reduced. The roads around and between the vermifiltration beds will be made up of gravel or dg to reduce dust. The corrals will be cleaned out and scraped a minimum of every 90 days to minimize dust emissions from cattle movement and maintenance activities. Equipment movement during feeding and corral maintenance shall be done at times when dust emissions are minimal. All unpaved roads, high traffic areas, and any other areas where dust emissions are prevalent shall be treated at minimum by use of a water truck. The water truck shall apply a minimum of 650 gallons/acre as needed throughout the year. These areas are to be treated and recorded (See *Appendix C*). If any permanent or long-term dust control measures, such as paving or oil-sealed decomposed granite, are implemented on the perimeter roads or high traffic areas, the treatment shall be recorded as well.

The operator of the facility will perform periodic visual inspections at dust sources around the facility. Dust sources include cattle movement areas, unpaved roads, and high traffic areas. These inspection areas will be performed at least monthly. In addition, an inspection shall be performed and recorded during periods of high winds throughout the year. All inspections shall be recorded using the Monthly Dust Control Visual Inspection Record in *Appendix C* and kept on site.

4.2.4 Dead Animal Management Plan

Dead animals will be removed from the facility and taken to a rendering plant within 72 hours, or by the end of the first working day after a holiday weekend. Burial or otherwise disposing of carcasses on site shall not be done unless by order of the Health Officer, Agricultural Commissioner, or other authority authorized to make such an order. A location has been set aside for personnel to place the fallen animal carcasses until the service arrives.

Service:	Baker Commodities, Inc.
Phone #:	(855) 422-5370

Record keeping shall be kept at the facility including the number of dead animals by date, the date and method of their removal, and the location to where the dead animals were taken (See *Appendix D*). The documentation shall be made available to Code Compliance personnel upon their request.

The disposal of dead animals at the facility is prohibited except when federal, state, or local officials declare a State of Emergency and where all other options for disposal have been pursued and failed and the onsite disposal complies with all state and local policies for disposal of dead animals.

4.2.5 Wastewater Spill Prevention & Contingency Plan

A spill prevention and contingency plan is required for any unpermitted, accidental off-property discharge of facility wastewater, and corresponding reporting to the Regional Water Quality Control Board within twenty-four hours of discovery. The written report to the Regional Water Quality Control Board shall contain the following information:

1. The date the discharge began
2. Duration and estimated volume of the discharge
3. Point of discharge
4. Specific source of discharge (e.g. overflow from holding pond, rainfall runoff from manure storage areas, etc.)
5. Steps taken to mitigate the effects of the discharge
6. Steps taken to prevent such a discharge in the future
7. Notification of adjacent and/or affected property owners
8. In case of spills affecting crops intended for human consumption, the Agricultural Commissioner and the Fresno County Health Officer shall also be notified.

Appendix E contains a Wastewater Spill Prevention & Contingency Plan

4.3 Waste Management Plan & Nutrient Management Plan

4.3.1 Feed Management

The facility hires a qualified nutritionist to determine the rations fed to the animals. All calves 0 – 3 months are raised in hutches, and bottle-fed milk twice daily. These calves are also provided with grain and water to help ween them from solely drinking milk. The calves 3 – 6 months are fed alfalfa and grain. The grain and milk diets for the calves are the typical ration for the growth and health of the animals. The larger heifers, milk cows, and dry cows are fed a ration as determined by the nutritionist. The nutritionist determines the maximum feed efficiency to optimize animal consumption while keeping the ration economically feasible. Each ration ensures that the animals have adequate nutrients and feed to maintain optimum health. All of the feed is stored in areas that drain to the wastewater retention pond.

4.3.2 Manure Handling & Storage

The manure at the existing facility is handled and stored properly to prevent adverse impacts to water quality. The open corrals are scraped throughout the year to prevent manure build-up. Once the manure accumulates, the dry manure is hauled off-site and used as organic soil amendments for farmers in the area. The open lot corrals and the manure storage areas are graded to drain any precipitation run-off to the wastewater retention pond.

The vermifiltration beds will be maintained throughout the year by preventing weeds and rodents from the edges of the beds. Any surface run-off near the beds is graded to convey drainage to a corresponding drain inlet to avoid standing water and infiltration of water into underlying soils. The woodchips, which may have residue of manure, will be removed from the beds every 2 years and transported to the manure stacking area on site.

The freestall facilities are maintained throughout the year by replacing bedding weekly and flushing daily. All flush water from the milk barns is diverted to the separation system and then to the storage pond(s). The proposed expansion to the facility will be incorporated within the existing facility and the manure handling and storage will continue to function to prevent standing water and uncontrolled manure run-off.

The process water is primarily generated at the milk barns. The process water is used to cool the milk and then recycled to flush the milk barns and freestall flush lanes. Additional process water is used to clean equipment and the milk tanks after each milking. All of the process water generated in the milk barns is controlled and diverted to the retention ponds. Any precipitation run-off generated from the milk barn areas or other equipment storage areas is diverted to the wastewater retention ponds.

There are canals adjacent to the facility. Any surface run-off is diverted away from the canals and collected within the facility itself. This run-off is diverted to the wastewater retention ponds.

The ponds will continue to be maintained to prevent weeds and rodents from the liner of the pond. In addition, the pond will be managed to prevent the excess build-up of manure to ensure adequate capacity for a rainfall event and prevent solids from clogging the irrigation distribution system.

No new irrigation or domestic wells are proposed as part of the expansion. A 100-foot setback from the existing wells to any potential source of pollution will be maintained.

4.3.3 Land Application of Manure

The land application shall be planned to ensure that the proper amounts of all nutrients are applied in a way that does not cause harm to the environment of public health. The Nutrient Balance, along with the timing and methods of application were prepared by a qualified agronomist, which is included in *Appendix G*.

The methods of application require that care is taken when applying the wastewater to prevent it from entering groundwater or environmentally sensitive areas. The timing and methods of application shall prevent the loss of excess nutrients to groundwater. As discussed, all dry manure will be hauled off-site, and distribution of this manure will be avoided during periods of winds in excess of 20 miles per hour.

4.3.4 Land Management

Tillage, crop residue management, and other conservation practices shall be utilized to minimize movement to groundwater of soil, organic materials, nutrients, and pathogens from lands where manure is applied. A qualified agronomist will assist to ensure the proper management practices are implemented as identified in *Appendix G*.

4.3.5 Record Keeping

The facility operators shall document the annual estimated quantity of solid manure produced at the facility and transported off-site. Documentation of this estimate shall be maintained by the dairy and shall be made available to the County Code Compliance personnel and Regional Water Quality Control Board inspectors upon request.

4.4 Vector Control Management Plan

Proper maintenance of the facility and implementation of good housekeeping practices are the primary tools used to combat vector infestation. The facility will be maintained to ensure good drainage of manured areas, frequent lane scraping, removal of any manure build-up along fences, stanchion curbs, or water troughs, and prompt repair of broken pipes or water troughs. All corrals, retention ponds, settling basins, milk barns, watering areas, calf areas, freestalls, flush lanes, shades, feed storage areas, and feeding areas shall be checked for vectors on a quarterly basis to ensure good housekeeping practices are properly maintaining pest and vector infestation.

The vermifiltration beds will also need to be monitored on a monthly basis to combat vector infestation. Tilling the beds on a quarterly basis will mix the biofilm and organic matter to allow airflow and absorb excess moisture. In addition to this practice, any puddles of wastewater near or around the beds will be pumped to a nearby drain inlet. The beds will be monitored to ensure they are draining to the drain inlets properly and that the drain inlets aren't clogged. Any manure buildup in the beds will also be removed to aid in combating vector infestation.

When the housekeeping items have a limited effect on the pests and vectors, chemicals and biological controls will be implemented. When the chemicals (pesticides) are used, special care shall be taken to select and apply chemicals that are compatible with existing biological controls in place (those that do not kill parasitic wasps). Growth of weeds shall be inhibited in all of the areas in and around the wastewater ponds. In addition to vector management at the ponds, the rodents will also be managed to prevent degradation of the pond liner.

Record keeping shall consist of documentation kept at the dairy site that includes pest control methods used and the dates of the pest control activities. A complaint register shall also be included, which includes who received the complaint, the date a complaint was received, what and when action was taken to determine the cause of the pest problem, action taken to resolve the problem, and the results action and whether additional action was required to solve the problem (See *Appendix H*). The complaint register will be available to the Code Compliance personnel at their request.

5. REFERENCES

California Department of Water Resources, Water Data Library, Well Data Information. http://www.water.ca.gov/waterdatalibrary/

NFPA 1 Uniform Code, Section 10.9. http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list of-codes-and-standards?mode=code&code=1

San Joaquin Valley Air Pollution Control District. www.valleyair.org

Title 8 of the California Code of Regulations (CCR), Sections 3220, 3203, 6184. https://www.dir.ca.gov/title8/index/T8index.asp

Title 27 of the California Code of Regulations (CCR), Division 2, Subdivision 1, Chapter 7, Subchapter 2, Article 1. http://www.ciwmb.ca.gov/Regulations/Title27/ch7s2345.htm#Article1

United States Department of Agriculture, National Resource Conservation Service. National Engineering Handbook, Agricultural Waste Management Field Handbook

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APPENDICES

APPENDIX A

EMERGENCY ACTION PLAN

EMERGENCY ACTION PLAN

Prepared for:

Sozinho Dairy #2
8489 East Elkhorn Avenue
Selma, CA 93662

Completed by:

324 S. SANTA FE ST., SUITE A
VISALIA, CA 93292
(559) 802-3052

July 24, 2024

TABLE OF CONTENTS

Purpose:

The purpose of this Emergency Action Plan is to establish procedures for safely and effectively managing an emergency event for Sozinho Dairy #2. All employees, supervisors, and managers are expected to follow the procedures outlined in this plan to ensure that employees and consumers are protected from any further harm during an emergency situation.

Authority:

California Code of Regulations, Title 8, Sections 3220, 3203, 6184, NFPA 1 Uniform Fire Code, section 10.9.

Scope:

This Emergency Action Plan covers those designated actions managers and employees must take to ensure employee and consumer safety from fire and other emergencies. This plan includes: emergency escape procedures; procedures for employees who must stay to operate critical plant operations before they evacuate (if applicable); procedures to account for employees after emergency evacuation has been completed; rescue and medical duties for those employees who are to perform them; the preferred means of reporting fires and other emergencies; and individuals who can be contacted for further information about the plan.

I. Responsibility

Person(s) responsible for emergency planning and information is/are:

Danny Sozinho, Owner/Operator
(559) 381-5485

A. Training

Specific employees will be trained and made aware of their duties so that they can assist in the safe and orderly emergency evacuation of employees. They shall be made aware of their responsibilities under this plan:

- Initially when the plan is developed;
- Whenever the employee's responsibility under the plan changes, and
- Whenever the plan is changed

B. Responsibilities of the Employees

The success of this Emergency Action Plan in times of emergencies hinges on employees knowing the procedures outlined in this plan and acting upon them in an appropriate manner.

Before an emergency, employees shall:

- Become familiar with the contents of this plan to include who to report emergencies to, the assigned evacuation routes for the facility, and the designated meeting locations.
- Actively participate in emergency drills and treat them as if they are real.

During an emergency:

- Assist others however appropriate.
- Listen and wait for directions on how and when to evacuate the facility from emergency response team members, security, police, or fire personnel.
- Report any emergencies such as a bomb threat or threats of violence to your supervisor first and immediately.
- Report immediately to your designated meeting location upon evacuating the facility. Do not take any side trips.
- Never go back into the facility to retrieve personal belongings.

II. Reporting Emergencies

Report fire or other emergencies immediately, first to your supervisor, then to the responsible person(s) listed above. When warranted, call 911 (9-911 if in a County facility). Be prepared to provide the responder with the nature and location of the emergency. Our address is:

Sozinho Dairy #2
8489 East Elkhorn Avenue, Selma, CA 93662
South side of E. Elkhorn Avenue between
Highland Avenue and S. Fowler Avenue
(559) 381-5485

The Fresno County Security division shall also be contacted by calling the radio pager at (559) 452-7102 to advise them of the situation and for further assistance.

III. Evacuation Route and Assembly Area Map/First Aid Kits

A. Location of First Aid Kits

The First Aid Kits are located in the office of the milking barn.

B. Designated Meeting Locations

Once employees have evacuated the facility, they **must** meet **on the west side of the milk barn** to check in with **the operator** who will be accounting for individuals. Those employees who do not show up to the designated meeting location will be presumed to still be in the building and fire and police personnel shall be notified of their absence immediately.

IV. Fire Emergency Procedures

A. Remove anyone in immediate danger.
B. Once an employee is alerted to the fire danger, he/she will go to the nearest exit, activate the fire alarm (if present), exit the building, and proceed directly to the designated assembly point.
C. Confine the fire to the room/area by closing the door to the area where the fire is located and by ensuring all doors leading to the main hallways are closed.
D. Attempt to extinguish the fire only if you have received training on the use of portable fire extinguishers, the fire is in its beginning stage, and it can be extinguished safely.
E. Disabled and non-ambulatory (unable to walk personnel) should request assistance from those nearest to them. Advise the Fire Department or Security of personnel trapped who may require assistance to evacuate.

V. Earthquake Emergency Procedures

A. If you are indoors, stay there. Take shelter under a desk, table, or in a doorway. If you cannot get under something sturdy or stand in a doorway, get on your hands and knees and cover your head with your hands and arms.
B. If you are outdoors, go to an open area away from trees, buildings, walls, roadways and power lines.
C. If the building is evacuated, do not return until authorized.
D. Beware of potential dangers after an earthquake such as escaping gas, unstable building structures, electrical hazards, etc. Also beware of aftershocks.

VI. Evacuation of the Disabled

In the event an emergency renders exit of any disabled person(s), a trained employee will assist or carry the disabled person(s) to the safe area.

VII. Serious Injury

A. Check the scene and the victim to determine the danger potential and the extent of the injury. Do not move a seriously injured victim unless there is an immediate danger such as fire, flood, or poisonous gas. If you must move the victim, do it as quickly and carefully as possible. If there is no immediate danger, do not move the victim and advise the bystanders the victim is not to be moved.

B. Call 911 (9-911 if in a County facility) immediately if the victim is unconscious. Additionally, you should call for an ambulance if the victim has trouble breathing or is breathing in a strange way; has pressure or pain in the chest or abdomen; is bleeding severely; has slurred speech; appears to have been poisoned; has injuries to the head, neck, or back; or has possible broken bones.

C. Keep the victim calm and as comfortable as possible. Administer CPR or First Aid if you have been trained in those areas. A First Aid kit should be used and precautions should be taken to minimize exposure to blood and other bodily fluids. Remain with the victim until emergency services personnel and Security arrive.

VIII. Hazardous Materials

A. A hazardous material is a substance that presents a physical or health hazard. A health hazard refers to a substance for which there is significant evidence that health effects may occur for exposed employees.

B. A Material Safety Data Sheet (MSDS) is required for all hazardous substances in use within the department. Employees will be provided with training on the safe use of all chemicals they will be exposed to.

C. In the event of a hazardous material emergency:

- **I.** Evacuate the area, securing access to the area when possible.
- **II.** Immediately call 911 (9-911 if in a County facility) and inform the operator of the emergency. Provide as much information as possible to the operator and refer to the MSDS.
- **III.** If safe, remain in the immediate area and call Security at (559) 488-6785.

D. The list of chemicals regularly used in this facility is located in the milk barn office, along with the MSDS binder.

APPENDIX B

ODOR MANAGEMENT PLAN

Appendix B
Odor Management Monitoring Plan

Frequency: Minimum On A Monthly Basis
When Potential For Odor Release is High (i.e. Dry Weather, High Temperature)

Inspection Areas: Unpaved Corrals and Calf Hutches, Lagoons and Manure Stockpiles, Land Application Areas, Site Boundaries, Vermifiltration Beds

Year _____

Month	Date	Are The Open Lot Corrals Being Kept Effectively Dry to Prevent Odors?	Is Manure Being Removed Frequently to Reduce Possible Odors?	Are Manure Storage Areas Being Managed Properly to Prevent Odors?	Are Manure Land Applications Causing Nuisance Conditions Due to Application Methods or Timing?	Initials
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						

Appendix B
Odor Complaint Register

Date of Complaint	Complaint Recipient	Action Taken To Determine Cause of Odor Complaint	Action Taken To Resolve The Odor Problem	Results of the Action	Additional Action, If Any, Required To Eliminate The Odor Problem From Re-Occuring

APPENDIX C

DUST EMISSIONS CONTROL PLAN

4CREEKS

DCP

Dust Control Plan

Sozinho Dairy #2 – BioFiltro Project

San Joaquin Valley Air Pollution Control District
Regulation VIII – Fugitive PM10 Prohibitions

Construction Notification

Pursuant to section 6.4 of **District Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities***, the owner or operator of a construction project of at least 1.0 acre in size shall provide written notification to the District at least 48 hours prior to his/her intent to commence any earthmoving activities. Use the first two pages of this form to submit a written Construction Notification. There are no fees for filing a construction notification.

Larger construction projects, as outlined below, may be required to submit a full Dust Control Plan. If a Dust Control Plan is required the owner/operator does not need to submit a separate construction notification.

Dust Control Plan

Pursuant to section 6.3 of **Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities***, the owner or operator shall submit a Dust Control Plan to the District for a construction project that will involve any of the following:

- Residential developments that will include ten acres or more of disturbed surface area, or
- Non-residential developments that will include five acres or more of disturbed surface area, or
- Will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days of the project.

A Dust Control Plan identifies the fugitive dust sources at the construction site and describes all of the dust control measures to be implemented before, during, and after any dust generating activity for the duration of the project. The District will review and approve, conditionally approve, or disapprove the Dust Control Plan within 30 days of submittal. **Construction activities shall not commence until the Dust Control Plan has been approved or conditionally approved by the District.** A copy of the approved Dust Control Plan must be retained at the project site and made available upon request by a District inspector.

At least one key individual representing the owner or operator, or any person who prepares a Dust Control Plan must complete a Dust Control Training Course presented by the District. Please contact the District to find out when courses are being offered.

Pursuant to **District Rule 3135 – *Dust Control Plan Fee***, payment must accompany each Dust Control Plan submitted to the District. A separate fee is charged for any major modification made to an approved plan, such as modifying the size and scope of the project or making significant changes to the types of control or preventative measures. No fees are charged for administrative changes to an approved plan.

Regardless of whether a Construction Notification or Dust Control Plan is required, the owner or operator of any construction project shall comply with all other applicable requirements of Regulation VIII, and other District Rules.

Construction Notifications and Dust Control Plans should be submitted to the District's Compliance Division at:

San Joaquin, Stanislaus, Merced Counties	*Madera, Fresno, Kings Counties*	*Tulare, Kern Counties*
Northern Region Office 4800 Enterprise Way Modesto, CA 95356 (209)557-6400 Fax: (209)557-6475	**Central Region Office** 1990 East Gettysburg Avenue Fresno, CA 93726 (559)230-5950 Fax: (559) 230-6062	**Southern Region Office** 34946 Flyover Court Bakersfield, CA 93308 (661) 392-5500 Fax: (661) 392-5585

Section 1 – General Information – Page 1

☐ **Construction Notification** (Complete section 1) ☒ **Dust Control Plan** (Complete sections 1-7)	Date Received: *(For District Use)*

1-A Project Name and Location

Project Name: Sozinho Dairy #2

Project Address: 8489 East Elkhorn Avenue

Major X-Streets: East Elkhorn Avenue & Highland Avenue

City: Selma County: Fresno

GPS Coordinate(s): 36°09'21.25"N & 119°38'14.58"W

Expected Construction Start Date: August 1, 2024 End Date: February 28, 2025

1-B Project Details

This project is: ☐ Residential ☒ Non-Residential (commercial, industrial, institutional, public, etc.)

Total project site area: 9.81 Acres

Total disturbed surface area: 9.81 Acres

Total disturbed areas that will be left inactive for more than seven days: 0.00 Acres

Maximum daily volume of earthmoving: 3,500 Cubic Yards

Average daily volume of earthmoving: 2,500 Cubic Yards

1-C Provide a brief description of the project's operations.

Project will include excavation, grading, concrete work, pipelaying, and all necessary subtrades for the construction of a manure separator.

1-D Indirect Source Review (ISR) (Rule 9510)

Final Land Use Approval: ☐ Discretionary ☐ Ministerial

☐ Approval is Pending ☐ Approval was granted on: _____

Air Impact Assessment (AIA) application submitted? ☐ No ☐ Yes Date: _____

ISR Project ID: _____ Type of space: _____ Project square ft: _____

☒ Exempt from ISR. Explain: Wastewater processing upgrades.

☐ I would like additional information about opportunities to reduce water usage on the project site.

Section 1 – General Information – Page 2

Project Name: Sozinho Dairy #2

1-E Contacts

Property Owner:	Danny Sozinho				
Address:	11447 8 1/2 Avenue				
City:	Selma	State:	CA	Zip:	93662
Phone:	559-381-5485	Fax:			
Mobile:		Email:			

Developer:	BioFiltro, Inc.				
Address:	1949 5th Street, Suite 101				
City:	Davis	State:	CA	Zip:	95616
Contact Person:	Rafael Concha				
Phone:	530-746-1770	Fax:			
Mobile:		Email:	rconcha@biofiltro.com		

General Contractor:	4CG Construction				
Address:	324 S. Santa Fe St. Suite B				
City:	Visalia	State:	CA	Zip:	93292
Contact Person:	Alec Grassel				
Phone:	559-372-0215	Fax:			
Mobile:	559-786-3694	Email:	alecg@4cgconstruction.com		

Other Contact:	Tyler Esteves, EIT				
Company:	4Creeks, Inc.				
Address:	324 S. Santa Fe St. Suite B				
City:	Visalia	State:	CA	Zip:	93292
Phone:	509-802-3052	Fax:			
Mobile:	559-805-3306	Email:			

STOP HERE FOR CONSTRUCTION NOTIFICATION ONLY

Section 2 – Dust Control Plan Implementation – Page 1

Project Name: Sozinho Dairy #2

2-A This Dust Control Plan was prepared by:

Name: Josh Thomas Title: Environmental QSD/QSP

Company Name: 4Creeks Engineering

Address: 324 S. Santa Fe St. Suite A

City: Visalia State: CA Zip: 93292

Phone: 559-802-3052 Fax:

Mobile: 661-343-3611 Email: josht@4-creeks.com

Date training completed: May 7, 2024 ☒ Copy of course certificate attached.

2-B Contractors

Provide the names, addresses, and phone numbers of the contractors involved in dust generating activities **or** performing dust control as part of this project (Rule 8021 Sec. 6.3.6.1). A supplemental list may be attached.

1. 4CG Construction, 324 S. Santa Fe St. Suite B, Visalia, CA 93292
   Alec Grassel, 559-786-3694, alecg@4cgconstruction.com
2.
3.
4.

2-C Who will have the primary responsibility for implementing this Dust Control Plan?

(Rule 8021 Sec 6.3.6.1)

☐ Property Owner ☐ Developer ☒ General / Prime Contractor

☐ Sub-Contractor(s) ☐ Other:

Primary Project Contact: Alec Grassel

Title: Construction Manager

Company Name: 4CG Construction

Address: 324 S. Santa Fe St. Suite B

City: Visalia State: CA Zip: 93292

On-Site Phone: 559-372-0215 Fax:

Mobile: 559-786-3694 Email: alecg@4cgconstruction.com

Date training completed: ☐ Attach a copy of the course certificate

San Joaquin Valley
Air Pollution Control District
Compliance Division

Presents this
Certificate of Completion
to

Josh Thomas

On May 7, 2024, at Fresno, California for

Regulation VIII — Dust Control Training

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

Signature

5/7/2024
Date

Section 2 – Dust Control Plan Implementation – Page 2

Project Name: Sozinho Dairy #2

2-D Dust Generating Activity Dates

The expected start and completion dates of **dust generating activities and soil disturbance activities** to be performed on site. For phased projects, it may be necessary to report expected start and completion dates separately. (Rule 8021 Sec. 6.3.6.4)

Expected start date:	August 1, 2024	Completion Date:	February 28, 2025
Phase Project Start – A:		Completion – A:	
Phase Project Start – B:		Completion – B:	
Phase Project Start – C:		Completion – C:	

2-E Other Locations

Identify whether any other locations should be included with this plan that are involved with this project. An example may include listing any site where bulk materials will be imported from or exported to. This does not need to include quarries or retailers of building materials. (Rule 8021 Sec. 6.3.2)

☒ No other locations are included with this project.

Location 1:

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

Location 2:

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

Location 3:

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

Section 3 – Fugitive PM10 Sources – Page 1

Project Name: Sozinho Dairy #2

3-A Sources of Fugitive Dust

This section describes the minimum requirements for limiting visible dust emissions from activities that cause fugitive dust emissions. (Rule 8021 Sec. 6.3.6.5) **Check at least one box under each category**.

Structural Demolition. (Rule 8021 Sec. 5.1, 6.3.3, & 6.3.6.5)

- ☒ No demolitions are planned for this project.
- ☐ Asbestos NESHAP notification and fees will be submitted to the District. (Rule 3050 and Rule 4002)
  Water will be applied to the following areas for the duration of the demolition activities:
  - Building exterior surfaces;
  - Unpaved surface areas where equipment will operate;
  - Razed building materials; and
  - Water or dust suppressants will be applied to unpaved surface areas within 100 feet of structure during demolition.

Pre-Activity (Rule 8021 Sec. 5.2)

- ☐ Not applicable for this project (Please explain why in Section 3-C).
- ☒ The site will be pre-watered and work will be phased to reduce the amount of disturbed surface area at any one time (Complete Section 4-A).

Active Operations (Rule 8021 Sec. 5.2)

- ☒ Water will be applied to dry areas during leveling, grading, trenching, and earthmoving activities (Complete Section 4-A).
- ☐ Wind barriers will be constructed and maintained, and water or dust suppressants will be applied to the disturbed surface areas (Complete Sections 4-A or 4-B, and 4-C).

Inactive Operations, Including After Work Hours, Weekends, and Holidays (Rule 8021 Sec. 5.2)

- ☒ Not applicable for this project (Please explain why in Section 3-C).
- ☐ Water or dust suppressants will be applied on disturbed surface areas to form a visible crust, and vehicle access will be restricted to maintain the visible crust. (Complete Section 4-A or 4-B, and 4-C)

Temporary stabilization of areas that remain unused for seven or more days (Rule 8021 Sec. 5.2)

- ☒ Not applicable for this project (Please explain why in Section 3-C)
- ☐ Vehicular access will be restricted and water or dust suppressants will be applied and maintained at all un-vegetated areas (Complete Section 4-A or 4-B, and 4-C).
- ☐ Vegetation will be established on all previously disturbed areas (Complete Section 4-C).
- ☐ Gravel will be applied and maintained at all previously disturbed areas (Complete Section 4-C).
- ☐ Previously disturbed areas will be paved (Complete Section 4-C).

Unpaved Access and Haul Roads, Traffic and Equipment Storage Areas (Rule 8021 Sec. 5.2 and 5.3)

- ☐ Not applicable for this project (Please explain why in Section 3-C)
- ☒ Apply water or dust suppressants to unpaved haul and access roads (Complete Section 4-A or 4-B)
- ☐ Post speed limit signs of not more than 15 miles per hour at each entrance, and again every 500 feet. (Complete Section 4-C)
- ☐ Water or dust suppressants will be applied to vehicle traffic and equipment storage areas (Complete Section 4-A or 4-B).

Wind Events (Rule 8021 Sec. 5.4)

- ☒ Water application equipment will apply water to control fugitive dust during wind events, unless unsafe to do so. Outdoor construction activities that disturb the soil will cease whenever visible dust emissions cannot be effectively controlled.

Section 3 – Fugitive PM10 Sources – Page 2

Project Name: Sozinho Dairy #2

3-B Bulk Materials (Rule 8021 Sec. 6.3.6.6 and Rule 8031)

Outdoor Handling of Bulk Materials (Rule 8031 Sec. 5.0 A)

- ☐ No bulk materials will be handled during this project.
- ☒ Water or dust suppressants will be applied when handling bulk materials.
- ☐ Wind barriers with less than 50 percent porosity will be installed and maintained, and water or dust suppressants will be applied.

Outdoor Storage of Bulk Materials (Rule 8031 Sec. 5.0 B)

- ☐ No bulk materials will be stored during this project.
- ☒ Water or dust suppressants will be applied to storage piles.
- ☐ Storage piles will be covered with tarps, plastic, or other suitable material and anchored in such a manner that prevents the cover from being removed by wind action.
- ☐ Wind barriers with less than 50 percent porosity will be installed and maintained around the storage piles, and water or dust suppressants will be applied.
- ☐ A three-sided structure (< 50% porosity) will be used that is at least as high as the storage piles.

On-Site Transporting of Bulk Materials (Rule 8031 Sec. 5.0 C)

- ☐ No bulk materials will be transported on the project site.
- ☐ Vehicle speed will be limited on the work site.
- ☒ All haul trucks will be loaded such that the freeboard is not less than six inches when transported across any paved public access road.
- ☒ A sufficient amount of water will be applied to the top of the load to limit visible dust emissions.
- ☐ Haul trucks will be covered with a tarp or other suitable cover.

Off-Site Transporting of Bulk Materials (Rule 8031 Sec. 5.0 D)

- ☒ No bulk materials will be transported to or from the project site.
- ☐ Measures in section 5-B will be implemented to prevent haul trucks from becoming a source of visible emissions or carryout onto public roads. (complete Section 5-B)

Outdoor Transport using a Chute or Conveyor (Rule 8031 Sec. 5.0 E)

- ☒ No chutes or conveyors will be used.
- ☐ Chute or conveyor will be fully enclosed.
- ☐ Water spray equipment will be used to sufficiently wet the materials.
- ☐ Transported materials will be washed or screened to remove fines (PM10 or smaller).

3-C Comments

The Dairy is currently implementing its own set of Dust Control regulations, watering the site as needed, and is active 7 days a week.

Section 4 – Dust Control Methods – Page 1

Project Name: Sozinho Dairy #2

4-A Water Application

Complete this section if water application will be used as a control method for limiting visible dust emissions and stabilizing surface areas. Check and answer everything that applies to this project.
(Rule 8021 Sec. 6.3.6.6)

Water Application Equipment:

☐ Sprinklers: Describe the activities that will utilize sprinklers:

Minimum treated area: _____ ☐ Square Feet ☐ Acres

Maximum treated area: _____ ☐ Square Feet ☐ Acres

Minimum water flow rate: _____ Gallons/minute Duration: _____

☒ Water Truck, ☐ Water Trailer, ☐ Water Wagon, ☐ Other: _____

Describe the activities that will utilize this equipment:

Grading and excavation

Number of application equipment available: 1

Application equipment capacity: 2,500

Application frequency (on a typical dry day): Minimum 2 times a day

Application rate: ☒ 650 gallons per acre ☐ _____ gallons per acre (Greater than 650)

Hours of operation: 6AM to 4PM ☐ Daily ☒ Mon-Fri ☐ Other: _____

Water application equipment is available to operate after normal working hours, on weekends, and holidays.

After-hours contact: Alec Grassel Phone No.: 559-786-3694

After-hours contact: Rafael Concha Phone No.: 530-746-1770

Water Supply: *Include the relative locations of these sources on the plot plan in Section 6.*

☐ Fire hydrants Number of hydrants available On-Site: _____ Off-Site: _____

☐ Storage tanks Number and capacity: _____

☒ Wells Number and flow rate: 4

☐ Canal, River, Pond, Lake, etc. Describe: _____

☐ Other: _____

Approval granted by the owner or public agency to use their water source for this project.

Owner or Agency: Owner

Contact: Danny Sozinho Phone No.: 559-381-5485

Section 4 – Dust Control Methods – Page 2

Project Name: Sozinho Dairy #2

4-B Dust Suppressant Products

Complete this section if a dust suppressant product will be used. These materials include, but are not limited to: hygroscopic suppressants (road salts), adhesives, petroleum emulsions, polymer emulsions, and bituminous materials (road oils). (Rule 8021 Sec. 6.3.6.6)

Copy this page if more than one dust suppressant product will be used.

☒ **Not Applicable.** No dust suppressant products will be used. **Skip to 4-C.**

Application Area: _____

Product Name: _____

Contractor's Name: _____ Phone No: _____

Application Rate: _____ Gallons of undiluted material per ☐ mile or ☐ acre treated.

Application Frequency: _____ Applications per ☐ week, ☐ month, ☐ year

Application Equipment: _____

Number of Application Equipment Available: _____

Application Equipment Capacity: _____

Attach each of the following information that fully describes this product. Use the checklist below to make sure all information is submitted with this plan.

