STANISLAUS COUNTY PLANNING COMMISSION

August 17, 2023

STAFF REPORT

USE PERMIT APPLICATION NO. PLN2021-0033
JOHN BRASIL DAIRY

REQUEST: TO EXPAND AN EXISTING DAIRY FACILITY LOCATED ON TWO PARCELS ACROSS A TOTAL OF 135.5± ACRES, IN THE GENERAL AGRICULTURE (A-2-40) ZONING DISTRICT, TO ALLOW THE HERD SIZE TO INCREASE FROM 442 MATURE COWS TO 1,500 AND FROM 600 SUPPORT STOCK TO 1,200, AND TO ALLOW CONSTRUCTION OF A 10,140 SQUARE-FOOT FREE STALL BARN, CORRALS TOTALING 5± ACRES, AND A NEW WASTEWATER POND.

APPLICATION INFORMATION

Applicant:	John Brasil, John Brasil Dairy
Property owner:	Brasil Family Trust (John H. Brasil and Maria G. Brasil)
Agent:	Manny Sousa, Sousa Engineering
Location:	1769, 1707, 2230, 2324, and 2300 S Mitchell Road, between W Linwood Avenue and Simmons Road, in the Turlock area.
Section, Township, Range:	25-05-09 and 26-05-09
Supervisorial District:	Two (Supervisor Chiesa)
Assessor's Parcel:	058-015-008, 058-015-012, and 058-016-016
Referrals:	See Exhibit H Environmental Review Referrals
Area of Parcel(s):	135.5± acres
Water Supply:	Private well
Sewage Disposal:	Private septic system
General Plan Designation:	Agriculture
Community Plan Designation:	N/A
Existing Zoning:	General Agriculture (A-2-40)
Sphere of Influence:	N/A
Williamson Act Contract No.:	78-3115 (portion)
Environmental Review:	Mitigated Negative Declaration
Present Land Use:	Existing dairy facility, four single-family dwellings, and irrigated cropland.
Surrounding Land Use:	Confined animal facilities, irrigated croplands, and scattered single-family dwellings in all directions.

RECOMMENDATION

Staff recommends the Planning Commission approve this request based on the discussion below and on the whole of the record provided to the County. If the Planning Commission decides to approve the project, Exhibit A provides an overview of all of the findings required for project approval.

PROJECT DESCRIPTION

The project site is located on 135.5± acres in the General Agriculture (A-2-40) zoning district. The applicant proposes to expand the herd from 442 mature cows to 1,500 mature cows, consisting of primarily milk cows and no dry cows. Under this request, the applicant also proposes to increase support stock number from 600 to 1,200. The increase to support stock will consist of: 400 heifers 7-14 months old; 400 heifers 4-8 months old; and 400 calves 4-6 months old. Additionally, the applicant proposes to construct a 10,140± square-foot free stall barn over existing corrals on Assessor Parcel Number (APN) 058-016-016, corrals that will total 5± acres on APN 058-015-012, and a new wastewater pond, 1.3± acres in size, on APN 058-015-008 (see Exhibit B-6 and B-7 – *Maps and Site Plans*).

The applicant anticipates generation of 2,184± cubic feet of additional manure from the proposed herd expansion, which will result in a total of 3,866± cubic feet of manure per day. Nutrients produced from the herd will be utilized to fertilize approximately 72± acres of irrigated cropland located on the project site. The dairy production area is comprised of approximately 26.4± acres. Hours of operation are 24-hours a day, seven days a week. The dairy currently receives three visits for tallow and veterinary services every two weeks, and a total of four milk and feed truck trips per day. The proposed request is expected to increase the number of feed truck trips by one for a combined total of five milk and feed truck trips per day as part of this request; no increase to the current tallow, or veterinary service trips are proposed. The number of employees on a maximum shift is expected to remain the same at four.

SITE DESCRIPTION

The 135.5± acre project site is located on Mitchell Road, between Linwood Avenue and Simmons Road, in the Turlock area, and consists of two legal parcels covered under three separate Assessor's Parcel Numbers (APNs): APN 058-016-016 and 058-015-008 comprise one legal parcel and 058-015-012 is a separate legal parcel. APN 058-016-016 is on the west side of Mitchell Road and APNs 058-015-008 and -012 are on the east side of Mitchell Road (see Exhibit B-6 – *Maps and Site Plans*). Present land uses on each parcel are as follows: APN 058-016-016 includes a dairy facility, single-family dwelling, and irrigated crops; APN: 058-015-008 includes a wastewater storage pond, dry manure storage area, and irrigated crops; and APN: 058-015-012 includes a dairy facility, three single-family dwellings, wastewater storage pond, and irrigated crops. Dwellings on the project site are occupied by employees and the dairy operator. All parcels are served by private wells and septic systems and have access to County-maintained roads.

The project site is surrounded by confined animal facilities, irrigated croplands, and scattered single-family dwellings in all directions.

ISSUES

Two issues have been identified as part of the review of the project:

The first issue relates to a referral response received from the Central Valley Regional Water Quality Control Board (CVRWQCB) during the projects Initial Study (IS) 30-day public review period (see Exhibit F - *Central Valley Regional Water Quality Control Board Referral Response Letter, dated July 18, 2023*). The CVRWQCB's letter states that they do not agree with the IS and Mitigated Negative Declaration (MND) prepared for the project which found impacts to Hydrology and Water Quality to be less than significant with mitigation included; further, the response letter states that the mitigation measures included in the IS are inadequate to address potential impacts to groundwater, that there is a fair argument that the proposed project could result in significant water quality impacts, and that the County should prepare an Environmental Impact Report (EIR) rather than a MND. Under the California Environmental Quality Act (CEQA), the CVRWQCB is a responsible state agency with the statutory responsibility to protect water quality in California's Central Valley.

The County's purpose in requiring use permits for new or expanding dairies is to provide dairy operators with an environmental document and determination under CEQA that may be used by the CVRWQCB in issuing new or modified individual permits, waivers, orders, or waste discharge requirements (WDRs). Individual WDRs are required for new and/or expanding dairies as the subject facilities are not covered under CVRWQCB's existing Reissuance of Waste Discharge Requirements General Order for Existing Milk Cow Dairies (Reissued Dairy General Order).

As mitigated, the proposed project includes implementation of a waste management plan (WMP) and nutrient management plan (NMP) that address the additional waste to be discharged as a result of the herd expansion. The WMP and NMP for the project are included as Attachments I and II of the Initial Study (see Attachments I and II of Exhibit D - *Initial Study, with Attachments*). Under the County's practice for processing use permits for dairy expansions, the WMP and NMP are sent to the CVRWQCB for review and acceptance prior to circulation of the IS; however, as of December of 2021, the CVRWQCB has informed the County that it has placed the review of WMPs or NMPs for expanding or new dairies on hold. Without acceptance of the WMP and NMP from the CVRWQCB, the County prepared a MND with more specific requirements to be met in terms of best management practices (BMP's) and protection of surface and groundwater from salts in wastewater.

While the County's previous environmental assessments prepared for dairy expansion requests have relied on the understanding that individual WDRs would be issued following the County's approval of the project, the County has learned that the CVRWQCB has instead been relying on the following provision of the State Water Code (Section 13264):

> "(a) No person shall initiate any new discharge of waste or make any material changes in any discharge, or initiate a discharge to, make any material changes in a discharge to, or construct, an injection well, prior to the filing of the report required by Section 13260 and no person shall take any of these actions after filing the report but before whichever of the following occurs first:
>
> (1) The issuance of waste discharge requirements pursuant to Section 13263.

(2) The expiration of 140 days after compliance with Section 13260 if the waste to be discharged does not create or threaten to create a condition of pollution or nuisance and any of the following applies:

(A) The project is not subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code).

(B) The regional board is the lead agency for purposes of the California Environmental Quality Act, a negative declaration is required, and at least 105 days have expired since the regional board assumed lead agency responsibility.

(C) The regional board is the lead agency for the purposes of the California Environmental Quality Act, and environmental impact report or written documentation prepared to meet the requirements of Section 21080.5 of the Public Resources Code is required, and at least one year has expired since the regional board assumed lead agency responsibility.

(D) The regional board is a responsible agency for purposes of the California Environmental Quality Act, and at least 90 days have expired since certification or approval of environmental documentation by the lead agency."

In this case section (D) would be applicable in that the CVRWQCB is a responsible agency for the purposes of CEQA. Based on the CVRWQCB's letter and staff discussion with CVRWQCB staff, this provision is now in question based on the requirement that the discharge not create or threaten to create a condition of pollution or nuisance.

The July 18, 2023, CVRWQCB referral response letter correctly identifies that the IS concludes a less than significant impact with mitigation based on the following:

1. Implementation of Best Management Practices (BMP).
2. Compliance with the Dairy's Waste and Nutrient Management Plans (WMP and NMP).
3. Enrollment in the Central Valley Dairy Representative Monitoring Program (CVDRMP) to meet the requirements for groundwater monitoring.

The Mitigation Monitoring and Reporting Program (MMRP) prepared for this project requires that the applicant comply with the mitigation measures prior to expansion of the herd (see Exhibit D - *Initial Study, with Attachments*). The CVRWQCB is the responsible agency for approving dairy herd expansions and accordingly, the authorization of the herd expansion is dependent on the CVRWQCB's approval. Reliance on the State Water Code places the CVRWQCB in a position to either accept or reject the County's CEQA determination based on their own finding that the discharge does not create or threaten to create a condition of pollution or nuisance.

Two use permits for expanding dairy facilities have been heard by the Planning Commission since the County became aware that the CVRWQCB had placed review of NMPs and WMPs on hold:

- Use Permit (UP) Application No. PLN2021-0056 – N&C Silveira Dairy – Hultberg Road included mitigation measures requiring implementation of BMP's and compliance with the Dairy's WMP and NMP, similar to those applied to the proposed project, along with three additional mitigation measures requiring compliance with permit requirements to protect surface waters and groundwater from salts in wastewater; groundwater monitoring of the

on-site domestic and irrigation wells, and required actions if the dairy showed an increased concentration in groundwater of constituents of concern. No response from the CVRWQCB was received in response to the IS/MND prepared for that project and the Planning Commission approved the UP. The August 18, 2022 Planning Commission Staff Report may be found here: https://www.stancounty.com/planning/agenda/2022/08-18-2022/7_A.pdf

- UP Application No. PLN2021-0030 – Silva Holsteins Diary included the same mitigation measures applied to N&C Silveira Dairy, along with the requirement for enrollment in the CVDRMP being applied to the proposed project. A comment letter received on October 5, 2022 from the CVRWQCB stated the mitigation measures included in the IS were inadequate to address potential impacts to groundwater and that degradation and pollution of groundwater resources were potentially significant adverse impacts that required consideration in an Environmental Impact Report (EIR). Based on the CVRWQCB having determined that the mitigation identified for the project was not sufficient to reduce the potential impacts to groundwater quality levels to a level of less than significant, staff recommended the Planning Commission take no action to adopt the MND and continue the project indefinitely to allow time to determine if an alternative path could be identified (such as revising the IS to include mitigation measures that the CVRWQCB felt were adequate to mitigate all potential impacts). With the understanding that CVRWQCB staff had indicated that no mitigation measures would be sufficient until the CVRWQCB adopts a new general order for expansion, an effort that could take several years, and, at the request of the applicant, the Planning Commission adopted the MND and approved the UP. As part of the approval, the Planning Commission modified the timing of the mitigation measures from "prior to issuance of a grading or building permit" to "prior to heard expansion". The November 3, 2022 Planning Commission Memo may be found here: https://www.stancounty.com/planning/agenda/2022/11-03-2022/7_C.pdf

Based on the Planning Commission's prior actions to approve dairy expansion permits despite objections to the environmental assessment from the CVRWQCB and the applicant's desire to have the project continue forward with the understanding that actual herd expansion is still subject to the CVRWQCB's acceptance of the County's environmental determination, staff is recommending approval of this request. If the Planning Commission believes that the mitigation measures identified in the IS/MND are sufficient to avoid potentially significant impacts to groundwater quality, then the findings required for approval of the project, including adoption of the MND, are provided in Exhibit A of the Planning Commission Staff Report. Since the mitigation measures are applicable at the time of herd expansion, the applicant may construct new buildings for the existing herd without any question of conflict with the MMRP. Building permits for the expansion of facilities for the existing herd are not subject to obtaining a use permit.