- ☐ Product Specifications (MSDS, Product Safety Data Sheet, etc.)
- ☐ Manufacturer's Usage Instructions (method, frequency, and intensity of application)
- ☐ Environmental impacts and approvals or certifications related to the appropriate and safe use for ground application.

Section 4 – Dust Control Methods – Page 3

Project Name: Sozinho Dairy #2

4-C Other Dust Control Methods

Check below the other types of dust control methods that will be employed at the construction site.
(Rule 8021 Sec. 5.2)

☒ Restricting unauthorized vehicle access:

☐ Fences ☐ Gates ☐ Posts ☐ Berms ☐ Concrete Barriers ☐ Signs

☒ Other: "Authorized Vehicles Only" sign to be placed at main entrance

☐ Wind barriers Describe: _____

☐ Posted speed limit signs that meet State and Federal Department of Transportation standards.
(Rule 8021 Sec. 5.3)

☐ Posted at 15 miles per hour ☐ Posted at _____ miles per hour (less than 15 MPH)

☐ Re-establish vegetation for temporarily stabilizing previously disturbed surfaces.

Explain: _____

☐ Apply and maintain gravel:

☐ On haul roads ☐ On access roads ☐ At equipment storage yards

☐ At vehicle traffic areas ☐ For temporarily stabilizing previously disturbed areas.

Explain: _____

☐ Apply pavement:

Explain: _____

☒ Other: See attached

4-D Contingencies

Contingencies to be implemented should the listed control measures fail to meet the stability and visible emission requirements. Examples include, but are not limited to: replacement equipment, additional equipment, increased water application, additional water resources, adding chemical/organic dust suppressants, restricting access, and additional staffing. Attach any additional information if needed.
(Rule 4102 and Rule 8021 Sec. 5.2)

See attached

4-E Record Keeping (Rule 8011 Sec. 6.2)

Records and any other supporting documents for demonstrating compliance must be maintained, but only for those days when a control measure is implemented. The District has developed record keeping forms that may be used for complying with this requirement. Check one or both below:

☒ Records will be maintained using the forms developed by the District.

☐ Records will be maintained using documents or forms developed by the owner or operator.

Explain and include copies: _____

4-C Other Dust Control Methods

The project site is set back on the dairy (private property), so there are existing measures to restrict access. Also, the site will be graded and excavated in phases as construction occurs to avoid having disturbed soil left exposed.

4-D Contingencies

Contractor will provide additional water trucks at their corporation yard, in case of breakdwon of primary water truck. If additional water trucks are unavailable at that time, then General Contractor will rent an additional water truck from a local equipment rental company. Additionally, if omissions from the construction site cannot be controlled by the Contractor all work on-site will cease until the Contractor is able to implement additional mitigation measures.

Section 5 – Carryout and Trackout – Page 1

Project Name: Sozinho Dairy #2

5-A Treatments for Preventing Trackout

Select the control devices that will be used for preventing trackout from occurring onto paved public roads. Trackout is any material that adheres to vehicle tires and is deposited onto a paved public road or the paved shoulder of a paved public road. Check one or a combination that will apply to this project.

☐ **Grizzly:** Rails, pipes, or grates used to dislodge debris off of vehicles before exiting the site. Extends from the intersection with the paved public road surface for the full width of the unpaved exit surface for a distance of at least 25 feet. (Rule 8041 Sec. 5.9.1)

Width: _____ Feet Length: _____ Feet

☒ **Gravel Pad:** A layer of washed gravel at least one (1) inch or larger in diameter, three (3) inches deep, and extends from the intersection with the public paved road surface for the full width of the unpaved exit surface for a distance of at least 50 feet. (Rule 8041 Sec. 5.9.2)

Width: **20** Feet Length: **50** Feet Depth: **3** Inches

Gravel Size: **1** Inches Clean-up Frequency: **as needed**

☐ **Paved Surface:** Extends from the intersection with the paved public road surface for the full width of the unpaved access road for at least 100 feet to allow mud and dirt to drop off of vehicles before exiting the site. (Rule 8041 Sec. 5.9.3)

Width: _____ Feet Length: _____ Feet

Mud and dirt deposits accumulating on paved interior roads used for trackout control will be removed with sufficient frequency, but not less frequently than once per workday. Cleanup will commence within ½ hour of generating any carryout and trackout onto public roads. (Rule 8041 Sec. 5.8.2 and 5.9.3)

Clean-up Frequency: _____

☐ **Wheel Washer:** Uses water to dislodge debris from tires and vehicle undercarriage. (Rule 8011 Sec. 3.73)

Describe: _____

☐ **Other:** (Rule 8041 Sec. 5.8.1.2) _____

5-B Treatments for Preventing Carryout

Report the required treatments that will be used for preventing carryout from occurring on paved public roads. Carryout occurs when materials from emptied or loaded haul trucks, vehicles, or trailers falls onto a paved public road or paved shoulder of a paved public road. (Rule 8031 Sec 5.0)

☒ No haul trucks will be routinely entering or leaving the project site.

☐ Spillage or loss of bulk materials from holes or other openings in the cargo compartment's floor, sides, and tailgates will be prevented when material is transported onto any paved public access road.

Emptied Haul Trucks:

- ☐ Interior cargo compartments will be cleaned before leaving the project site.
- ☐ Cargo compartment will be covered with a tarp or suitable cover before leaving the project site.

Loaded Haul Trucks:

- ☐ Haul trucks will be loaded such that the freeboard is not less than six inches with water applied to the top of the load before leaving the project site.
- ☐ Cargo compartment and load will be covered with a tarp or suitable cover before leaving the project site.

☐ **Other:** _____

Section 5 – Carryout and Trackout – Page 2

Project Name: Sozinho Dairy #2

5-C Cleaning up Carryout and Trackout

Check and report below the methods and frequency for cleaning up carryout and trackout from the surface and paved shoulders of paved public roads.

The use of blower devices, or dry rotary brushers or brooms, for removal of carryout and trackout from paved public roads is prohibited. (Rule 8041 Sec. 5.0)

Projects subject to a dust control plan are required to prevent and mitigate carryout and trackout beyond the minimum cleanup requirements. (Rule 8041 Sec. 5.3)

Cleanup Frequency:

☒ In the event the control device becomes insufficient to prevent carryout and trackout, removal of any carryout and trackout must be accomplished within one-half hour of the generation of such carryout and trackout. (Rule 8041 Sec. 5.8.2.)

Cleanup Method: Check the method below that will be used for cleaning carryout and trackout.

☒ Manually sweeping and picking up. (Rule 8041 Sec. 5.7.1)

☐ Mechanical sweeping with a rotary brush or broom accompanied or preceded by water. (Rule 8041 Sec. 5.7.2)

Describe the types of equipment that will used: _____

☐ Operating a PM10-efficient street sweeper. (Rule 8041 Sec. 5.7.3)

Make and Model: _____

☒ Flushing with water: allowed if: (Rule 8041 Sec. 5.7.4)

- No curbs or gutters are present.
- Using water will not result as a source of trackout and carryout.
- Using water will not result in adverse impacts on storm water drainage systems.
- Using water will not violate any National Pollutant Discharge Elimination System permit program.

5-D Record keeping for Cleanup of Carryout and Trackout (Rule 8011 Sec. 6.2)

Records and any other supporting documents for demonstrating compliance must be maintained. The District has developed a record keeping form specific for cleaning carryout and trackout from paved public roads and may be used for complying with this requirement. Check one or both below:

☒ Records will be maintained using the form developed by the District.

☐ Records will be maintained using documents or forms developed by the owner or operator.

Explain and include copies: _____

Section 6 – Plot Plan

Project Name: Sozinho Dairy #2

6-A Plot Plan

A plot plan identifies the type and location of each project. Attach appropriately sized maps with the project boundaries outlined or use the space in section 6-B to draw a plot plan. Attached maps may include tract maps, site maps, and topographic maps. Use the checklist below to make sure all areas have been identified on the plot plan. (Rule 8021 Sec. 6.3.6.2 & 6.3.6.5)

Identify the relative locations of actual and potential sources of fugitive dust emissions.

- ☒ Bulk material handling and storage areas.
- ☒ Paved and unpaved access roads, haul roads, traffic areas, and equipment storage yards.
- ☒ Exit points where carryout and trackout onto paved public roads may occur.
- ☒ Water supply locations if water application will be used for controlling visible dust emissions.

Identify the relative locations of sensitive receptors within ¼ mile of the project. (Rule 4102 Sec. 4.1)

- ☐ No sensitive receptors within ¼ mile of the project.
- ☒ Residential areas, schools, day care, churches, hospitals, nursing facilities, commercial, retail, etc.
- ☒ Freeways, roads, or traffic areas that may be affected by the dust generating activities.
- ☐ Other: _____

6-B Draw Plot Plan (if one is not attached)

May use the back of this form
Include a North Arrow

☒ Plot plan is attached (Skip to Section 7).

Section 7 – Certification

Project Name: Sozinho Dairy #2

7-A Certification

The owner, principle operator, or the individual implementing must certify the plan. (Rule 8021 Sec 6.3). For Title V sources, the responsible official must provide the certification. (Rule 2520 Sec. 3.28 and 10.0).

I certify that all information contained herein and information submitted in the attachments to this documents are true and correct.

Alec Grassel	**Construction Manager**
Print Name	Title
 Digitally signed by Alec Grassel DN: C=US, E=alecg@4cgconstruction.com, O=4Creeks, OU=Build, CN=Alec Grassel Date: 2024.06.13 16:04:15-07'00'	
Signature	Date

559-372-0215		**559-786-3694**
Phone Number	Fax Number	Cell Number

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

Regulation VIII Record Keeping Forms

This matrix lists the suggested forms that may be used for Regulation VIII record keeping. The left column lists potentially applicable rules. The next column lists major industry groups affected by the various rules of Regulation VIII. The letters A, B, C, and D refer to the record keeping forms developed by the SJVUAPCD.

		Activity at site and corresponding record keeping forms					
Regulation VIII Rule Number	Type of Business or Commercial Activity	Bulk Materials	Unpaved Roads	Equip. & Vehicle Storage	Open Areas	Earth Moving	Trackout and Carryout
8021 8031 8041 8051 8061 8071	Construction	**A C**	**A C D**	**A C D**	**A C**	**A**	**B**
8021 8031 8041 8051 8061 8071	Oilfields	**A C**	**A C D**	**A C D**	**A C**	**A**	**B**
8081	Off-field Agricultural Operations	**A C**	**A C D**	**A C D**			
8031 8041 8551 8061	Agricultural Product Processing	**A C**	**A C D**	**A C D**			**B**
8031 8041 8071	Bulk Materials	**A C**	**A C D**	**A C D**			**B**
8041 8061 8071	Equipment and Vehicle Storage	**A C**	**A C D**	**A C D**	**A C**		**B**
8041 8051 8071	Truck Stops	**A C**	**A C D**	**A C D**	**A C**		**B**

Form A = Area Water Application
Form B = Sweeping/cleanup
Form C = Permanent control measure such as paving, gravel, a grizzly, chemical/organic dust suppressants
Form D = Water Application onto Unpaved Roads and Traffic Areas

(Rev. 06.01.09)

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 ♦ FAX (209) 557-6475

Central Region (Main Office)
1990 East Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 ♦ FAX (559) 230-6062

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 ♦ FAX (661) 392-5585

www.valleyair.org

Regulation VIII Record Keeping Form

Month:

FORM A – Area Water Application

Project Location: 8489 East Elkhorn Avenue City: Selma Size: 9.81 (Miles/ Acres)

Owner: Danny Sozinho Address: 11447 8 1/2 Avenue City: Selma Zip: 93662

Contact Person: Alec Grassel Title: Construction Manager Phone: 559-786-3694

Watering Schedule

Use this form to document daily water applications at a single site by recording total gallons per day and number of applications per day at a single area. Use additional forms, as necessary, for areas with different treatment schedules.

Area treated: _____

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Area treated: _____

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Retain for one year after project ends. Title V sources are required to retain for five years after project ends.

Regulation VIII Record Keeping Form

Month:

FORM B – For Cleanup of Trackout and Carryout

Project Location: 8489 East Elkhorn Avenue City: Selma Size: 9.81 (Miles/ Acres)

Owner: Danny Sozinho Address: 11447 8 1/2 Avenue City: Selma Zip: 93662

Contact Person: Alec Grassel Title: Construction Manager Phone: 559-786-3694

Sweeping / Cleanup Schedule

Use this form to document the cleanup schedule by entering the time of day cleanup is done.
Mornings =am; Afternoon = pm. Write "end of day" if cleanup is done at the end of the workday. In urban areas, preventing or cleaning-up trackout at construction sites is required immediately if it extends 50 feet or more. Record keeping is required for construction sites subject to Rule 8021, sites that store bulk materials subject to Rule 8031 and vehicle/equipment storage areas subject to Rule 8071.

Week		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	am							
	pm							
2		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	am							
	pm							
3		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	am							
	pm							
4		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	am							
	pm							
5		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	am							
	pm							

Retain for one year after project ends. Title V sources are required to retain for five years after project ends.

Regulation VIII Record Keeping Form

Month:

FORM C: For Permanent / Long Term Dust Controls

Project Location: 8489 East Elkhorn Avenue City: Selma Size: 9.81 (Miles/ Acres)

Owner: Danny Sozinho Address: 11447 8 1/2 Avenue City: Selma Zip: 93662

Contact Person: Alec Grassel Title: Construction Manager Phone: 559-786-3694

Permanent Activities

Describe the types of permanent dust controls implemented, the date, the activity, such as applying an organic dust suppressant, gravel, paving or a trackout control device. Add comments such as the amount used, where used, brand name.

Date	Dust Control Activity Performed (Gravel, paving)	Comments: Type of material, application rate.

Comments:

Retain for one year after project ends. Title V sources are required to retain for five years after project ends. Attach product information, maps and other specifications as appropriate unless already addressed in an approved or verified Fugitive PM10 Management Plan.

Regulation VIII Record Keeping Form

Month:

FORM D: Water Application onto Unpaved Roads & Equipment Areas

Project Location: 8489 East Elkhorn Avenue Selma, CA 93662 Size: 9.81 Miles or (Acres) (circle one)

Owner: Danny Sozinho Address: 11447 8 1/2 Avenue City: Selma Zip: 93662

Contact Person: Alec Grassel Title: Construction Manager Phone: 559-786-3694

Use this form to document daily water applications at the same or different areas. Use additional forms, as necessary.

Date	Time	Area Treated	Distance, Area, or Gallons Applied

Comments: _____

Retain for one year after project ends. Title V sources are required to retain for five years after project ends. Attach product information, maps and other specifications as appropriate unless already addressed in an approved or verified Fugitive PM10 Management Plan.

EXISTING RESIDENTIAL
EXISTING RESIDENTIAL
EXISTING RESIDENTIAL
E. ELKHORN AVE.
EXISTING RESIDENTIAL
EXISTING RESIDENTIAL
IRRIGATION WELL
DOMESTIC WELL
EXISTING RESIDENTIAL
EXISTING FARMLAND
EXISTING FARMLAND
EXISTING FARMLAND
SOZINHO #2 DAIRY
S. HIGHLAND AVE.
HIGHLAND AVE
EXISTING FARMLAND
EXISTING FARMLAND
EXISTING FARMLAND
EXISTING FARMLAND
EXISTING FARMLAND
MATERIAL STORAGE AREA
STABILIZED CONSTRUCTION ENTRANCE
IRRIGATION WELL
IRRIGATION WELL
UNPAVED ACCESS ROAD
EXISTING RESIDENTIAL
EXISTING FARMLAND
EXISTING FARMLAND
EXISTING FARMLAND
EXISTING FARMLAND
EXISTING RESIDENTIAL
EXISTING FARMLAND

LEGEND

CONSTRUCTION BMPS:

BMPs SHOWN ON MAP

- LIMITS OF SURFACE DISTURBANCE = 9.81 ACRES
- ¼ MILE RADIUS
- WATER SOURCE
- ACCESS/HAUL ROAD
- MATERIAL STORAGE AREA
- STABILIZED CONSTRUCTION ENTRANCE

BMPs NOT SHOWN ON MAP
VEHICLE AND EQUIPMENT FUELING (NS-9)
VEHICLE AND EQUIPMENT MAINTENANCE (NS-10)
CONCRETE FINISHING (NS-13)
SPILL PREVENTION AND CONTROL (WM-4)

811 Know what's below. Call before you dig.

NORTH

REVISIONS

DATE	BY	DESCRIPTION

PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: (559) 802-3052
FAX: (559) 802-3275
www.4-creeks.com

CHK BY: TE
DRW BY: AF

IMPROVEMENT PLANS FOR:
SOZINHO DAIRY #2
8489 E. ELKHORN AVENUE
SELMA, CA 93662

BIOFILTRO WASTEWATER PROCESSING DUST CONTROL PLAN

PLOT DATE:	Jul 25, 2024
JOB NO.:	240341
FILE NAME:	240341 - DCP EXHIBIT
SCALE:	1" = 250'
SHEET NO.:	1 OF 1

APPENDIX D

DEAD ANIMAL MANAGEMENT PLAN

Appendix D
Dead Animal Management Plan Records

Month	Number of Dead Animals Picked Up	Name of Company That Picked Up Dead Animals

APPENDIX E

SPILL PREVENTION PLAN

Appendix E
Wastewater Spill Prevention & Contingency Plan

Frequency: Accidental Off-Property Discharge of Wastewater

Note: In the case of spills affecting crops intended for human consumption, the Agricultural Commissioner and the Fresno County Health Officer shall be notified.

Date of Discharge Event	Duration of Discharge	Location Point of Discharge	Specific Source of Discharge	Steps Taken to Mitigate Effects of Discharge	Steps Taken to Prevent Such Discharge in Future	Adjacent Property Owner(s) Notified

APPENDIX F

WASTE MANAGEMENT PLAN

July 24, 2024

Mr. Lewis Lummen
Central Valley Regional Water Quality Control Board
1685 E. Street, Suite 200
Fresno, CA 93706

RE: Sozinho Dairy #2 Waste Management Plan Addendum

Dear Mr. Lummen,

Sozinho Dairy #2 (Facility) submitted a Waste Management Plan (WMP), completed by Joseph M. Lord, P.E., on May 29, 2014. Recently, the Facility has proposed to revise the existing wastewater flow process by adding two lift stations, four wastewater processing beds, and upgrading the existing mechanical separator. The Facility has hired 4Creeks, Inc. (4Creeks) to amend the previously approved 2014 WMP to analyze the new proposed modifications to the wastewater process system and ensure the facility will still comply with the Reissued General Order No. R5-2013-0122 (General Order).

According to the calculations of the approved WMP completed by Joseph M. Lord, P.E., in May of 2014, the Facility met the required wastewater storage for the 120-day required storage period (November 1st – February 28). The addition of proposed processing beds will increase the reduction of solids from the wastewater, prior to reaching the storage ponds. Additionally, the proposed processing beds will increase the impervious area within the stormwater tributary area. According to the analysis completed by 4Creeks the proposed modifications will result in a total excess wastewater storage capacity of **19,816,471 gallons**. This analysis is demonstrated in the attached calculations and exhibits.

Based upon the results of the provided analysis, the Facility will meet the storage capacity requirements set forth by the General Order, once the proposed modifications become operational. No additional modifications to the facility will be required.

A new Operations and Maintenance Plan for the proposed processing beds is attached and will be followed by the Facility once the proposed modifications have become operational. Operations and Maintenance of the existing wastewater retention ponds shall be conducted in accordance with the previous Waste Management Plan / Operations and Maintenance Plan provided to the Facility.

Respectfully,

Kyle Parreira, PE #89070

VISALIA
324 S Santa Fe Suite A
Visalia, CA 93292
559-802-3052
info@4-creeks.com

HANFORD
308 N. Irwin St.
Hanford, CA 93230
559-802-3052
info@4-creeks.com

FRESNO
1444 Fulton St. Suite B11,
Fresno, CA 93721
559-802-3052
info@4-creeks.com

Attachments

A. Dairy Facility Wastewater Flow Diagram
B. Storm Water Tributary Area Map

Appendices:

A. Wastewater Retention Pond Volume Analysis Summary
B. Normal Precipitation Data
C. Operations and Maintenance Plan
D. Waste Management Plan, Sozinho Dairy #2
Completed by Joseph M. Lord, P.E. Submitted to Regional Water Quality Control Board on May 29, 2014.

PROCESS FLOW KEYNOTES

1. *EXISTING WATER SUPPLY WELL:*
   SUPPLIES ALL MILK BARN PROCESS WATER USE.

2. *EXISTING MILK BARN PROCESS WATER:*
   SOURCE: WATER SUPPLY WELLS.
   PLATE COOLER, ABOVE GROUND TANK, BARN FLUSH, SPRINKLER PENS, AND MISC. BARN WASH WATER

3. *EXISTING RECEPTION PIT:*
   SOURCE: EXISTING MILK BARN PROCESS WATER AND FLUSH WATER.
   PUMPS OVER MECHANICAL SEPARATOR.

4. *EXISTING MECHANICAL SEPARATOR:*
   SOURCE: EXISTING RECEPTION PIT.
   GRAVITY FLOWS INTO EXISTING SETTLING CELL 1.

5. *EXISTING SETTLING CELL 1:*
   SOURCE: EXISTING MECHANICAL SEPARATOR.
   GRAVITY FLOWS INTO EXISTING SETTLING CELL 2.

6. *EXISTING SETTLING CELL 2:*
   SOURCE: EXISTING SETTLING CELL 1.
   OVERFLOWS TO PROPOSED LIFT STATION.

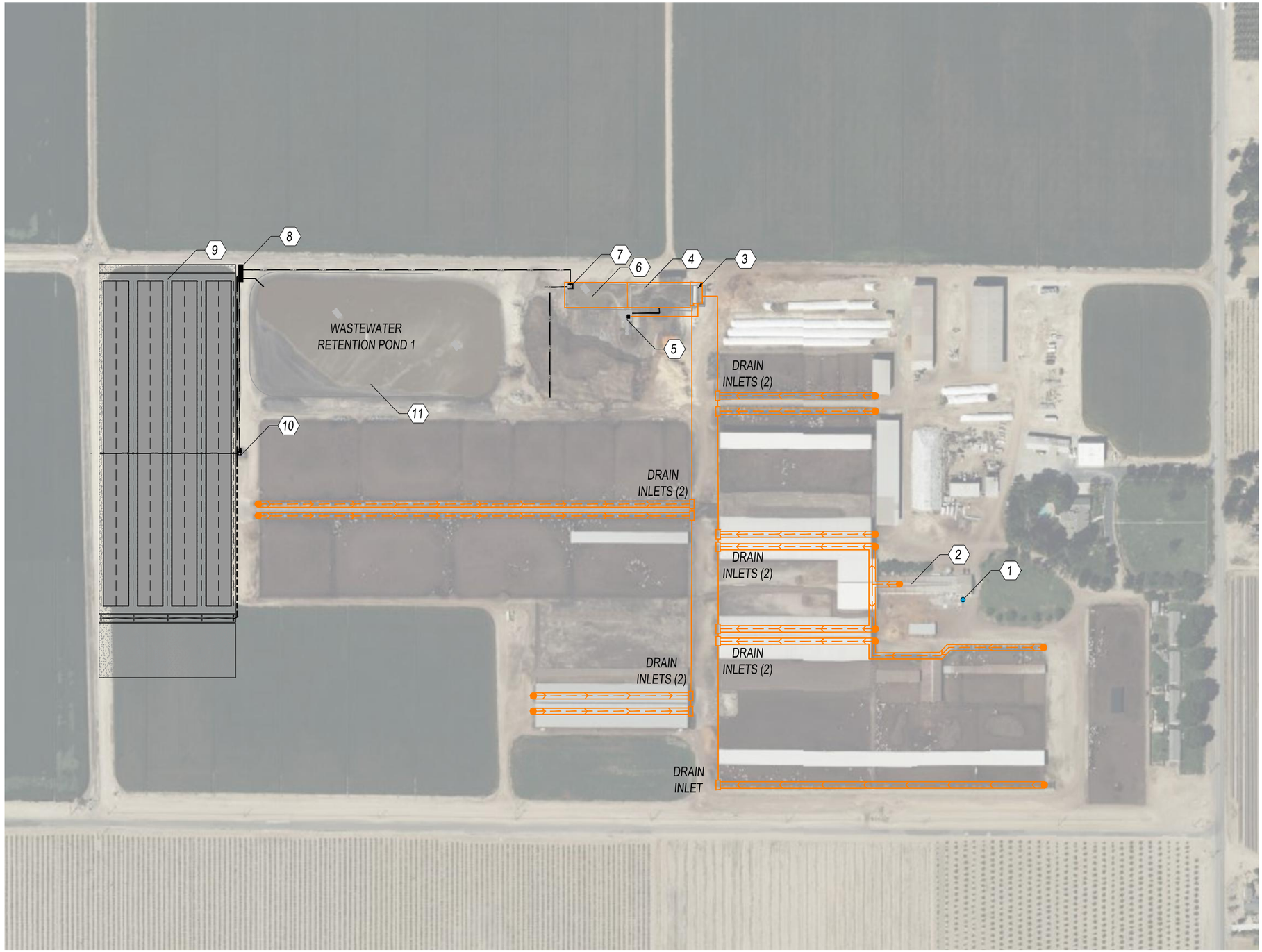
7. *PROPOSED LIFT STATION:*
   SOURCE: EXISTING SETTLING CELL 2.
   WASTEWATER IS PUMPED THROUGH PROPOSED CONTROL UNIT TO PROCESSING BEDS AND PUMPED TO FACILITY FOR FLUSH.

8. *CONTROL UNIT:*
   SOURCE: PROPOSED LIFT STATION.
   MONITORS FLOW OF WASTEWATER TO AND FROM PROCESSING BEDS.

9. *PROPOSED WASTEWATER PROCESSING BEDS (TYP. 4):*
   SOURCE: PROPOSED LIFT STATION.
   PROCESSING BEDS CONTAIN WORMS THAT BREAK DOWN WASTEWATER PARTICULATES BEFORE GRAVITY FLOWING TO PROPOSED LIFT STATION.

10. *PROPOSED LIFT STATION:*
    SOURCE: PROPOSED WASTEWATER PROCESSING BEDS.
    PUMPS WASTEWATER POST PROCESSING BEDS TO WASTEWATER RETENTION POND 1.

11. *WASTEWATER RETENTION POND 1:*
    SOURCE: PROPOSED LIFT STATION.
    STORES WASTEWATER LONG TERM.



NORTH

DAIRY FACILITY WASTEWATER FLOW DIAGRAM

SOZINHO DAIRY #2
FRESNO COUNTY, CA

JOB NO. 240341
DAIRY WW FLOW
07/02/2024
SCALE: 1" = 250'

324 S. SANTA FE, STE. A
VISALIA, CA 93292
(559) 802-3052
www.4-creeks.com
4CREEKS

PROPOSED LIFT STATION
EXISTING SETTLING CELL 2
EXISTING SETTLING CELL 1
EXISTING RECEPTION PIT
COMMODITY BARN
WASTEWATER RETENTION POND 1
PROPOSED WASTEWATER PROCESSING BEDS (TYP. 4)
SILAGE STORAGE
HAY BARN
OPEN LOT CORRALS
MANURE DRYING AREA
EXISTING MECHANICAL SEPARATOR TO BE UPGRADED
MANURE SEPARATION PAD
EXERCISE PEN
DEAD ANIMAL MANAGEMENT AREA
EQUIPMENT STORAGE
FREESTALL BARN
MILK BARN
RESIDENCE
E. ELKHORN AVE.
S. HIGHLAND AVE.

LEGEND

- IMPERVIOUS AREA BOUNDARY
- TRIBUTARY AREA BOUNDARY
- WASTEWATER POND AREA
- BIDA BED SYSTEM AREA
- DIRECTION OF SLOPE

TOTAL AREA WITHIN MANURE HANDLING LIMITS: 2,416,452 SQ. FT.
TOTAL IMPERVIOUS AREA: 536,850 SQ. FT.
TOTAL POND AREA: 194,121 SQ. FT.
TOTAL BIDA BED SYSTEM AREA: 186,372 SQ. FT.