The second issue is with the third dwelling on Assessor Parcel Number (APN) 058-015-012 which is a manufactured home, permitted under a Temporary Mobile Home Permit (TMHP) for a full-time employee, that is not in compliance. Enforcement of the TMHP is ongoing independent of this use permit application, however, a condition has been placed on the project to ensure compliance before any further expansion of the dairy occurs.

GENERAL PLAN CONSISTENCY

The site is currently designated "Agriculture" in the Stanislaus County General Plan; this designation is consistent with the site's General Agriculture (A-2-40), 40-acre minimum, zoning district. The agricultural designation recognizes the value and importance of agriculture by acting to preclude incompatible urban development within agricultural areas and, as such, should generally be zoned with 40- to 160-acre minimum parcel sizes. This designation establishes agriculture as the primary use, but allows dwelling units, limited agriculturally related commercial services, agriculturally related light industrial uses, and other uses which by their unique nature are not compatible with urban uses, provided they do not conflict with the primary use.

The proposed project is addressed by multiple goals, policies, and implementation measures of the Land Use and Agriculture Elements of the General Plan. Goal One, Policy Two of the Land Use Element requires that land designated Agriculture be restricted to uses that are compatible with agricultural practices. Goal Two, Policy 14, Implementation Measure One of the Land Use Element requires all development proposals that require discretionary action to be carefully reviewed to ensure that approval will not adversely affect an existing agricultural area. Goal Three, Policy 17 of the Land Use Element states that, "Agriculture, as the primary industry of the County, shall be promoted and protected." Goal One of the Agricultural Element is to strengthen the agricultural sector of our economy.

Policy 1.10 of the Agricultural Element requires buffers between agriculture operations and nonagricultural uses in order to minimize conflicts. Dairies are included in the Agricultural Element's definition of "Agriculture" and are considered to be permitted agricultural uses. Accordingly, an agricultural buffer would not be required between surrounding agricultural uses and the proposed project, as the proposed project is also considered to be an agricultural use.

Staff believes that the proposed project is consistent with the General Plan policies discussed above.

ZONING CONSISTENCY

The site is currently zoned General Agriculture (A-2-40), 40 acres minimum. It is the intent of the A-2 zoning district to support and enhance agriculture as the predominant land use in the unincorporated areas of Stanislaus County. The procedures contained within the A-2 zoning district are specifically established to ensure that all land uses are compatible with agriculture.

As discussed in the *Issues* section of the report, Confined Animal Facilities (CAF), which include dairies, are considered to be permitted agricultural uses; however, a use permit is required for new or expanding CAFs requiring a new or modified permit, waiver, order, or Waste Discharge Requirements (WDRs) from the Central Valley Regional Water Quality Control Board (CVRWQCB), where the issuance of such permit, waiver, order, or WDR requires compliance with the California Environmental Quality Act (CEQA) (Section 21.20.030 (F) of the Stanislaus County Zoning Ordinance). The County adopted the use permit requirement in 2003 in order to allow the County to facilitate the environmental review (in accordance with CEQA) required for issuance of any permit, waiver, order, or WDR by the CVRWQCB. The proposed project is only required to obtain a use permit because the CVRWQCB has determined that the proposed dairy is subject to issuance of WDRs requiring CEQA review. WDRs are State regulations pertaining to the treatment, storage, processing or disposal of solid waste.

Any project required to obtain a use permit is subject to the following finding for approval:

> *The establishment, maintenance, and operation of the proposed use or building applied for is consistent with the General Plan designation of "Agriculture" and will not, under the circumstances of the particular case, be detrimental to the health, safety, and general welfare of persons residing or working in the neighborhood of the use and that it will not be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.*

CAFs are agricultural uses protected by the County's Right-to-Farm Ordinance which was adopted in 1991. The Ordinance states that:

> *The County of Stanislaus recognizes and supports the right-to-farm agricultural lands in a manner consistent with accepted customs and standards. Residents of property on or near agricultural land should be prepared to accept the inconveniences or discomforts associated with agricultural operations, including but not limited to noise, odors, flies, fumes, dust, the operation of machinery of any kind during any 24-hour period (including aircraft), the storage and disposal of manure, and the application by spraying or otherwise of chemical fertilizers, soil amendments, herbicides, and pesticides. Stanislaus County has determined that inconveniences or discomfort associated with such agricultural operations shall not be considered to be a nuisance if such operations are consistent with accepted customs and standards.*

The project site is currently enrolled under Williamson Act Contract No. 78-3115, with the exception of a portion of Assessor Parcel Number 058-015-012. Section 21.20.045(A) of the Zoning Ordinance requires that all uses requiring use permits that are approved on Williamson Act contracted lands shall be consistent with the following three principles of compatibility:

1. *The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in the A-2 zoning district.*

2. *The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in the A-2 zoning district. Uses that significantly displace agricultural operations on the subject contracted parcel or parcels may be deemed compatible if they relate directly to the production of commercial agricultural products on the subject contracted parcel or parcels or neighboring lands, including activities such as harvesting, processing, or shipping.*

3. *The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.*

Dairies are considered to be an agricultural use and accordingly are considered to be consistent with the Williamson Act Principals of Compatibility.

Staff believes the necessary findings for approval of this project can be made. With the mitigation measures and conditions of approval in place, there is no indication that, under the circumstances of this particular case, the proposed project will be detrimental to the health, safety, and general welfare of persons residing or working in the neighborhood of the use or that it will be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the

County. Dairy facilities are an important component of the agricultural economy in Stanislaus County. There is no indication this project will interfere or conflict with other agricultural uses in the area, compromise the long-term productive agricultural capability of the subject parcel or other contracted parcels in the A-2 zoning district, or result in the significant removal of adjacent contracted land from agricultural or open-space use.

ENVIRONMENTAL REVIEW

An environmental assessment for the project has been prepared in accordance with the California Environmental Quality Act (CEQA). The assessment included preparation of an Initial Study (see Exhibit D – *Initial Study, with Attachments*). Pursuant to CEQA, the proposed project was circulated to interested parties and responsible agencies for review and comment and no significant issues, aside from those discussed in the Issues section of this report, were raised (see Exhibit H – *Environmental Review Referrals*).

As discussed in the *Issues* section of this report, Mitigation Measures have been incorporated into the project to mitigate potential impacts to water quality. The Mitigation Measures included in the Initial Study and Mitigation Monitoring and Reporting Program for the project include the following: requirements for the operator to follow best management practices; compliance with the Waste Management Plan (WMP), Nutrient Management Plan (NMP), and enrollment in the Central Valley Dairy Representative Monitoring Program (CVDRMP) to meet the requirements for groundwater monitoring.

A Mitigated Negative Declaration has been prepared for adoption prior to action on the project (see Exhibit F – *Mitigated Negative Declaration*). Conditions of approval reflecting referral responses have been placed on the project (see Exhibit C – *Conditions of Approval and Mitigation Measures*).

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Note: Pursuant to California Fish and Game Code Section 711.4, all project applicants subject to the California Environmental Quality Act (CEQA) shall pay a filing fee for each project; therefore, the applicant will further be required to pay **$2,821.00** for the California Department of Fish and Wildlife (formerly the Department of Fish and Game) and the Clerk-Recorder filing fees. The attached Conditions of Approval ensure that this will occur.

Contact Person: Teresa McDonald, Associate Planner, (209) 525-6330

Attachments:

Exhibit A - Findings and Actions Required for Project Approval
Exhibit B - Maps and Site Plans
Exhibit C - Conditions of Approval and Mitigation Measures
Exhibit D - Initial Study, with Attachments
Exhibit E - Mitigation Monitoring and Reporting Program
Exhibit F - Mitigated Negative Declaration
Exhibit G - Central Valley Regional Water Quality Control Board Referral Response Letter, dated July 18, 2023
Exhibit H - Environmental Review Referrals

Findings and Actions Required for Project Approval

1. Adopt the Mitigated Negative Declaration pursuant to CEQA Guidelines Section 15074(b), by finding that on the basis of the whole record, including the Initial Study and any comments received, that there is no substantial evidence the project will have a significant effect on the environment and that the Mitigated Negative Declaration reflects Stanislaus County's independent judgment and analysis.

2. Order the filing of a Notice of Determination with the Stanislaus County Clerk-Recorder's Office pursuant to Public Resources Code Section 21152 and CEQA Guidelines Section 15075.

3. Find That:

    a. The establishment, maintenance, and operation of the proposed use or building applied for is consistent with the General Plan designation of "Agriculture" and will not, under the circumstances of the particular case, be detrimental to the health, safety, and general welfare of persons residing or working in the neighborhood of the use and that it will not be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.

    b. The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in the A-2 zoning district.

    c. The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in the A-2 zoning district. Uses that significantly displace agricultural operations on the subject contracted parcel or parcels may be deemed compatible if they relate directly to the production of commercial agricultural products on the subject contracted parcel or parcels or neighboring lands, including activities such as harvesting, processing, or shipping.

    d. The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

    e. The project will increase activities in and around the project area, and increase demands for roads and services, thereby requiring dedication and improvements.

4. Approve Use Permit Application No. PLN2021-0033 – John Brasil Dairy, subject to the attached Conditions of Approval and Mitigation Measures.

JOHN BRASIL DAIRY

UP
PLN2021-0033

AREA MAP

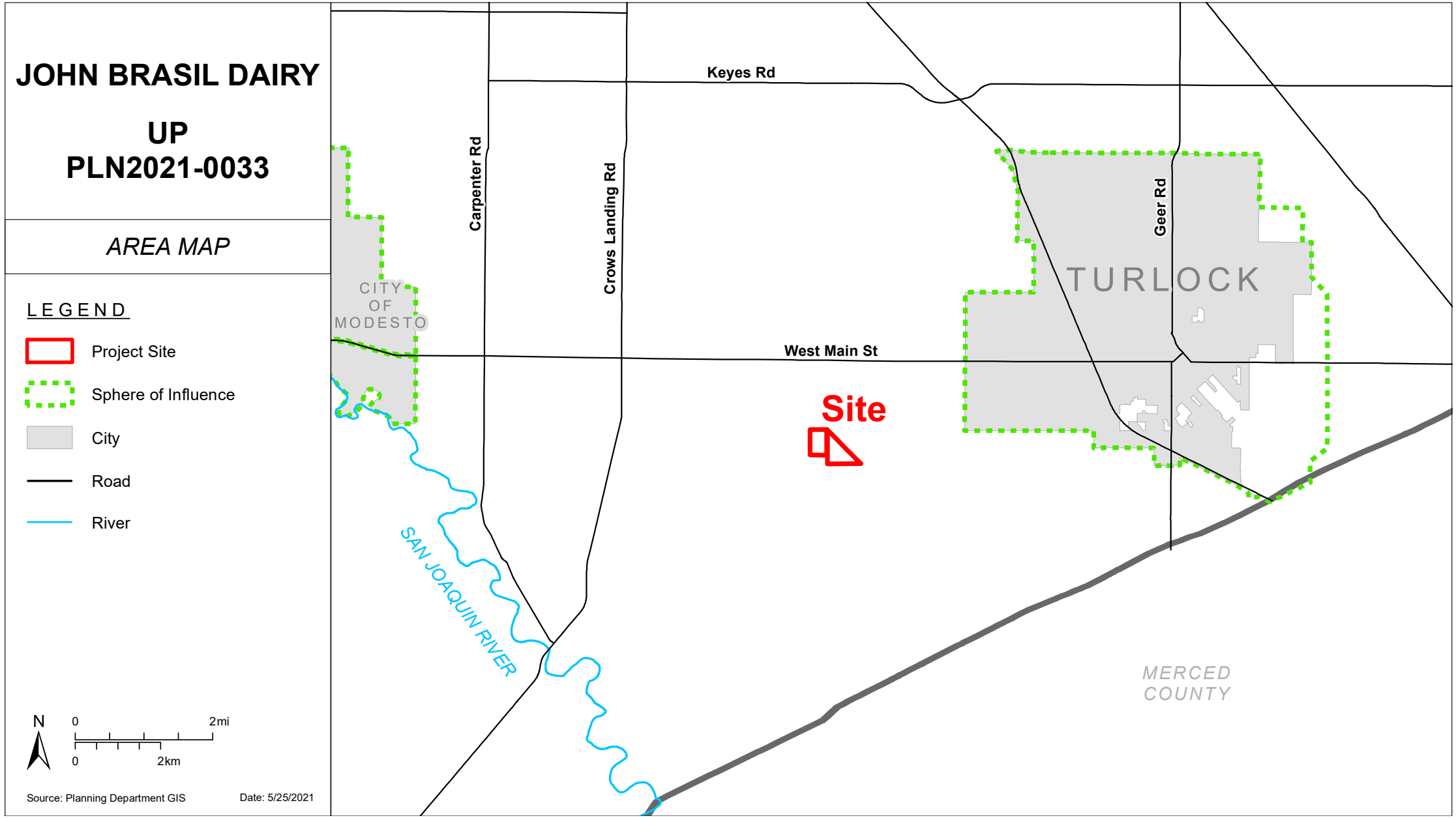


EXHIBIT B

JOHN BRASIL DAIRY

UP
PLN2021-0033

GENERAL PLAN MAP

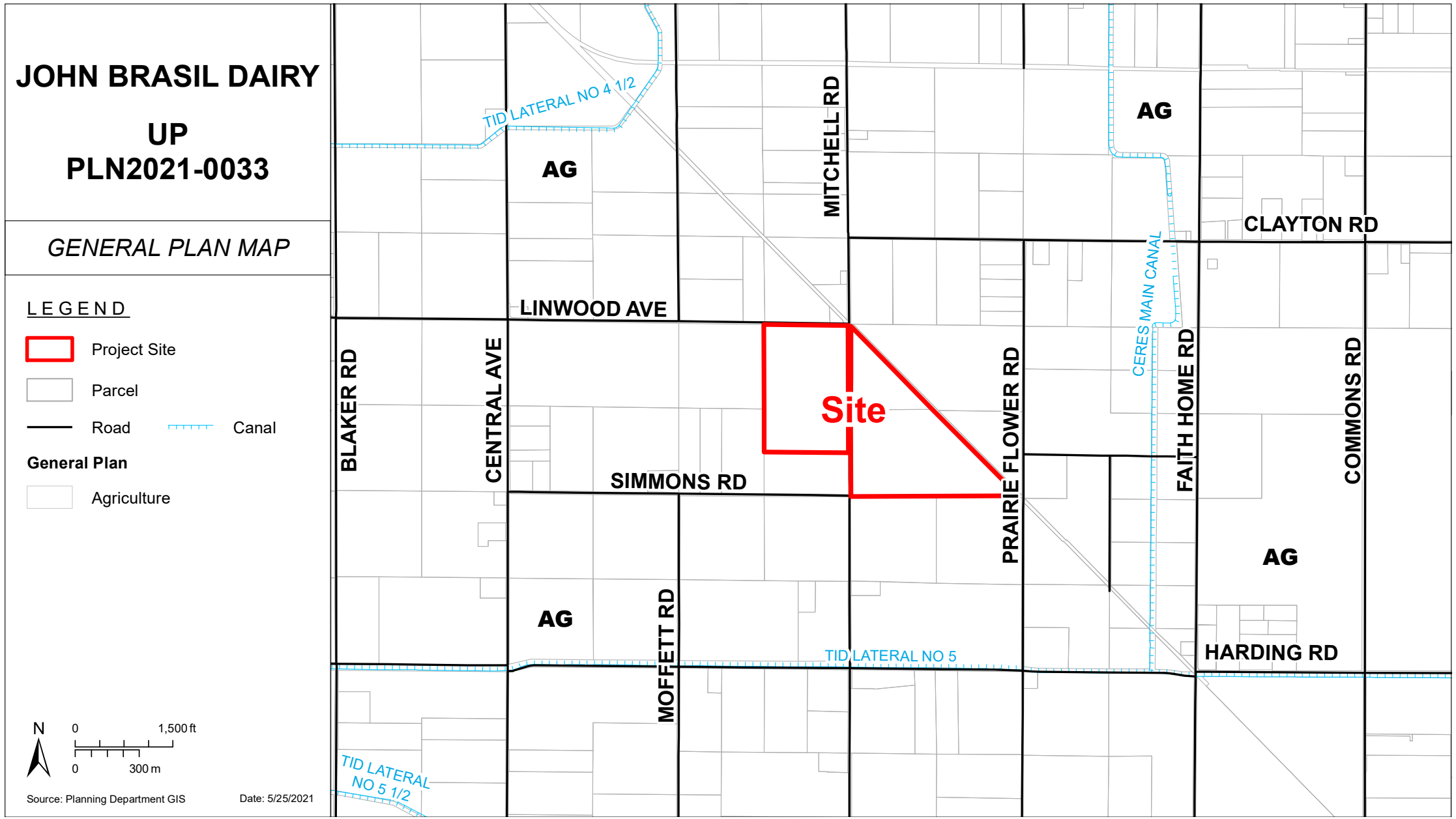


EXHIBIT B-1

JOHN BRASIL DAIRY

UP
PLN2021-0033

ZONING MAP

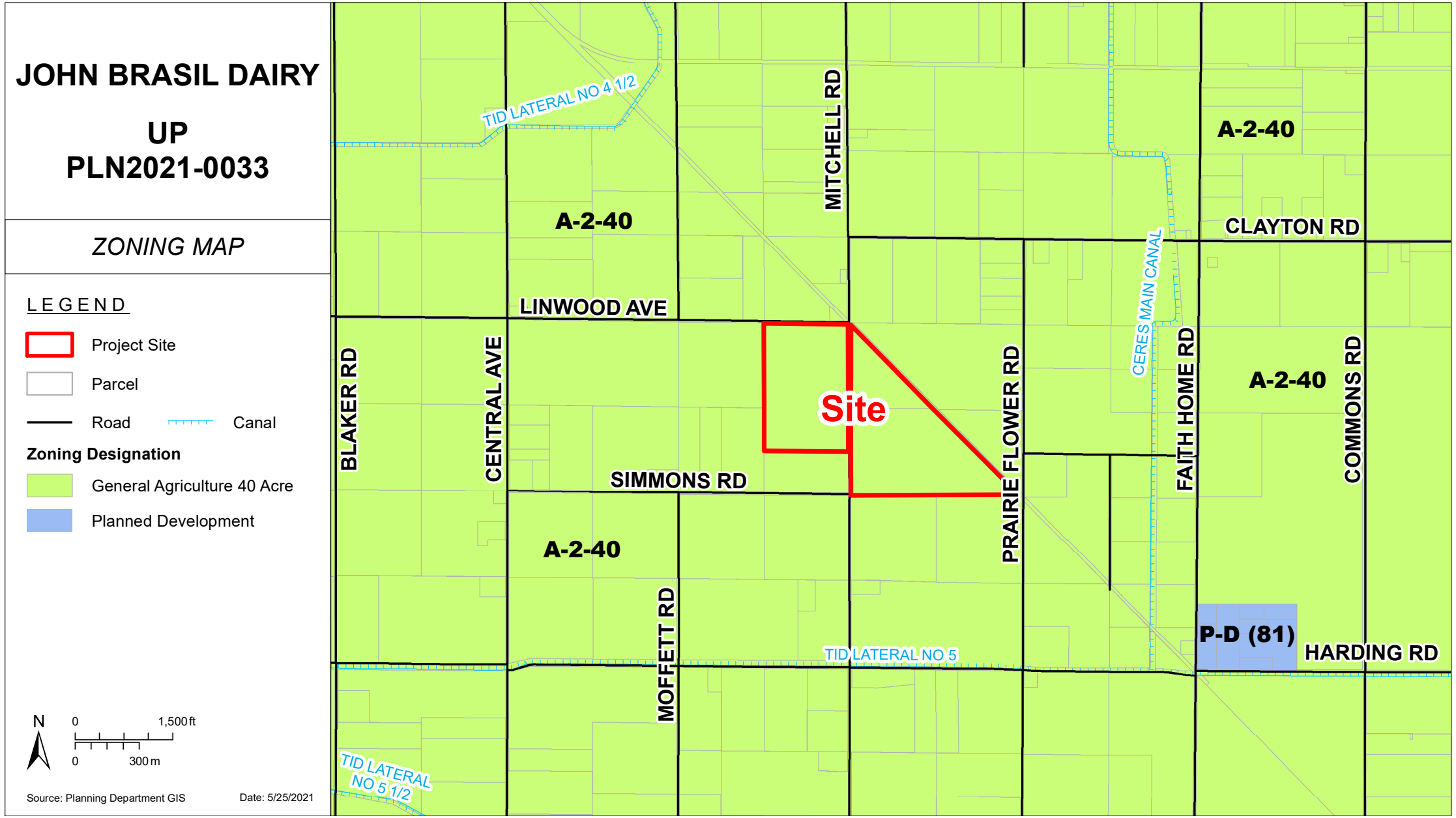
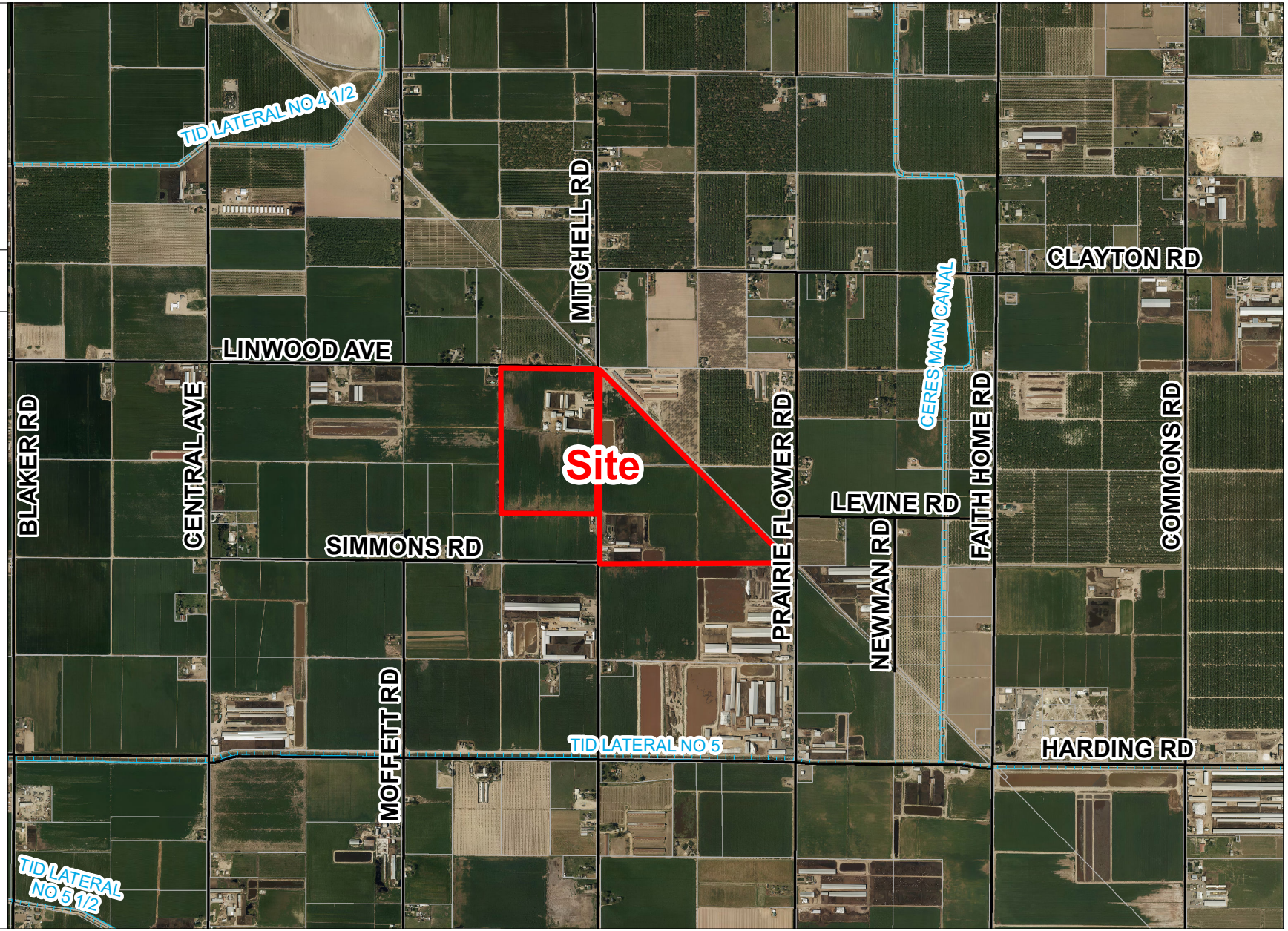