NORTH
200' 0' 200'

JOB NO. 240341
ATTACHMENT B
7/3/2024
SCALE: AS SHOWN

STORM WATER TRIBUTARY AREA MAP

SOZINHO DAIRY #2
FRESNO COUNTY, CA

324 S. Santa Fe, Ste. A
Visalia, CA 93292
(559) 802-3052
www.4-creeks.com
4CREEKS

APPENDIX A

WASTEWATER RETENTION POND VOLUME ANALYSIS SUMMARY

Calculations Completed By:	TE
Calculations Checked By:	MCC
Date:	7/24/2024

Wastewater Retention Pond Volume Analysis

SOZINHO DAIRY #2

A. POND STORAGE VOLUME

SUMMARY

Pond	Pond Type	Depth of Pond November 1st (ft)	Storage Period Pond Volume Reduction (ft^3)
Pond 1:	Irrigation	0.00	249,130

Pond	Total Raw Volume (gal)	1 Foot Freeboard Reduction (gal)	Storage Period Pond Reduction (gal)	Total Retention Volume (gal)
Pond 1:	38,641,680	1,688,318	1,863,620	35,089,742
			TOTAL:	**35,089,742**

B. PROCESS WASTEWATER VOLUME ANALYSIS

Age of Animal & Housing Type	*# of Animals*	*Waste Produced - Urine & Manure (ft^3/day) (ASABE 384.2)*	*Hours/Day on Flush Surface*	*Single Stage Mechanical Separator w/ Sand Lane, Digester, and Separation Ponds Reduction Factor*	*Total (gal/day)*
Milking Cows (Freestall)	1,158	2.4	18	75%	3,898
Dry Cows (Open Lot)	170	1.3	4	75%	69
Heifers: 15-24 mo. (Open Lot)	530	0.78	3	75%	97
Heifers: 7-14 mo. (Open Lot)	274	0.78	3	75%	50
Heifers: 4-6 mo. (Open Lot)	0	0.3	3	75%	0
Calves: up to 3 mo. (Not Flushed)	20	0.3	3	75%	1
				Total :	**4,115**

Milk Barn Wastewater Output (Obtained from 2010 WMP)

Sprinkler Pen/Barn Flush Combo:	58,415	gallons/day*
TOTAL:	**58,415**	**gallons/day**

Summary:

Wastewater Source	*Volume (gal./day)*	*Total Volume Accumulated in 120 day period (gal.)*
Milk Barn Wastewater Output:	58,415	7,009,800
Animal Output (Urine & Manure):	4,115	493,764
Total Process Wastewater Volume From Operations:	**62,530**	**7,503,564**

C. PRECIPITATION RUN-OFF VOLUME ANALYSIS

Rainfall Run-off from Production Area

Total Additional Production Tributary Area	2,416,452	ft^2
	55.47	*acres*

Run-off Coefficients

Runoff Coefficient for Impervious:	0.75
Runoff Coefficient for Pervious:	0.31
25 Yr. 24 Hr. Storm Runoff Coefficient for Impervious:	0.88
25 Yr. 24 Hr. Storm Runoff Coefficient for Pervious:	0.40

Conversion Factor: **0.623377**

(7.48051941 gal/ft^3 x 1 ft/12 in)

Production Area Subdivision Summary

Area Description	Run-off Area (ft^2)	Run-off Coefficient	Weighted Run-off Area (ft^2)
Wastewater Retention Pond Area	194,121	1.00	194,121
BioFiltro Vermifiltration System	186,372	0.75	139,779
Total Impervious Area	536,850	0.75	402,638
Total Pervious Area	1,685,481	0.31	522,499
Total Production Area	**2,602,824**		**1,259,037**

25 year 24 hour Rainfall Event

Source: NOAA Online Weather Data: NOAA Atlas 2, 1973 for 25 yr / 24 hr

Area Description	Rainfall (in.)*	Weighted Run-off Area	Total Volume Accumulated (gal)
Wastewater Retention Pond Area	2.30	194,121	**278,324**
Total BioFiltro System of Tributary Area	2.30	139,779	**200,410**
Total Impervious Part of Tributary Area	2.30	402,637.50	**577,288**
Total Pervious Part of Tributary Area	2.30	522,499	**749,142**
Total Production Area		**1,259,037**	**1,805,164**

*Per 2014 WMP

Run-Off to Wastewater Retention Basin

Source: California Department of Water Resources (DWR) & California Irrigation Management Information Systems (CIMIS) Online Data from Sampling Stations, Appendix B

Rational Method - Equation:

Average Rainfall (in)/12 X (Total Production Area (ft^2)- Wastewater Pond Area(ft^2)) X (Weighted Run-off Coefficient) X 7.48051941 (ft^3 to gallons) = Normal Rainfall Run-off Volume to Pond (gallons)

Normal Precipitation & Run-off

Month	Ave. Rainfall (in.)	Days of Retention	Total Volume Accumulated in Each Period (gal.)
November	0.87	30	682,823
December	1.48	31	1,161,584
January	1.80	31	1,412,737
February	1.64	28	1,287,161
Total:	**5.79**	**120**	**4,544,305**

Normal Precipitation & Run-off times a factor of 1.5

Month	Ave. Rainfall X 1.5 (in.)	Days of Retention	Total Volume Accumulated in Each Period (gal.)
November	1.31	30	1,024,234
December	2.22	31	1,742,376
January	2.70	31	2,119,106
February	2.46	28	1,930,741
Total:	**8.69**	**120**	**6,816,457**

Evaporation from Wastewater Basin

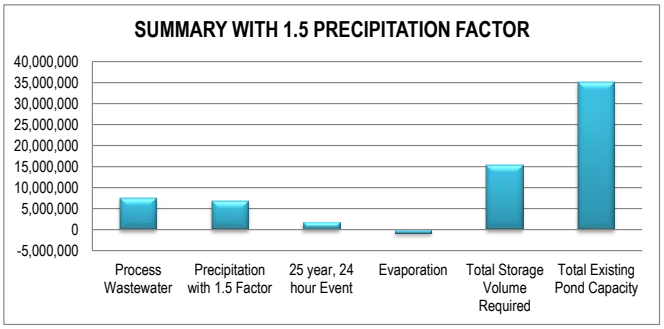
Source DWR-San Joaquin District Plan Evaporation Monthly Averages for Fresno and Bakersfield from 1958-2010

Month	*Bakersfield Evaporation Rate (in.)*	*Fresno Evaporation Rate (in.)*	*Average Evaporation Rate (in.)*	*Total Volume Evaporated (gal.)*
November	2.24	2.25	2.25	271,669
December	1.35	1.21	1.28	154,893
January	1.44	1.26	1.35	163,364
February	2.25	2.08	2.17	261,988
Total:	**7.28**	**6.80**	**7.04**	**851,914**

D. SUMMARY OF REQUIRED WASTEWATER RETENTION POND STORAGE VOLUME:

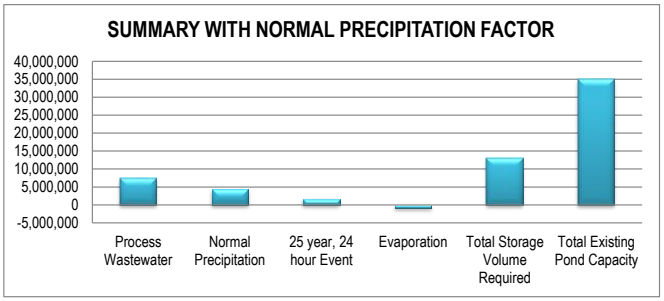
1.5 PRECIPITATION FACTOR

Volume Description	Total Volume in 120 Day Period (gal.)
Wastewater from Operations	7,503,564
Wastewater Accumulated From Normal Precipitation w/ 1.5 Factor	6,816,457
Wastewater Accumulated From 25 Year, 24 Hour Event	1,805,164
Less: Evaporation from Wastewater Retention Ponds	(851,914)
Net Required Wastewater Retention Pond Storage Volume	**15,273,271**
Less: Net Existing Wastewater Retention Ponds Storage Volume	35,089,742
Excess Wastewater Retention Pond Capacity	**19,816,471**



1.5 PRECIPITATION FACTOR NOT INCLUDED

Volume Description	Total Volume in 120 Day Period (gal.)
Wastewater from Operations	7,503,564
Wastewater Accumulated From Normal Precipitation w/o 1.5 Factor	4,544,305
Wastewater Accumulated From 25 Year, 24 Hour Event	1,805,164
Less: Evaporation from Wastewater Retention Ponds	(851,914)
Net Required Wastewater Retention Pond Storage Volume	**13,001,119**
Less: Net Existing Wastewater Retention Ponds Storage Volume	35,089,742
Excess Wastewater Retention Pond Capacity	**22,088,623**

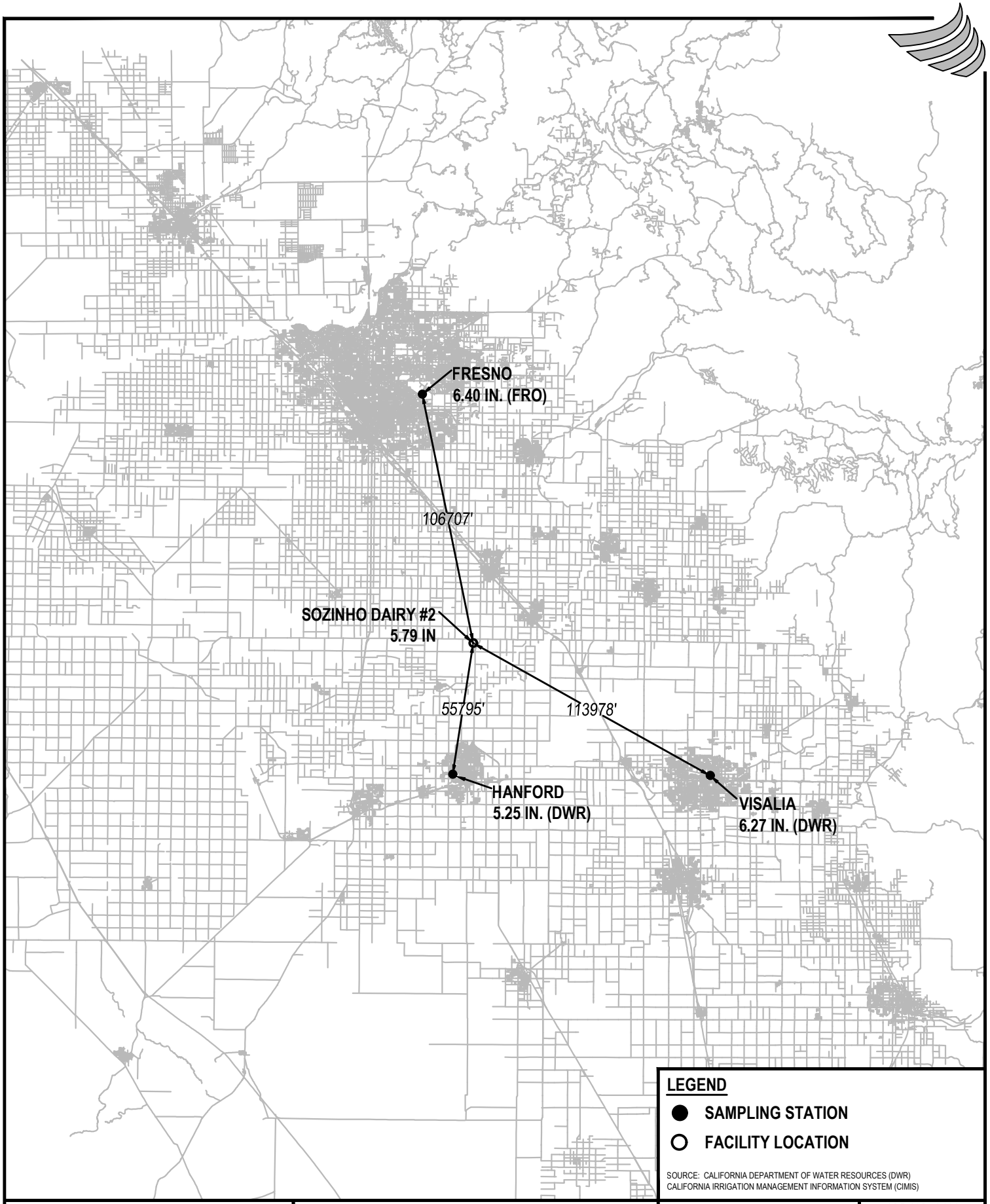


Total Available Retention Days of Storage (1.5 factor): 275.7

Total Available Retention Days of Storage (Normal): 323.9

APPENDIX B

NORMAL PRECIPITATION DATA



4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

DWR COLLECTION LOCATIONS

SOZINHO DAIRY #2

FRESNO COUNTY, CA

JOB NO. 240341

APPENDIX B

07/02/2024

1"= 5 MILES

Calculations Completed By:	TE
Calculations Checked By:	MC
Date:	7/2/2024

SOZINHO DAIRY #2

Appendix B - Normal Precipitation Analysis Summary

Source: Department of Water Resources
http://cdec.water.ca.gov/selectQuery.html
Source: CIMIS
http://wwwcimis.water.ca.gov/cimis/frontMonthlyReport.do

Average Precipitation at 3 Nearest Precipitation Recording Station *(Inches)*

	Fresno	*Hanford*	*Visalia*
November	0.96	0.79	0.93
December	1.65	1.32	1.64
January	1.99	1.64	1.91
February	1.80	1.50	1.79
March	1.74	1.39	1.67

Average Rainfall

Enter Latitude & Longitude:

Latitude: 36°29'03.43"N Longitude: 119°38'15.81"W

Enter State Plane Coordinates:

x:	1,942,857	meters
	6,374,203	ft
y:	627,901	meters
	2,060,043	ft

(State Plane Coordinates and Station proximity detailed in CAD Exhibit, See Attachment)

Normal Precipitation Summary

(Average based on proximity to DWR collection station)

120 Day Precipitation (November - February)

November:	0.87	inches
December:	1.48	inches
January:	1.80	inches
February:	1.64	inches

Retention Period Total Precipitation

November - February: 5.79 in.

Normal Precipitation Averages

Source:Department of Water Resources
http://cdec.water.ca.gov/selectQuery.html
Source: NOAA Geodetic to SPC
http://www.ngs.noaa.gov/cgi-bin/spc_getpc.prl

4CREEKS

DWR-Fresno (FRO)
1905 - 2024

Latitude: 36.7670°N 36° 46' 1.2"
Longitude: 119.7170°W 119° 43' 1.1994"
Zone: 4

State Plane Coordinates:
x: 1,935,988.641 meters
6,351,668.770 ft
y: 659,321.179 meters
2,163,127.228 ft

Date / Time	RAIN INCHES
Jan-1905	0.93
Feb-1905	0.9
Mar-1905	2.04
Apr-1905	0.45
May-1905	1.58
Jun-1905	0
Jul-1905	0
Aug-1905	0
Sep-1905	0
Oct-1905	0
Nov-1905	0.96
Dec-1905	0.41
Jan-1906	2.05
Feb-1906	2.2
Mar-1906	4.12
Apr-1906	0.92
May-1906	2.88
Jun-1906	0
Jul-1906	0
Aug-1906	0
Sep-1906	0
Oct-1906	0
Nov-1906	0.73
Dec-1906	3.16
Jan-1907	3.34
Feb-1907	0.94
Mar-1907	1.74
Apr-1907	0.69
May-1907	0
Jun-1907	0.24
Jul-1907	0
Aug-1907	0
Sep-1907	0
Oct-1907	1.08
Nov-1907	0
Dec-1907	0.97
Jan-1908	1.78
Feb-1908	1.75
Mar-1908	0.71
Apr-1908	0.8
May-1908	0.63
Jun-1908	0
Jul-1908	0.01
Aug-1908	0
Sep-1908	0.15
Oct-1908	0.02
Nov-1908	0.66
Dec-1908	0.57
Jan-1909	4.44
Feb-1909	2.76
Mar-1909	1.18
Apr-1909	0
May-1909	0
Jun-1909	0.08
Jul-1909	0
Aug-1909	0
Sep-1909	0
Oct-1909	0.72
Nov-1909	2.79
Dec-1909	4.5
Jan-1910	1.22
Feb-1910	0.21
Mar-1910	1.28
Apr-1910	0.27
May-1910	0
Jun-1910	0
Jul-1910	0
Aug-1910	0
Sep-1910	1
Oct-1910	0.45
Nov-1910	0.24
Dec-1910	0.21
Jan-1911	4.23
Feb-1911	1.14
Mar-1911	3.3
Apr-1911	1.03
May-1911	0.22
Jun-1911	0
Jul-1911	0
Aug-1911	0
Sep-1911	0.01
Oct-1911	0.09
Nov-1911	0.17
Dec-1911	1.06
Jan-1912	0.72
Feb-1912	0
Mar-1912	3.02

Fresno (FRO)

November:	0.9560	in.
December:	1.6529	in.
January:	1.9915	in.
February:	1.7951	in.
March:	1.7405	in.
April:	0.9481	in.

November - February Total
6.3955 in.

DWR-Hanford (HND)
1964-2024

Latitude: 36.3330°N 36-19'-58.8"
Longitude: 119.6670°W 119-40'-1.2"
Zone: 4

State Plane Coordinates:
x: 1,940,117.918 meters
6,365,216.266 ft
y: 611,132.228 meters
2,005,026.995 ft

Date / Time	RAIN INCHES
Oct-1964	0.93
Nov-1964	1.43
Dec-1964	1.43
Jan-1965	0.87
Feb-1965	0.26
Mar-1965	0.53
Apr-1965	1.16
May-1965	0
Jun-1965	0
Jul-1965	0
Aug-1965	0
Sep-1965	0.07
Oct-1965	0
Nov-1965	1.77
Dec-1965	1.86
Jan-1966	0.59
Feb-1966	0.63
Mar-1966	0.08
Apr-1966	0
May-1966	0.08
Jun-1966	0.04
Jul-1966	0.04
Aug-1966	0
Sep-1966	0.3
Oct-1966	0
Nov-1966	1.1
Dec-1966	2.77
Jan-1967	1.14
Feb-1967	0.06
Mar-1967	2.21
Apr-1967	2.63
May-1967	0.1
Jun-1967	0.29
Jul-1967	0
Aug-1967	0
Sep-1967	0.13
Oct-1967	0
Nov-1967	1.93
Dec-1967	0.48
Jan-1968	0.62
Feb-1968	0.63
Mar-1968	1.11
Apr-1968	0.5
May-1968	0.08
Jun-1968	0
Jul-1968	0
Aug-1968	0
Sep-1968	0
Oct-1968	1.5
Nov-1968	1.1
Dec-1968	1.5
Jan-1969	7.46
Feb-1969	4.94
Mar-1969	0.7
Apr-1969	1.07
May-1969	0.27
Jun-1969	0.22
Jul-1969	0.1
Aug-1969	0
Sep-1969	0.15
Oct-1969	0.03
Nov-1969	0.49
Dec-1969	0.81
Jan-1970	1.81
Feb-1970	1.56
Mar-1970	1.3
Apr-1970	0.2
May-1970	0
Jun-1970	0
Jul-1970	0
Aug-1970	0
Sep-1970	0
Oct-1970	0.01
Nov-1970	2.56
Dec-1970	1.41
Jan-1971	0.49
Feb-1971	0.2
Mar-1971	0.29

Hanford (HND)

November:	0.7914	in.
December:	1.3207	in.
January:	1.6373	in.
February:	1.5004	in.
March:	1.3924	in.
April:	0.6980	in.

November - February Total
5.2498 in.

DWR-Visalia (VSL)
1905 - 2024

Latitude: 36.3330°N 36-19'-58.8"
Longitude: 119.3000°W 119-18'-00"
Zone: 4

State Plane Coordinates:
x: 1,973,066.357 meters
6,473,314.820 ft
y: 610,966.351 meters
2,004,482.779 ft

Date / Time	RAIN INCHES
Jan-1905	1.03
Feb-1905	1.48
Mar-1905	4.19
Apr-1905	0.38
May-1905	0.81
Jun-1905	0
Jul-1905	0
Aug-1905	0
Sep-1905	0
Oct-1905	0
Nov-1905	1.32
Dec-1905	0.45
Jan-1906	2.87
Feb-1906	1.48
Mar-1906	4.13
Apr-1906	1.3
May-1906	2.3
Jun-1906	0
Jul-1906	0
Aug-1906	0
Sep-1906	0
Oct-1906	0
Nov-1906	0.48
Dec-1906	3.22
Jan-1907	3.67
Feb-1907	1.07
Mar-1907	3.09
Apr-1907	0.32
May-1907	0
Jun-1907	0
Jul-1907	0
Aug-1907	0
Sep-1907	0
Oct-1907	1.02
Nov-1907	0
Dec-1907	1.67
Jan-1908	1.66
Feb-1908	4.77
Mar-1908	0.13
Apr-1908	0.54
May-1908	0.22
Jun-1908	0
Jul-1908	0
Aug-1908	0
Sep-1908	0.53
Oct-1908	0.1
Nov-1908	0.87
Dec-1908	0.34
Jan-1909	6.2
Feb-1909	3.91
Mar-1909	1.37
Apr-1909	0.51
May-1909	0
Jun-1909	0
Jul-1909	0
Aug-1909	0
Sep-1909	0
Oct-1909	0.75
Nov-1909	2.24
Dec-1909	2.79
Jan-1910	1.16
Feb-1910	0.03
Mar-1910	1.68
Apr-1910	0.22
May-1910	0
Jun-1910	0
Jul-1910	0
Aug-1910	0
Sep-1910	0.15
Oct-1910	0.15
Nov-1910	0
Dec-1910	0.71
Jan-1911	3.89
Feb-1911	1.27
Mar-1911	2.31
Apr-1911	1.09
May-1911	0
Jun-1911	0
Jul-1911	0
Aug-1911	0
Sep-1911	0
Oct-1911	0
Nov-1911	0
Dec-1911	0.95
Jan-1912	0.74
Feb-1912	0.08
Mar-1912	2.21

Visalia (VSL)

November:	0.9267	in.
December:	1.6442	in.
January:	1.9092	in.
February:	1.7927	in.
March:	1.6703	in.
April:	0.9179	in.

November - February Total
6.2729 in.

NOVEMBER

Calculations of a point on a Plane

Equation for a Plane

Ax+By+Cz+D=0

Point 1	Fresno(Sta.)
x1	6351668.77
y1	2163127.228
z1(Rain)	0.956016949

Point 2	Hanford(Sta.)
x2	6365216.266
y2	2005026.995
z2(Rain)	0.791428571

Point 3	Visalia(Sta.)
x3	6473314.82
y3	2004482.779
z3(Rain)	0.926666667

		1	2163127.228	0.956016949	
A=		1	2005026.995	0.791428571	A= -21470.74597
		1	2004482.779	0.926666667	
	6351668.77	1	0.956016949		
B=	6365216.266	1	0.791428571		B= -19623.90315
	6473314.82	1	0.926666667		
	6351668.77	2163127.228	1		
C=	6365216.266	2005026.995	1		C= 17083033671
	6473314.82	2004482.779	1		
	6351668.77	2163127.228	0.956016949		
-D=	6365216.266	2005026.995	0.791428571		D= 1.62492E+11
	6473314.82	2004482.779	0.926666667		

X= 6374202.756

Y= 2060042.651

Z= 0.87 Value of rainfall data on site

4CREEKS

DECEMBER

Calculations of a point on a Plane

Equation for a Plane

Ax+By+Cz+D=0

Point 1	Fresno(Sta.)
x1	6351668.77
y1	2163127.228
z1(Rain)	1.652881356

Point 2	Hanford(Sta.)
x2	6365216.266
y2	2005026.995
z2(Rain)	1.320714286

Point 3	Visalia(Sta.)
x3	6473314.82
y3	2004482.779
z3(Rain)	1.644237288

		1	2163127.228	1.652881356	
A=		1	2005026.995	1.320714286	A= -51329.83264
		1	2004482.779	1.644237288	
	6351668.77	1		1.652881356	
B=	6365216.266	1		1.320714286	B= -40289.70651
	6473314.82	1		1.644237288	
	6351668.77	2163127.228		1	
C=	6365216.266	2005026.995		1	C= 17083033671
	6473314.82	2004482.779		1	
	6351668.77	2163127.228		1.652881356	
-D=	6365216.266	2005026.995		1.320714286	D= 3.84946E+11
	6473314.82	2004482.779		1.644237288	

X=	6374202.756	
Y=	2060042.651	
Z=	1.48	Value of rainfall data on site

JANUARY

Calculations of a point on a Plane

Equation for a Plane

Ax+By+Cz+D=0

Point 1	Fresno(Sta.)
x1	6351668.77
y1	2163127.228
z1(Rain)	1.991525424

Point 2	Hanford(Sta.)
x2	6365216.266
y2	2005026.995
z2(Rain)	1.637272727

Point 3	Visalia(Sta.)
x3	6473314.82
y3	2004482.779
z3(Rain)	1.909237288

		1	2163127.228	1.991525424	
A=		1	2005026.995	1.637272727	A= -43190.45037
		1	2004482.779	1.909237288	
	6351668.77	1	1.991525424		
B=	6365216.266	1	1.637272727		B= -41978.64293
	6473314.82	1	1.909237288		
	6351668.77	2163127.228	1		
C=	6365216.266	2005026.995	1		C= 17083033671
	6473314.82	2004482.779	1		
	6351668.77	2163127.228	1.991525424		
-D=	6365216.266	2005026.995	1.637272727		D= 3.31115E+11
	6473314.82	2004482.779	1.909237288		

X= 6374202.756

Y= 2060042.651

Z= 1.80 Value of rainfall data on site

FEBRUARY

Calculations of a point on a Plane

Equation for a Plane

Ax+By+Cz+D=0

Point 1	Fresno(Sta.)
x1	6351668.77
y1	2163127.228
z1(Rain)	1.795084746

Point 2	Hanford(Sta.)
x2	6365216.266
y2	2005026.995
z2(Rain)	1.500363636

Point 3	Visalia(Sta.)
x3	6473314.82
y3	2004482.779
z3(Rain)	1.792711864

	1	2163127.228	1.795084746		
A=	1	2005026.995	1.500363636	A=	-46380.71486
	1	2004482.779	1.792711864		
	6351668.77	1	1.795084746		
B=	6365216.266	1	1.500363636	B=	-35819.51217
	6473314.82	1	1.792711864		
	6351668.77	2163127.228	1		
C=	6365216.266	2005026.995	1	C=	17083033671
	6473314.82	2004482.779	1		
	6351668.77	2163127.228	1.795084746		
-D=	6365216.266	2005026.995	1.500363636	D=	3.41412E+11
	6473314.82	2004482.779	1.792711864		

X=	6374202.756	
Y=	2060042.651	
Z=	1.64	Value of rainfall data on site

APPENDIX C

OPERATION AND MAINETENANCE PLAN

BIODYNAMIC AEROBIC SYSTEM

OPERATION AND MAINTENANCE PLAN

Prepared for:

Sozinho Dairy #2
8489 East Elkhorn Avenue
Selma, CA 93662

Completed by:

4CREEKS

324 S. SANTA FE ST., SUITE A
VISALIA, CA 93292
(559) 802-3052

July 24, 2024

OPERATION AND MAINTENANCE PLAN

The California Regional Water Quality Control Board, Region 5, Central Valley Region, requires that each new Tier 1 Pond built at a dairy comply with waste discharge requirements identified in General Order No. R5-2010-0130 or R5-2013-0122, as applicable. One of these requirements is an Operation and Maintenance Plan (O&M). The purpose of the O&M is to ensure that wastewater processing systems are designed, constructed, operated, and maintained in compliance with the Central Valley Region Water Board's identified mitigation measures to prevent adverse impacts to groundwater and surface water quality.

SOZINHO DAIRY #2

FRESNO COUNTY, CA

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 understand the monitoring frequency required and agree to submit all relevant documentation in the Dairy Annual Report. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

OWNER:

_____
SIGNATURE OF OWNER

_____
PRINT

_____
DATE

OPERATOR:

_____
SIGNATURE OF OPERATOR

_____
PRINT

_____
DATE

ENGINEER:

_____
KYLE PARREIRA, PE #89070

7/25/2024
DATE

Table of Contents

I. INTRODUCTION

This Operation and Maintenance Plan (O&M Plan) was prepared by 4CREEKS, INC. (Design Engineer) for implementation by Sozinho Dairy #2 (Facility) following the completion of construction and installation of the Biodynamic Aerobic (BIDA) System at the Facility located in Fresno County, California. The O&M Plan is written for the period of time after construction, when the BIDA system has been completely constructed and installed. This O&M Plan was prepared in accordance with the Best Available Operational Management Practices of the industry ("Best Practices"). The purpose of the O&M Plan is to document the proper maintenance and operation of the BIDA system and the kinds of activities and circumstances that may result in a failure. To meet these objectives, this O&M Plan is intended to identify activities and circumstances that may contribute to increased risk of the BIDA system failure and correct the failures before such problems materially impair the operation or functionality of the BIDA system, and adversely impact the local groundwater and surface water quality.

A. Facility Description

i. Name of the Facility & County Location

Facility Name:	Sozinho Dairy #2
County:	Fresno County

ii. Facility Location

Address:	8489 E. Elkhorn Avenue, Selma, CA 93662
Assessor's Parcel Number:	056-031-35S
Township, Range, Section:	Township 17 S., Range 21 E., Section 01
Baseline Meridian:	Mt. Diablo Base and Meridian

iii. Facility Contacts

Property Owner/Operator/Contact:	Danny Sozinho
Address:	10795 6th Avenue, Hanford, CA 93230
Phone:	(559) 381-5485

II. DEFINITIONS

The following terms are used throughout this text:

BIOFILM: A slimy film consisting of billions of hungry microbes and bacteria that feed off the organic matter and nutrients in the wastewater produced by dairy processes.

WOOD CHIPS/SHAVINGS: The top layer of the beds that is in contact with the wastewater. Allows for the formation of biofilm. It provides the worms with a comfortable living environment and is edible to the worms for extra energy.

PERMEABLE TEXTILE MATERIAL: A shade mesh that prevents the wood chips and worms from entering the drainage canals, while also being used as biofilm to further treat the water.

DRAINAGE CELLS: Plastic pallets that allow water to flow through to drainage channels on the outer edge of the beds. Their purpose is to maintain an air chamber, which enables the system to provide odorless wastewater treatment.

DRAINAGE CHANNELS: Collects the treated water and directs it to the area drain.

LINER: 60 Mil High-density polyethylene (HDPE) liner and geomembrane which acts as an impermeable membrane to prevent water from infiltrating into the ground.

III. RESPONSIBILITY OF OWNER

By executing the attached Acknowledgment of Owner (incorporated herein by this reference), Owner, among other things, assumes (i) all responsibility for the proper use, operation and maintenance of the BIDA system, including, but not limited to, the proper implementation and execution of all aspects of this O&M Plan in strict accordance, and (ii) all liability for any loss or liability arising out of the operation, maintenance, or use of the BIDA system. Owner further agrees to indemnify, defend, and hold harmless Design Engineer as set forth below.

IV. BIDA BED OPERATION

A. BIDA Bed Operation

The BIDA beds will be used on a year-round basis to treat wastewater produced from dairy facility operations through a microbial process prior to reusing, storing, and land applying the treated wastewater. The wastewater treatment occurs by pumping wastewater from existing wastewater retention ponds on site to a linear irrigation system which equally distributes wastewater across the bed as it moves east/west. Within the woodchips, worms live and feed off the wastewater by consuming nutrients, thus removing contaminants. The treated water percolates down the wood chips and through a permeable textile material. Below the wood chips and permeable textile material, plastic drainage cells are sloped to allow the treated wastewater to flow to drainage channels on the outer edge of the beds. Underneath the plastic cells is an HDPE geomembrane liner.

Materials within the BIDA beds are contained by a 1-foot-tall weeping wall constructed with support posts and boards. Woodchips are placed and maintained away from the edge of the bed and do not rest on the weeping wall, therefore decreasing the possibility of woodchips overtopping the wall and materials flowing outside of the beds. The weeping wall and support post allows water to flow into the drainage channel and to the drain inlet at the end of the bed. A 6-inch curb is located on the outer edge of the drainage channel to prevent outside materials from entering into the drainage channel. A shade mesh is also utilized to prevent materials from entering the drainage channel and clogging the drainage path/pipelines. A 20-foot access road, surfaced with gravel, decomposed granite (DG), or similar all-weather material, is located between the beds allowing for operational efficiency when cleaning and maintaining the beds.

B. Site Drainage

The beds are designed with a crowned point and a cross-sectional slope of 3% or greater to drain water away from the center. Wastewater is then conveyed through drainage channels, drain inlets, and pipelines to be collected at a lift station to pump back to the existing wastewater retention ponds for land application, storage, and recirculation throughout the facility. A slide gate valve will be included in the lift station to be opened only during storm events and remove all storm water into an adjacent pond. No wastewater will be stored in the BIDA beds, as they will operate similar to drainage channels. The BIDA beds will be exclusively used for wastewater treatment as the water runs through the beds and back into the retention ponds on site.

The site surrounding the BIDA beds is graded to convey drainage to a corresponding drain inlet to avoid standing water and infiltration of water into the underlying soils. All contaminated rainwater runoff is directed to the drain inlets and is included in the facility's required waste management plan storage calculations to be stored in the facilities wastewater retention ponds. There will be no discharge of waste or manured storm water, as all such waste will be maintained within the drainage system.

C. Chemical and Contaminant Handling

All chemicals and contaminants on site can be found in the facilities waste management plan and are stored and disposed of in accordance with the recommendations of the manufacturer. The BIDA bed operations and maintenance do not propose any additional chemicals or contaminates on site.

D. Salt Limitations

Salt is not produced by, nor added to, the BIDA beds.

E. Animal Containment

All animals on site are contained within the animal housing, transfer lanes, and milking center. Animals are contained to prevent them from entering surface water confined areas within the wastewater treatment area.

F. Wastewater Storage

The peak discharge flow rate design criteria for the BIDA system was based on the analysis for a 25 year, 24 hour rainfall event. The BIDA bed was analyzed to ensure that the depth of the water during a 25 year storm event would not overtop the proposed curb. All wastewater produced on site is directed to the existing/proposed wastewater retention ponds. Calculations for the facility's required storage capacity and existing storage capacity on site are provided. The facility will have adequate capacity to contain all wastewater produced from the facility operations and via rainfall runoff times a factor of 1.5 and including a 25 year, 24 hour rainfall event during the winter storms.

V. POSSIBLE CAUSES OF FAILURE

Owner acknowledges that the BIDA system operations and activities may lead to or contribute to system failure. Although it is impossible to provide an exhaustive list of all possible causes for failure, the following are the most common causes:

- Any punctures to the shade mesh regardless of type or cause.
- Any punctures to the liner regardless of type or cause.
- Any material other than the dairy wastewater entering pond.
- Erosion or settling that may be caused by stormwater, ponding within the vicinity, grading changes within the beds creating overland flow conditions to the pond, or for any other reason.
- Activities of burrowing animals.
- Any blow to the structure of the beds regardless of type or cause.
- Depositing of the wood chips in the drainage channels.
- Clogged sprinkler head(s).
- Overtopping of woodchips/shavings outside of the BIDA beds.

As set forth above, this list is not intended to and cannot be exhaustive. The causes listed above as well as all similar causes may result in the failure of the BIDA system. For that reason, Owner shall not permit any activities or other circumstance to arise that would result in the occurrence of the causes listed above, or any similar causes. If, at any time, Owner has any question whether a given activity or circumstance is likely to cause or lead to the failure of the BIDA system, Owner is instructed to contact Design Engineer for further assistance in determining whether a given activity or circumstance will be detrimental to the BIDA system.

VI. BIDA BED MAINTENANCE

Owner is responsible to manage, operate, and maintain the BIDA beds. Access to the beds will be limited to only the Owner, contractors, and/or employees designated by Owner to assist in managing or maintaining the beds.

Weekly: Inspect all pumps for damage and noise. Inspect drainage channels for proper flow.

Monthly: Inspect outer wall sides of the beds for weeds, animal holes, and erosion. Inspect and ensure that valves are operational. Visually inspect to ensure there is no damage to the BIDA beds. Visually inspect sprinkler nozzles to ensure all are free of debris.

Quarterly: Burrowing animals living in the vicinity of the pond shall be controlled to reduce population levels, thus reducing the likelihood of and preventing damage to the bed liner. Weeds and vegetation within the vicinity of the beds shall be removed to prevent damage to the beds and the bed liner caused by roots. Mix biofilm and organic matter with the tilling machine to encourage optimal biodynamic aerobic wastewater treatment performance.

Prior to Storm Events: Inspect BIDA beds to ensure that no woodchip materials are collecting near the edges of the beds. Verify that pond WWS 1 receiving the storm water via the gate valve in the lift station has been pumped down per the pond OMM.

Following Storm Events: Within 72 hours of an event, inspect BIDA beds and surrounding areas to ensure that no standing water or woodchip materials is visible outside of the beds.

A. Bed Cleaning

The beds will have scheduled cleanouts every 2 years, and all wood shavings removed during this time will be transported to the facilities' manure stacking area for processing, land application, and/or to be sold. The cleanouts will utilize a machine to scrape the beds, leaving 6 inches of woodchips at the bottom to avoid damaging the liner, permeable textile material, concrete, and drainage cells.