EXHIBIT B-2

JOHN BRASIL DAIRY

UP
PLN2021-0033

2017 AERIAL AREA MAP



LEGEND

- Project Site
- Road
- Canal

N

0 1,500 ft

0 300 m

Source: Planning Department GIS

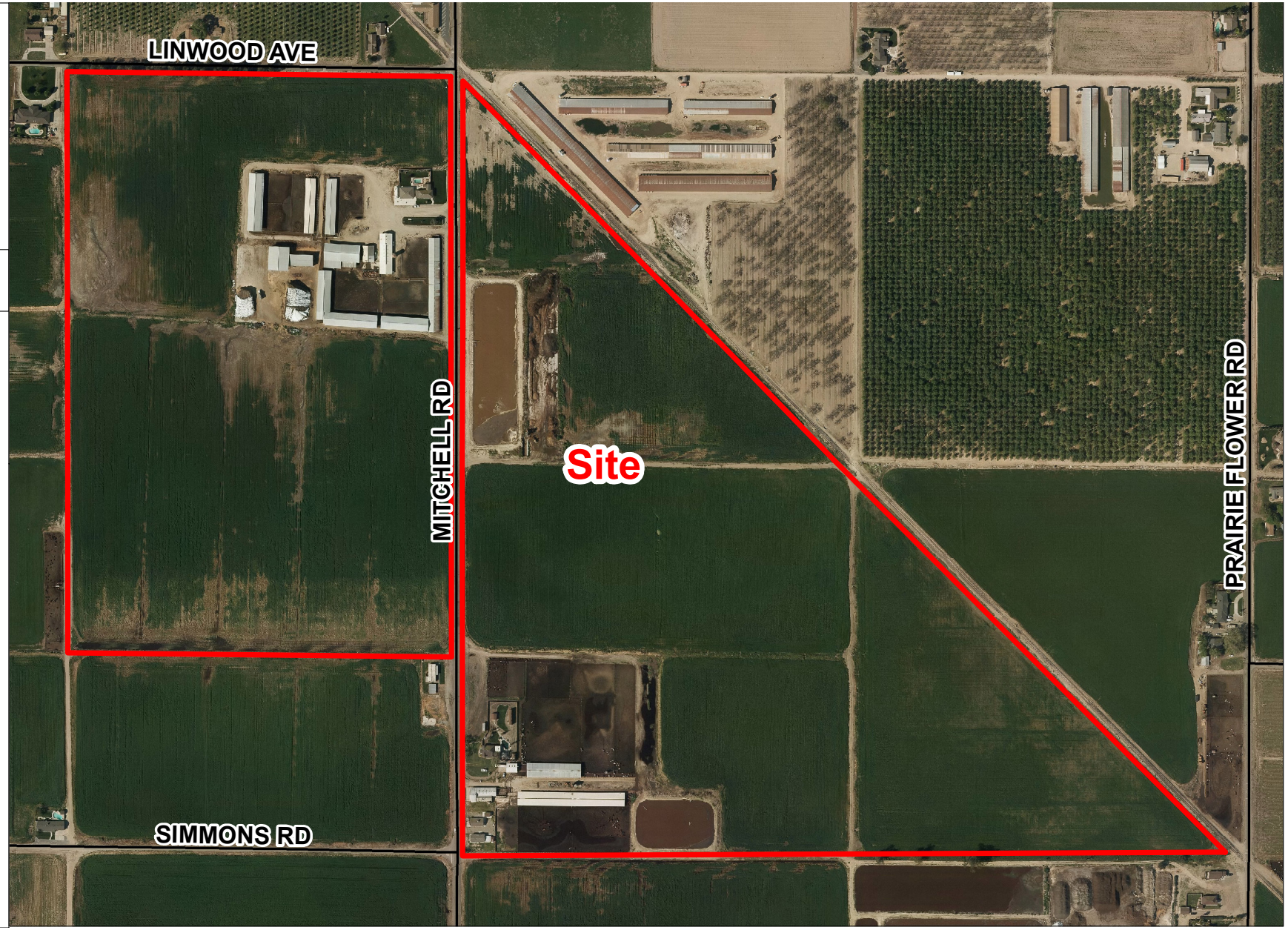
Date: 5/25/2021

EXHIBIT B-3

JOHN BRASIL DAIRY

UP
PLN2021-0033

2017 AERIAL SITE MAP



LEGEND

Project Site

Road

N

0 400 ft

0 100 m

Source: Planning Department GIS

Date: 5/25/2021

EXHIBIT B-4

JOHN BRASIL DAIRY

UP
PLN2021-0033

ACREAGE MAP

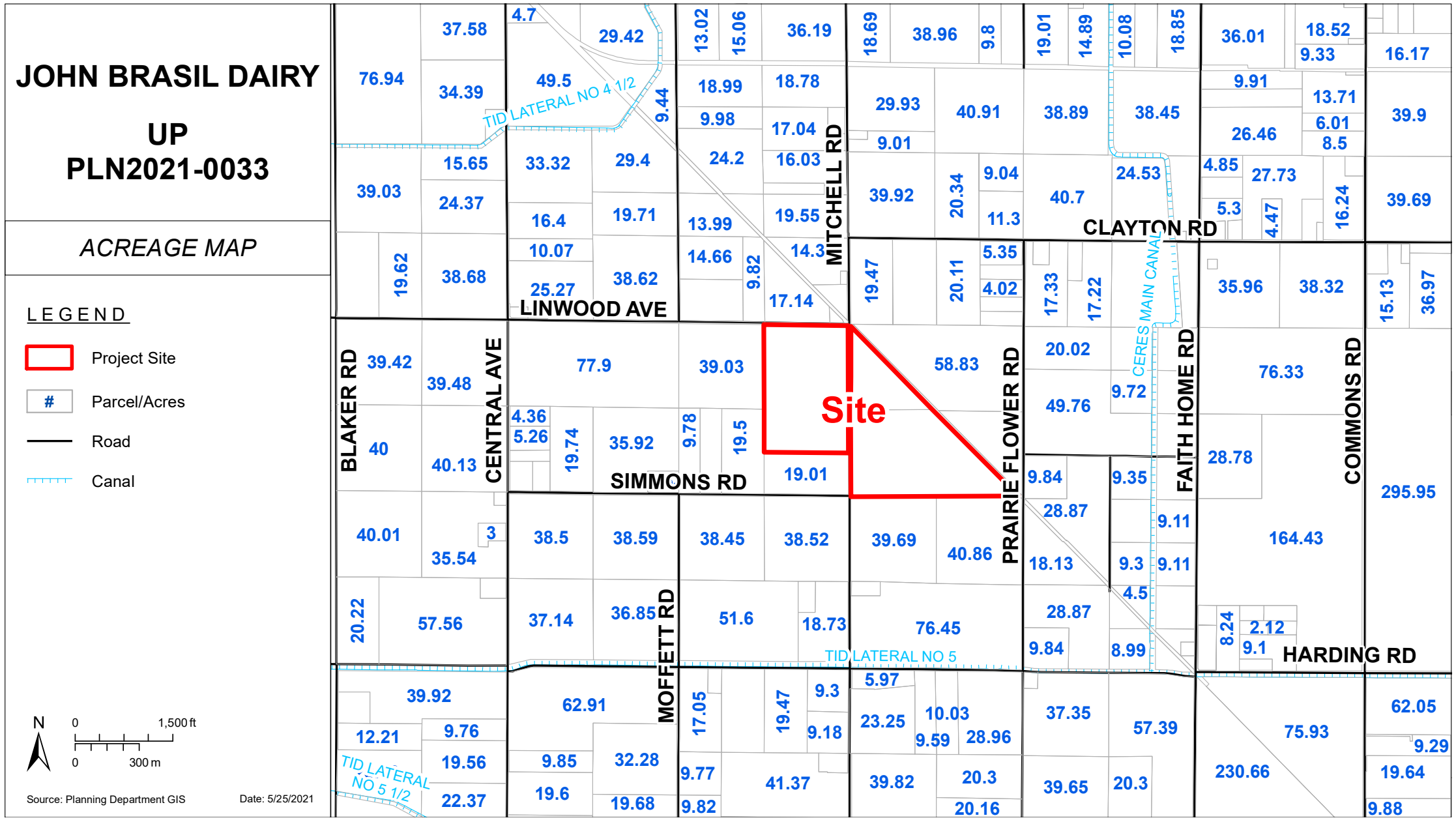
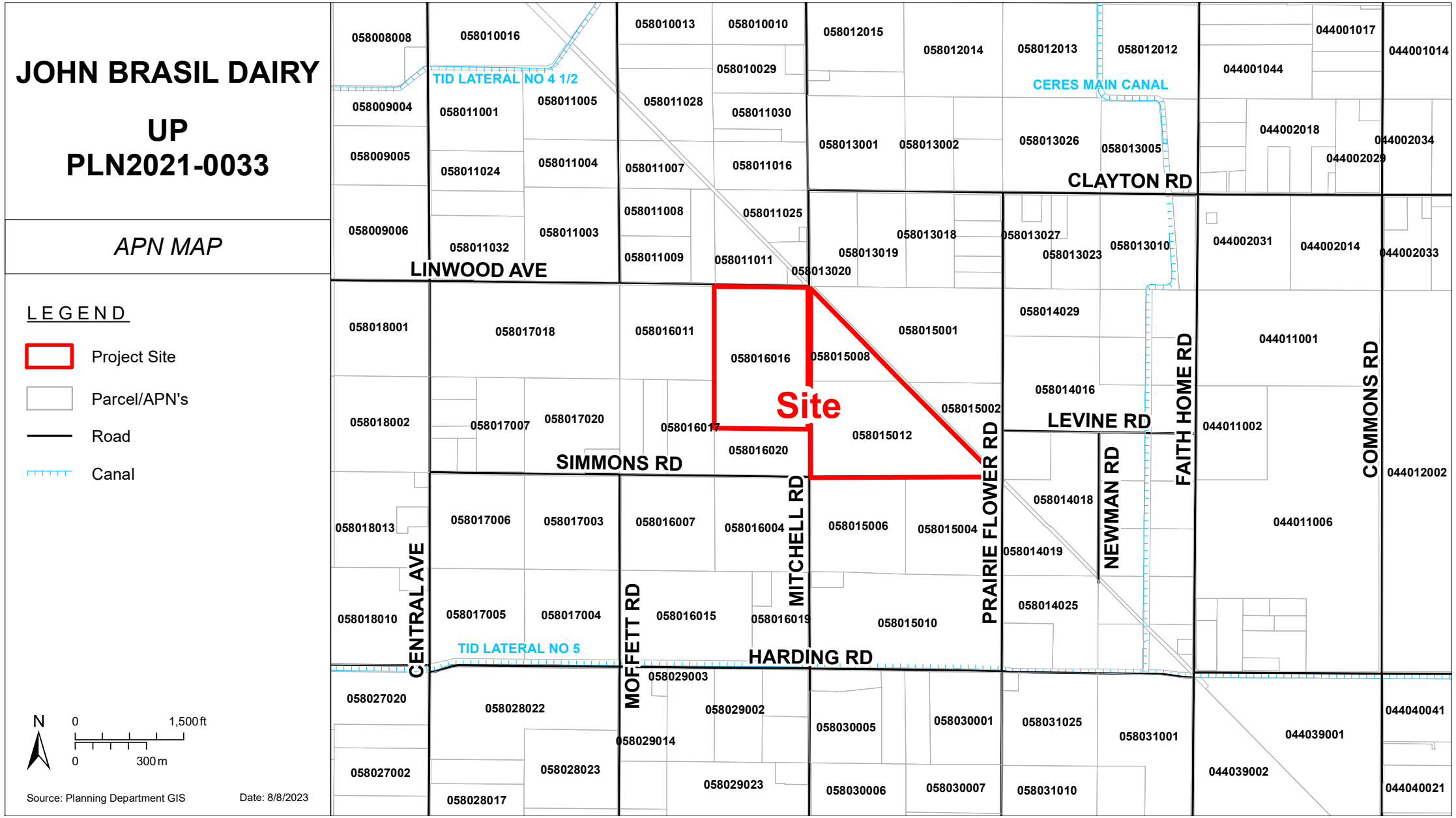


EXHIBIT B-5

JOHN BRASIL DAIRY

UP
PLN2021-0033

APN MAP



Source: Planning Department GIS

Date: 8/8/2023

EXHIBIT B-6

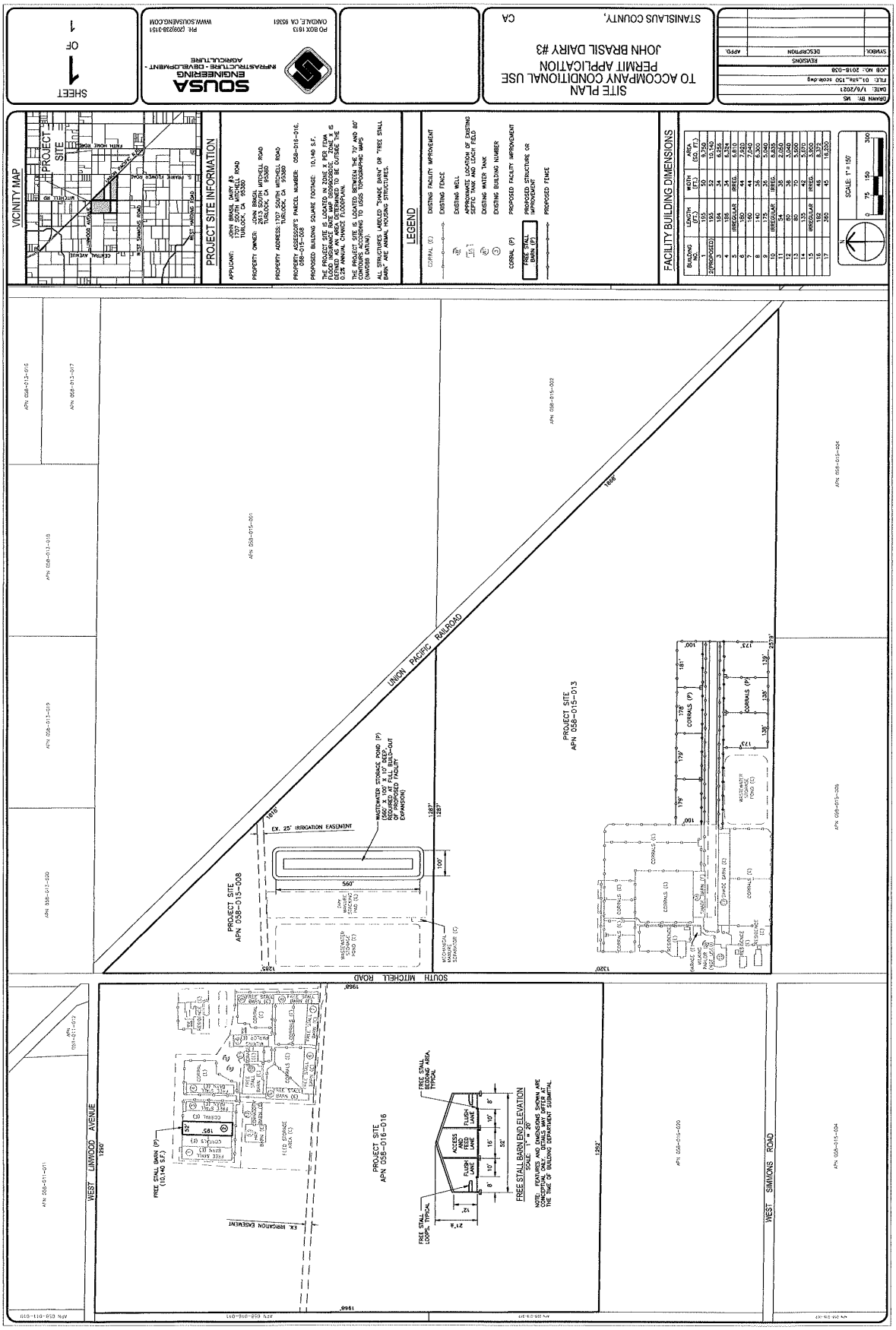

SITE PLAN
TO ACCOMPANY CONDITIONAL USE
PERMIT APPLICATION
JOHN BRASIL DAIRY #3
STANISLAUS COUNTY, CA
SOUSA ENGINEERING
INFRASTRUCTURE - DEVELOPMENT - AGRICULTURE
SHEET 1 OF 1
VICINITY MAP
PROJECT SITE
PROJECT SITE INFORMATION
LEGEND
FACILITY BUILDING DIMENSIONS
SCALE: 1" = 150'
UNION PACIFIC RAILROAD
SOUTH MITCHELL ROAD
WEST LINWOOD AVENUE
WEST SIMMONS ROAD
PROJECT SITE APN 058-015-008
PROJECT SITE APN 058-015-013
PROJECT SITE APN 058-016-016
FREE STALL BARN END ELEVATION
SCALE: 1" = 20'

EXHIBIT B-7

VICINITY MAP

PROJECT SITE INFORMATION

APPLICANT: JOHN BRASIL DAIRY #3
1707 SOUTH MITCHELL ROAD
TURLOCK, CA 95380

PROPERTY OWNER: JOHN BRASIL
2613 SOUTH MITCHELL ROAD
TURLOCK, CA 95380

PROPERTY ADDRESS: 1707 SOUTH MITCHELL ROAD
TURLOCK, CA 95380

PROPERTY ASSESSOR'S PARCEL NUMBER: 058-016-016, 058-015-008

PROPOSED BUILDING SQUARE FOOTAGE: 10,140 S.F.

THE PROJECT SITE IS LOCATED IN ZONE X PER FEMA FLOOD INSURANCE RATE MAP 06099C0580D. ZONE X IS DEFINED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

THE PROJECT SITE IS LOCATED BETWEEN THE 70' AND 80' CONTOURS ACCORDING TO USGS TOPOGRAPHIC MAPS (NAVD88 DATUM).

ALL STRUCTURES LABELED "SHADE BARN" OR "FREE STALL BARN" ARE ANIMAL HOUSING STRUCTURES.

LEGEND

CORRAL (E)	EXISTING FACILITY IMPROVEMENT
	EXISTING FENCE
	EXISTING WELL
SEPTIC	APPROXIMATE LOCATION OF EXISTING SEPTIC TANK AND LEACH FIELD
	EXISTING WATER TANK
1	EXISTING BUILDING NUMBER
CORRAL (P)	PROPOSED FACILITY IMPROVEMENT
FREE STALL BARN (P)	PROPOSED STRUCTURE OR IMPROVEMENT
	PROPOSED FENCE

FACILITY BUILDING DIMENSIONS

BUILDING NO.	LENGTH (FT.)	WIDTH (FT.)	AREA (SQ. FT.)
1	195	50	9,750
2(PROPOSED)	195	52	10,140
3	184	34	6,256
4	186	34	6,324
5	IRREGULAR	IRREG.	6,810
6	180	44	7,920
7	160	44	7,040
8	140	36	5,300
9	175	36	5,040
10	IRREGULAR	IRREG.	8,835
11	54	38	2,050
12	80	38	3,040
13	80	70	5,600
14	135	42	5,670
15	IRREGULAR	IRREG.	3,900
16	182	46	8,372
17	360	45	16,200

N

SCALE: 1" = 150'

0 75 150 300

SHEET 1 OF 1

SOUSA ENGINEERING
INFRASTRUCTURE - DEVELOPMENT - AGRICULTURE
PO BOX 913
OAKDALE, CA 95361
PH: (209)838-3151
WWW.SOUSAENG.COM

SITE PLAN
TO ACCOMPANY CONDITIONAL USE PERMIT APPLICATION
JOHN BRASIL DAIRY #3
STANISLAUS COUNTY, CA

DRAWN BY: MS
DATE: 1/6/2021
FILE: 01_site_150 scale.dwg
JOB NO.: 2018-038

SYMBOL	DESCRIPTION	REVISIONS	APPR.