B. Repair Procedure for the Liner

Owner shall contract any and all maintenance and repairs of the BIDA system, including, but not limited to, the maintenance and repair of the liner material, to be performed with the highest available level of care to protect the liner, and all other parts of the BIDA system. Owner shall contract such services to be provided by a qualified contractor with experience in successfully cleaning geosynthetic materials used in connection with the treatment of wastewater. During routine inspections, if any portion of the beds exhibits a significant defect, it shall be repaired. Examples of defects include tears, cuts, or cracks in liner or structure of the beds. The following procedures will ensure proper repair:

C. Routine Repair Procedures

1. Empty out the BIDA beds.
2. Liner damage shall be patched and tested.

D. Emergency Repair Procedures

1. Contain any spillage.
2. Remove all wood shavings, worms, and permeable textile material.
3. Stop all flow to beds.
4. Consult Design Engineer.
5. Liner damage shall be patched.

VII. WAIVER OF LIABILITY AND INDEMNIFICATION OF DESIGN ENGINEER

A. Waiver of Liability of Design Engineer

In consideration of the Design Engineer's agreement to allow Owner to maintain and operate the BIDA system pursuant to this O&M Plan in the absence of Design Engineer's direct supervision, and in acknowledgment of the potential for failure of the BIDA system resulting from the improper operation and maintenance of the system, Owner hereby acknowledges and agrees that Design Engineer shall not be liable for any loss, liability, damage, claim, action, or injury of any kind or nature whatsoever to any person or property arising out of the use, operation, and/or maintenance of pond system. OWNER EXPRESSLY ASSUMES ALL LIABILITY WITH RESPECT TO THE USE, OPERATION, AND MAINTENANCE OF THE BIDA SYSTEM.

B. Indemnification of Design Engineer by Owner

Owner shall indemnify, defend, and hold harmless Design Engineer and Design Engineer's representatives, consultants, officers, agents, servants, employees, attorneys and each of them (collectively, the “Indemnitees”), from and against any and all loss, liability, and claims made, asserted or alleged for any damage or injury of any kind or nature whatsoever, to any person or property (including, without limitation, claims for injury to or death of any employee of Owner, contractor, or subcontractors or materialmen or suppliers of any tier) which loss, liability or claims result from, arise out of, or occur in connection with the use, maintenance, or operation of the pond system, except that Owner shall not be required to indemnify an Indemnitee against a claim, loss, or liability that is solely the result of the Indemnitee's gross negligence or willful misconduct. Owner shall indemnify Indemnitees from and against all loss, cost, expense, liability, damage, or injury, including legal fees, that Indemnitees may directly or indirectly sustain, suffer, or incur as a result thereof, and further agrees to defend the Indemnitees with counsel of Indemnitees' own choosing. Owner shall pay on behalf of Indemnitees, promptly following their demand therefor, the amount of any judgment that may be entered against Indemnitees or any of them in any such action.

APPENDIX D

WASTE MANAGEMENT PLAN 2014

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Waste Management Plan - Storage Calculations

A. Dairy Facility Information

Dairy Name:	Sozinho Dairy #2			
Physical Address:	8489 E. Elkhorn			
	Selma	CA	93662	
County:	Fresno			
Latitude:	36.487117	Longitude:	-119.638098	

Calculations Based On: MAX Herd Population

B. The following items are included in this report.

1. General Inputs for WMP & NMP
2. Manure Production Estimates
3. Runoff Coefficients
4. Milk Barn Fresh Water Use
5. Storage Pond Volume Calculations
6. Wastewater Utilization Summary from NMP Plan
7. Waste Management System Design Calculations
8. Waste Management Plan Summary
9. Waste Management Plan Certification

C. Brief Waste System Description

Sozinho Dairy #2 has one storage pond to collect rainfall runoff, dairy waste, and milk barn wastewater. Wastewater flows to a mechanical separator and then into Pond 1 after solids have been removed. Recycled wastewater or used barn water is used to flush the lanes. Corral manure is stored in the corrals and collected/removed several times a year. All corral manure is exported offsite. Some separator solids can be used as bedding, some is land-applied to fields associated with the dairy, and the rest is exported. All wastewater is applied to fields associated with the dairy.

This Waste Management Plan (WMP) was prepared under the direction of Professional Engineer, Joseph Lord. Site specific data was provided by the owner/operator of the above mentioned dairy or a representative of the dairy. This plan is true and accurate to the best of my knowledge based on the information provided at the time of completion. When any changes to the animal population or farm management practices are made, both the Waste Management Plan- Storage Calculations and the Nutrient Management Plan (NMP)- Nutrient Budget should be reviewed. Analyses are predicated on best management practices being implemented at the facility. The Storage Calculations and Nutrient Budget are only one part of the whole WMP and NMP, respectively.

Sozinho Dairy #2

1. General Inputs for WMP & NMP

Input data needed for manure, nutrient & runoff calculations.

Runoff Information

Area Type	Runoff Area (ft^2)	Runoff Curve Number (CN)	S	Storm Runoff Volume (ft3)	Storm Runoff Volume (gal)
Concrete	206,403.92	98.00	0.20	35,639.25	266,581.61
Hard Roof	132,300.00	98.00	0.20	22,843.91	170,872.47
Corral	815,682.97	68.00	4.71	20,694.58	154,795.42
Unpaved	305,569.62	59.00	6.95	2,684.04	20,076.59
Paved	0.00	83.00	2.05	0.00	0.00
Total	1,459,956.51			81,861.78	612,326.09

Hydrologic Soil Group (HSG) - Antecedent Condition II used for storm runoff estimate.

		Weighted CN	S	P > 0.2*S
24 Hr - 25 Yr Storm Depth (in)	2.3			
Hydrologic Soil Group	A	73.0762	3.6844	True

Herd Information

Herd	Current	Weight (lbs)	Concrete (hrs/day)	Max Capacity
Milking Cows	1,158.00	1,400.00	18	1,304
Dry Cow	170.00	1,200.00	18	191
Heifers 15-24 months	530.00	1,100.00	18	597
Calves: 7-14 months	274.00	900.00	6	308
Calves: 4-6 months	0.00	0.00	6	0
Calves: 0 to 3 months	20.00	0.00	0	23

Max (MC+DC) 1,495.00

Herd increase (%) 12.58 Assumes ratio of MC to DC will stay the same.

Milk Production (lbs milk/cow/day) 70.00

Does the dairy have freestalls? Yes

Is bedding added to the freestalls? Yes

		How much is used weekly?		Daily Bedding Input (tons/day)	Daily Bedding into Waste System* (kg/day)	Bedding from Manure (tons/day)	Bedding from Manure Used (kg/day)
What type of bedding is used?	Manure	8	tons	1.14	414.72	1.14	1,036.80
What type of bedding is used?							
What type of bedding is used?							

*Assumes a volume reduction factor of 0.4.

Pond Dimensions & Waste Exports

Pond Dimensions	Pond A Pond 1	Pond B	Pond C	Pond D	Pond E
top width	660.00				
top length	345.00				
depth	30.00				
side slope	2.00				
freeboard	1.00				
dead storage	2.00				

Pond Dimensions	Pond F	Pond G	Pond H	Pond I	Pond J
top width					
top length					
depth					
side slope					
freeboard					
dead storage					

Wastewater & Dry Manure Exports*

Month	Wastewater ac-feet	Corral Manure tons	Separator Manure tons
January			
February			
March			
April		675	200
May			
June			
July			
August			
September			
October		675	200
November			
December			
Year Tot.	0.00	1350	400

*Based on export records.

Crops		average yield (ton/ac)	TN (lbs/ac)	P (lbs/ac)	K (lbs/ac)	Plant Date	Harvest Date
Corn Silage	259	30.00	277.27	53.54	294.48	1-May	1-Sep
Sudan/Sorghum	80	15.00	229.63	36.70	276.68	15-Sep	31-Oct
Wheat Silage	259	14.00	231.05	39.31	392.12	15-Nov	15-Apr
Corn-Silage (early)		30.00	277.27	53.54	294.48	15-Apr	4-Sep
0			-	-	-		

Wastewater	TN (ppm)	P (ppm)	K (ppm)	EC (µS/cm)	TN (lbs/1000 gallons)	P (lbs/1000 gallons)	K (lbs/1000 gallons)	TDS (lbs/1000 gallons)
1st Quarter	695.40	99.28	965.80	9,332.50	5.80	0.83	8.06	49.86
2nd Quarter	559.20	57.20	605.00	6,520.00	4.67	0.48	5.05	34.83
3rd Quarter	280.20	41.56	439.60	5,645.00	2.34	0.35	3.67	30.16
4th Quarter	527.40	65.40	766.00	8,302.00	4.40	0.55	6.39	44.35
average	515.55	65.86	694.10	7,449.88	4.30	0.55	5.79	39.80

Corral Manure	As Received TN %	P %	K %	% Moisture	TN (lbs/ton)	P (lbs/ton)	K (lbs/ton)
Spring	1.78	0.70	2.95	18.90	35.60	13.92	59.08
Fall	1.54	0.74	3.47	24.36	30.80	14.80	69.36
average	1.66	0.72	3.21	21.63	33.20	14.36	64.22

Separator Manure	As Received TN %	P %	K %	% Moisture	TN (lbs/ton)	P (lbs/ton)	K (lbs/ton)
Spring	1.59	0.33	0.84	81.10	31.80	6.64	16.80
Fall	1.63	0.29	0.44	79.22	32.68	5.72	8.76
average	1.61	0.31	0.64	80.16	32.24	6.18	12.78

Separator Information *

Does facility have any solids separator devices?	How many?	Type 1	Type 2	Type 3	Type 4	Type 5
yes	1	Inclined Screen with Drag Chain				
	Efficiency	0.2	0.4			

From NRCS-CA Standard 632

Solid/Liquid Separators	Total Solids Capture Efficiency	Average Efficiency (%)*
Centrifuge	20-45%	32.5
Dry Scrape	50-90%	70.0
Geotextile Container	50-98%	74.0
Inclined Screen with Drag	10-30%	20.0
Rotating Screen	20-40%	30.0
Screw or Roller Press	30-50%	40.0
Settling Basin	40-65%	52.5
Static Inclined Screen	10-20%	15.0
Vibratory Screen	15-30%	22.5
Weeping Wall	50-85%	67.5

*Average separator efficiency is used, unless farm practices warrant a different value.

Irrigation Pump Information

Pumping capacity for wells, surface water and wastewater sources. Average of fresh water analysis collected to date shown.

Wells, Lifts, Ponds	Pump Flow Rate (gpm)	Nitrogen (lbs/1000 gallons)	EC (umhos/cm)	Pump Type
Lagoon Pump	600	-	-	Wastewater
Well 5E	1450	0.1523	988.00	Groundwater
0	0	-	-	0
0	0	-	-	0
0	0	-	-	0
0	0	-	-	0
0	0	-	-	0
0	0	-	-	0

Field Information

Waste Application Fields - Refer to the Planned Application pages for more information.

Field ID	Acres	APN
Field 01E	15	056-030-008
Field 03E	4	056-030-008
Field 1E	40	056-030-048
Field 2E	40	056-030-048
Field 3E	40	056-030-008
Field 4E	40	056-030-008
Field 5E	40	056-030-048
Field 6E	40	056-030-048

Sozinho Dairy #2

2. Manure Production Estimates

Manure production based on ASABE Standard D384.2 MAR2005 (Tables 5a, 5b, and 5c). Nutrient losses based on the Agricultural Waste Management Field Handbook.

	lbs/day	kg/day
Milk Production (lbs milk/cow/day)	70	31.75

Herd	Current Herd Size	Weight (kg)	Maximum Herd Size	Total Manure Prod. kg/day		Total Manure Prod. kg/year
Milking Cows	1158	635.03	1,304	89,949.92	Table 5a	32,831,719.77
Dry Cow	170	544.31	191	7,272.36	Table 5a	2,654,413.03
Heifers 15-24 months	530	498.95	597	13,126.28	Table 5a	4,791,092.24
Calves: 7-14 months	274	408.23	308	4,703.96	Table 5a & 5b (average btn heifer-440kg & calf-150kg)	1,716,945.02
Calves: 4-6 months	0		0	0.00	Table 5b - calf-150 kg	0.00
Calves: 0 to 3 months	20		23	66.98	Assume manure production is 35% of Calf (4-6 month); based on difference of weight in Table 5c.	24,448.54
				115,119.50		42,018,618.60

Herd	Total solids Prod kg/day		Total solids Prod kg/year
Milking Cows	11,602.24	Table 5a	4,234,816.03
Dry Cow	937.75	Table 5a	342,279.57
Heifers 15-24 months	2,207.60	Table 5a	805,774.60
Calves: 7-14 months	786.56	Table 5a & 5b (average btn heifer-440kg & calf-150kg)	287,095.72
Calves: 4-6 months	0.00	Table 5b - calf-150 kg	0.00
Calves: 0 to 3 months	11.03	Assume manure prod. is 35% of Calf (4-6 month); based on difference of weight in Table 5c.	4,026.82
Bedding	414.72	Bedding material entering the waste system.	151,372.80
	15,959.91		5,825,365.55

Herd	Nitrogen Prod kg/day		Nitrogen* Prod kg/year
Milking Cows	586.62989	Table 5a	149,883.93806
Dry Cow	44.01694	Table 5a	11,246.32888
Heifers 15-24 months	71.59789	Table 5a	18,293.26130
Calves: 7-14 months	28.22375	Table 5a & 5b (average btn heifer-440kg & calf-150kg)	7,211.16909
Calves: 4-6 months	0.00000	Table 5b - calf-150 kg	0.00000
Calves: 0 to 3 months	0.17787	Assume manure prod. is 35% of Calf (4-6 month); based on difference of weight in Table 5c.	45.44552
	730.64635		186,680.14285

* Includes a 30% reduction in N due to handling losses based on the AWMFH - Ch 11, Table 11.5.

Herd	Phosphorus Prod kg/day		Phosphorus Prod kg/year
Milking Cows	101.68	Table 5a	37,114.12
Dry Cow	9.38	Table 5a & 5b (average btn heifer-440kg & milk cow)	3,422.80
Heifers 15-24 months	11.93	Table 5a	4,355.54
Calves: 7-14 months	5.97	Table 5a & 5b (average btn heifer-440kg & calf-150kg)	2,177.77
Calves: 4-6 months	0.00	Assume manure production is 35% of heifer; based on difference of weight from Table 5c.	0.00
Calves: 0 to 3 months	0.16	Assume manure prod. is 13% of heifers; based on diff. of weight from Table 5c.	57.53
	129.12		47,127.75

Herd	Potassium Prod kg/day		Potassium Prod kg/year
Milking Cows	130.36	Table 5a	47,582.20
Dry Cow	9.76	Assume manure prod. is 51% of lactating cows based on diff. of N excreted from Table 5a.	3,562.50
Heifers 15-24 months	14.92	Assume manure prod. is 25% of lactating cows based on diff. of N excreted from Table 5a.	5,444.42
Calves: 7-14 months	6.01	Assume manure prod. is 19.5% of lactating cows based average N excreted btn heifer & calf.	2,195.44
Calves: 4-6 months	0.00	Assume manure prod. is 14% of lactating cows based on diff of N excreted from Table 5a.	0.00
Calves: 0 to 3 months	0.05	Assume manure prod. is 2% of lactating cows based on diff of N excreted from Table 5a.	16.44
	161.10		58,801.00

Waste Stream Partitioning

Herd	Hours on Concrete (hrs/day)	% Manure sent to ponds %	Sent to Ponds Total Manure* kg/day	Total Solids* kg/day	Nitrogen kg/day	Phosphorus kg/day	Potassium kg/day
Milking Cows	18	75.00	62,937.57	4,176.80	307.98	76.26	97.77
Dry Cow	18	75.00	5,088.55	337.59	23.11	7.03	7.32
Heifers 15-24 months	18	75.00	8,983.75	794.74	37.59	8.95	11.19
Calves: 7-14 months	6	25.00	1,073.74	94.39	4.94	1.49	1.50
Calves: 4-6 months	6	25.00	0.00	0.00	0.00	0.00	0.00
Calves: 0 to 3 months	0	0.00	0.00	0.00	0.00	0.00	0.00
Outside Source**	18	75.00		149.30			
			78,083.60	5,552.82	373.62	93.74	117.78

*Adjustment made for solid separation, assumes negligible nutrient removal with solids.

**For Total Solid Estimation: The addition of bedding is typically associated with the milking cows, so the hours of concrete and % manure sent to pond are the same. Since it has been assumed negligible nutrients are removed with the solids, it is also assumed the addition of solids adds negligible nutrients to the system.

Estimated Wastewater Production - Sent to Ponds Monthly, after any solid separation

Month	Total Manure Prod Sent to Pond kg/month	Total Manure Prod Sent to Pond ac-ft	Total solids Sent to Pond kg/month	Nitrogen* Sent to Pond kg/month	Phosphorus* Sent to Pond kg/month	Potassium* Sent to Pond kg/month	Month
Jan	2,420,591.53	1.96	172,137.39	11,582.15	2,905.83	3,651.27	Jan
Feb	2,186,340.74	1.77	155,478.93	10,461.29	2,624.62	3,297.92	Feb
Mar	2,420,591.53	1.96	172,137.39	11,582.15	2,905.83	3,651.27	Mar
Apr	2,342,507.93	1.90	166,584.57	11,208.53	2,812.09	3,533.48	Apr
May	2,420,591.53	1.96	172,137.39	11,582.15	2,905.83	3,651.27	May
Jun	2,342,507.93	1.90	166,584.57	11,208.53	2,812.09	3,533.48	Jun
Jul	2,420,591.53	1.96	172,137.39	11,582.15	2,905.83	3,651.27	Jul
Aug	2,420,591.53	1.96	172,137.39	11,582.15	2,905.83	3,651.27	Aug
Sep	2,342,507.93	1.90	166,584.57	11,208.53	2,812.09	3,533.48	Sep
Oct	2,420,591.53	1.96	172,137.39	11,582.15	2,905.83	3,651.27	Oct
Nov	2,342,507.93	1.90	166,584.57	11,208.53	2,812.09	3,533.48	Nov
Dec	2,420,591.53	1.96	172,137.39	11,582.15	2,905.83	3,651.27	Dec
Annual Total	28,500,513.21	23.11	2,026,778.97	136,370.44	34,213.78	42,990.70	Annual Total

*Nutrient amounts into pond is based on the theoretical nutrient productions from the ASABE documentation.

Estimated Solids Production

	Total Solids Produced (kg/day)	Total Solids Sent to Pond (kg/day)	Solids Reused for Bedding (kg/day)	Total Solids** Collected (kg/day)	Total Solids Collected (kg/yr)	Total Solids Collected (tons/yr)
Total	15,959.91	5,552.82	1,036.80	9,370.29	3,420,154.58	3,770.01
			Corral Solids	3,354.73	1,224,477.36	1,349.73
			Separator Solids	6,015.55	2,195,677.22	2,420.28

Herd	TN in Solids kg/day	P in Solids kg/day	K in Solids kg/day	TN in Solids tons/yr	P in Solids tons/yr	K in Solids tons/yr	
Milking Cows	102.66	25.42	32.59	41.30	10.23	13.11	
Dry Cow	7.70	2.34	2.44	3.10	0.94	0.98	
Heifers 15-24 months	12.53	2.98	3.73	5.04	1.20	1.50	
Calves: 7-14 months	14.82	4.47	4.51	5.96	1.80	1.82	
Calves: 4-6 months	0.00	0.00	0.00	0.00	0.00	0.00	
Calves: 0 to 3 months	0.12	0.16	0.05	0.05	0.06	0.02	
Total	137.83	35.38	43.32	55.46	14.23	17.43	Annual Total

*Nutrient amounts in collected solids (i.e. Dry Manure) is based on the theoretical nutrient productions from the ASABE documentation.

**Total solids collected is broken down into corral manure and separator manure so the nutrients can be attributed to its source for application purposes.

Sozinho Dairy #2

3. Runoff Coefficients

Percent Runoff for Normal Rainfall

	Concrete	Hard Roof	Corral	Unpaved	Paved
Jan	45	100	15	30	45
Feb	50	100	20	35	50
Mar	35	100	15	25	35
Apr	40	100	10	25	40
May	30	100	10	20	30
Jun	33	100	10	21.5	33
Jul	25	100	10	17.5	25
Aug	20	100	10	15	20
Sep	48	100	15	31.5	48
Oct	45	100	20	32.5	45
Nov	48	100	10	29	48
Dec	45	100	20	32.5	45
Average	38.7	100.0	13.8	26.2	38.7

Assumptions
Paved = concrete
unpaved = average of concrete & corral
From NRCS Agricultural Waste Management Field Handbook (Appendix 10C)

SCS Curve Number for the 24hr-25yr Storm Event

Hydrologic Soil Group (HSG) - Antecedent Condition I

	A	B	C	D
Concrete	95.37	95.37	95.37	95.37
Hard Roof	95.37	95.37	95.37	95.37
Corral	47.16	61.24	72.07	77.26
Unpaved	37.67	54.45	65.68	72.07
Paved	67.22	77.26	82.85	84.80

Hydrologic Soil Group (HSG) - Antecedent Condition II

	A	B	C	D
Concrete	98	98	98	98
Hard Roof	98	98	98	98
Corral	68	79	86	89
Unpaved	59	74	82	86
Paved	83	89	92	93

Hydrologic Soil Group (HSG) - Antecedent Condition III

	A	B	C	D
Concrete	99.12	99.12	99.12	99.12
Hard Roof	99.12	99.12	99.12	99.12
Corral	83.01	89.64	93.39	94.90
Unpaved	76.80	86.75	91.29	93.39
Paved	91.82	94.90	96.36	96.83

HSG	Texture
A	sand, loamy sand, or sandy loam
B	silt loam or loam
C	sandy clay loam
D	clay loam, silty clay loam, sandy clay, silty clay, or clay

Curve numbers from Soil Conservation Service (1986).

Sozinho Dairy #2

4. Milk Barn Fresh Water Use

Refer to the Dairy Water Use Record for details of the fresh water use at this facility.

CURRENT WATER USE SUMMARY

Number of Cows Milked: Current number of cows milked daily	**1158**
Total Fresh Water Used Daily (gallons): Current Daily Fresh Water Use	**51,890**
Average Water Use per Milk Cow (gallons/cow/day): Average Water Use per Milk Cow = Total Fresh Water Used Daily / Number of Cows Milked	**44.8**
120 Day Fresh Water Production (gallons): Current 120 Day Fresh Water Production = Current Total Fresh Water Used Daily * 120 days	**6,226,800**

POTENTIAL MAXIMUM WATER USE ESTIMATION

Assumptions: The maximum sprinkler pen water requirement is based on the number of wash strings now required based on the maximum allowable cows. While the majority of the fresh water use increase will come from the addition of wash strings, other water uses will also increase, but to a lesser extent. For best estimate purposes, all other water uses have been increased by the same percentage in which the number of milk cows increased. It is recommended that a revised water use assessment is made after the milk cow increase to verify estimates. Refer to Dairy Water Use Record and Calculations for more information.

Number of Cows Milked:	**1158**
Maximum Allowable Milk Cows:	**1,304**
Percent Increase in cows milked from current to maximum (PI_C):	**13**
Maximum Total Fresh Water Used Daily (gallons): Maximum Daily Fresh Water Use	**58,415**
Maximum Average Water Use per Milk Cow (gallons/cow/day): Maximum Average Water Use per Milk Cow = Maximum Total Fresh Water / Maximum Allowable Milk Cows	**44.8**
Maximum 120 Day Fresh Water Production (gallons): Maximum 120 Day Fresh Water Production = Maximum Total Fresh Water Used Daily * 120 days	**7,009,839**

Sozinho Dairy #2

5. Storage Pond Volume Calculations

Input Parameters	**Storage Pond Dimensions** (Pond A)
Pond ID	Pond 1
Top Berm width, ft	660.00
Top Berm length, ft	345.00
Total Depth, ft	30.00
Side slope, H/V	2.00
Freeboard, ft	1.00
Dead Storage Depth, ft	2.00
	Site Runoff and Rainfall into Pond
24 Hr - 25 Yr Storm Volume, ft3	125,504.28

Calculations	**Storage Pond Volumes**
Top of Berm Parameters	
Top Berm Volume, ft3	5,166,000.00
Top Berm Volume, yd3	191,333.33
Top Berm Volume, gal	38,641,680.00
Top Berm Surface Area, ft2	227,700.00
Slope Length, ft	67.08
Freeboard Volume, ft3	225,695.33
Bottom of Lagoon Parameters	
Bottom Width, ft	540.00
Bottom Length, ft	225.00
Dead Storage Parameters	
Depth to Dead Storage, ft	28.00
Dead Storage Width, ft	548.00
Dead Storage Length, ft	233.00
Dead Storage Volume, ft3	249,162.67
Dead Storage Volume, yd3	9,228.25
Dead Storage Volume, gal	1,863,736.75
Storm Depth	
24 Hr - 25 Yr Storm Volume, ft3	125,504.28
Depth in Pond for Storm Volume (ft)	0.5639
Liq. Level Width, ft	656.00
Liq. Level Length, ft	341.00
Storm Volume Estimate, ft3	125,509.07
Storm Volume Estimate, gal	938,807.86
Depth in Pond for Storm Volume (in)	6.77
Depth to Top of Liquid Level (in)	18.77
Liquid Level Parameters	
Less freeboard, dead storage & storm volume	
Liq. Level Depth, ft	26.44
Liq. Level Width, ft	653.74
Liq. Level Length, ft	338.74
Liq. Level Volume, ft3	4,565,632.93
Liq. Level Volume, yd3	169,097.52
LL Surface Area, ft2	221,452.25
Liq. Level Volume, gal	34,150,934.30
Liq. Level Volume, ac-ft	104.81

Sozinho Dairy #2

6. Wastewater Utilization Summary from NMP Plan

Wastewater Applications

	Field 01E		Field 03E		Field 1E		Field 2E		Field 3E	
	Date	WW Applic (gal)	Date	WW Applic (gal)	Date	WW Applic (gal)	Date	WW Applic (gal)	Date	WW Applic (gal)
Irrig 1	Jan	305,485.31	Jan	81,462.75	Jan	868,936.00	Jan	868,936.00	Jan	814,627.50
Irrig 2										
Irrig 3										
Irrig 4					May	955,829.60	May	955,829.60		
Irrig 5	Apr	309,558.45	Apr	83,635.09					Apr	825,489.20
Irrig 6										
Irrig 7										
Irrig 8					Jul	923,244.50	Jul	923,244.50		
Irrig 9										
Irrig 10	Jul	309,558.45	Jul	83,635.09					Jul	825,489.20
Irrig 11										
Irrig 12										
Irrig 13					Sep	868,936.00	Sep	868,936.00		
Irrig 14										
Irrig 15										
Irrig 16					Oct	814,627.50	Oct	814,627.50		
Irrig 17	Oct	305,485.31	Oct	81,462.75					Oct	814,627.50
Irrig 18										
Irrig 19					Nov	868,936.00	Nov	868,936.00		
Irrig 20										
TOTAL		1,230,087.53		330,195.68		5,300,509.60		5,300,509.60		3,280,233.40

	Field 4E		Field 5E		Field 6E					
	Date	WW Applic (gal)	Date	WW Applic (gal)	Date	WW Applic (gal)	Date	WW Applic (gal)	Date	WW Applic (gal)
Irrig 1	Jan	814,627.50	Jan	814,627.50	Jan	814,627.50				
Irrig 2										
Irrig 3										
Irrig 4										
Irrig 5	Apr	825,489.20	Apr	825,489.20	Apr	814,627.50				
Irrig 6										
Irrig 7										
Irrig 8										
Irrig 9										
Irrig 10	Jul	825,489.20	Jul	825,489.20	Jul	814,627.50				
Irrig 11										
Irrig 12										
Irrig 13										
Irrig 14										
Irrig 15										
Irrig 16										
Irrig 17	Oct	814,627.50	Oct	814,627.50	Oct	814,627.50				
Irrig 18										
Irrig 19										
Irrig 20										
TOTAL		3,280,233.40		3,280,233.40		3,258,510.00		0.00		0.00

Sozinho Dairy #2

Wastewater Exports

Month	Wastewater Exports ac-feet	gallons
January	0.00	0
February	0.00	0
March	0.00	0
April	0.00	0
May	0.00	0
June	0.00	0
July	0.00	0
August	0.00	0
September	0.00	0
October	0.00	0
November	0.00	0
December	0.00	0
Year Tot.	0.00	0

Overall Annual Summary of Wastewater Applications and Exports

Month	Applied ac-feet	Exported ac-feet	Annual Total
January	16.52	0.00	16.52
February	0.00	0.00	0.00
March	0.00	0.00	0.00
April	11.31	0.00	11.31
May	5.87	0.00	5.87
June	0.00	0.00	0.00
July	16.97	0.00	16.97
August	0.00	0.00	0.00
September	5.33	0.00	5.33
October	16.19	0.00	16.19
November	5.33	0.00	5.33
December	0.00	0.00	0.00
Year Total	77.52	0.00	77.52

*Refer to the Nutrient Management Plan - Nutrient Budget developed for this dairy for more information about the utilization of the dairy waste. Only wastewater applications and exports shown.

Dairy Name: Sozinho Dairy #2

7. Waste Management System Design Calculations

System Type: Two Stage Pond with Irrigation

Initial Analysis:
Last Revision:

Site Information
Address: 8489 E. Elkhorn
Selma CA 93662
County: Fresno

Milk Barn Water Generation
Current Fresh Water Sent to Pond (gal/day): 51,890
Maximum Estimated Daily Fresh Water Use (gal/day): 58,415
Calculations Bases on MAX

Site Weather & Crop Information

CIMIS Station #39 - Parlier is located in Fresno County. Weather data was available from 1984 to 2012. The average daily precipitation and evaporation was determined from the available historical data for this CIMIS station. All weather data is reported in inches.

Based on the weather data, the wettest consecutive 120 day period is from November thru February for this facility.

CIMIS weather station is 10.25 miles Ne of dairy.

Pan Coefficient (Pan to Lake): 0.7

Weather and Crop Use Summary

Month	Year	Rainfall (inches)	Evap. (inches)	Design Rainfall (1.5x) (inches)	Based on Design Rainfall: Effective Runoff Volume from concrete (ft3)	from Hard Roof (ft3)	from corral (ft3)	from unpaved (ft3)	from paved (ft3)	TOTAL RUNOFF into Pond (ft3)	TOTAL RUNOFF into Pond (ac-ft)
January	avg	2.19	1.04	3.284	25,418	36,206	33,483	25,087	0	120,194	2.76
February	avg	2.12	1.96	3.185	27,395	35,119	43,305	28,390	0	134,209	3.08
March	avg	2.07	3.63	3.111	18,729	34,300	31,721	19,806	0	104,556	2.40
April	avg	0.94	5.16	1.410	9,704	15,550	9,587	8,979	0	43,821	1.01
May	avg	0.39	7.01	0.587	3,028	6,469	3,988	2,988	0	16,474	0.38
June	avg	0.22	7.79	0.329	1,870	3,632	2,239	1,803	0	9,544	0.22
July	avg	0.14	8.09	0.205	884	2,265	1,397	916	0	5,462	0.13
August	avg	0.14	7.13	0.206	708	2,271	1,400	787	0	5,166	0.12
September	avg	0.13	5.23	0.197	1,623	2,168	2,005	1,577	0	7,372	0.17
October	avg	0.61	3.41	0.922	7,135	10,162	12,531	7,628	0	37,457	0.86
November	avg	1.01	1.70	1.516	12,513	16,710	10,302	11,192	0	50,717	1.16
December	avg	1.78	1.00	2.674	20,698	29,482	36,354	22,131	0	108,665	2.49
Year Tot.		11.75	53.15	17.63	129,706	194,334	188,313	131,284	0	643,637	14.78
Avg. Monthly		0.98	4.43	1.47							

System Characteristics:

Waste Storage Ponds

Pond A	Pond 1	Pond F	
Pond B		Pond G	
Pond C		Pond H	
Pond D		Pond I	
Pond E		Pond J	

Based on wastewater application schedule, Pond C and D are assumed to be full at the start of the year (i.e. January 1st), Pond E is 75% full, Pond F is 50% full, Pond B is 25% full and Pond A is assumed to be nearly empty at the start of the year (i.e. January 1st), since this is the middle of the wettest consecutive 120 day period.

Depth of pond markers is measured from top of berm of the pond and is the summation of the freeboard and storm storage depth. Refer to "Pond Vol" sheet for more information.