EXHIBIT B-8

NOTE: Approval of this application is valid only if the following conditions are met. This permit shall expire unless activated within 18 months of the date of approval. In order to activate the permit, it must be signed by the applicant and one of the following actions must occur: (a) a valid building permit must be obtained to construct the necessary structures and appurtenances; or, (b) the property must be used for the purpose for which the permit is granted. (Stanislaus County Ordinance 21.104.030)

CONDITIONS OF APPROVAL AND MITIGATION MEASURES

USE PERMIT APPLICATION NO. PLN2021-0033
JOHN BRASIL DAIRY

Department of Planning and Community Development

1. Use(s) shall be conducted as described in the application and supporting information (including the plot plan) as approved by the Planning Commission and/or Board of Supervisors and in accordance with other laws and ordinances.

2. Pursuant to Section 711.4 of the California Fish and Game Code (effective January 1, 2014), the applicant is required to pay a California Department of Fish and Wildlife (formerly the Department of Fish and Game) fee at the time of filing a "Notice of Determination." Within five (5) days of approval of this project by the Planning Commission or Board of Supervisors, the applicant shall submit to the Department of Planning and Community Development a check for **$2,821.00**, made payable to **Stanislaus County**, for the payment of California Department of Fish and Wildlife and Clerk-Recorder filing fees.

   Pursuant to Section 711.4 (e) (3) of the California Fish and Game Code, no project shall be operative, vested, or final, nor shall local government permits for the project be valid, until the filing fees required pursuant to this section are paid.

3. Developer shall pay all Public Facilities Impact Fees and Fire Facilities Fees as adopted by Resolution of the Board of Supervisors. The fees shall be payable at the time of issuance of a building permit for any construction in the development project and shall be based on the rates in effect at the time of building permit issuance.

4. The applicant/owner is required to defend, indemnify, or hold harmless the County, its officers, and employees from any claim, action, or proceedings against the County to set aside the approval of the project which is brought within the applicable statute of limitations. The County shall promptly notify the applicant of any claim, action, or proceeding to set aside the approval and shall cooperate fully in the defense.

5. The Department of Planning and Community Development shall record a Notice of Administrative Conditions and Restrictions with the County Recorder's Office within 30 days of project approval. The Notice includes: Conditions of Approval/Development Standards and Schedule; any adopted Mitigation Measures; and a project area map.

6. Should any archeological or human remains be discovered during development, work shall be immediately halted within 150 feet of the find until it can be evaluated by a qualified archaeologist. If the find is determined to be historically or culturally significant, appropriate mitigation measures to protect and preserve the resource shall be formulated and implemented. The Central California Information Center shall be notified if the find is deemed historically or culturally significant.

7. A photometric lighting plan shall be submitted for review and approval by the Planning Department, prior to the installation of any additional lighting. All exterior lighting shall be designed (aimed down and toward the site) to provide adequate illumination without a glare effect. This shall include, but not be limited to, the use of shielded light fixtures to prevent skyglow (light spilling into the night sky) and the installation of shielded fixtures to prevent light trespass (glare and spill light that shines onto neighboring properties). The height of any freestanding lighting fixtures should not exceed 15 feet above grade.

8. Prior to issuance of a building permit, the existing manufactured home located at 2324 S Mitchell Road (APN: 058-015-012), permitted under Temporary Mobile Home Permit (TMHP) No. 98-11 – APRIL, shall be brought into compliance.

Department of Public Works

9. No parking, loading, or unloading of vehicles will be permitted within the Linwood Avenue and Mitchell Road right-of-way.

10. The developer will be required to install or pay for the installation of any signs and/or markings, if warranted.

11. Prior to either increasing the herd or the issuance of a grading permit or building permit, whichever comes first, an Encroachment Permit shall be obtained for the unpaved driveways that accesses the dairy site from Linwood Avenue and Mitchell Road. The driveways shall be installed as per Stanislaus County Public Work Standards and Specifications. Before Stanislaus County Public Works will issue an encroachment permit for installation of a pipeline within County right-of-way, a pipeline maintenance agreement shall be recorded.

12. Linwood Avenue is classified as a 60-foot-wide Local Road. The current right-of-way width of Linwood Avenue at the project site is 40 feet for the full road width. The required ½ width of Linwood Avenue is 30 feet south of the centerline of the roadway. The existing right-of-way at APN: 058-016-016 is 20 feet south of the centerline of the roadway. The remaining 10 feet south of the centerline shall be dedicated as an Irrevocable Offer of Dedication prior to increasing the herd or the issuance of a grading permit or a building permit, whichever comes first.

13. Mitchell Road is classified as a 60-foot-wide Local Road. The current right-of-way width of Mitchell Road at the project site is 40 feet for the full road width. The required ½ width of Mitchell Road is 30 feet west of the centerline of the roadway. The existing right-of-way at APN: 058-016-016 is 20 feet west of the centerline of the roadway. The remaining 10 feet west of the centerline shall be dedicated as an Irrevocable Offer of Dedication prior to increasing the herd or the issuance of a grading permit or a building permit, whichever comes first.

14. Mitchell Road is classified as a 60-foot-wide Local Road. The current right-of-way width of Mitchell Road at the project site is 40 feet for the full road width. The required ½ width of Mitchell Road is 30 feet east of the centerline of the roadway. The existing right-of-way at APN: 058-015-008 & 058-015-012 is 20 feet east of the centerline of the roadway. The remaining 10 feet east of the centerline shall be dedicated as an Irrevocable Offer of Dedication prior to increasing the herd or the issuance of a grading permit or a building permit, whichever comes first.

15. At the intersection of Linwood Avenue at Mitchell Road, a right-of-way chord is required. Please refer to Stanislaus County Public Works Standards and Specifications Detail 3C-1 for appropriate right-of-way Chord.

16. A grading, drainage, and erosion/sediment control plan for the project site shall be submitted for any building permit that will create a larger or smaller building footprint. The grading and drainage plan shall include the following information:

    A. The plan shall contain drainage calculations and enough information to verify that all runoff will be kept from going onto adjacent properties and Stanislaus County road right-of-way. Public Works will review and approve the drainage calculations.

    B. For projects greater than one acre in size, the grading drainage and erosion/sediment control plan shall comply with the current State of California National Pollutant Discharge Elimination System (NPDES) General Construction Permit. A Waste Discharge Identification Number (WDID) and a copy of the Notice of Intent (NOI) and the project's Storm Water Pollution Prevention Plan (SWPPP) shall be provided prior to the approval of any grading, if applicable.

    C. The applicant of the grading permit shall pay the current Stanislaus County Public Works weighted labor rate for the plan review of the grading plan.

    D. The applicant of the grading permit shall pay the current Stanislaus County Public Works weighted labor rate for all on-site inspections. The Public Works inspector shall be contacted 48 hours prior to the commencement of any grading or drainage work on-site.

Building Permits Division

17. Building permits are required and the project must conform with the California Code of Regulations, Title 24.

Department of Environmental Resources (DER)

18. Prior to grading or building permit issuance, any new well shall demonstrate, based on substantial evidence, that the well is exempt from the prohibition provided pursuant to SCOC Section 9.37.040, or that extraction of groundwater from the proposed well will not constitute unsustainable extraction of groundwater, (SCOC 9.37.045).

19. Well construction permit applications shall demonstrate compliance with Drought Executive Order N-7-22 prior to permit issuance.

Department of Environmental Resources – HAZMAT Division

20. The applicant shall contact the Department of Environmental Resources regarding appropriate permitting requirements for hazardous materials, and/or wastes. The applicant and/or occupants handling hazardous materials or generating wastes must notify the Department prior to operation.

Central Valley Regional Water Quality Control Board

21. Prior to increasing the herd or start of construction, the developer shall be responsible for contacting the Central Valley Regional Water Quality Control Board to determine if any permits are required.

San Joaquin Valley Air Pollution Control District

22. Any construction resulting from this project shall comply with standardized dust controls adopted by the San Joaquin Valley Air Pollution Control District (SJVAPCD) and may be subject to additional regulations/permits, as determined by the SJVAPCD.

Mitigation Measures

23. The following Best Management Practices shall be implemented as applicable: Positive drainage shall be included in project design and construction to ensure that excessive ponding does not occur. The design shall comply with Title Three, Division Two, Chapter One, Article 22, Section 646.1 of the Food and Agriculture Code for construction and maintenance of dairy or facility surroundings, corrals, and ramps, as described below. Dirt or unpaved corrals, or unpaved lanes, shall not be located closer than 25 feet from the milking barn or closer than 50 feet from the milk house. Corral drainage must be provided. A paved (concrete or equivalent) ramp or corral shall be provided to allow the animals to enter and leave the milking barn. This paved area shall be curbed (minimum of 6 inches high and 6 inches wide) and sloped to a drain. Cow washing areas shall be paved (concrete or equivalent) and sloped to a drain. The perimeter of the area shall be constructed in a manner that will retain the wash water to a paved drained area. Paved access shall be provided to permanent feed racks, mangers, and water troughs. Water troughs shall be provided with: (1) a drain to carry the water from the corrals; and (2) pavement (concrete or equivalent) which is at least 10 feet wide at the drinking area. The cow standing platform at permanent feed racks shall be paved with concrete or equivalent for at least 10 feet back of the stanchion line. As unpaved areas are cleaned, depressions tend to form, allowing ponding and increased infiltration. Regular maintenance shall include filling of depressions. Personnel shall be taught the correct use of manure collection machines (wheel loaders or elevating scrapers). The dairy operator/property owner shall be responsible for verifying, to the satisfaction of the Planning Director, implementation of the aforementioned Best Management Practices. The dairy operator/property owner shall be responsible for paying the County's actual costs of verifying compliance. If the County finds any of the applicable Best Management Practices have not been implemented, the dairy operator/property owner shall implement said Best Management Practices within the time frame specified in writing by the County. The dairy operator/property owner's verification shall be submitted to the Stanislaus County Planning Department within 60-days of written notice being delivered to the dairy operator/property owner.

24. The applicant shall comply with requirements of the Nutrient Management Plan (NMP) and Waste Management Plan (WMP) submitted to the County, as part of the Use Permit approval. The application rates of liquid and/or solid manure identified within the NMP shall not result in total nitrogen applied to the land application areas exceeding 1.65 times total nitrogen that will be removed from the field in the harvested portion of the crop. Upon request, compliance shall be verified by the collection of nutrient samples for nitrogen, potassium, phosphorus, and salts prior to and during application periods to confirm agronomic rates within all portions of cropped areas receiving manure, and to protect water supplies. The dairy operator/property owner shall be responsible for hiring a qualified professional, approved by the Planning Director, to collect nutrient samples, interpret the results, and provide said results to the County for review. If determined necessary by the Planning Director, the dairy operator/property owner shall pay for the County's actual costs to hire a third party to review the annual results.

25. The applicant shall enroll in the Central Valley Dairy Representative Monitoring Program (CVDRMP) to meet the requirements for groundwater monitoring prior to increasing the herd.

****

*Please note: If Conditions of Approval/Development Standards are amended by the Planning Commission or Board of Supervisors, such amendments will be noted in the upper right-hand corner of the Conditions of Approval/Development Standards; new wording is in **bold**, and deleted wording will have a ~~line through it.~~*

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
1010 10TH Street, Suite 3400, Modesto, CA 95354
Planning Phone: (209) 525-6330 Fax: (209) 525-5911
Building Phone: (209) 525-6557 Fax: (209) 525-7759

CEQA INITIAL STUDY

Adapted from CEQA Guidelines APPENDIX G Environmental Checklist Form, Final Text, January 1, 2020

1.	**Project title:**	Use Permit Application No. PLN2021-0033 John Brasil Dairy
2.	**Lead agency name and address:**	Stanislaus County 1010 10th Street, Suite 3400 Modesto, CA 95354
3.	**Contact person and phone number:**	Teresa McDonald, Associate Planner
4.	**Project location:**	1707 and 2300 S Mitchell Road between W Linwood Avenue and Simmons Road, in the Turlock area (APN: 058-015-008, 058-015-012, and 058-016-016).
5.	**Project sponsor's name and address:**	John Brasil 2613 South Mitchell Road Turlock, CA 95380
6.	**General Plan designation:**	Agriculture
7.	**Zoning:**	General Agriculture (A-2-40)

8. Description of project:

Request to expand the herd of an existing dairy facility located on three parcels across a total of 135.5± acres, in the General Agriculture (A-2-40) zoning district. The applicant proposes to expand the herd from 442 mature cows to 1,500 mature cows, consisting of primarily milk cows and no dry cows. Under this request, the applicant also proposes to increase support stock number from 600 to 1,200. The increase to support stock will consist of 400 heifers 7-14 months old; 400 heifers 4-8 months old; and 400 calves 4-6 months old. Additionally, the applicant proposes to construct a 10,140± square-foot free stall barn on Assessor Parcel Number (APN) 058-016-016, corrals totaling 5± acres in area on APN 058-015-012, and a new wastewater pond 1.3± acres in size on APN 058-015-008. The applicant anticipates an increase of 2,184± cubic feet of additional manure per day generated on the facility from the proposed herd expansion for a total of 3,866± cubic feet of manure per day. Nutrients produced from the herd will be utilized to fertilize approximately 72± acres of irrigated cropland located across the project site. Hours of operation are 24-hours a day, seven days a week. The dairy currently receives three visits for tallow and veterinary services every two weeks, and a total of four milk and feed truck trips per day. The proposed request is expected to increase the number of feed truck trips by one for a combined total of five milk and feed truck trips per day as part of this request; no increase to the current milk truck trips, tallow, or veterinary service trips are proposed.

There is a single-family dwelling developed on APN 058-016-016 and three single-family dwellings on APN 058-015-012, which are occupied by employees and their families. There are currently four employees; the proposed request is not expected to increase the number of employees. No additional housing is proposed as part of this request. The applicant does not anticipate any customers on-site. The existing facility is currently improved with 125,447± square feet of dairy and residential building space and 20.5± acres of corrals, storage ponds, and feed storage. The site is served by private wells and septic system and has access to County-maintained West Linwood Avenue and South Mitchell Road. Confined Animal Facilities (CAF), which include dairies, are considered to be permitted agricultural uses; however, a use permit is required for new or expanding

CAFs requiring a new or Modified permit waiver, order, or Waste Discharge Requirements (WDRs) from the Regional Water Quality Control Board (RWQCB), where the issuance of such permit, waiver, order, or WDR requires compliance with the California Environmental Quality Act (CEQA) (Section 21.20.030 (F) of the Stanislaus County Zoning Code). The County adopted the use permit requirement in 2003 in order to allow the County to facilitate the environmental review (in accordance with CEQA) required for issuance of any permit, waiver, order, or WDR by the RWQCB.

9.	**Surrounding land uses and setting:**	Confined animal facilities, orchards, irrigated cropland, and scattered single-family dwellings in all directions.
10.	**Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.):**	Regional Water Quality Control Board San Joaquin Valley Air Pollution Control District Stanislaus County Department of Public Works Department of Environmental Resources
11.	**Attachments:**	I. Nutrient Manage Plan prepared by Sousa Engineering, dated December 18, 2020 II. Waste Management Plan prepared by Sousa Engineering, dated March 2021 III. Health Risk Assessment and Ambient Air Quality Analysis prepared by Trinity Consultants, dated October 2022

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ **Aesthetics**	☐ **Agriculture & Forestry Resources**	☐ **Air Quality**
☐ **Biological Resources**	☐ **Cultural Resources**	☐ **Energy**
☐ **Geology / Soils**	☐ **Greenhouse Gas Emissions**	☐ **Hazards & Hazardous Materials**
☒ **Hydrology / Water Quality**	☐ **Land Use / Planning**	☐ **Mineral Resources**
☐ **Noise**	☐ **Population / Housing**	☐ **Public Services**
☐ **Recreation**	☐ **Transportation**	☐ **Tribal Cultural Resources**
☐ **Utilities / Service Systems**	☐ **Wildfire**	☐ **Mandatory Findings of Significance**

DETERMINATION: (To be completed by the Lead Agency)
On the basis of this initial evaluation:

☐ **I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.**

☒ **I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.**

☐ **I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.**

☐ **I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.**

☐ **I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.**

Signature on File **May 11, 2023**
Prepared by Teresa McDonald Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, than the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration.

Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). References to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

a) the significant criteria or threshold, if any, used to evaluate each question; and

b) the mitigation measure identified, if any, to reduce the impact to less than significant.

ISSUES

I. AESTHETICS – Except as provided in Public Resources Code Section 21099, could the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

Discussion: The site itself is not considered to be a scenic resource or unique scenic vista. The only scenic designation in the County is along Interstate 5, which is not near the project site. As the site is already developed with a dairy facility, aesthetics associated with the project site are not anticipated to change as a result of this project. Any additional lighting will be building mounted, LED, dawn-to-dusk lighting at each end of proposed animal housing structure. Standard conditions of approval will be added to this project to address glare and nightglow from any proposed on-site lighting.

Mitigation: None.

References: Application information; Stanislaus County Zoning Ordinance; the Stanislaus County General Plan; and Support Documentation[1].

II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			X	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X	

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				**X**
d) Result in the loss of forest land or conversion of forest land to non-forest use?				**X**
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?			**X**	

Discussion: The applicant proposes to expand the herd of an existing dairy operation from 442 to 1,500 mature cows, which includes primarily milk and no dry cows. Under this request, the applicant also proposes to increase support stock number from 600 to 1,200. Additionally, the applicant proposes to construct a 10,140± square-foot free stall barn on Assessor Parcel Number (APN) 058-016-016, corrals totaling 5± acres in area on APN 058-015-012, and a new wastewater pond 1.3± acres in size on APN 058-015-008. The applicant anticipates an increase of 2,184± cubic feet of additional manure per day generated on the facility from the proposed herd expansion for a total of 3,866± cubic feet of manure per day. Nutrients produced from the herd will be utilized to fertilize approximately 72± acres of irrigated cropland located across the project site. Surrounding land uses consist of confined animal facilities, cropland, orchards, and scattered single-family dwellings in all directions.

The Stanislaus County's Williamson Act Uniform Rules defines prime farmland as land that qualifies for rating as class I or class II in the Natural Resource Conservation Service land use capability classification, land which qualifies for rating of 80 through 100 in the Storie Index Rating, irrigated pastureland which supports livestock used for the production of food and fiber, or land planted with crops that gross $800 per acre for three of the last five years. The USDA uses the class system for soils which ranges from I to VIII to score the capability of the soils for agricultural production, with Class I soils being the most productive and Class VIII soils being non-agricultural. The California Revised Storie Index is a rating system based on soil properties, including texture, steepness, and drainage, that dictate the potential for soils to be used for irrigated agricultural production in California. This rating system grades soils with an index rating between 81-100 to be excellent (Grade 1), 61-80 to be good (Grade 2), 41-60 to be fair (Grade 3), 21-40 to be poor (Grade 4), 11-20 to be very poor (Grade 5), and 10 or less to be nonagricultural (Grade 6). The project site is designated by the California Department of Conservation Farmland Mapping and Monitoring Program as Confined Animal Agriculture and Farmland of Statewide Importance. According to the California Department of Agriculture's Natural Resources Conservation Service's Soil Survey, the project site's soil is classified as being comprised 88.9%± Dinuba sandy loam, slightly saline-alkali, 0 to 1 percent slopes (DwA – California Revised Storie Index Rating: 68, Grade 2); 6.7%± Hilmar loamy sand, slightly saline-alkali, 0 to 1 percent slopes (HkbA – Storie Index Rating: 54, Grade 3); 3.9%± Dinuba sandy loam, very poorly drained variant, slightly saline-alkali, 0 to 1 percent slopes (DzA – Storie Index Rating: 38, Grade 4); and 0.6%± Hilmar loamy sand, 0 to 1 percent slopes (HfA – Storie Index Rating: 68, Grade 2). However, the site does qualify as prime agricultural land based on the site having irrigated land, which supports livestock used for the production of food and fiber.

The Agricultural Element includes a requirement for an agricultural buffer to protect the long-term health of local agriculture by minimizing conflicts resulting from normal agricultural practices as a consequence of new or expanding uses approved in or adjacent to the General Agriculture (A-2) zoning district. These guidelines apply to all new or expanding uses approved by discretionary permit in the A-2 zoning district or on a parcel adjoining the A-2 zoning district. However, dairies are considered to be a permitted agricultural use in the A-2 zoning district in Stanislaus County. Use permits are only processed for the expansion of dairy facilities when the Regional Water Quality Control Board (RWQCB) determines that Waste Discharge Requirements (WDRs) are required, which requires CEQA compliance. As dairies are a permitted use, an agricultural buffer is not required for this project.

Additionally, the project site is currently enrolled under California Land Conservancy ("Williamson Act") Contract No. 78-3115. Uses requiring use permits that are approved on lands under California Land Conservation Contracts (Williamson Act Contracts) shall be consistent with all of the following principles of compatibility:

1. The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in the A-2 zoning district;
2. The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in the A-2 zoning district; and
3. The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use. As a permitted agricultural use, the project is considered to be consistent with the Williamson Act Principals of Compatibility.

The existing dairy facility utilizes both flush and scrape cleaning systems and the requested expansion includes a new wastewater pond 1.3± acres in size on APN 058-015-008. The site is served by an on-site domestic well and private septic system. The attached Waste Management Plan (WMP) and Nutrient Management Plan (NMP) provide details on managing the expanded dairy cow stock. The nutrients produced by the herd will be utilized to fertilize approximately 72± farmable acres of irrigated cropland.

The project will have no impact to forest land or timberland. The project does not appear to conflict with any agricultural activities in the area and/or lands enrolled in the Williamson Act. The project was referred to the Department of Conservation, and no response has been received to date.