Pond Cell Dimensions	From Pond Volume Section								
Pond ID	Top Berm Storage Volume (Gallons)	Top Berm Surface Area (ft^2)	Liquid Level Storage Volume (Gallons)	Liquid Level Surface Area (ft^2)	Top Berm Storage Volume (acre-feet)	Top Berm Surface Area (acres)	Liquid Level Storage Volume (acre-feet)	Liquid Level Surface Area (acres)	Pond Marker Freeboard + Storm Depth (in)
Pond 1	38,641,680.00	227,700.00	34,150,934.30	221,452.25	118.59	5.23	104.81	5.08	18.77

Water Balance Initial Cell: Pond A Pond 1

Month	Year	Wastewater Into Pond A (ac-feet)	Ave. Fresh Water Into Pond (ac-feet)	Rainfall Into Pond (ac-feet)	Total Runoff Into Pond (ac-feet)	Additional* Fresh Water Added to Pond (ac-feet)	Water Evap. Removed From Pond (ac-feet)	Monthly Net Water Loss/Gain (ac-feet)	Irrigation Water Rem. from Pond A (ac-feet)	Storage Volume in Pond A (ac-feet)	Outflow to Pond B (ac-feet)	Potential Problems
Prev. Condition										52.40		
January	avg	1.96	5.56	1.43	2.76		0.31	11.40	16.52	47.28	0.00	
February	avg	1.77	5.02	1.39	3.08		0.58	10.68	0.00	57.96	0.00	
March	avg	1.96	5.56	1.36	2.40		1.08	10.20	0.00	68.16	0.00	
April	avg	1.90	5.38	0.61	1.01		1.53	7.37	11.31	64.22	0.00	
May	avg	1.96	5.56	0.26	0.38		2.08	6.08	5.87	64.43	0.00	
June	avg	1.90	5.38	0.14	0.22		2.31	5.33	0.00	69.77	0.00	
July	avg	1.96	5.56	0.09	0.13		2.40	5.34	16.97	58.13	0.00	
August	avg	1.96	5.56	0.09	0.12		2.11	5.61	0.00	63.74	0.00	
September	avg	1.90	5.38	0.09	0.17		1.55	5.98	5.33	64.39	0.00	
October	avg	1.96	5.56	0.40	0.86		1.01	7.77	16.19	55.97	0.00	
November	avg	1.90	5.38	0.66	1.16		0.50	8.60	5.33	59.23	0.00	
December	avg	1.96	5.56	1.16	2.49		0.30	10.88	0.00	70.12	0.00	
Year Total		23.11	65.43	7.68	14.78		15.76	95.24	77.52		0.00	
Monthly avg.		1.93	5.45	0.64	1.23		1.31	7.94	6.46		0.00	

*Additional Fresh Water added to pond refers to when fresh water is pumped directly into the pond for the purpose of diluting the wastewater or removing solids. Typical annual practice has been shown.

Sozinho Dairy #2

Waste Management Plan - Storage Calculations Summary

Calculations based on MAX herd population of 1495 milk cows + dry cows.

Storage Period **119** (days)

(max[1] days between wastewater applications/exports)

Wastewater Generated

	(gal/year)	(gal/day)	(gal/Storage Period)	
Liquid manure	7,533,841	20,641	2,456,238	
Milk barn water use	21,321,593	58,415	6,951,424	
Rainfall[2] runoff	4,814,730	13,191	1,569,734	
Rainfall into ponds	2,501,979	6,855	815,714	
24h-25yr storm runoff	612,367	1,678	199,648	
24hr-25yr storm rainfall into ponds	326,468	894	106,437	
Additional freshwater	0	0	0	
Tailwater returned to pond	0	0	0	
Evaporation water loss	-5,136,248	-14,072	-1,674,557	
TOTAL (gal)	**31,974,730**	**87,602**	**10,424,638**	(gallons)

Wastewater Storage Capacity

(total liquid storage[3])

		(gal)		
Pond A	Pond 1	35,089,742		
Pond B		0		
Pond C		0		
Pond D		0		
Pond E		0		
Pond F		0		
Pond G		0		
Pond H		0		
Pond I		0		
Pond J		0	**Remainder:**	
	TOTAL (gal)	**35,089,742**	**24,665,104**	(gallons)

Sufficient

☑ Based on wastewater production, runoff capture, 1.5 x rainfall and wastewater application scenarios, the storage capacity at this facility is sufficient to contain the wastewater produced by the herd size indicated.

Insufficient

☐ Based on wastewater production, runoff capture, 1.5 x rainfall and wastewater application scenarios, the storage capacity at this facility is insufficient to contain the wastewater produced by the herd size indicated. Additional work is needed.

[1]Based on the wastewater application/irrigation schedule and wastewater exports from the Nutrient Management Plan. Refer to the NMP for more information.

[2]Design rainfall volume is based on 1.5 times the average annual rainfall for the dairy.

[3]Total Liquid Storage Volume equals the Top Berm Volume less the Freeboard Volume and Dead Storage Volume or equals the Liquid Level Storage Volume and the Storm Storage Volume.

Sozinho Dairy #2

Waste Management Plan - Storage Calculations Certification

A. Dairy Facility Information

Dairy Name: Sozinho Dairy #2

Physical Address: 8489 E. Elkhorn

Selma CA 93662

County: Fresno

Calculations Based On: MAX Herd Population

B. Documentation of Qualifications and Plan Development

I have reviewed the portion of the waste management plan that is related to storage capacity facility and design specifications in accordance with Item II, Attachment B of the Waste Discharge Requirements General Order for Existing Milk Cow Dairies - Order No. R5-2007-0035 and certify that this plan was prepared by, or under the responsible charge of, and certified by a civil engineer who is registered pursuant to California law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work.

Storage capacity is:

Insufficient

☐ Retrofitting Plan/Schedule/Design Criteria attached in accordance with Attachment B, II.B. 1-5 and Attachment B, II. C.

Sufficient

☑ Certification 1 - Certified in accordance with Attachment B, II. A. 1-8. (no contingency plan)

☐ Certification 2 - Certified in accordance with Attachment B, II. A. 1-8, II. C. (with contingency plan attached)

SIGNATURE OF CIVIL ENGINEER DATE 5/2/14

Joseph M. Lord, Civil Engineer
PRINT OR TYPE NAME

JMLord, Inc., 267 N. Fulton Ave, Fresno, CA 93701
MAILING ADDRESS

(559) 268-9755
PHONE NUMBER

REGISTERED PROFESSIONAL ENGINEER
JOSEPH M. LORD, JR.
NO. C26710
5/2/14
CIVIL
STATE OF CALIFORNIA

CIVIL ENGINEER'S WET STAMP

C. Owner and/or Operator 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.

Joe Sozinho
SIGNATURE OF OWNER OF FACILITY

Joe Sozinho
PRINT OR TYPE NAME

5-29-14
DATE

Danny Sozinho
SIGNATURE OF OPERATOR OF FACILITY

Danny Sozinho
PRINT OR TYPE NAME

5-29-14
DATE

JMLORD, INC.

267 N. FULTON, FRESNO, CA 93701-1610
PHONE: (559) 268-9755 FAX: (559) 486-6504
WWW.JMLORDINC.COM

DAIRY WATER USE RECORD

Dairy Name	**Sozinho Dairy #2**
Dairy Address	**8489 E. Elkhorn Ave., Selma, CA 93662**

GENERAL INFORMATION

Number of Cows Milked per Milking:	**1158**
Does this include cows in the hospital: Yes or No	**Yes**
If No, how many cows in hospital group?	
Number of Milkings per day:	**2**
Number of Strings per Milking:	**8.0**
Number of Cows per String:	**150**
Are all strings full? Yes or No	**Yes**
If No, how many strings are not full?	
If No, how many cows are in non-full strings?	
Maximum Allowable Milk Cows	**1,304**

DAIRY WATER USE RECORD (cont)

Dairy Name:	**Sozinho Dairy #2**
Dairy Address:	**8489 E. Elkhorn Ave., Selma, CA 93662**

SPRINKLER PEN INFORMATION

Number of sprinklers in holding pen:	**79**
Size of Sprinklers (list all found):	**0**
Size of Sprinklers (list all found):	**0**
Size of Sprinklers (list all found):	**0**
Average flowrate of sprinklers (gpm):	**4.09**

How long is each sprinkler cycle? (minutes)	**2**
How many cycles per string?	**2**
Are the sprinklers on a timer? Yes or No	**Yes**
Measure a minimum of 3 cycles to verify the sprinkler times	
1. Minutes	**2.00**
2. Minutes	**2.00**
3. Minutes	**2.00**
What is the pressure of the sprinkler system? (psi)	**40**

Can some sprinklers be turned off when pen is not full? Yes or No	**No**
If yes, how many sprinklers are turned off?	
If yes, how many strings are not full?	

Is water source from recycled water? Yes or No	**Yes**

DAIRY WATER USE RECORD (cont)

Dairy Name:	**Sozinho Dairy #2**
Dairy Address:	**8489 E. Elkhorn Ave., Selma, CA 93662**

MILKHOUSE WATER USE

Bulk Tank Wash

Number of Bulk Tank Washings per Day:		**2**
Is the bulk tank wash automatic: Yes or No		**Yes**
If yes:	How much water is used per washing? (gallons)	**280**
If no:	Hose flow rate (gallons/sec)	
If no:	Total time/wash (minutes):	
Comments:		
Is this water recycled? Yes or No		**No**

Pipeline Wash

Number of Pipeline Washings per Day:		**2**
Is the pipe wash automatic: Yes or No		**Yes**
If yes:	How much water is used per washing? (gallons)	**960**
If no:	Hose flow rate (gallons/sec)	
If no:	Total time/wash (minutes):	
Comments:		
Is this water recycled? Yes or No		**No**

Plate Cooler or Chiller Water

Estimate plate cooler or chiller water use: (gallons)	**8100**
Comments:	
Is this water reused? Yes or No	**Yes**

Ice Machine Water

Estimate ice machine water use: (gallons)	**37800**
Comments:	
Is this water recycled? Yes or No	**Yes**

Automatic Floor Wash

Floor Wash:	
Is there an automatic floor wash: Yes No	**Yes**
If yes, how much water is used per milking?	**9000**
Comments:	
Is water source from recycled water? Yes or No	**Yes**
Is this water recycled? Yes or No	**No**

DAIRY WATER USE RECORD (cont)

Dairy Name:	**Sozinho Dairy #2**
Dairy Address:	**8489 E. Elkhorn Ave., Selma, CA 93662**

MILKHOUSE WATER USE (cont)

Red Hose Floor Wash

Estimate Red Hose Floor wash volume	
Hose flow rate (gallons/sec)	**0.83**
Total time/day (minutes):	**60**
Comments:	
Is water source from recycled water? Yes or No	**No**
Is this water recycled? Yes or No	**No**

Cow Prep Water Wash

Estimate Cow Prep Water Use:		
Is Cow Prep Water Used: Y or N		**No**
If Yes	Hose Flow Rate (gallons/second):	
If Yes	Total time/wash per Cow (minutes):	
Comments:		
Is this water recycled? Yes or No		**No**

Miscellaneous Water Use (Daily)

Estimate Miscellaneous Water Use: Describe activity & estimate gallons used.	
1. Milk Station	**440**
2. Calf Bottles	**72**
3. Milk Tank Room	**10**
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Sozinho Dairy #2
8489 E. Elkhorn Ave., Selma, CA 93662

DAIRY WATER USE CALCULATIONS

GENERAL INFORMATION	Eq #	Value
Current Number of Cows Milked per Milking (C/M):	(1)	**1158**
Does this include cows in the hospital:	(2)	**Yes**
If No, how many cows in hospital group?	(3)	
Number of Milkings per day (M/D):	(4)	**2**
Number of Cows per String (C/S):	(5)	**150**
Number of Strings per Milking (S/M):	(6)	**8.0**
S/M = Round{(C/M)/(C/S)}, if ≥ .5 rounds up, if < .5 rounds down		
Eq #: (6) = Round {(1) / (5)}		

SPRINKLER PEN INFORMATION	Eq #	Value
Number of sprinklers in holding pen (s):	(7)	**79**
Average flowrate of sprinklers (gpm/s):	(8)	**4.09**
How long is each sprinkler cycle in minutes?	(9)	**2**
How many cycles per string (c/S)?	(10)	**2**
Total Strings per Milking (TS/M)	(11)	**8.0**
TS/M = S/M + 1 for hospital cows. If no hospital cows, TS/M = S/M		
Eq #: (11) = (6) + 1 for hospital cows. If no hospital cows, (11) = (6)		
Are the sprinklers on a timer?	(12)	**Yes**
Measured Average sprinkler time per cycle in minutes (m/c)	(13)	**2.00**
$m/S = \{\sum_{i=1}^{n} m_i\} / n$		
(sum of the minutes per string/number of strings)		
What is the pressure of the sprinkler system? (psi)	(14)	**40**
Can some sprinklers be turned off when pen is not full?	(15)	**No**
If yes, how many sprinklers are turned off (so)?	(16)	
If yes, how many strings are not full (nf)?	(17)	
Sprinkler Water Use (G_S/D)	(18)	**20,679**
If All Sprinklers: G_S/D = TS/M * s * m/c * gpm/s * c/S * M/D		
Eq #: (18) = (11) * (7) * (13) * (8) * (10) * (4)		
If Partial Sprinklers: G_S/D =[{(TS/M - nf) * s} + {nf * (s - so)}] * m/c * gpm/s * c/S * M/D		
Eq #: (18) = [{(11 - 17) * (7)} + {(17) * (7 - 16)}]* (13) * (8) * (10) * (4)		
Is water source from reused water?	(19)	**Yes**

Sozinho Dairy #2
8489 E. Elkhorn Ave., Selma, CA 93662

DAIRY WATER USE CALCULATIONS (cont)

MILKHOUSE WATER USE	Eq #	Value
Bulk Tank Wash		
Number of Bulk Tank Washings per Day (w/D):	(20)	**2**
Is the bulk tank wash automatic:	(21)	**Yes**
If yes: How much water is used per washing in gallons? (g)	(22)	**280**
If no: Hose flow rate in gallons/second (g/s)	(23)	
If no: Total time/wash in minutes (m):	(24)	
Total Bulk Tank Wash (G_W/D)	(25)	**560**
If Automatic: $G_W/D = w/D * g$		
Eq #: (25) = (20) * (22)		
If NOT Automatic: $G_W/D = w/D * g/s * m * 60$ sec/min		
Eq #: (25) = (20) * (23) * (24) * 60 sec/min		
Is this water reused?	(26)	**No**
Pipeline Wash		
Number of Pipeline Washings per Day (w/D):	(27)	**2**
Is the pipe wash automatic:	(28)	**Yes**
If yes: How much water is used per washing in gallons? (g)	(29)	**960**
If no: Hose flow rate in gallons/second (g/s)	(30)	
If no: Total time/wash in minutes (m):	(31)	
Total Pipe Tank Wash (G_P/D)	(32)	**1,920**
If Automatic: $G_P/D = w/D * g$		
Eq #: (32) = (27) * (29)		
If NOT Automatic: $G_P/D = w/D * g/s * m * 60$ sec/min		
Eq #: (32) = (27) * (30) * (31) * 60 sec/min		
Is this water reused?	(33)	**No**
Plate Cooler or Chiller Water		
Estimate plate cooler or chiller water use in gallons: (G_{PC}/D)	(34)	**8,100**
Is this water reused?	(35)	**Yes**

Sozinho Dairy #2
8489 E. Elkhorn Ave., Selma, CA 93662

DAIRY WATER USE CALCULATIONS (cont)

MILKHOUSE WATER USE (cont)	Eq #	Value
Ice Machine Water		
Estimate ice machine water use in gallons: (G_{IM}/D)	(36)	**37,800**
Is this water reused?	(37)	**Yes**
Automatic Floor Wash		
Is there an automatic floor wash: Yes No	(38)	**Yes**
If yes, how much water is used per milking in gallons? (g)	(39)	**9000**
Total Floor Wash (G_{FW}/D)	(40)	**18,000**
If Yes: G_{FW}/D*M/D =g, If No: G_{FW}/D = 0		
Eq #: If Yes: (39)*(4) = (40), If NO: (40) = 0		
Is water source from reuse water? Yes or No	(41)	**Yes**
Is this water reused?	(42)	**No**
Red Hose Floor Wash		
Hose flow rate in gallons/second (g/s)	(43)	**0.83**
Total time/day in minutes (m):	(44)	**60**
Total Red Hose Wash (G_{RH}/D)	(45)	**2,988**
G_{RH}/D = g/s * m * 60 sec/min		
Eq #: (45) = (43) * (44) * 60 sec/min		
Is water source from recycled water? Yes or No	(46)	**No**
Is this water reused?	(47)	**No**
Cow Prep Water Wash		
Is Cow Prep Water Used:	(48)	**No**
If Yes Hose Flow Rate in gallons/second (g/s):	(49)	
If Yes Total time/wash per Cow in minutes (m/c):	(50)	
Total Cow Prep Wash (G_{CW}/D)	(51)	**0**
If NO: G_{CW}/D = 0, If YES Est: G_{CW}/D = g/s * 60 sec/min * m/c * Total Cows * M/D		
Eq #: If No: (50) = 0, If YES Estimate: (50) = (48) * 60 sec/min * (49) * Total Cows * (4)		
Is this water reused?	(52)	**No**

Sozinho Dairy #2
8489 E. Elkhorn Ave., Selma, CA 93662

DAIRY WATER USE CALCULATIONS (cont)

Miscellaneous Water Use (Daily)		
Item	Eq #	Value
1. Milk Station	(53)	**440**
2. Calf Bottles	(54)	**72**
3. Milk Tank Room	(55)	**10**
4.	(56)	
5.	(57)	
6.	(58)	
7.	(59)	
8.	(60)	
9.	(61)	
10.	(62)	
Total Misc Water Use (Sum of Miscellaneous Water Use, G_{MW}/Day):	(63)	**522**

Sozinho Dairy #2
8489 E. Elkhorn Ave., Selma, CA 93662

DAIRY WATER USE CALCULATIONS (cont)

CURRENT WATER USE SUMMARY

Fresh Water Use (gallons per day)		Reused	gpd	
1 G_W/D	Bulk Tank Wash (25)	No	**560**	
2 G_P/D	Pipeline Wash (32)	No	**1,920**	
3 G_{PC}/D	Plate Cooler or Chiller (34)	Yes	**8,100**	
4 G_{IM}/D	Ice Machine (36)	Yes	**37,800**	
5 G_{FW}/D	Floor Wash (40)	No	**18,000**	R
6 G_{RH}/D	Red Hose Wash (45)	No	**2,988**	
7 G_{CW}/D	Cow Prep Water Use (51)	No	**0**	
8 G_{MW}/D	Miscellaneous Equipment (63)	N/A	**522**	
9 F_{ST}	**Fresh Subtotal (gpd)**		**51,890**	

Sub Total = $G_W/D + G_P/D + G_{PC}/D + G_{IM}/D + G_{FW}/D + G_{RH}/D + G_{CW}/D + G_{MW}/D$ - (GFW/D + GRH/D if source is from recycled water)

10 RU_{ST}	Subtotal Reused Water (gpd)		**45,900**
	Sub Total Reused = $G_W/D + G_P/D + G_{PC}/D + G_{IM}/D + G_{FW}/D + G_{RH}/D + G_{CW}/D + G_{MW}/D$ if reused		
11 G_S/D	Sprinkler Pen (water needed) (18)	Yes	**20,679**
	Available Recycled Water (less floor wash water needs)		**27,900**

If Sprinkler Uses Recycle water = Subtotal Reused Water (above) - Reused Floor Wash (40) - Reused Red Hose Wash (45), Else 0

12 F_{SP}	Total Fresh Water Needed for Sprinkler Pen	**0**
	= Sprinkler Pen - Available Recycled Water (but not negative)	

Current	**Total Fresh Water Used Daily (gallons)**	**51,890**
	Current Total Fresh Water = $F_{ST} + F_{SP}$	
Current	**Average Water Use per Milk Cow (gallons/cow/day)**	**44.8**
	Current Average Water Use per Milk Cow = Current Total Fresh Water Used Daily / Current Number of Cows Milked	
Current	**120 Day Fresh Water Production (gallons)**	**6,226,800**
	Current 120 Day Fresh Water Production = Current Total Fresh Water Used Daily * 120 days	

R = Uses available recycled water prior to using fresh water.

Sozinho Dairy #2
8489 E. Elkhorn Ave., Selma, CA 93662

DAIRY WATER USE CALCULATIONS (cont)

POTENTIAL MAXIMUM WATER USE ESTIMATION

Assumptions: The maximum sprinkler pen water requirement is based on the number of wash strings now required based on the maximum allowable cows. While the majority of the fresh water use increase will come from the addition of wash strings, other water uses will also increase, but to a lesser extent. For best estimate purposes, all other water uses have been increased by the same percentage in which the number of milk cows increased. It is recommended that a revised water use assessment is made after the milk cow increase to verify estimates.

Current Number of Cows Milked per Milking (C/M):	**1158**
Maximum Allowable Milk Cows: (Assumes +15% if Max Cows is not provided)	**1,304**
Percent Increase in cows milked from current to maximum (PI_C):	**13**
Cows Milked per String:	**150**
Number of Strings Milked based on Maximum Allowable Milk Cows:	**9**
Number of Strings Milked = Round (Maximum Allowable Milk Cows / Cows Milked per String)	
If total number does not include hospital cows, add 1 to the Number of Strings Milked	
Has the Number of Strings Increased due to the Increase in Milk Cows:	**Yes**
Maximum Fresh Water Subtotal (non sprinkler water use): (gpd)	**58,415**
MaximumTotal Fresh Water = F_{ST} * (1 + (PI_C/100)	
Maximum Subtotal Reused Water: (gpd)	**51,672**
Maximum Subtotal Reused Water = RU_{ST} * (1 + (PIC/100)	
Maximum Sprinkler Water Use: (gpd)	**23,264**
Maximum Sprinkler Water Use = (Number of sprinklers * Average Flow Rate * Average Time per String * Number of Cycles * Number of Strings Milked (Maximum) * Number Milkings per Day)	
Maximum Available Recycled Water (less floor wash water needs)	**31,409**
If Sprinkler Uses Recycle water = Available Recycled Water (less floor wash water needs) * (1 + (PI_C/100)	
Maximum Sprinkler Fresh Water Use:	**0**
Maximum Sprinkler Fresh Water Use = Maximum Sprinkler Water Use - Maximum Available Recycled Water (assumes recycle water is used, can not be negative)	

Maximum	**Total Fresh Water Used Daily (gallons)**	**58,415**
Maximum Total Fresh Water Used Daily = Maximum Sprinkler Fresh Water Use + Maximum Fresh Water Subtotal		
Maximum	**Average Water Use per Milk Cow (gallons/cow/day)**	**44.8**
Maximum Average Water Use per Milk Cow = Maximum Total Fresh Water / Maximum Allowable Milk Cows		
Maximum	**120 Day Fresh Water Production (gallons)**	**7,009,839**
Maximum 120 Day Fresh Water Production = Maximum Total Fresh Water Used Daily * 120 days		

APPENDIX G

NUTRIENT MANGAMENT PLAN

Sozinho Dairy #2

Nutrient Management Plan - Nutrient Budget

A. Dairy Facility Information

Dairy Name:	Sozinho Dairy #2			
Physical Address:	8489 E. Elkhorn			
	Selma	CA	93662	
County:	Fresno			
Latitude:	36.239313	Longitude:	-119.24881	
Calculations Based On:	MAX	Herd Population		

B. The following items are included in this report.

1. General Inputs for WMP & NMP
2. Manure Production Estimates
3. Crop Weather Data
4. Crop Water Needs
5. Planned Nutrient Application & Removal Record per Field
6. Summary of Nitrogen Ratios per Field
7. Nutrient Management Plan Summary for Farm
8. Nutrient Management Plan Certification

C. Brief Application Description

Sozinho Dairy #2 utilizes about 259 acres for dairy waste application. The crops grown are corn silage and wheat silage. Liquid manure is applied using flood irrigation. Some dry manure is sold.

This Waste Management Plan (WMP) was prepared under the direction of Professional Engineer, Joseph Lord. Site specific data was provided by the owner/operator of the above mentioned dairy or a representative of the dairy. This plan is true and accurate to the best of my knowledge based on the information provided at the time of completion. When any changes to the animal population or farm management practices are made, both the Waste Management Plan- Storage Calculations and the Nutrient Management Plan (NMP)- Nutrient Budget should be reviewed. Analyses are predicated on best management practices being implemented at the facility. The Storage Calculations and Nutrient Budget are only one part of the whole WMP and NMP, respectively.

Sozinho Dairy #2

1. General Inputs for WMP & NMP

Input data needed for manure, nutrient & runoff calculations.

Runoff Information

Area Type	Runoff Area (ft^2)	Runoff Curve Number (CN)	S	Storm Runoff Volume (ft3)	Storm Runoff Volume (gal)
Concrete	206,403.92	98.00	0.20	35,639.25	266,581.61
Hard Roof	132,300.00	98.00	0.20	22,843.91	170,872.47
Corral	815,682.97	68.00	4.71	20,694.58	154,795.42
Unpaved	305,569.62	59.00	6.95	2,684.04	20,076.59
Paved	0.00	83.00	2.05	0.00	0.00
Total	2,938,364.60			81,861.78	612,326.09
24 Hr - 25 Yr Storm Depth (in)	2.3	Weighted CN	S	P > 0.2*S	
Hydrologic Soil Group	A	73.0762	3.6844	True	

Hydrologic Soil Group (HSG) - Antecedent Condition II used for storm runoff estimate.

Herd Information

Herd	Current	Weight (lbs)	Concrete (hrs/day)	Max Capacity
Milking Cows	1,158.00	1,400.00	18	1,304
Dry Cow	170.00	1,450.00	18	191
Heifers 15-24 months	530.00	1,000.00	18	597
Calves: 7-14 months	274.00	800.00	6	308
Calves: 4-6 months	0.00	0.00	6	0
Calves: 0 to 3 months	20.00	0.00	0	23

Max (MC+DC)	1,495.00	
Herd increase (%)	12.58	Assumes ratio of MC to DC will stay the same.
Milk Production (lbs milk/cow/day)	70.00	

Does the dairy have freestalls?	Yes
Is bedding added to the freestalls?	Yes

		How much is used weekly?		Daily Bedding Input (tons/day)	Daily Bedding into Waste System* (kg/day)	Bedding from Manure (tons/day)	Bedding from Manure Used (kg/day)
What type of bedding is used?	Manure	4	tons	0.57	207.36	0.57	518.40
What type of bedding is used?							
What type of bedding is used?							

*Assumes a volume reduction factor of 0.4.

Pond Dimensions & Waste Exports

Pond Dimensions	Pond A Pond 1	Pond B	Pond C	Pond D	Pond E
top width	660.00				
top length	345.00				
depth	30.00				
side slope	2.00				
freeboard	1.00				
dead storage	2.00				

Pond Dimensions	Pond F	Pond G	Pond H	Pond I	Pond J
top width					
top length					
depth					
side slope					
freeboard					
dead storage					

Wastewater & Dry Manure Exports*

Month	Wastewater ac-feet	Corral Manure tons	Separator Manure tons
January			
February			
March			
April		400	
May			
June			
July			
August			
September			
October		400	
November			
December			
Year Tot.	0.00	800	0

*Based on export records.

Lab Analysis Summary

Values based on an average of laboratory analysis.

Wastewater	TN (ppm)	P (ppm)	K (ppm)	EC (µS/cm)	TN (lbs/1000 gallons)	P (lbs/1000 gallons)	K (lbs/1000 gallons)	TDS (lbs/1000 gallons)
1st Quarter	622.86	76.89	757.00	6,953.33	5.20	0.64	6.32	37.15
2nd Quarter	507.86	43.44	484.43	5,031.67	4.24	0.36	4.04	26.88
3rd Quarter	297.14	35.20	365.57	4,810.00	2.48	0.29	3.05	25.70
4th Quarter	532.14	51.20	620.57	6,884.00	4.44	0.43	5.18	36.78
average	490.00	51.68	556.89	5,919.75	4.09	0.43	4.65	31.63

	As Received						
Corral Manure	TN %	P %	K %	% Moisture	TN (lbs/ton)	P (lbs/ton)	K (lbs/ton)
Spring	1.78	0.70	2.95	18.90	35.60	13.92	59.08
Fall	1.54	0.74	3.47	24.36	30.80	14.80	69.36
average	1.66	0.72	3.21	21.63	33.20	14.36	64.22

	As Received						
Separator Manure	TN %	P %	K %	% Moisture	TN (lbs/ton)	P (lbs/ton)	K (lbs/ton)
Spring	0.30	0.06	0.11	81.46	6.07	1.13	2.13
Fall	0.33	0.07	0.15	82.42	6.53	1.40	2.93
average	0.32	0.06	0.13	81.94	6.30	1.27	2.53

Separator Information

Does facility have any solids separator devices?	How many?	Type 1	Type 2	Type 3	Type 4	Type 5
yes	Efficiency	0.2				

From NRCS-CA Standard 632

Solid/Liquid Separators	Total Solids Capture Efficiency	Average Efficiency (%)*
Centrifuge	20-45%	32.5
Dry Scrape	50-90%	70.0
Geotextile Container	50-98%	74.0
Inclined Screen with Drag	10-30%	20.0
Rotating Screen	20-40%	30.0
Screw or Roller Press	30-50%	40.0
Settling Basin	40-65%	52.5
Static Inclined Screen	10-20%	15.0
Vibratory Screen	15-30%	22.5
Weeping Wall	50-85%	67.5

Irrigation Pump Information

Pumping capacity for wells, surface water and wastewater sources. Average of fresh water analysis collected to date shown.

Wells, Lifts, Ponds	Pump Flow Rate (gpm)	Nitrogen (lbs/1000 gallons)	EC (umhos/cm)	Pump Type
Lagoon Pump	600	-	-	Wastewater
Well 003E	1425	0.1419	1,000.00	Groundwater
Well 03E	650	0.1482	948.00	Groundwater
Well 1E	1450	0.1920	1,550.00	Groundwater
Well 3E	1100	0.1273	938.00	Groundwater
Well 5E	1450	0.1523	988.00	Groundwater

Field Information

Waste Application Fields - Refer to the Planned Application pages for more information.

Field ID	Acres	APN
Field 01E	8	056-030-008
Field 03E	4	056-030-008
Field 1E	40	056-030-048
Field 2E	40	056-030-048
Field 3E	40	056-030-008
Field 4E	40	056-030-008
Field 5E	40	056-030-048
Field 6E	40	056-030-048

Sozinho Dairy #2

2. Manure Production Estimates

Manure production based on ASABE Standard D384.2 MAR2005 (Tables 5a, 5b, and 5c).

Nutrient losses based on the Agricultural Waste Management Field Handbook.

	lbs/day	kg/day
Milk Production (lbs milk/cow/day)	70	31.75

Herd	Current Herd Size	Weight (kg)	Maximum Herd Size	**Total Manure Prod. kg/day**		**Total Manure Prod. kg/year**
Milking Cows	1158	635.03	1,304	89,949.92	Table 5a	32,831,719.77
Dry Cow	170	657.71	191	7,272.36	Table 5a	2,654,413.03
Heifers 15-24 months	530	453.59	597	13,126.28	Table 5a	4,791,092.24
Calves: 7-14 months	274	362.87	308	4,703.96	Table 5a & 5b (average btn heifer-440kg & calf-150kg)	1,716,945.02
Calves: 4-6 months	0		0	0.00	Table 5b - calf-150 kg	0.00
Calves: 0 to 3 months	20		23	66.98	Assume manure production is 35% of Calf (4-6 month); based on difference of weight in Table 5c.	24,448.54
				115,119.50		42,018,618.60

Herd	**Total solids Prod kg/day**		**Total solids Prod kg/year**
Milking Cows	11,602.24	Table 5a	4,234,816.03
Dry Cow	937.75	Table 5a	342,279.57
Heifers 15-24 months	2,207.60	Table 5a	805,774.60
Calves: 7-14 months	786.56	Table 5a & 5b (average btn heifer-440kg & calf-150kg)	287,095.72
Calves: 4-6 months	0.00	Table 5b - calf-150 kg	0.00
Calves: 0 to 3 months	11.03	Assume manure prod. is 35% of Calf (4-6 month); based on difference of weight in Table 5c.	4,026.82
Bedding	207.36	Bedding material entering the waste system.	75,686.40
	15,752.55		5,749,679.15

Herd	Nitrogen Prod kg/day		Nitrogen* Prod kg/year
Milking Cows	586.62989	Table 5a	149,883.93806
Dry Cow	44.01694	Table 5a	11,246.32888
Heifers 15-24 months	71.59789	Table 5a	18,293.26130
Calves: 7-14 months	28.22375	Table 5a & 5b (average btn heifer-440kg & calf-150kg)	7,211.16909
Calves: 4-6 months	0.00000	Table 5b - calf-150 kg	0.00000
Calves: 0 to 3 months	0.17787	Assume manure prod. is 35% of Calf (4-6 month); based on difference of weight in Table 5c.	45.44552
	730.64635		186,680.14285

* Includes a 30% reduction in N due to handling losses based on the AWMFH - Ch 11, Table 11.5.

Herd	Phosphorus Prod kg/day		Phosphorus Prod kg/year
Milking Cows	101.68	Table 5a	37,114.12
Dry Cow	9.38	Table 5a & 5b (average btn heifer-440kg & milk cow)	3,422.80
Heifers 15-24 months	11.93	Table 5a	4,355.54
Calves: 7-14 months	5.97	Table 5a & 5b (average btn heifer-440kg & calf-150kg)	2,177.77
Calves: 4-6 months	0.00	Assume manure production is 35% of heifer; based on difference of weight from Table 5c.	0.00
Calves: 0 to 3 months	0.16	Assume manure prod. is 13% of heifers; based on diff. of weight from Table 5c.	57.53
	129.12		47,127.75

Herd	Potassium Prod kg/day		Potassium Prod kg/year
Milking Cows	130.36	Table 5a	47,582.20
Dry Cow	9.76	Assume manure prod. is 51% of lactating cows based on diff. of N excreted from Table 5a.	3,562.50
Heifers 15-24 months	14.92	Assume manure prod. is 25% of lactating cows based on diff. of N excreted from Table 5a.	5,444.42
Calves: 7-14 months	6.01	Assume manure prod. is 19.5% of lactating cows based average N excreted btn heifer & calf.	2,195.44
Calves: 4-6 months	0.00	Assume manure prod. is 14% of lactating cows based on diff of N excreted from Table 5a.	0.00
Calves: 0 to 3 months	0.05	Assume manure prod. is 2% of lactating cows based on diff of N excreted from Table 5a.	16.44
	161.10		58,801.00

Waste Stream Partitioning

Herd	Hours on Concrete (hrs/day)	% Manure sent to ponds %	Sent to Ponds: Total Manure* kg/day	Total Solids* kg/day	Nitrogen kg/day	Phosphorus kg/day	Potassium kg/day
Milking Cows	18	75.00	67,462.44	8,701.68	307.98	76.26	97.77
Dry Cow	18	75.00	5,454.27	703.31	23.11	7.03	7.32
Heifers 15-24 months	18	75.00	9,844.71	1,655.70	37.59	8.95	11.19
Calves: 7-14 months	6	25.00	1,175.99	196.64	4.94	1.49	1.50
Calves: 4-6 months	6	25.00	0.00	0.00	0.00	0.00	0.00
Calves: 0 to 3 months	0	0.00	0.00	0.00	0.00	0.00	0.00
Outside Source**	18	75.00		155.52			
			83,937.41	11,412.85	373.62	93.74	117.78

*Adjustment made for solid separation, assumes negligible nutrient removal with solids.

**For Total Solid Estimation: The addition of bedding is typically associated with the milking cows, so the hours of concrete and % manure sent to pond are the same. Since it has been assumed negligible nutrients are removed with the solids, it is also assumed the addition of solids adds negligible nutrients to the system.

Estimated Wastewater Production - Sent to Ponds Monthly, after any solid separation

Month	Total Manure Prod Sent to Pond kg/month	Total Manure Prod Sent to Pond ac-ft	Total solids Sent to Pond kg/month	Nitrogen* Sent to Pond kg/month	Phosphorus* Sent to Pond kg/month	Potassium* Sent to Pond kg/month	Month
Jan	2,602,059.74	2.11	353,798.45	11,582.15	2,905.83	3,651.27	Jan
Feb	2,350,247.51	1.91	319,559.89	10,461.29	2,624.62	3,297.92	Feb
Mar	2,602,059.74	2.11	353,798.45	11,582.15	2,905.83	3,651.27	Mar
Apr	2,518,122.33	2.04	342,385.59	11,208.53	2,812.09	3,533.48	Apr
May	2,602,059.74	2.11	353,798.45	11,582.15	2,905.83	3,651.27	May
Jun	2,518,122.33	2.04	342,385.59	11,208.53	2,812.09	3,533.48	Jun
Jul	2,602,059.74	2.11	353,798.45	11,582.15	2,905.83	3,651.27	Jul
Aug	2,602,059.74	2.11	353,798.45	11,582.15	2,905.83	3,651.27	Aug
Sep	2,518,122.33	2.04	342,385.59	11,208.53	2,812.09	3,533.48	Sep
Oct	2,602,059.74	2.11	353,798.45	11,582.15	2,905.83	3,651.27	Oct
Nov	2,518,122.33	2.04	342,385.59	11,208.53	2,812.09	3,533.48	Nov
Dec	2,602,059.74	2.11	353,798.45	11,582.15	2,905.83	3,651.27	Dec
Annual Total	30,637,155.03	24.84	4,165,691.39	136,370.44	34,213.78	42,990.70	Annual Total

*Nutrient amounts into pond is based on the theoretical nutrient productions from the ASABE documentation.

Estimated Solids Production

	Total Solids Produced (kg/day)	Total Solids Sent to Pond (kg/day)	Solids Reused for Bedding (kg/day)	Total Solids** Collected (kg/day)	Total Solids Collected (kg/yr)	Total Solids Collected (tons/yr)
Total	15,752.55	11,412.85	518.40	3,821.29	1,394,771.76	1,537.45
			Corral Solids	3,821.29	1,394,771.76	1,537.45
			Separator Solids	0.00	0.00	0.00

Herd	TN in Solids kg/day	P in Solids kg/day	K in Solids kg/day	TN in Solids tons/yr	P in Solids tons/yr	K in Solids tons/yr	
Milking Cows	102.66	25.42	32.59	41.30	10.23	13.11	
Dry Cow	7.70	2.34	2.44	3.10	0.94	0.98	
Heifers 15-24 months	12.53	2.98	3.73	5.04	1.20	1.50	
Calves: 7-14 months	14.82	4.47	4.51	5.96	1.80	1.82	
Calves: 4-6 months	0.00	0.00	0.00	0.00	0.00	0.00	
Calves: 0 to 3 months	0.12	0.16	0.05	0.05	0.06	0.02	
Total	137.83	35.38	43.32	55.46	14.23	17.43	Annual Total

*Nutrient amounts in collected solids (i.e. Dry Manure) is based on the theoretical nutrient productions from the ASABE documentation.

**Total solids collected is broken down into corral manure and separator manure so the nutrients can be attributed to its source for application purposes.

Sozinho Dairy #2

6. Wastewater Utilization Summary from NMP Plan

Wastewater Applications

	Field 01E		Field 03E		Field 1E		Field 2E		Field 3E	
	Date	WW Applic (gal)	Date	WW Applic (gal)	Date	WW Applic (gal)	Date	WW Applic (gal)	Date	WW Applic (gal)
Irrig 1	Oct	108,617	Oct	54,309	Oct	543,085	Oct	543,085	Oct	543,085
Irrig 2										
Irrig 3										
Irrig 4										
Irrig 5	Jan	108,617	Jan	54,309	Jan	814,628	Jan	814,628	Jan	543,085
Irrig 6										
Irrig 7										
Irrig 8										
Irrig 9	Apr	162,926	Apr	81,463	Apr	814,628	Apr	814,628	Apr	814,628
Irrig 10										
Irrig 11										
Irrig 12	Jun	325,851	Jun	162,926	Jun	1,629,255	Jun	1,629,255	Jun	1,629,255
Irrig 13										
Irrig 14	Jul	271,543	Jul	162,926	Jul	1,357,713	Jul	1,357,713	Jul	1,357,713
Irrig 15										
TOTAL		977,553		515,931		5,159,308		5,159,308		4,887,765

	Field 4E		Field 5E		Field 6E					
	Date	WW Applic (gal)	Date	WW Applic (gal)	Date	WW Applic (gal)	Date	WW Applic (gal)	Date	WW Applic (gal)
Irrig 1	Oct	543,085	Oct	543,085	Oct	543,085				
Irrig 2										
Irrig 3										
Irrig 4										
Irrig 5	Jan	543,085	Jan	1,086,170	Jan	543,085				
Irrig 6										
Irrig 7										
Irrig 8										
Irrig 9	Apr	814,628	Apr	814,628	Apr	814,628				
Irrig 10										
Irrig 11										
Irrig 12	Jun	1,629,255	Jun	1,629,255	Jun	1,629,255				
Irrig 13										
Irrig 14	Jul	1,357,713	Jul	1,357,713	Jul	1,357,713				
Irrig 15										
TOTAL		4,887,765		5,430,850		4,887,765		0		0

Sozinho Dairy #2

Wastewater Exports

Month	Wastewater Exports ac-feet	gallons
January	0.00	0
February	0.00	0
March	0.00	0
April	0.00	0
May	0.00	0
June	0.00	0
July	0.00	0
August	0.00	0
September	0.00	0
October	0.00	0
November	0.00	0
December	0.00	0
Year Tot.	0.00	0

Overall Annual Summary of Wastewater Applications and Exports

Month	Applied ac-feet	Exported ac-feet	Annual Total
January	13.83	0.00	13.83
February	0.00	0.00	0.00
March	0.00	0.00	0.00
April	15.75	0.00	15.75
May	0.00	0.00	0.00
June	31.50	0.00	31.50
July	26.33	0.00	26.33
August	0.00	0.00	0.00
September	0.00	0.00	0.00
October	10.50	0.00	10.50
November	0.00	0.00	0.00
December	0.00	0.00	0.00
Year Total	97.92	0.00	97.92

*Refer to the Nutrient Management Plan - Nutrient Budget developed for this dairy for more information about the utilization of the dairy waste. Only wastewater applications and exports shown.

Sozinho Dairy #2

4. Crop Water Needs

Crop Information	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5	Crop 6	Crop 7
Crop Cultivated:	Corn-Silage	Wheat Silage					
Crop Water Req (in):	39.32	11.49	0.00	0.00	0.00	0.00	0.00
Irrigation eff. (%):	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Crop Req. (in):	52.43	15.32	0.00	0.00	0.00	0.00	0.00

Monthly Crop Water Need Based on ETo Requirement & adjusted for Irrigation Uniformity

		Corn-Silage	Wheat Silage					
Month	Year	(inch)						
January	avg	0.00	2.15					
February	avg	0.00	2.87					
March	avg	0.00	3.73					
April	avg	4.44	2.44					
May	avg	9.17	0.00					
June	avg	10.90	0.00					
July	avg	10.63	0.00					
August	avg	9.49	0.00					
September	avg	7.03	0.00					
October	avg	0.76	0.69					
November	avg	0.00	1.83					
December	avg	0.00	1.60					
	Total	52.43	15.32	0.00	0.00	0.00	0.00	0.00
	Total ac-ft	4.37	1.28	-	-	-	-	-

Total Crop Water Use Based on Crop Acreage

	CROP	Corn-Silage	Wheat Silage						Total
Month		(acre-inch)							(acre-inch)
January		0.00	556.56						556.56
February		0.00	743.49						743.49
March		0.00	966.83						966.83
April		1,150.70	632.47						1,783.17
May		2,375.55	0.00						2,375.55
June		2,823.49	0.00						2,823.49
July		2,753.91	0.00						2,753.91
August		2,457.11	0.00						2,457.11
September		1,821.64	0.00						1,821.64
October		196.18	177.72						373.90
November		0.00	474.71						474.71
December		0.00	414.98						414.98
		13,578.58	3,966.76	0.00	0.00	0.00	0.00	0.00	17,545.34
	Year Total (ac-ft)	1131.55	330.56	0.00	0.00	0.00	0.00	0.00	1,462.11

3. Crop Weather Data

CIMIS Station: 999 Multiple (15, 39, 86) Sozinho Dairy #2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo (in)	1.07	1.94	3.65	5.31	7.23	8.09	8.39	7.49	5.55	3.67	1.83	1.04	55.28
Precip (in)	2.12	1.99	1.83	0.85	0.40	0.18	0.07	0.08	0.10	0.57	0.87	1.72	10.78

CROP: Corn-Silage

Plant Date:	5-Apr
End Date:	4-Oct
Days:	182

Kc_{ini}	0.70
Kc_{mid}	1.05
Kc_{end}	0.95

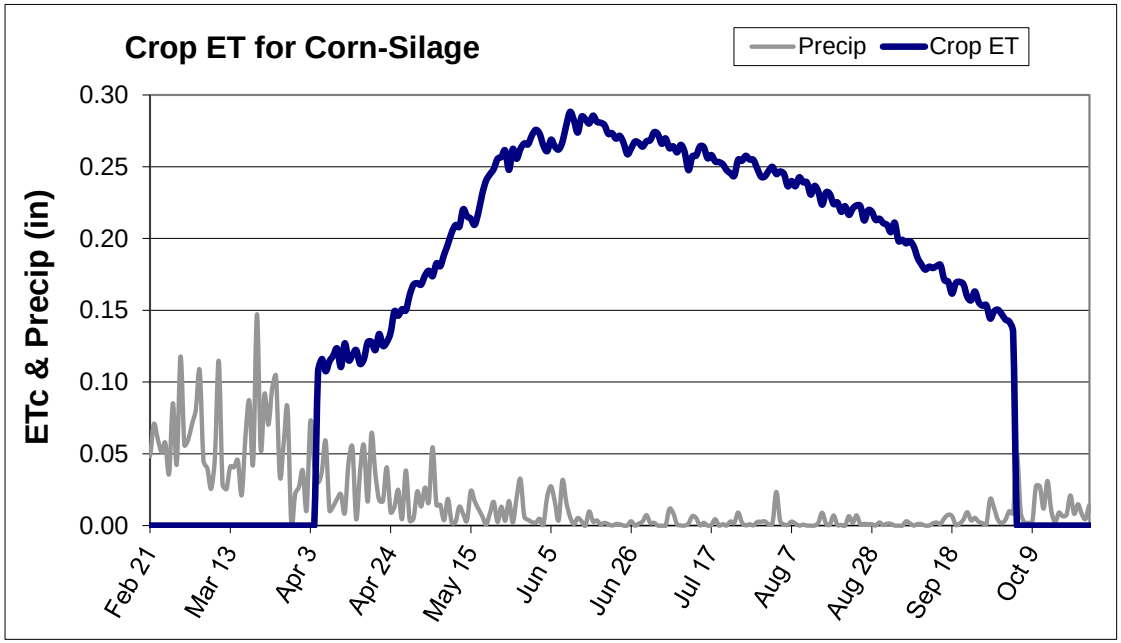
		Start	End
L_{ini}	20	5-Apr	25-Apr
L_{dev}	30	25-Apr	25-May
L_{mid}	20	25-May	14-Jun
L_{late}	10	14-Jun	24-Jun

SUMMER CROP

Corn-Silage **ET: 39.32 inches**

Weekly ET During Crop Season

Date	ETo/wk	Kc/wk	ETc/wk
22-Mar	0.00	0.00	0.00
29-Mar	0.00	0.00	0.00
5-Apr	0.47	2.10	0.33
12-Apr	1.18	4.90	0.83
19-Apr	1.23	4.90	0.86
26-Apr	1.37	5.02	0.98
3-May	1.50	5.55	1.19
10-May	1.56	6.13	1.37
17-May	1.62	6.70	1.55
24-May	1.72	7.23	1.78
31-May	1.78	7.35	1.87
7-Jun	1.78	7.35	1.87
14-Jun	1.89	7.32	1.98
21-Jun	1.95	6.93	1.93
28-Jun	1.95	6.65	1.85
5-Jul	1.98	6.65	1.88
12-Jul	1.91	6.65	1.81
19-Jul	1.88	6.65	1.78
26-Jul	1.86	6.65	1.77
2-Aug	1.81	6.65	1.72
9-Aug	1.77	6.65	1.68
16-Aug	1.70	6.65	1.61
23-Aug	1.63	6.65	1.55
30-Aug	1.58	6.65	1.50
6-Sep	1.48	6.65	1.40
13-Sep	1.34	6.65	1.27
20-Sep	1.23	6.65	1.17
27-Sep	1.13	6.65	1.08
4-Oct	0.76	6.65	0.72
Total	42.05		39.32



CIMIS Station #145 - Madera is located in Madera County. Weather data was available from 1999 to 2012. The average daily precipitation and evaporation was determined from the available historical data for this CIMIS station. All weather data is reported in inches.

Reference Data:
Crop Info: http://www.fao.org/docrep/X0490E/x0490e0b.htm
Crop ET: http://itrc.org/etdata/irrsched.htm

3. Crop Weather Data

CIMIS Station: 999 Multiple (15, 39, 86) Sozinho Dairy #2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo (in)	1.10	1.98	3.71	5.37	7.28	8.11	8.37	7.45	5.49	3.60	1.79	1.00	55.25
Precip (in)	2.02	2.02	1.81	0.84	0.38	0.18	0.07	0.08	0.10	0.59	0.87	1.70	10.65

CROP: Wheat Silage

Plant Date:	15-Oct
End Date:	15-Apr
Days:	182

Kc_{ini}	0.30
Kc_{mid}	1.20
Kc_{end}	0.64

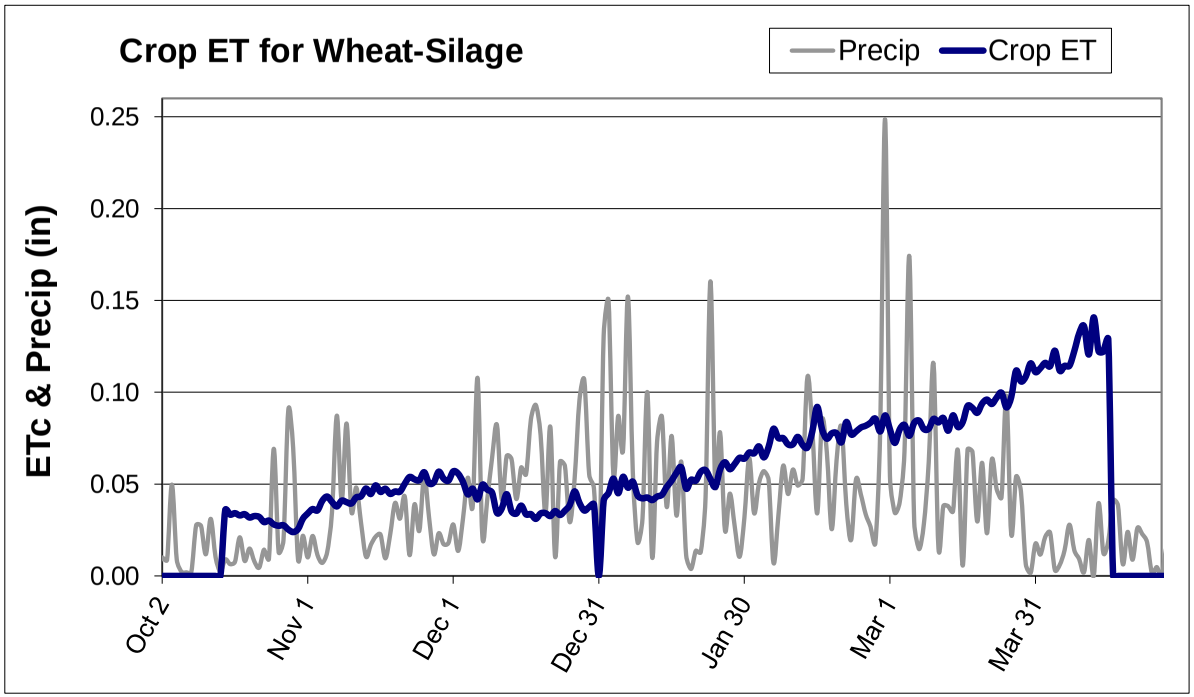
		Start	End
L_{ini}	15	15-Oct	30-Oct
L_{dev}	30	30-Oct	29-Nov
L_{mid}	65	29-Nov	2-Feb
L_{late}	40	2-Feb	14-Mar

WINTER CROP

Wheat Silage **ET: 11.49 inches**

Weekly ET During Crop Season

Date	ETo/wk	Kc/wk	ETc/wk
1-Oct	0.00	0.00	0.00
8-Oct	0.00	0.00	0.00
15-Oct	0.67	1.80	0.20
22-Oct	0.69	2.10	0.21
29-Oct	0.58	2.55	0.21
5-Nov	0.50	3.99	0.28
12-Nov	0.41	5.46	0.32
19-Nov	0.35	6.93	0.35
26-Nov	0.32	8.22	0.38
3-Dec	0.28	8.40	0.34
10-Dec	0.22	8.40	0.27
17-Dec	0.20	8.40	0.23
24-Dec	0.22	8.40	0.27
31-Dec	0.23	8.40	0.28
7-Jan	0.26	8.40	0.31
14-Jan	0.30	8.40	0.36
21-Jan	0.32	8.40	0.39
28-Jan	0.38	8.40	0.45
4-Feb	0.44	8.01	0.51
11-Feb	0.52	7.32	0.54
18-Feb	0.58	6.64	0.55
25-Feb	0.67	5.95	0.57
4-Mar	0.75	5.26	0.57
11-Mar	0.89	4.62	0.59
18-Mar	1.02	4.48	0.65
25-Mar	1.14	4.48	0.73
1-Apr	1.25	4.48	0.80
8-Apr	1.39	4.48	0.89
15-Apr	0.39	4.48	0.25
22-Apr	0.00	4.48	0.00
29-Apr	0.00	4.48	0.00
Total	14.99		11.49



CIMIS Station #145 - Madera is located in Madera County. Weather data was available from 1999 to 2012. The average daily precipitation and evaporation was determined from the available historical data for this CIMIS station. All weather data is reported in inches.

Reference Data:
Crop Info: http://www.fao.org/docrep/X0490E/x0490e0b.htm
Crop ET: http://itrc.org/etdata/irrsched.htm

Planned Nutrient Application & Removal Record

Field ID **Field 01E** **Farm:** Sozinho Dairy #2 **Year** 2024

Address: 8489 E. Elkhorn

Selma CA 93662

Field Size (acres) = **(A)** 8

CROP	Required Nutrient Loading (lb/acre) = **(B)** Based on average yields for farm and crop analysis.			Average Yield (ton/ac)	Anticipated Plant Date	Anticipated Harvest Date
	N	P	K			
Wheat Silage	252.69	50.54	504.15	18.00	November	April
Corn Silage	334.64	53.54	294.48	30.00	May	September
Loading Rate (∑**B**) (tons/ac)	587.33	104.08	798.63			
Total Nutrients Required - Whole Field Loading (tons) = ∑**B** x **A**	4,698.61	832.64	6,389.03			

Allowable N Applied per crop **(Bc')** (lbs/ac)	**Maximum*** N Applied per crop **(Bm')** (lbs/ac)	
N	N	CROP
353.77	416.94	Wheat Silage
468.49	552.15	Corn Silage
822.26	969.09	

Bc' = B x 1.4 for N Bm' = B x 1.65 for N

*Additional sampling is required to justify using the **Maximum** application schedule.

Wastewater & Fresh Water Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
Start Date (month)	Liquid Application Source[a]	Liquid Application (ac-in/acre)	Total Volume Applied (gallons)	Volume per Acre (gal/acre) (3) (A)	Lab Analysis TN[c] (lb/1000 gal)	N Applied (lb/acre) (4) x (5) 1000	Lab Analysis P[c] (lb/1000 gal)	P Applied (lb/acre) (4) x (7) 1000	Lab Analysis K[c] (lb/1000 gal)	K Applied (lb/acre) (4) x (9) 1000	EC[c] (umhos/cm)	Salts Applied (lb/acre) (11)*0.6*(4)*2.72 325848	CROP
Oct	Lagoon Pump	0.50	108,617	13,577.13	4.44	60.31	0.43	5.80	5.18	70.33	6884.00	468.12	Wheat Silage
Oct	Well 1E	2.00	434,468	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Nov	Well 1E	2.00	434,468	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Dec	Well 5E	2.00	434,468	54,308.50	0.15	8.27	0.00	0.00	0.00	0.00	988.00	268.74	Wheat Silage
Jan	Lagoon Pump	0.50	108,617	13,577.13	5.20	70.59	0.64	8.71	6.32	85.79	6953.33	472.83	Wheat Silage
Jan	Well 1E	2.00	434,468	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Feb	Well 5E	2.00	434,468	54,308.50	0.15	8.27	0.00	0.00	0.00	0.00	988.00	268.74	Wheat Silage
Mar	Well 1E	2.00	434,468	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Apr	Lagoon Pump	0.75	162,926	20,365.69	4.24	86.33	0.36	7.38	4.04	82.35	5031.67	513.23	Corn Silage
Apr	Well 1E	4.00	868,936	108,617.00	0.19	20.85	0.00	0.00	0.00	0.00	1550.00	843.21	Corn Silage
May	Well 5E	4.00	868,936	108,617.00	0.15	16.55	0.00	0.00	0.00	0.00	988.00	537.48	Corn Silage
Jun	Lagoon Pump	1.50	325,851	40,731.38	2.48	101.02	0.29	11.97	3.05	124.29	4810.00	981.25	Corn Silage
Jun	Well 5E	8.00	1,737,872	217,234.00	0.15	33.09	0.00	0.00	0.00	0.00	988.00	1074.95	Corn Silage
Jul	Lagoon Pump	1.25	271,543	33,942.81	2.48	84.19	0.29	9.97	3.05	103.57	4810.00	817.71	Corn Silage
Jul	Well 5E	10.00	2,172,340	271,542.50	0.15	41.36	0.00	0.00	0.00	0.00	988.00	1343.69	Corn Silage
Aug	Well 1E	10.00	2,172,340	271,542.50	0.19	52.13	0.00	0.00	0.00	0.00	1550.00	2108.02	Corn Silage
Sep	Well 5E	4.00	868,936	108,617.00	0.15	16.55	0.00	0.00	0.00	0.00	988.00	537.48	Corn Silage
					TN Applied	*641.22*	**P Applied**	*43.84*	**K Applied**	*466.33*	**TDS Applied**	*11921.86*	

Field ID Field 01E **Farm** Sozinho Dairy #2 **Year** 2024

Liquid Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Date (month)	Fertilizer Source[1]	Volume Applied (gallons)	Volume / Acre (gal/acre) (2) (A)	Fertilizer Weight (lbs/gal)	Fert. Analysis TN[2] %	N Applied (lb/acre) (3) * (4) * (5) 100	Fert. Analysis P[2] %	P Applied (lb/acre) (3) * (4) * (7) 100	Fert. Analysis K[2] %	K Applied (lb/acre) (3) * (4) * (9) 100	CROP
					TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID Field 01E **Farm** Sozinho Dairy #2 **Year** 2024

Dry Manure Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Application Source	Vol. Applied (tons)	Vol. per Acre (tons/ac) (2) / (A)	Lab Analysis TN[2] (%) - rcvd	N Applied (lb/acre) (3) * (4)	Lab Analysis P[2] (%) - rcvd	P Applied (lb/acre) (3) * (6)	Lab Analysis K[2] (%) - rcvd	K Applied (lb/acre) (3) * (8)	CROP
Oct	Corral	40	5.00	1.54	154.00	0.74	74.00	3.47	346.80	Wheat Silage
				TN Applied	*154.00*	**P Applied**	*74.00*	**K Applied**	*346.80*	

rcvd = Lab analysis are reports "as received" format.

Dry Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Fertilizer Source[1]	Vol. Applied (lbs)	Vol. per Acre (lbs/ac) (2) / (A)	Fert. Analysis TN[2] %	N Applied (lb/acre) (3) * (4)	Fert. Analysis P[2] %	P Applied (lb/acre) (3) * (6)	Fert. Analysis K[2] %	K Applied (lb/acre) (3) * (8)	CROP
			0.00		0.00		0.00		0.00	
				TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID Field 01E **Farm** Sozinho Dairy #2 **Year** 2024

Nutrient Application & Removal Summary

Crop Application Summary

	Wheat Silage				Corn Silage							
	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)
Required Nutrients (B) (lbs/ac)	252.69	50.54	504.15	2000.00	334.64	53.54	294.48	2000.00				2000.00
Allowable to Apply (Bc') (lbs/ac)	353.77				468.49							
Maximum Nitrogen to Apply (Bm') (lbs/ac)	416.94				552.15							
Wastewater & Fresh Water Applications	189.14	14.52	156.12	3164.84	452.07	29.33	310.21	8757.02				
Liquid Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Dry Manure Applications	154.00	74.00	346.80		0.00	0.00	0.00					
Dry Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Atmospheric Deposition	7.00				7.00				0.00			
Nutrients Planned per Crop (lbs/acre)	350.14	88.52	502.92	3164.84	459.07	29.33	310.21	8757.02	0.00	0.00	0.00	0.00
N-Ratio per Crop*	**1.39** GOOD				**1.37** GOOD							

Field ID Field 01E **Farm** Sozinho Dairy #2 **Year** 2024

Whole Field Application Summary

Planned Nutrient Inputs from All Sources

Field Inputs	N Applied (lb/acre)	P Applied (lb/acre)	K Applied (lb/acre)	TDS Applied (lb/acre)
Wastewater & Fresh Water Applications	641.22	43.84	466.33	11921.86
Liquid Fertilizer Applications	0.00	0.00	0.00	NA
Dry Manure Applications	154.00	74.00	346.80	
Dry Fertilizer Applications	0.00	0.00	0.00	
Atmospheric Deposition	14.00			
Total Nutrients Planned (lbs/acre)	**809.22**	**117.84**	**813.13**	**11921.86**
Total Nutrients Required (lbs/Field)	**4,699**	**833**	**6,389**	**24,000**
Total Nutrients Planned (lbs/Field)	**6,474**	**943**	**6,505**	**95,375**

N-Ratio for Field	**1.38**

N-Ratio = Based on nutrients required verses nutrients planned. Target ratio is 1.4. Maximum N-Ratio is 1.65. Additional sampling is required to justify using the Maximum application schedule. Refer the MRP in the Dairy General Order for more information.

Planned Nutrient Application & Removal Record

Field ID **Field 03E** **Farm:** Sozinho Dairy #2 **Year** 2024

Address: 8489 E. Elkhorn

Selma CA 93662

Field Size (acres) = **(A)** 4

CROP	Required Nutrient Loading (lb/acre) = **(B)** Based on average yields for farm and crop analysis.			Average Yield (ton/ac)	Anticipated Plant Date	Anticipated Harvest Date
	N	P	K			
Wheat Silage	252.69	50.54	504.15	18.00	November	April
Corn Silage	334.64	53.54	294.48	30.00	May	September
Loading Rate (∑**B**) (tons/ac)	587.33	104.08	798.63			
Total Nutrients Required - Whole Field Loading (tons) = ∑**B** x **A**	2,349.30	416.32	3,194.51			

Allowable N Applied per crop **(Bc')** (lbs/ac)	**Maximum*** N Applied per crop **(Bm')** (lbs/ac)	
N	N	CROP
353.77	416.94	Wheat Silage
468.49	552.15	Corn Silage
822.26	969.09	

Bc' = B x 1.4 for N Bm' = B x 1.65 for N

*Additional sampling is required to justify using the **Maximum** application schedule.

Wastewater & Fresh Water Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
Start Date (month)	Liquid Application Source*	Liquid Application (ac-in/acre)	Total Volume Applied (gallons)	Volume per Acre (gal/acre) (3) (A)	Lab Analysis TN* (lb/1000 gal)	N Applied (lb/acre) (4) x (5) 1000	Lab Analysis P* (lb/1000 gal)	P Applied (lb/acre) (4) x (7) 1000	Lab Analysis K* (lb/1000 gal)	K Applied (lb/acre) (4) x (9) 1000	EC* (umhos/cm)	Salts Applied (lb/acre) (11)*0.6*(4)*2.72 325848	CROP
Oct	Lagoon Pump	0.50	54,309	13,577.13	4.44	60.31	0.43	5.80	5.18	70.33	6884.00	468.12	Wheat Silage
Oct	Well 3E	2.00	217,234	54,308.50	0.13	6.91	0.00	0.00	0.00	0.00	938.00	255.14	Wheat Silage
Nov	Well 3E	2.00	217,234	54,308.50	0.13	6.91	0.00	0.00	0.00	0.00	938.00	255.14	Wheat Silage
Dec	Well 03E	2.00	217,234	54,308.50	0.15	8.05	0.00	0.00	0.00	0.00	948.00	257.86	Wheat Silage
Jan	Lagoon Pump	0.50	54,309	13,577.13	5.20	70.59	0.64	8.71	6.32	85.79	6953.33	472.83	Wheat Silage
Jan	Well 3E	2.00	217,234	54,308.50	0.13	6.91	0.00	0.00	0.00	0.00	938.00	255.14	Wheat Silage
Feb	Well 03E	2.00	217,234	54,308.50	0.15	8.05	0.00	0.00	0.00	0.00	948.00	257.86	Wheat Silage
Mar	Well 3E	2.00	217,234	54,308.50	0.13	6.91	0.00	0.00	0.00	0.00	938.00	255.14	Wheat Silage
Apr	Lagoon Pump	0.75	81,463	20,365.69	4.24	86.33	0.36	7.38	4.04	82.35	5031.67	513.23	Corn Silage
Apr	Well 03E	4.00	434,468	108,617.00	0.15	16.09	0.00	0.00	0.00	0.00	948.00	515.72	Corn Silage
May	Well 3E	4.00	434,468	108,617.00	0.13	13.83	0.00	0.00	0.00	0.00	938.00	510.28	Corn Silage
Jun	Lagoon Pump	1.50	162,926	40,731.38	2.48	101.02	0.29	11.97	3.05	124.29	4810.00	981.25	Corn Silage
Jun	Well 3E	8.00	868,936	217,234.00	0.13	27.65	0.00	0.00	0.00	0.00	938.00	1020.55	Corn Silage
Jul	Lagoon Pump	1.50	162,926	40,731.38	2.48	101.02	0.29	11.97	3.05	124.29	4810.00	981.25	Corn Silage
Jul	Well 3E	10.00	1,086,170	271,542.50	0.13	34.57	0.00	0.00	0.00	0.00	938.00	1275.69	Corn Silage
Aug	Well 03E	10.00	1,086,170	271,542.50	0.15	40.23	0.00	0.00	0.00	0.00	948.00	1289.29	Corn Silage
Sep	Well 03E	4.00	434,468	108,617.00	0.15	16.09	0.00	0.00	0.00	0.00	948.00	515.72	Corn Silage
					TN Applied	*611.48*	**P Applied**	*45.84*	**K Applied**	*487.04*	**TDS Applied**	*10080.20*	

Field ID **Field 03E** **Farm** **Sozinho Dairy #2** **Year** **2024**

Liquid Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Date (month)	Fertilizer Source[1]	Volume Applied (gallons)	Volume / Acre (gal/acre) (2) / (A)	Fertilizer Weight (lbs/gal)	Fert. Analysis TN^2 %	N Applied (lb/acre) (3) * (4) * (5) / 100	Fert. Analysis P^2 %	P Applied (lb/acre) (3) * (4) * (7) / 100	Fert. Analysis K^2 %	K Applied (lb/acre) (3) * (4) * (9) / 100	CROP
					TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID **Field 03E** **Farm** **Sozinho Dairy #2** **Year** **2024**

Dry Manure Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Application Source	Vol. Applied (tons)	Vol. per Acre (tons/ac) (2) / (A)	Lab Analysis TN^{-} (%) - rcvd	N Applied (lb/acre) (3) * (4)	Lab Analysis P^{-} (%) - rcvd	P Applied (lb/acre) (3) * (6)	Lab Analysis K^{-} (%) - rcvd	K Applied (lb/acre) (3) * (8)	CROP
Oct	Corral	20	5.00	1.54	154.00	0.74	74.00	3.47	346.80	Wheat Silage
				TN Applied	*154.00*	**P Applied**	*74.00*	**K Applied**	*346.80*	

rcvd = Lab analysis are reports "as received" format.

Dry Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Fertilizer Source[1]	Vol. Applied (lbs)	Vol. per Acre (lbs/ac) (2) / (A)	Fert. Analysis TN^2 %	N Applied (lb/acre) (3) * (4)	Fert. Analysis P^2 %	P Applied (lb/acre) (3) * (6)	Fert. Analysis K^2 %	K Applied (lb/acre) (3) * (8)	CROP
			0.00		0.00		0.00		0.00	
				TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID Field 03E **Farm** Sozinho Dairy #2 **Year** 2024

Nutrient Application & Removal Summary

Crop Application Summary

	Wheat Silage				Corn Silage							
	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)
Required Nutrients (B) (lbs/ac)	252.69	50.54	504.15	2000.00	334.64	53.54	294.48	2000.00				2000.00
Allowable to Apply (Bc') (lbs/ac)	353.77				468.49							
Maximum Nitrogen to Apply (Bm') (lbs/ac)	416.94				552.15							
Wastewater & Fresh Water Applications	174.64	14.52	156.12	2477.22	436.84	31.32	330.93	7602.98				
Liquid Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Dry Manure Applications	154.00	74.00	346.80		0.00	0.00	0.00					
Dry Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Atmospheric Deposition	7.00				7.00				0.00			
Nutrients Planned per Crop (lbs/acre)	335.64	88.52	502.92	2477.22	443.84	31.32	330.93	7602.98	0.00	0.00	0.00	0.00
N-Ratio per Crop*	**1.33** GOOD				**1.33** GOOD							

Whole Field Application Summary

Planned Nutrient Inputs from All Sources

Field Inputs	N Applied (lb/acre)	P Applied (lb/acre)	K Applied (lb/acre)	TDS Applied (lb/acre)
Wastewater & Fresh Water Applications	611.48	45.84	487.04	10080.20
Liquid Fertilizer Applications	0.00	0.00	0.00	NA
Dry Manure Applications	154.00	74.00	346.80	
Dry Fertilizer Applications	0.00	0.00	0.00	
Atmospheric Deposition	14.00			
Total Nutrients Planned (lbs/acre)	**779.48**	**119.84**	**833.84**	**10080.20**
Total Nutrients Required (lbs/Field)	**2,349**	**416**	**3,195**	**12,000**
Total Nutrients Planned (lbs/Field)	**3,118**	**479**	**3,335**	**40,321**

N-Ratio for Field	**1.33**

N-Ratio = Based on nutrients required verses nutrients planned. Target ratio is 1.4. Maximum N-Ratio is 1.65. Additional sampling is required to justify using the Maximum application schedule. Refer the MRP in the Dairy General Order for more information.

Planned Nutrient Application & Removal Record

Field ID **Field 1E** **Farm:** Sozinho Dairy #2 **Year** 2024

Address: 8489 E. Elkhorn

Selma CA 93662

Field Size (acres) = **(A)** 40

CROP	Required Nutrient Loading (lb/acre) = **(B)** Based on average yields for farm and crop analysis.			Average Yield (ton/ac)	Anticipated Plant Date	Anticipated Harvest Date
	N	P	K			
Wheat Silage	252.69	50.54	504.15	18.00	November	April
Corn Silage	334.64	53.54	294.48	30.00	May	September
Loading Rate (∑**B**) (tons/ac)	587.33	104.08	798.63			
Total Nutrients Required - Whole Field Loading (tons) = ∑**B** x **A**	23,493.05	4,163.19	31,945.14			

Allowable N Applied per crop **(Bc')** (lbs/ac)	**Maximum*** N Applied per crop **(Bm')** (lbs/ac)	
N	N	CROP
353.77	416.94	Wheat Silage
468.49	552.15	Corn Silage
822.26	969.09	

Bc' = B x 1.4 for N Bm' = B x 1.65 for N

*Additional sampling is required to justify using the **Maximum** application schedule.

Wastewater & Fresh Water Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
Start Date (month)	Liquid Application Source[+]	Liquid Application (ac-in/acre)	Total Volume Applied (gallons)	Volume per Acre (gal/acre) (3) (A)	Lab Analysis TN[~] (lb/1000 gal)	N Applied (lb/acre) (4) x (5) 1000	Lab Analysis P[~] (lb/1000 gal)	P Applied (lb/acre) (4) x (7) 1000	Lab Analysis K[~] (lb/1000 gal)	K Applied (lb/acre) (4) x (9) 1000	EC[~] (umhos/cm)	Salts Applied (lb/acre) (11)*0.6*(4)*2.72 325848	CROP
Oct	Lagoon Pump	0.50	543,085	13,577.13	4.44	60.31	0.43	5.80	5.18	70.33	6884.00	468.12	Wheat Silage
Oct	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Nov	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Dec	Well 5E	2.00	2,172,340	54,308.50	0.15	8.27	0.00	0.00	0.00	0.00	988.00	268.74	Wheat Silage
Jan	Lagoon Pump	0.75	814,628	20,365.69	5.20	105.88	0.64	13.07	6.32	128.68	6953.33	709.25	Wheat Silage
Jan	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Feb	Well 5E	2.00	2,172,340	54,308.50	0.15	8.27	0.00	0.00	0.00	0.00	988.00	268.74	Wheat Silage
Mar	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Apr	Lagoon Pump	0.75	814,628	20,365.69	4.24	86.33	0.36	7.38	4.04	82.35	5031.67	513.23	Corn Silage
Apr	Well 1E	4.00	4,344,680	108,617.00	0.19	20.85	0.00	0.00	0.00	0.00	1550.00	843.21	Corn Silage
May	Well 5E	4.00	4,344,680	108,617.00	0.15	16.55	0.00	0.00	0.00	0.00	988.00	537.48	Corn Silage
Jun	Lagoon Pump	1.50	1,629,255	40,731.38	2.48	101.02	0.29	11.97	3.05	124.29	4810.00	981.25	Corn Silage
Jun	Well 5E	8.00	8,689,360	217,234.00	0.15	33.09	0.00	0.00	0.00	0.00	988.00	1074.95	Corn Silage
Jul	Lagoon Pump	1.25	1,357,713	33,942.81	2.48	84.19	0.29	9.97	3.05	103.57	4810.00	817.71	Corn Silage
Jul	Well 5E	10.00	10,861,700	271,542.50	0.15	41.36	0.00	0.00	0.00	0.00	988.00	1343.69	Corn Silage
Aug	Well 1E	10.00	10,861,700	271,542.50	0.19	52.13	0.00	0.00	0.00	0.00	1550.00	2108.02	Corn Silage
Sep	Well 1E	4.00	4,344,680	108,617.00	0.19	20.85	0.00	0.00	0.00	0.00	1550.00	843.21	Corn Silage
					TN Applied	*680.82*	**P Applied**	*48.20*	**K Applied**	*509.22*	**TDS Applied**	*12464.00*	

Field ID Field 1E **Farm** Sozinho Dairy #2 **Year** 2024

Liquid Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Date (month)	Fertilizer Source[1]	Volume Applied (gallons)	Volume / Acre (gal/acre) (2) / (A)	Fertilizer Weight (lbs/gal)	Fert. Analysis TN^2 %	N Applied (lb/acre) (3) * (4) * (5) / 100	Fert. Analysis P^2 %	P Applied (lb/acre) (3) * (4) * (7) / 100	Fert. Analysis K^2 %	K Applied (lb/acre) (3) * (4) * (9) / 100	CROP
					TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID Field 1E **Farm** Sozinho Dairy #2 **Year** 2024

Dry Manure Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Application Source	Vol. Applied (tons)	Vol. per Acre (tons/ac) (2) / (A)	Lab Analysis $TN^{<}$ (%) - rcvd	N Applied (lb/acre) (3) * (4)	Lab Analysis $P^{<}$ (%) - rcvd	P Applied (lb/acre) (3) * (6)	Lab Analysis $K^{<}$ (%) - rcvd	K Applied (lb/acre) (3) * (8)	CROP
May	Corral	160	4.00	1.54	123.20	0.74	59.20	3.47	277.44	Wheat Silage
				TN Applied	*123.20*	**P Applied**	*59.20*	**K Applied**	*277.44*	

rcvd = Lab analysis are reports "as received" format.

Dry Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Fertilizer Source[1]	Vol. Applied (lbs)	Vol. per Acre (lbs/ac) (2) / (A)	Fert. Analysis TN^2 %	N Applied (lb/acre) (3) * (4)	Fert. Analysis P^2 %	P Applied (lb/acre) (3) * (6)	Fert. Analysis K^2 %	K Applied (lb/acre) (3) * (8)	CROP
			0.00		0.00		0.00		0.00	
				TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID Field 1E **Farm** Sozinho Dairy #2 **Year** 2024

Nutrient Application & Removal Summary

Crop Application Summary

	Wheat Silage				Corn Silage							
	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)
Required Nutrients (B) (lbs/ac)	252.69	50.54	504.15	2000.00	334.64	53.54	294.48	2000.00				2000.00
Allowable to Apply (Bc') (lbs/ac)	353.77				468.49							
Maximum Nitrogen to Apply (Bm') (lbs/ac)	416.94				552.15							
Wastewater & Fresh Water Applications	224.44	18.87	199.01	3401.26	456.38	29.33	310.21	9062.75				
Liquid Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Dry Manure Applications	123.20	59.20	277.44		0.00	0.00	0.00					
Dry Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Atmospheric Deposition	7.00				7.00				0.00			
Nutrients Planned per Crop (lbs/acre)	354.64	78.07	476.45	3401.26	463.38	29.33	310.21	9062.75	0.00	0.00	0.00	0.00
N-Ratio per Crop*	**1.40** GOOD				**1.38** GOOD							

Whole Field Application Summary

Planned Nutrient Inputs from All Sources

Field Inputs	N Applied (lb/acre)	P Applied (lb/acre)	K Applied (lb/acre)	TDS Applied (lb/acre)
Wastewater & Fresh Water Applications	680.82	48.20	509.22	12464.00
Liquid Fertilizer Applications	0.00	0.00	0.00	NA
Dry Manure Applications	123.20	59.20	277.44	
Dry Fertilizer Applications	0.00	0.00	0.00	
Atmospheric Deposition	14.00			
Total Nutrients Planned (lbs/acre)	**818.02**	**107.40**	**786.66**	**12464.00**
Total Nutrients Required (lbs/Field)	**23,493**	**4,163**	**31,945**	**120,000**
Total Nutrients Planned (lbs/Field)	**32,721**	**4,296**	**31,467**	**498,560**

N-Ratio for Field	**1.39**

N-Ratio = Based on nutrients required verses nutrients planned. Target ratio is 1.4. Maximum N-Ratio is 1.65. Additional sampling is required to justify using the Maximum application schedule. Refer the MRP in the Dairy General Order for more information.

Planned Nutrient Application & Removal Record

Field ID Field 2E

Farm: Sozinho Dairy #2

Address: 8489 E. Elkhorn

Selma CA 93662

Year 2024

Field Size (acres) = **(A)** 40

CROP	Required Nutrient Loading (lb/acre) = **(B)** Based on average yields for farm and crop analysis.			Average Yield (ton/ac)	Anticipated Plant Date	Anticipated Harvest Date
	N	P	K			
Wheat Silage	252.69	50.54	504.15	18.00	November	April
Corn Silage	334.64	53.54	294.48	30.00	May	September
Loading Rate (∑**B**) (tons/ac)	587.33	104.08	798.63			
Total Nutrients Required - Whole Field Loading (tons) = ∑**B** x **A**	23,493.05	4,163.19	31,945.14			

Allowable N Applied per crop **(Bc')** (lbs/ac)	**Maximum*** N Applied per crop **(Bm')** (lbs/ac)	
N	N	CROP
353.77	416.94	Wheat Silage
468.49	552.15	Corn Silage
822.26	969.09	

Bc' = B x 1.4 for N Bm' = B x 1.65 for N

*Additional sampling is required to justify using the **Maximum** application schedule.

Wastewater & Fresh Water Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
Start Date (month)	Liquid Application Source[a]	Liquid Application (ac-in/acre)	Total Volume Applied (gallons)	Volume per Acre (gal/acre) (3) (A)	Lab Analysis TN[c] (lb/1000 gal)	N Applied (lb/acre) (4) x (5) 1000	Lab Analysis P[c] (lb/1000 gal)	P Applied (lb/acre) (4) x (7) 1000	Lab Analysis K[c] (lb/1000 gal)	K Applied (lb/acre) (4) x (9) 1000	EC[c] (umhos/cm)	Salts Applied (lb/acre) (11)*0.6*(4)*2.72 325848	CROP
Oct	Lagoon Pump	0.50	543,085	13,577.13	4.44	60.31	0.43	5.80	5.18	70.33	6884.00	468.12	Wheat Silage
Oct	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Nov	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Dec	Well 5E	2.00	2,172,340	54,308.50	0.15	8.27	0.00	0.00	0.00	0.00	988.00	268.74	Wheat Silage
Jan	Lagoon Pump	0.75	814,628	20,365.69	5.20	105.88	0.64	13.07	6.32	128.68	6953.33	709.25	Wheat Silage
Jan	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Feb	Well 5E	2.00	2,172,340	54,308.50	0.15	8.27	0.00	0.00	0.00	0.00	988.00	268.74	Wheat Silage
Mar	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Apr	Lagoon Pump	0.75	814,628	20,365.69	4.24	86.33	0.36	7.38	4.04	82.35	5031.67	513.23	Corn Silage
Apr	Well 1E	4.00	4,344,680	108,617.00	0.19	20.85	0.00	0.00	0.00	0.00	1550.00	843.21	Corn Silage
May	Well 5E	4.00	4,344,680	108,617.00	0.15	16.55	0.00	0.00	0.00	0.00	988.00	537.48	Corn Silage
Jun	Well 1E	1.50	1,629,255	40,731.38	2.48	101.02	0.29	11.97	3.05	124.29	4810.00	981.25	Corn Silage
Jun	Well 5E	8.00	8,689,360	217,234.00	0.15	33.09	0.00	0.00	0.00	0.00	988.00	1074.95	Corn Silage
Jul	Well 1E	1.25	1,357,713	33,942.81	2.48	84.19	0.29	9.97	3.05	103.57	4810.00	817.71	Corn Silage
Jul	Well 5E	10.00	10,861,700	271,542.50	0.15	41.36	0.00	0.00	0.00	0.00	988.00	1343.69	Corn Silage
Aug	Lagoon Pump	10.00	10,861,700	271,542.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Corn Silage
Sep	Well 1E	4.00	4,344,680	108,617.00	0.19	20.85	0.00	0.00	0.00	0.00	1550.00	843.21	Corn Silage
					TN Applied	*628.69*	**P Applied**	*48.20*	**K Applied**	*509.22*	**TDS Applied**	*10355.99*	

Field ID **Field 2E** **Farm** **Sozinho Dairy #2** **Year** **2024**

Liquid Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Date (month)	Fertilizer Source[1]	Volume Applied (gallons)	Volume / Acre (gal/acre) (2) (A)	Fertilizer Weight (lbs/gal)	Fert. Analysis TN[2] %	N Applied (lb/acre) (3) * (4) * (5) 100	Fert. Analysis P[2] %	P Applied (lb/acre) (3) * (4) * (7) 100	Fert. Analysis K[2] %	K Applied (lb/acre) (3) * (4) * (9) 100	CROP
					TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID **Field 2E** **Farm** **Sozinho Dairy #2** **Year** **2024**

Dry Manure Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Application Source	Vol. Applied (tons)	Vol. per Acre (tons/ac) (2) / (A)	Lab Analysis TN[<] (%) - rcvd	N Applied (lb/acre) (3) * (4)	Lab Analysis P[<] (%) - rcvd	P Applied (lb/acre) (3) * (6)	Lab Analysis K[<] (%) - rcvd	K Applied (lb/acre) (3) * (8)	CROP
Oct	Corral	160	4.00	1.54	123.20	0.74	59.20	3.47	277.44	Wheat Silage
				TN Applied	*123.20*	**P Applied**	*59.20*	**K Applied**	*277.44*	

rcvd = Lab analysis are reports "as received" format.

Dry Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Fertilizer Source[1]	Vol. Applied (lbs)	Vol. per Acre (lbs/ac) (2) / (A)	Fert. Analysis TN[2] %	N Applied (lb/acre) (3) * (4)	Fert. Analysis P[2] %	P Applied (lb/acre) (3) * (6)	Fert. Analysis K[2] %	K Applied (lb/acre) (3) * (8)	CROP
			0.00		0.00		0.00		0.00	
				TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID Field 2E **Farm** Sozinho Dairy #2 **Year** 2024

Nutrient Application & Removal Summary

Crop Application Summary

	Wheat Silage				Corn Silage							
	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)
Required Nutrients (B) (lbs/ac)	252.69	50.54	504.15	2000.00	334.64	53.54	294.48	2000.00				2000.00
Allowable to Apply (Bc') (lbs/ac)	353.77				468.49							
Maximum Nitrogen to Apply (Bm') (lbs/ac)	416.94				552.15							
Wastewater & Fresh Water Applications	224.44	18.87	199.01	3401.26	404.25	29.33	310.21	6954.73				
Liquid Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Dry Manure Applications	123.20	59.20	277.44		0.00	0.00	0.00					
Dry Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Atmospheric Deposition	7.00				7.00				0.00			
Nutrients Planned per Crop (lbs/acre)	354.64	78.07	476.45	3401.26	411.25	29.33	310.21	6954.73	0.00	0.00	0.00	0.00
N-Ratio per Crop*	**1.40** GOOD				**1.23** GOOD							

N-Ratio (Max Nutrients) = Based on nutrients needed times 1.4 (maximum allowed). Target ratio is 1.0. *N-Ratio (Alternative Max* Nutrients) = Based on nutrients needed times 1.65 (Alternative maximum allowed). Target ratio is 1.0.*

* Ratings: Excessive = N-ratio > 1.6; Acceptable = 1.4 < N-ratio > 1.65; Good = N-ratio < 1.4

Whole Field Application Summary

Planned Nutrient Inputs from All Sources

Field Inputs	N Applied (lb/acre)	P Applied (lb/acre)	K Applied (lb/acre)	TDS Applied (lb/acre)
Wastewater & Fresh Water Applications	628.69	48.20	509.22	10355.99
Liquid Fertilizer Applications	0.00	0.00	0.00	NA
Dry Manure Applications	123.20	59.20	277.44	
Dry Fertilizer Applications	0.00	0.00	0.00	
Atmospheric Deposition	14.00			
Total Nutrients Planned (lbs/acre)	**765.89**	**107.40**	**786.66**	**10355.99**
Total Nutrients Required (lbs/Field)	**23,493**	**4,163**	**31,945**	**120,000**
Total Nutrients Planned (lbs/Field)	**30,636**	**4,296**	**31,467**	**414,239**

N-Ratio for Field	**1.30**

N-Ratio = Based on nutrients required verses nutrients planned. Target ratio is 1.4. Maximum N-Ratio is 1.65. Additional sampling is required to justify using the Maximum application schedule. Refer the MRP in the Dairy General Order for more information.

Planned Nutrient Application & Removal Record

Field ID **Field 3E** **Farm:** Sozinho Dairy #2 **Year** 2024

Address: 8489 E. Elkhorn

Selma CA 93662

Field Size (acres) = **(A)** 40

CROP	Required Nutrient Loading (lb/acre) = **(B)** Based on average yields for farm and crop analysis.			Average Yield (ton/ac)	Anticipated Plant Date	Anticipated Harvest Date
	N	P	K			
Wheat Silage	252.69	50.54	504.15	18.00	November	April
Corn Silage	334.64	53.54	294.48	30.00	May	September
Loading Rate (∑**B**) (tons/ac)	587.33	104.08	798.63			
Total Nutrients Required - Whole Field Loading (tons) = ∑**B** x **A**	23,493.05	4,163.19	31,945.14			

Allowable N Applied per crop **(Bc')** (lbs/ac)	**Maximum*** N Applied per crop **(Bm')** (lbs/ac)	
N	**N**	**CROP**
353.77	416.94	Wheat Silage
468.49	552.15	Corn Silage
822.26	969.09	

Bc' = B x 1.4 for N Bm' = B x 1.65 for N

*Additional sampling is required to justify using the **Maximum** application schedule.

Wastewater & Fresh Water Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
Start Date (month)	Liquid Application Source[+]	Liquid Application (ac-in/acre)	Total Volume Applied (gallons)	Volume per Acre (gal/acre) (3) (A)	Lab Analysis TN[+] (lb/1000 gal)	N Applied (lb/acre) (4) x (5) 1000	Lab Analysis P[+] (lb/1000 gal)	P Applied (lb/acre) (4) x (7) 1000	Lab Analysis K[+] (lb/1000 gal)	K Applied (lb/acre) (4) x (9) 1000	EC[-] (umhos/cm)	Salts Applied (lb/acre) (11)*0.6*(4)*2.72 325848	CROP
Oct	Lagoon Pump	0.50	543,085	13,577.13	4.44	60.31	0.43	5.80	5.18	70.33	6884.00	468.12	Wheat Silage
Oct	Well 3E	2.00	2,172,340	54,308.50	0.13	6.91	0.00	0.00	0.00	0.00	938.00	255.14	Wheat Silage
Nov	Well 3E	2.00	2,172,340	54,308.50	0.13	6.91	0.00	0.00	0.00	0.00	938.00	255.14	Wheat Silage
Dec	Well 03E	2.00	2,172,340	54,308.50	0.15	8.05	0.00	0.00	0.00	0.00	948.00	257.86	Wheat Silage
Jan	Lagoon Pump	0.50	543,085	13,577.13	5.20	70.59	0.64	8.71	6.32	85.79	6953.33	472.83	Wheat Silage
Jan	Well 3E	2.00	2,172,340	54,308.50	0.13	6.91	0.00	0.00	0.00	0.00	938.00	255.14	Wheat Silage
Feb	Well 03E	2.00	2,172,340	54,308.50	0.15	8.05	0.00	0.00	0.00	0.00	948.00	257.86	Wheat Silage
Mar	Well 3E	2.00	2,172,340	54,308.50	0.13	6.91	0.00	0.00	0.00	0.00	938.00	255.14	Wheat Silage
Apr	Lagoon Pump	0.75	814,628	20,365.69	4.24	86.33	0.36	7.38	4.04	82.35	5031.67	513.23	Corn Silage
Apr	Well 3E	4.00	4,344,680	108,617.00	0.13	13.83	0.00	0.00	0.00	0.00	938.00	510.28	Corn Silage
May	Well 3E	4.00	4,344,680	108,617.00	0.13	13.83	0.00	0.00	0.00	0.00	938.00	510.28	Corn Silage
Jun	Lagoon Pump	1.50	1,629,255	40,731.38	2.48	101.02	0.29	11.97	3.05	124.29	4810.00	981.25	Corn Silage
Jun	Well 3E	8.00	8,689,360	217,234.00	0.13	27.65	0.00	0.00	0.00	0.00	938.00	1020.55	Corn Silage
Jul	Lagoon Pump	1.25	1,357,713	33,942.81	2.48	84.19	0.29	9.97	3.05	103.57	4810.00	817.71	Corn Silage
Jul	Well 5E	10.00	10,861,700	271,542.50	0.15	41.36	0.00	0.00	0.00	0.00	988.00	1343.69	Corn Silage
Aug	Well 03E	10.00	10,861,700	271,542.50	0.15	40.23	0.00	0.00	0.00	0.00	948.00	1289.29	Corn Silage
Sep	Well 3E	4.00	4,344,680	108,617.00	0.13	13.83	0.00	0.00	0.00	0.00	938.00	510.28	Corn Silage
					TN Applied	*596.91*	**P Applied**	*43.84*	**K Applied**	*466.33*	**TDS Applied**	*9973.78*	

Field ID Field 3E **Farm** Sozinho Dairy #2 **Year** 2024

Liquid Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Date (month)	Fertilizer Source[1]	Volume Applied (gallons)	Volume / Acre (gal/acre) (2) / (A)	Fertilizer Weight (lbs/gal)	Fert. Analysis TN^2 %	N Applied (lb/acre) (3) * (4) * (5) / 100	Fert. Analysis P^2 %	P Applied (lb/acre) (3) * (4) * (7) / 100	Fert. Analysis K^2 %	K Applied (lb/acre) (3) * (4) * (9) / 100	CROP
					TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID Field 3E **Farm** Sozinho Dairy #2 **Year** 2024

Dry Manure Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Application Source	Vol. Applied (tons)	Vol. per Acre (tons/ac) (2) / (A)	Lab Analysis TN^c (%) - rcvd	N Applied (lb/acre) (3) * (4)	Lab Analysis P^c (%) - rcvd	P Applied (lb/acre) (3) * (6)	Lab Analysis K^c (%) - rcvd	K Applied (lb/acre) (3) * (8)	CROP
Oct	Seperator	200	5.00	1.54	154.00	0.74	74.00	3.47	346.80	Wheat Silage
				TN Applied	*154.00*	**P Applied**	*74.00*	**K Applied**	*346.80*	

rcvd = Lab analysis are reports "as received" format.

Dry Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Fertilizer Source[1]	Vol. Applied (lbs)	Vol. per Acre (lbs/ac) (2) / (A)	Fert. Analysis TN^2 %	N Applied (lb/acre) (3) * (4)	Fert. Analysis P^2 %	P Applied (lb/acre) (3) * (6)	Fert. Analysis K^2 %	K Applied (lb/acre) (3) * (8)	CROP
			0.00		0.00		0.00		0.00	
				TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID Field 3E **Farm** Sozinho Dairy #2 **Year** 2024

Nutrient Application & Removal Summary

Crop Application Summary

	Wheat Silage				Corn Silage							
	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)
Required Nutrients (B) (lbs/ac)	252.69	50.54	504.15	2000.00	334.64	53.54	294.48	2000.00				2000.00
Allowable to Apply (Bc') (lbs/ac)	353.77				468.49							
Maximum Nitrogen to Apply (Bm') (lbs/ac)	416.94				552.15							
Wastewater & Fresh Water Applications	174.64	14.52	156.12	2477.22	422.27	29.33	310.21	7496.56				
Liquid Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Dry Manure Applications	154.00	74.00	346.80		0.00	0.00	0.00					
Dry Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Atmospheric Deposition	7.00				7.00				0.00			
Nutrients Planned per Crop (lbs/acre)	335.64	88.52	502.92	2477.22	429.27	29.33	310.21	7496.56	0.00	0.00	0.00	0.00
N-Ratio per Crop*	**1.33** GOOD				**1.28** GOOD							

Whole Field Application Summary

Planned Nutrient Inputs from All Sources

Field Inputs	N Applied (lb/acre)	P Applied (lb/acre)	K Applied (lb/acre)	TDS Applied (lb/acre)
Wastewater & Fresh Water Applications	596.91	43.84	466.33	9973.78
Liquid Fertilizer Applications	0.00	0.00	0.00	NA
Dry Manure Applications	154.00	74.00	346.80	
Dry Fertilizer Applications	0.00	0.00	0.00	
Atmospheric Deposition	14.00			
Total Nutrients Planned (lbs/acre)	**764.91**	**117.84**	**813.13**	**9973.78**

Total Nutrients Required (lbs/Field)	**23,493**	**4,163**	**31,945**	**120,000**
Total Nutrients Planned (lbs/Field)	**30,596**	**4,714**	**32,525**	**398,951**

N-Ratio for Field	**1.30**

N-Ratio = Based on nutrients required verses nutrients planned. Target ratio is 1.4. Maximum N-Ratio is 1.65. Additional sampling is required to justify using the Maximum application schedule. Refer the MRP in the Dairy General Order for more information

Planned Nutrient Application & Removal Record

Field ID **Field 4E** **Farm:** Sozinho Dairy #2 **Year** 2024

Address: 8489 E. Elkhorn

Selma CA 93662

Field Size (acres) = **(A)** 40

CROP	Required Nutrient Loading (lb/acre) = **(B)** Based on average yields for farm and crop analysis.			Average Yield (ton/ac)	Anticipated Plant Date	Anticipated Harvest Date
	N	P	K			
Wheat Silage	252.69	50.54	504.15	18.00	November	April
Corn Silage	334.64	53.54	294.48	30.00	May	September
Loading Rate (∑**B**) (tons/ac)	587.33	104.08	798.63			
Total Nutrients Required - Whole Field Loading (tons) = ∑**B** x **A**	23,493.05	4,163.19	31,945.14			

Allowable N Applied per crop **(Bc')** (lbs/ac)	**Maximum*** N Applied per crop **(Bm')** (lbs/ac)	
N	N	CROP
353.77	416.94	Wheat Silage
468.49	552.15	Corn Silage
822.26	969.09	

Bc' = B x 1.4 for N Bm' = B x 1.65 for N

*Additional sampling is required to justify using the **Maximum** application schedule.

Wastewater & Fresh Water Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
Start Date (month)	Liquid Application Source*	Liquid Application (ac-in/acre)	Total Volume Applied (gallons)	Volume per Acre (gal/acre) (3) (A)	Lab Analysis TN** (lb/1000 gal)	N Applied (lb/acre) (4) x (5) 1000	Lab Analysis P* (lb/1000 gal)	P Applied (lb/acre) (4) x (7) 1000	Lab Analysis K* (lb/1000 gal)	K Applied (lb/acre) (4) x (9) 1000	EC** (umhos/cm)	Salts Applied (lb/acre) (11)*0.6*(4)*2.72 325848	CROP
Oct	Lagoon Pump	0.50	543,085	13,577.13	4.44	60.31	0.43	5.80	5.18	70.33	6884.00	468.12	Wheat Silage
Oct	Well 3E	2.00	2,172,340	54,308.50	0.13	6.91	0.00	0.00	0.00	0.00	938.00	255.14	Wheat Silage
Nov	Well 3E	2.00	2,172,340	54,308.50	0.13	6.91	0.00	0.00	0.00	0.00	938.00	255.14	Wheat Silage
Dec	Well 03E	2.00	2,172,340	54,308.50	0.15	8.05	0.00	0.00	0.00	0.00	948.00	257.86	Wheat Silage
Jan	Lagoon Pump	0.50	543,085	13,577.13	5.20	70.59	0.64	8.71	6.32	85.79	6953.33	472.83	Wheat Silage
Jan	Well 3E	2.00	2,172,340	54,308.50	0.13	6.91	0.00	0.00	0.00	0.00	938.00	255.14	Wheat Silage
Feb	Well 03E	2.00	2,172,340	54,308.50	0.15	8.05	0.00	0.00	0.00	0.00	948.00	257.86	Wheat Silage
Mar	Well 3E	2.00	2,172,340	54,308.50	0.13	6.91	0.00	0.00	0.00	0.00	938.00	255.14	Wheat Silage
Apr	Lagoon Pump	0.75	814,628	20,365.69	4.24	86.33	0.36	7.38	4.04	82.35	5031.67	513.23	Corn Silage
Apr	Well 03E	4.00	4,344,680	108,617.00	0.15	16.09	0.00	0.00	0.00	0.00	948.00	515.72	Corn Silage
May	Well 3E	4.00	4,344,680	108,617.00	0.13	13.83	0.00	0.00	0.00	0.00	938.00	510.28	Corn Silage
Jun	Lagoon Pump	1.50	1,629,255	40,731.38	2.48	101.02	0.29	11.97	3.05	124.29	4810.00	981.25	Corn Silage
Jun	Well 3E	8.00	8,689,360	217,234.00	0.13	27.65	0.00	0.00	0.00	0.00	938.00	1020.55	Corn Silage
Jul	Lagoon Pump	1.25	1,357,713	33,942.81	2.48	84.19	0.29	9.97	3.05	103.57	4810.00	817.71	Corn Silage
Jul	Well 5E	10.00	10,861,700	271,542.50	0.15	41.36	0.00	0.00	0.00	0.00	988.00	1343.69	Corn Silage
Aug	Well 03E	10.00	10,861,700	271,542.50	0.15	40.23	0.00	0.00	0.00	0.00	948.00	1289.29	Corn Silage
Sep	Well 3E	4.00	4,344,680	108,617.00	0.13	13.83	0.00	0.00	0.00	0.00	938.00	510.28	Corn Silage
					TN Applied	*599.17*	**P Applied**	*43.84*	**K Applied**	*466.33*	**TDS Applied**	*9979.22*	

Field ID **Field 4E** **Farm** **Sozinho Dairy #2** **Year** **2024**

Liquid Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Date (month)	Fertilizer Source[1]	Volume Applied (gallons)	Volume / Acre (gal/acre) (2) / (A)	Fertilizer Weight (lbs/gal)	Fert. Analysis TN^2 %	N Applied (lb/acre) (3) * (4) * (5) / 100	Fert. Analysis P^2 %	P Applied (lb/acre) (3) * (4) * (7) / 100	Fert. Analysis K^2 %	K Applied (lb/acre) (3) * (4) * (9) / 100	CROP
					TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID **Field 4E** **Farm** **Sozinho Dairy #2** **Year** **2024**

Dry Manure Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Application Source	Vol. Applied (tons)	Vol. per Acre (tons/ac) (2) / (A)	Lab Analysis TN- (%) - rcvd	N Applied (lb/acre) (3) * (4)	Lab Analysis P- (%) - rcvd	P Applied (lb/acre) (3) * (6)	Lab Analysis K- (%) - rcvd	K Applied (lb/acre) (3) * (8)	CROP
Oct	Corral	200	5.00	1.54	154.00	0.74	74.00	3.47	346.80	Wheat Silage
				TN Applied	*154.00*	**P Applied**	*74.00*	**K Applied**	*346.80*	

rcvd = Lab analysis are reports "as received" format.

Dry Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Fertilizer Source[1]	Vol. Applied (lbs)	Vol. per Acre (lbs/ac) (2) / (A)	Fert. Analysis TN^2 %	N Applied (lb/acre) (3) * (4)	Fert. Analysis P^2 %	P Applied (lb/acre) (3) * (6)	Fert. Analysis K^2 %	K Applied (lb/acre) (3) * (8)	CROP
			0.00		0.00		0.00		0.00	
				TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID Field 4E **Farm** Sozinho Dairy #2 **Year** 2024

Nutrient Application & Removal Summary

Crop Application Summary

	Wheat Silage				Corn Silage							
	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)
Required Nutrients (B) (lbs/ac)	252.69	50.54	504.15	2000.00	334.64	53.54	294.48	2000.00				2000.00
Allowable to Apply (Bc') (lbs/ac)	353.77				468.49							
Maximum Nitrogen to Apply (Bm') (lbs/ac)	416.94				552.15							
Wastewater & Fresh Water Applications	174.64	14.52	156.12	2477.22	424.54	29.33	310.21	7502.00				
Liquid Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Dry Manure Applications	154.00	74.00	346.80		0.00	0.00	0.00					
Dry Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Atmospheric Deposition	7.00				7.00				0.00			
Nutrients Planned per Crop (lbs/acre)	335.64	88.52	502.92	2477.22	431.54	29.33	310.21	7502.00	0.00	0.00	0.00	0.00
N-Ratio per Crop*	**1.33** GOOD				**1.29** GOOD							

Whole Field Application Summary

Planned Nutrient Inputs from All Sources

Field Inputs	N Applied (lb/acre)	P Applied (lb/acre)	K Applied (lb/acre)	TDS Applied (lb/acre)
Wastewater & Fresh Water Applications	599.17	43.84	466.33	9979.22
Liquid Fertilizer Applications	0.00	0.00	0.00	
Dry Manure Applications	154.00	74.00	346.80	NA
Dry Fertilizer Applications	0.00	0.00	0.00	
Atmospheric Deposition	14.00			
Total Nutrients Planned (lbs/acre)	**767.17**	**117.84**	**813.13**	**9979.22**

Total Nutrients Required (lbs/Field)	**23,493**	**4,163**	**31,945**	**120,000**
Total Nutrients Planned (lbs/Field)	**30,687**	**4,714**	**32,525**	**399,169**

N-Ratio for Field	**1.31**

N-Ratio = Based on nutrients required verses nutrients planned. Target ratio is 1.4. Maximum N-Ratio is 1.65. Additional sampling is required to justify using the Maximum application schedule. Refer the MRP in the Dairy General Order for more information.

Planned Nutrient Application & Removal Record

Field ID **Field 5E** **Farm:** Sozinho Dairy #2 **Year** 2024

Address: 8489 E. Elkhorn

Selma CA 93662

Field Size (acres) = **(A)** 40

CROP	Required Nutrient Loading (lb/acre) = **(B)** Based on average yields for farm and crop analysis.			Average Yield (ton/ac)	Anticipated Plant Date	Anticipated Harvest Date
	N	P	K			
Wheat Silage	252.69	50.54	504.15	18.00	November	April
Corn Silage	334.64	53.54	294.48	30.00	May	September
Loading Rate (∑**B**) (tons/ac)	587.33	104.08	798.63			
Total Nutrients Required - Whole Field Loading (tons) = ∑**B** x **A**	23,493.05	4,163.19	31,945.14			

Allowable N Applied per crop **(Bc')** (lbs/ac)	**Maximum*** N Applied per crop **(Bm')** (lbs/ac)	
N	N	CROP
353.77	416.94	Wheat Silage
468.49	552.15	Corn Silage
822.26	969.09	

Bc' = B x 1.4 for N Bm' = B x 1.65 for N

*Additional sampling is required to justify using the **Maximum** application schedule.

Wastewater & Fresh Water Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
Start Date (month)	Liquid Application Source*	Liquid Application (ac-in/acre)	Total Volume Applied (gallons)	Volume per Acre (gal/acre) (3) (A)	Lab Analysis TN** (lb/1000 gal)	N Applied (lb/acre) (4) x (5) 1000	Lab Analysis P* (lb/1000 gal)	P Applied (lb/acre) (4) x (7) 1000	Lab Analysis K* (lb/1000 gal)	K Applied (lb/acre) (4) x (9) 1000	EC** (umhos/cm)	Salts Applied (lb/acre) (11)*0.6*(4)*2.72 325848	CROP
Oct	Lagoon Pump	0.50	543,085	13,577.13	4.44	60.31	0.43	5.80	5.18	70.33	6884.00	468.12	Wheat Silage
Oct	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Nov	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Dec	Well 5E	2.00	2,172,340	54,308.50	0.15	8.27	0.00	0.00	0.00	0.00	988.00	268.74	Wheat Silage
Jan	Lagoon Pump	1.00	1,086,170	27,154.25	5.20	141.17	0.64	17.43	6.32	171.58	6953.33	945.66	Wheat Silage
Jan	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Feb	Well 5E	2.00	2,172,340	54,308.50	0.15	8.27	0.00	0.00	0.00	0.00	988.00	268.74	Wheat Silage
Mar	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Apr	Lagoon Pump	0.75	814,628	20,365.69	4.24	86.33	0.36	7.38	4.04	82.35	5031.67	513.23	Corn Silage
Apr	Well 5E	4.00	4,344,680	108,617.00	0.15	16.55	0.00	0.00	0.00	0.00	988.00	537.48	Corn Silage
May	Well 1E	4.00	4,344,680	108,617.00	0.19	20.85	0.00	0.00	0.00	0.00	1550.00	843.21	Corn Silage
Jun	Lagoon Pump	1.50	1,629,255	40,731.38	2.48	101.02	0.29	11.97	3.05	124.29	4810.00	981.25	Corn Silage
Jun	Well 1E	8.00	8,689,360	217,234.00	0.19	41.70	0.00	0.00	0.00	0.00	1550.00	1686.42	Corn Silage
Jul	Lagoon Pump	1.25	1,357,713	33,942.81	2.48	84.19	0.29	9.97	3.05	103.57	4810.00	817.71	Corn Silage
Jul	Well 1E	10.00	10,861,700	271,542.50	0.19	52.13	0.00	0.00	0.00	0.00	1550.00	2108.02	Corn Silage
Aug	Well 5E	10.00	10,861,700	271,542.50	0.15	41.36	0.00	0.00	0.00	0.00	988.00	1343.69	Corn Silage
Sep	Well 5E	4.00	4,344,680	108,617.00	0.15	16.55	0.00	0.00	0.00	0.00	988.00	537.48	Corn Silage
					TN Applied	*720.42*	**P Applied**	*52.55*	**K Applied**	*552.12*	**TDS Applied**	*13006.15*	

Field ID **Field 5E** **Farm** **Sozinho Dairy #2** **Year** **2024**

Liquid Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Date (month)	Fertilizer Source[1]	Volume Applied (gallons)	Volume / Acre (gal/acre) (2) / (A)	Fertilizer Weight (lbs/gal)	Fert. Analysis TN^2 %	N Applied (lb/acre) (3) * (4) * (5) / 100	Fert. Analysis P^2 %	P Applied (lb/acre) (3) * (4) * (7) / 100	Fert. Analysis K^2 %	K Applied (lb/acre) (3) * (4) * (9) / 100	CROP
					TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID **Field 5E** **Farm** **Sozinho Dairy #2** **Year** **2024**

Dry Manure Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Application Source	Vol. Applied (tons)	Vol. per Acre (tons/ac) (2) / (A)	Lab Analysis TN^c (%) - rcvd	N Applied (lb/acre) (3) * (4)	Lab Analysis P^c (%) - rcvd	P Applied (lb/acre) (3) * (6)	Lab Analysis K^c (%) - rcvd	K Applied (lb/acre) (3) * (8)	CROP
Oct	Separator	400	10.00	0.33	65.33	0.07	14.00	0.15	29.33	Wheat Silage
				TN Applied	*65.33*	**P Applied**	*14.00*	**K Applied**	*29.33*	

rcvd = Lab analysis are reports "as received" format.

Dry Commercial Fertilizer Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Date (month)	Fertilizer Source[1]	Vol. Applied (lbs)	Vol. per Acre (lbs/ac) (2) / (A)	Fert. Analysis TN^2 %	N Applied (lb/acre) (3) * (4)	Fert. Analysis P^2 %	P Applied (lb/acre) (3) * (6)	Fert. Analysis K^2 %	K Applied (lb/acre) (3) * (8)	CROP
			0.00		0.00		0.00		0.00	
				TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID Field 5E **Farm** Sozinho Dairy #2 **Year** 2024

Nutrient Application & Removal Summary

Crop Application Summary

	Wheat Silage				Corn Silage							
	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)
Required Nutrients (B) (lbs/ac)	252.69	50.54	504.15	2000.00	334.64	53.54	294.48	2000.00				2000.00
Allowable to Apply (Bc') (lbs/ac)	353.77				468.49							
Maximum Nitrogen to Apply (Bm') (lbs/ac)	416.94				552.15							
Wastewater & Fresh Water Applications	259.73	23.23	241.91	3637.67	460.69	29.33	310.21	9368.48				
Liquid Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Dry Manure Applications	65.33	14.00	29.33		0.00	0.00	0.00					
Dry Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Atmospheric Deposition	7.00				7.00				0.00			
Nutrients Planned per Crop (lbs/acre)	332.07	37.23	271.24	3637.67	467.69	29.33	310.21	9368.48	0.00	0.00	0.00	0.00
N-Ratio per Crop*	**1.31** GOOD				**1.40** GOOD							

Whole Field Application Summary

Planned Nutrient Inputs from All Sources

Field Inputs	N Applied (lb/acre)	P Applied (lb/acre)	K Applied (lb/acre)	TDS Applied (lb/acre)
Wastewater & Fresh Water Applications	720.42	52.55	552.12	13006.15
Liquid Fertilizer Applications	0.00	0.00	0.00	NA
Dry Manure Applications	65.33	14.00	29.33	
Dry Fertilizer Applications	0.00	0.00	0.00	
Atmospheric Deposition	14.00			
Total Nutrients Planned (lbs/acre)	**799.75**	**66.55**	**581.45**	**13006.15**
Total Nutrients Required (lbs/Field)	**23,493**	**4,163**	**31,945**	**120,000**
Total Nutrients Planned (lbs/Field)	**31,990**	**2,662**	**23,258**	**520,246**

N-Ratio for Field	**1.36**

N-Ratio = Based on nutrients required verses nutrients planned. Target ratio is 1.4. Maximum N-Ratio is 1.65. Additional sampling is required to justify using the Maximum application schedule. Refer the MRP in the Dairy General Order for more information.

Planned Nutrient Application & Removal Record

Field ID **Field 6E** **Farm:** Sozinho Dairy #2 **Year** 2024

Address: 8489 E. Elkhorn

Selma CA 93662

Field Size (acres) = **(A)** 40

CROP	Required Nutrient Loading (lb/acre) = **(B)** Based on average yields for farm and crop analysis.			Average Yield (ton/ac)	Anticipated Plant Date	Anticipated Harvest Date
	N	P	K			
Wheat Silage	252.69	50.54	504.15	18.00	November	April
Corn Silage	334.64	53.54	294.48	30.00	May	September
Loading Rate (∑**B**) (tons/ac)	587.33	104.08	798.63			
Total Nutrients Required - Whole Field Loading (tons) = ∑**B** x **A**	23,493.05	4,163.19	31,945.14			

Allowable N Applied per crop **(Bc')** (lbs/ac)	**Maximum*** N Applied per crop **(Bm')** (lbs/ac)	
N	N	CROP
353.77	416.94	Wheat Silage
468.49	552.15	Corn Silage
822.26	969.09	

Bc' = B x 1.4 for N Bm' = B x 1.65 for N

*Additional sampling is required to justify using the **Maximum** application schedule.

Wastewater & Fresh Water Applications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
Start Date (month)	Liquid Application Source*	Liquid Application (ac-in/acre)	Total Volume Applied (gallons)	Volume per Acre (gal/acre) (3) (A)	Lab Analysis TN** (lb/1000 gal)	N Applied (lb/acre) (4) x (5) 1000	Lab Analysis P** (lb/1000 gal)	P Applied (lb/acre) (4) x (7) 1000	Lab Analysis K** (lb/1000 gal)	K Applied (lb/acre) (4) x (9) 1000	EC** (umhos/cm)	Salts Applied (lb/acre) (11)*0.6*(4)*2.72 325848	CROP
Oct	Lagoon Pump	0.50	543,085	13,577.13	4.44	60.31	0.43	5.80	5.18	70.33	6884.00	468.12	Wheat Silage
Oct	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Nov	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Dec	Well 5E	2.00	2,172,340	54,308.50	0.15	8.27	0.00	0.00	0.00	0.00	988.00	268.74	Wheat Silage
Jan	Lagoon Pump	0.50	543,085	13,577.13	5.20	70.59	0.64	8.71	6.32	85.79	6953.33	472.83	Wheat Silage
Jan	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Feb	Well 5E	2.00	2,172,340	54,308.50	0.15	8.27	0.00	0.00	0.00	0.00	988.00	268.74	Wheat Silage
Mar	Well 1E	2.00	2,172,340	54,308.50	0.19	10.43	0.00	0.00	0.00	0.00	1550.00	421.60	Wheat Silage
Apr	Lagoon Pump	0.75	814,628	20,365.69	4.24	86.33	0.36	7.38	4.04	82.35	5031.67	513.23	Corn Silage
Apr	Well 5E	4.00	4,344,680	108,617.00	0.15	16.55	0.00	0.00	0.00	0.00	988.00	537.48	Corn Silage
May	Well 1E	4.00	4,344,680	108,617.00	0.19	20.85	0.00	0.00	0.00	0.00	1550.00	843.21	Corn Silage
Jun	Lagoon Pump	1.50	1,629,255	40,731.38	2.48	101.02	0.29	11.97	3.05	124.29	4810.00	981.25	Corn Silage
Jun	Well 1E	8.00	8,689,360	217,234.00	0.19	41.70	0.00	0.00	0.00	0.00	1550.00	1686.42	Corn Silage
Jul	Lagoon Pump	1.25	1,357,713	33,942.81	2.48	84.19	0.29	9.97	3.05	103.57	4810.00	817.71	Corn Silage
Jul	Well 1E	10.00	10,861,700	271,542.50	0.19	52.13	0.00	0.00	0.00	0.00	1550.00	2108.02	Corn Silage
Aug	Well 5E	10.00	10,861,700	271,542.50	0.15	41.36	0.00	0.00	0.00	0.00	988.00	1343.69	Corn Silage
Sep	Well 5E	4.00	4,344,680	108,617.00	0.15	16.55	0.00	0.00	0.00	0.00	988.00	537.48	Corn Silage
					TN Applied	*649.83*	**P Applied**	*43.84*	**K Applied**	*466.33*	**TDS Applied**	*12533.32*	

Field ID **Field 6E** **Farm** **Sozinho Dairy #2** **Year** **2024**

Liquid Commercial Fertilizer Applications

(1) Date (month)	(2) Fertilizer Source[1]	(3) Volume Applied (gallons)	(4) Volume / Acre (gal/acre) (2) / (A)	(5) Fertilizer Weight (lbs/gal)	(6) Fert. Analysis TN^2 %	(7) N Applied (lb/acre) (3) * (4) * (5) / 100	(8) Fert. Analysis P^2 %	(9) P Applied (lb/acre) (3) * (4) * (7) / 100	(10) Fert. Analysis K^2 %	K Applied (lb/acre) (3) * (4) * (9) / 100	CROP
				TN Applied		*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID **Field 6E** **Farm** **Sozinho Dairy #2** **Year** **2024**

Dry Manure Applications

Date (month)	(1) Application Source	(2) Vol. Applied (tons)	(3) Vol. per Acre (tons/ac) (2) / (A)	(4) Lab Analysis TN- (%) - rcvd	(5) N Applied (lb/acre) (3) * (4)	(6) Lab Analysis P- (%) - rcvd	(7) P Applied (lb/acre) (3) * (6)	(8) Lab Analysis K- (%) - rcvd	(9) K Applied (lb/acre) (3) * (8)	CROP
Oct	Corral	400	10.00	0.33	65.33	0.07	14.00	0.15	29.33	Wheat Silage
				TN Applied	*65.33*	**P Applied**	*14.00*	**K Applied**	*29.33*	

rcvd = Lab analysis are reports "as received" format.

Dry Commercial Fertilizer Applications

Date (month)	(1) Fertilizer Source[1]	(2) Vol. Applied (lbs)	(3) Vol. per Acre (lbs/ac) (2) / (A)	(4) Fert. Analysis TN^2 %	(5) N Applied (lb/acre) (3) * (4)	(6) Fert. Analysis P^2 %	(7) P Applied (lb/acre) (3) * (6)	(8) Fert. Analysis K^2 %	(9) K Applied (lb/acre) (3) * (8)	CROP
			0.00		0.00		0.00		0.00	
				TN Applied	*0.00*	**P Applied**	*0.00*	**K Applied**	*0.00*	

Field ID Field 6E **Farm** Sozinho Dairy #2 **Year** 2024

Nutrient Application & Removal Summary

Crop Application Summary

	Wheat Silage				Corn Silage							
	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)	N (lb/acre)	P (lb/acre)	K (lb/acre)	TDS (lb/acre)
Required Nutrients (B) (lbs/ac)	252.69	50.54	504.15	2000.00	334.64	53.54	294.48	2000.00				2000.00
Allowable to Apply (Bc') (lbs/ac)	353.77				468.49							
Maximum Nitrogen to Apply (Bm') (lbs/ac)	416.94				552.15							
Wastewater & Fresh Water Applications	189.14	14.52	156.12	3164.84	460.69	29.33	310.21	9368.48				
Liquid Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Dry Manure Applications	65.33	14.00	29.33		0.00	0.00	0.00					
Dry Fertilizer Applications	0.00	0.00	0.00		0.00	0.00	0.00					
Atmospheric Deposition	7.00				7.00				0.00			
Nutrients Planned per Crop (lbs/acre)	261.48	28.52	185.45	3164.84	467.69	29.33	310.21	9368.48	0.00	0.00	0.00	0.00
N-Ratio per Crop*	**1.03** GOOD				**1.40** GOOD							

Whole Field Application Summary

Planned Nutrient Inputs from All Sources

Field Inputs	N Applied (lb/acre)	P Applied (lb/acre)	K Applied (lb/acre)	TDS Applied (lb/acre)
Wastewater & Fresh Water Applications	649.83	43.84	466.33	12533.32
Liquid Fertilizer Applications	0.00	0.00	0.00	NA
Dry Manure Applications	65.33	14.00	29.33	
Dry Fertilizer Applications	0.00	0.00	0.00	
Atmospheric Deposition	14.00			
Total Nutrients Planned (lbs/acre)	**729.17**	**57.84**	**495.66**	**12533.32**
Total Nutrients Required (lbs/Field)	**23,493**	**4,163**	**31,945**	**120,000**
Total Nutrients Planned (lbs/Field)	**29,167**	**2,314**	**19,827**	**501,333**

N-Ratio for Field	**1.24**

N-Ratio = Based on nutrients required verses nutrients planned. Target ratio is 1.4. Maximum N-Ratio is 1.65. Additional sampling is required to justify using the Maximum application schedule. Refer the MRP in the Dairy General Order for more information.

Sozinho Dairy #2

6. Summary of Nitrogen Ratios Per Field

Refer to the *Planned Nutrient Application & Removal Record* for more information about an individual field.

Field	Crop 1	N-Ratio 1	Crop 2	N-Ratio 2	Crop 3	N-Ratio 3	Overall N-Ratio
Field 01E	Wheat Silage	1.39	Corn Silage	1.37			1.38
Field 03E	Wheat Silage	1.33	Corn Silage	1.33			1.33
Field 1E	Wheat Silage	1.40	Corn Silage	1.38			1.39
Field 2E	Wheat Silage	1.40	Corn Silage	1.23			1.30
Field 3E	Wheat Silage	1.33	Corn Silage	1.28			1.30
Field 4E	Wheat Silage	1.33	Corn Silage	1.29			1.31
Field 5E	Wheat Silage	1.31	Corn Silage	1.40			1.36
Field 6E	Wheat Silage	1.03	Corn Silage	1.40			1.24

Sozinho Dairy #2

Nutrient Management Plan - Nutrient Budget Summary

Based on: MAX Herd Population

Waste Volume Production & Use

	Volume Produced[1]	Potential Volume Utilized by Crops[2]	Exports[3]
Wastewater (ac-ft)	100	98	0
Corral Solids Collected (tons/yr)	1,537	780	800
Separator Solids Collected (tons/yr)	0	800	0
Dry Manure used for bedding annually (tons/yr)			208

Nutrient Sources

Dairy Nutrients	TN	P	K
Gross Wastewater	300,642	75,428	94,777
Gross Manure	110,912	28,470	34,855
Net Wastewater (after losses)	133,088	14,037	151,256
Net Manure (after losses)	51,043	22,078	98,735
Net Available	184,131	36,115	249,991

Other Nutrients	TN	P	K
Irrigation Sources	55,481	0	0
Commercial Fertilizer	0	0	0
Atmospheric Deposition	3,528		
Exports[3]	26,560	11,488	51,376
Crop Nutrient Requirements	148,006	26,228	201,254

Whole Farm Nitrogen Ratio

	Total Nitrogen Available	Total Nitrogen Required	Balance[4]
Farm Balance	216,580	148,006	68,574
		Nitrogen Ratio	**1.46**

Nutrient Balance is:

Sufficient

☑ No adjustments or modifications are necessary for nutrient balance at this time. Whole farm nitrogen balance is below 1.65.

Insufficient

☐ Retrofitting Plan & Schedule to improve nutrient balance is needed. Whole farm nitrogen balance is above 1.65.

Sozinho Dairy #2

NOTES:

[1]Annual Volume and Nutrient Production are calculated values based on the herd size, water production and runoff areas. The wastewater volume shown is the total volume entering the storage ponds annually, which includes process wastewater, milk barn water, runoff and rainfall. Additional details of wastewater production are in the Waste Management Plan. Solids collected volume is the total of all solids produced annually, which includes dairy manure solids, bedding materials, and separated solids. Refer to Section 2. Manure Production Estimates.

[2]Annual Volume and Nutrient Usage is based on average laboratory analysis of waste products and typical application practices. Potential nutrient utilization of wastewater and dry manure may exceed the volume produced, which indicates the potential addition of other nutrient sources may be needed to meet crop requirements. Refer to Section 5: Waste Application to Crops.

[3]Exports of wastewater and solids are based on dairy records. Dry manure may be stored for multiple years prior to exporting resulting in a volume exported greater than that produced in a single year. Refer to Section 1: General Inputs for WMP & NMP.

[4]Balance is the difference between the nitrogen required to grow the intended crops and nutrients available to grow those crops. A negative balance reflects the lack of available nutrients for the crops.

*All dates are estimated based on historical records provided by the owner/operator of the facility. Due to agriculture's dependency on weather, actual dates of plant, harvest and application events may vary as much as 15 days before or after the intended date.

*Any application planned for Nov, Dec, Jan or Feb will be subject to weather and soil conditions at time of application. No waste application should occur when soil is saturated. It is the discretion of the owner/operator to determine if conditions are favorable for an application event prior to application.

*Fresh water applications are based on an average year of available surface water. When available, surface water will be used before groundwater.

*Total Nutrients Required = Nutrients required by crop based on average yield and harvested tissue analysis. No multiplication factor included.

*Total Allowable Nuttrients = Nutrients required by crop times the 1.4.

*Total Maximum Nutrients = Nutrients required by crop times the 1.65. A mid-season tissue sample should be collected and analyzed to ensure crop needs the extra nutrients.

*Total Nutrients Planned = Summation of the nutrients to be applied based on proposed plans, includes all sources.

*Year NA means that this plan can be used for multiple years. A similar form can be used to record the actual annual applications.

Sozinho Dairy #2

Nutrient Management Plan - Nutrient Budget Certification

A. Dairy Facility Information

Dairy Name:	Sozinho Dairy #2		
Physical Address:	8489 E. Elkhorn		
	Selma	CA	93662
County:	Fresno		

Calculations Based On: MAX Herd Population

Whole Farm Nitrogen Ratic	**1.46**

B. Documentation of Qualifications and Plan Development

I certify that I meet the requirements as a certified specialist in developing nutrient management plans as described in Attachment C of Waste Discharge Requirements General Order No. R5-2007-0035 and that I prepared the Nutrient Budget plan.

Certified Crop Advisor # 17275

TITLE/QUALIFICATIONS OF CERTIFIED NUTRIENT MANAGEMENT SPECIALIST

Louis R. Oliveira 7/28/24

SIGNATURE OF TRAINED PROFESSIONAL DATE

Louis R. Oliveira

PRINT OR TYPE NAME

4184 North Knoll Drive Fresno, CA 93722

BUSINESS MAILING ADDRESS

559-268-9755

PHONE NUMBER

C. Owner and/or Operator 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.

SIGNATURE OF OWNER OF FACILITY

SIGNATURE OF OPERATOR OF FACILITY

Danny Sozinho

PRINT OR TYPE NAME

PRINT OR TYPE NAME

7/29/24

DATE

DATE

Field & Crop Summary

Updated: **2024**

		Crop Needed			WW			Irrigation			DM			Fertilizers			Atmospheric Deposition				
Field	**acres**	**N**	**P**	**K**	**N**	**P**	**K**	**N**	**P**	**K**	**N**	**P**	**K**	**N**	**P**	**K**	**N**	**Total Planned N**	**Total Planned P**	**Total Planned K**	**Overall N-Ratio**
Field 01E	8	4,698.61	832.64	6,389.03	3,219.49	350.73	3,730.64	1,910.26	0.00	0.00	1232.00	592.00	2774.40	0.00	0.00	0.00	112.00	6473.76	942.73	6505.04	1.38
Field 03E	4	2,349.30	416.32	3,194.51	1,677.10	183.34	1,948.18	768.82	0.00	0.00	616.00	296.00	1387.20	0.00	0.00	0.00	56.00	3117.92	479.34	3335.38	1.33
Field 1E	40	23,493.05	4,163.19	31,945.14	17,509.22	1,927.91	20,368.97	9,723.56	0.00	0.00	4928.00	2368.00	11097.60	0.00	0.00	0.00	560.00	32720.78	4295.91	31466.57	1.39
Field 2E	40	23,493.05	4,163.19	31,945.14	17,509.22	1,927.91	20,368.97	7,638.32	0.00	0.00	4928.00	2368.00	11097.60	0.00	0.00	0.00	560.00	30635.54	4295.91	31466.57	1.30
Field 3E	40	23,493.05	4,163.19	31,945.14	16,097.47	1,753.64	18,653.18	7,778.85	0.00	0.00	6160.00	2960.00	13872.00	0.00	0.00	0.00	560.00	30596.32	4713.64	32525.18	1.30
Field 4E	40	23,493.05	4,163.19	31,945.14	16,097.47	1,753.64	18,653.18	7,869.51	0.00	0.00	6160.00	2960.00	13872.00	0.00	0.00	0.00	560.00	30686.98	4713.64	32525.18	1.31
Field 5E	40	23,493.05	4,163.19	31,945.14	18,920.96	2,102.17	22,084.76	9,895.82	0.00	0.00	2613.33	560.00	1173.33	0.00	0.00	0.00	560.00	31990.12	2662.17	23258.10	1.36
Field 6E	40	23,493.05	4,163.19	31,945.14	16,097.47	1,753.64	18,653.18	9,895.82	0.00	0.00	2613.33	560.00	1173.33	0.00	0.00	0.00	560.00	29166.63	2313.64	19826.52	1.24
TOTALS	**252**	**148,006**	**26,228**	**201,254**	**107,128**	**11,753**	**124,461**	**55,481**	**0**	**0**	**29,251**	**12,664**	**56,447**	**0**	**0**	**0**	**3,528**	**195,388**	**24,417**	**180,909**	**1.33**

APPENDIX H

PEST & VECTOR MANAGEMENT PLAN

Appendix H
Pest Control Methods Record

Frequency: Minimum On A Quarterly Basis
When Potential For Infestation is High (Broken Water Line, Manure Build-Up at Fenceline, Vegetative Growth Near Ponds etc.)

Inspection Areas: Corrals, Retention Ponds, Settling Basins, Milk Barns, Watering Areas, Freestalls, Flush Lanes, Shades, Feed Storage Areas, Feeding Areas, Vermifiltration Beds

Date	Pest Control Methods Used

Appendix H
Pest and Vector Complaint Register

Date of Complaint	Complaint Recipient	Action Taken To Determine Cause of Pest Complaint	Action Taken To Resolve The Pest Problem	Results of the Action	Additional Action, If Any, Required To Eliminate The Pest Problem From Re-Occuring

APPENDIX I

RECORD KEEPING FORMS