Based on the specific features and design of this project, it does not appear this project will impact the long-term productive agricultural capability of surrounding contracted lands in the A-2 zoning district. There is no indication this project will result in the removal of adjacent contracted land from agricultural use.

Mitigation: None.

References: Natural Resources Conservation Service Soil Survey; application information; Stanislaus Soil Survey (1957); California State Department of Conservation Farmland Mapping and Monitoring Program - Stanislaus County Farmland 2018; Stanislaus County General Plan and Support Documentation[1].

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?			**X**	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			**X**	
c) Expose sensitive receptors to substantial pollutant concentrations?			**X**	
d) Result in other emissions (such as those odors adversely affecting a substantial number of people?			**X**	

Discussion: The proposed project is located within the San Joaquin Valley Air Basin (SJVAB) and, therefore, falls under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). In conjunction with the Stanislaus Council of Governments (StanCOG), the SJVAPCD is responsible for formulating and implementing air pollution control strategies. The SJVAPCD's most recent air quality plans are the 2007 PM10 (respirable particulate matter) Maintenance Plan, the 2008 PM2.5 (fine particulate matter) Plan, and the 2007 Ozone Plan. These plans establish a comprehensive air pollution control program leading to the attainment of state and federal air quality standards in the SJVAB, which has been classified as "extreme non-attainment" for ozone, "attainment" for respirable particulate matter (PM-10), and "non-attainment" for PM 2.5, as defined by the Federal Clean Air Act.

This project requests to expand the herd from 442 mature cows to 1,500 mature cows and to increase support stock number from 600 to 1,200. The existing dairy operation has been previously developed with areas for feed storage, waste

containment, milking facility infrastructure, and utilities. Due to the proposed increases in animal units, this applicant is also requesting construction of one new 10,140± square-foot free stall barn on APN 058-016-016, corrals totaling 5± acres in area on APN 058-015-012, and a new wastewater pond 1.3± acres in size on APN 058-015-008. Hours of operation are 24-hours a day, seven days a week. The dairy currently receives three visits for tallow and veterinary services every two weeks, and a total of four milk and feed truck trips per day. The proposed request is expected to increase the number of feed truck trips by one for a combined total of five milk and feed truck trips per day as part of this request; no increase to the current milk truck trips, tallow, or veterinary visits are proposed.

A referral response was received from the SJVAPCD indicating that emissions resulting from construction and/or operation of the project may exceed the District's thresholds of significance for carbon monoxide (CO), oxides of nitrogen (NOx), reactive organic gases (ROG), oxides of sulfur (SOx), and particulate matter (PM10 and PM2.5). The SJVAPCD recommended that a more detailed preliminary review of the project be conducted for the project's construction and operational emissions. Further, the SJVAPCD recommended other potential air impacts related to Toxic Air Contaminants, Ambient Air Quality Standards, and Hazards and Odors be addressed. The SJVAPCD recommended the project be evaluated for potential health impacts to surrounding receptors (on-site and off-site) resulting from operational and multi-year construction Toxic Air Contaminants (TAC) emissions and stated that a Health Risk Assessment should evaluate the risk associated with sensitive receptors in the area and mitigate any potentially significant risk to help limit emission exposure to sensitive receptors. The SJVAPCD also recommended the County evaluate heavy-duty truck routing patterns to help limit emission exposure to sensitive receptors, reduce idling of heavy-duty trucks, and utilize zero emission equipment. Additionally, SJVAPCD recommended that if emissions exceed 100 pounds per day of any pollutant, an Ambient Air Quality Analysis (AAQA) be performed. The SJVAPCD also recommended the environmental document include a discussion on cumulative air impacts, nuisance odors, and suggested incorporating vegetative barriers and urban green to reduce air pollution exposure to the residences on adjacent properties.

The SJVAPCD response indicated the project will be subject to District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), and Rule 2301 (Emission Reduction Credit Banking). The project may also be subject to the following rules: Regulation VIII, (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations), Rule 4550 (Conservation Management Practices), and Rule 4570 (Confined Animal Facilities). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants). The project may be subject to other applicable District permits and rules, which must be met as part of the District's Authority to Construct (ATC) permitting process.

In response to the Air District comments, a Health Risk Assessment (HRA) and Ambient Air Quality Analysis (AAQA) were prepared by Trinity Consultants, dated October 2022. The HRA evaluated the potential risk to the population attributable to emissions of hazardous air pollutants from the proposed dairy expansion and the AAQA evaluated the criteria pollutants compared to the California and national ambient air quality standards. Emissions of hazardous air pollutants attributable to the proposed construction activities, animal movement, manure management, and on-site mobile sources were calculated using generally accepted emission factors and the California Emissions Estimator Model version 2020.4.0 (CalEEMod). Construction emissions were evaluated assuming construction would occur within two phases and be completed within five years of issuance of a use permit. The actual total construction activities were estimated to be eight months.

According to the assessment, construction equipment sources evaluated included diesel-fueled dozers, loaders, backhoes, excavators, graders, cranes, forklifts, generator sets, concrete/industrial saws, and welders. CalEEMod default equipment listing for general heavy industrial usages were utilized. Default horsepower, daily operating hours, and load factors were also used. Operational mobile sources include a diesel-fueled solids manure removal trucks, commodity delivery trucks, a manure scraping tractor, a manure loading tractor, a bedding delivery tractor, and a feed delivery tractor. Other diesel-fueled sources that will not have an on-site increase in usage as a result of the project are feed loading tractor and milk tankers. There will also be emissions from the housing barns, milk barn, lagoons, solid manure storage and land application areas associated with increased herd size.

The air dispersion model, which calculates the concentration of selected pollutants at specific downwind points such as residential or off-site workplace receptors, used for this HRA was the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), which is the model recommended by the SJVAPCD. The construction activities, animal housing areas, milk barn, lagoons, solid manure storage and land application areas were modeled as area sources. A total of 207 off-site receptors, consisting of residences and workers, were assessed in the HRA modeling.

Ambient air concentrations were predicted with dispersion modeling to arrive at a conservative estimate of increased individual carcinogenic risk that might occur as a result of continuous exposure over a 70-year lifetime. Similarly, concentrations of compounds with non-cancer adverse health effects were used to calculate health hazard indexes, which are the ratio of expected exposure to acceptable exposure. The Air District has set the level of significance for carcinogenic risk to 20 in one million and the maximum predicted cancer risk among the modeled receptors is 15.1 in one million. The level of significance for acute and chronic non-cancer risk is a hazard index of 1.0, and the maximum predicted acute and chronic non-cancer hazard index among the modeled receptors are 0.148 and 0.123, respectively. As both levels are below the SJVAPCD's level of significance, the potential health risk attributable to the proposed project is determined to be less than significant.

As stated previously, the Air District recommended that an AAQA be performed for all criteria pollutants when emissions of any criteria pollutant resulting from project construction or operational activities exceed the 100 pounds per day screening level, after compliance with Rule 9510 requirements and implementation of all enforceable mitigation measures. The proposed project's construction emissions were estimated to be 11.05 NOx, 11.65 CO, 0.02 SOx, 1.04 PM10, and 0.67 PM2.5 (pounds per day). Operational emissions were estimated to be 0.12 NOx, 0.99 CO, 0.002 SOx, 9.15 PM10, and 1.05 PM2.5 (pounds per day). The proposed project's construction and operational activities will not exceed 100 pounds per day of any criteria pollutant that has an ambient air quality standard. Therefore, the proposed project is considered less than significant for ambient air quality impacts.

The SJVAPCD reviewed the HRA/AAQA and recommended that: the exposure duration used to estimate cancer risk for nearby worker receptors be changed from 25 years to 40 years; the daily breathing rate used to evaluate health risk for worker receptors be changed from eight hours to 24 hours; and that use of Fraction of time away from home (FAH) adjustment factors used to estimate the project's cancer risk from construction-related DPM emissions receive approval from the District as required by Policy APR 1906 (Framework for Performing Health Risk Assessments). However, the District also stated modifications to the HRA based on the recommendations are not expected to change the project's significance presented in the environmental review. The applicant was advised of the District's comments but did not revise the assessment.

Therefore, impacts to air quality are anticipated to be less than significant.

Mitigation: None.

References: Application information; Referral response from the San Joaquin Valley Air Pollution Control District (SJVAPCD) dated July 21, 2021; Response to HRA/AAQA from the SJVAPCD, dated December 6, 2022; San Joaquin Valley Air Pollution Control District - Regulation VIII Fugitive Dust/PM-10 Synopsis; www.valleyair.org; Health Risk Assessment (HRA) and Ambient Air Quality Analysis (AAQA), prepared by Trinity Consultants, dated October 2022; Stanislaus County General Plan and Support Documentation[1].

IV. BIOLOGICAL RESOURCES -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			**X**	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			**X**	

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			**X**	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			**X**	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			**X**	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?			**X**	

Discussion: The project is located within the Hatch Quad of the California Natural Diversity Database (CNDDB). There are five species of animals which are state or federally listed, threatened, or identified as species of special concern within the Hatch California Natural Diversity Database Quad. These species include the following: Swainson's hawk, tricolored blackbird, green sturgeon - southern DPS, steelhead - Central Valley DPS, and western pond turtle. According to the CNDDB, none of the species have been sited within the project area. The western pond turtle has been sighted approximately 1.1 miles southwest of the project site, and the tricolored blackbird has been sited approximately 2.3 miles west of the project site. The entire project site is developed or disturbed.

The project was referred to the California Department of Fish and Wildlife, and no comments have been received to date.

Mitigation: None.

References: Application information; California Department of Fish and Wildlife's Natural Diversity Database Quad Species List; California Department of Fish and Wildlife's Natural Diversity Database spatial data for element occurrences; Stanislaus County General Plan and Support Documentation[1].

V. CULTURAL RESOURCES -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in § 15064.5?			**X**	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?			**X**	
c) Disturb any human remains, including those interred outside of formal cemeteries?			**X**	

Discussion: As this project is not a General Plan Amendment it was not referred to the tribes listed with the Native American Heritage Commission (NAHC), in accordance with SB 18. Tribal notification of the project was not referred to any tribes in conjunction with AB 52 requirements, as Stanislaus County has not received any requests for consultation from the tribes listed with the NAHC. It does not appear that this project will result in significant impacts to any archaeological or cultural resources. The project site is already developed and the proposed construction is within the area which has already been disturbed. However, standard conditions of approval regarding the discovery of cultural resources during the construction process will be added to the project.

Mitigation: None.

References: Application information; Stanislaus County General Plan and Support Documentation[1].

VI. ENERGY. -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			**X**	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			**X**	

Discussion: The CEQA Guidelines Appendix F states that energy consuming equipment and processes, which will be used during construction or operation such as: energy requirements of the project by fuel type and end use, energy conservation equipment and design features, energy supplies that would serve the project, and total estimated daily vehicle trips to be generated by the project, and the additional energy consumed per trip by mode, which shall be taken into consideration when evaluating energy impacts. Additionally, the project's compliance with applicable state or local energy legislation, policies, and standards must be considered.

This project requests to expand the herd from 442 mature cows to 1,500 mature cows and to increase support stock number from 600 to 1,200. The existing dairy operation has been previously developed with areas for feed storage, waste containment, milking facility infrastructure, and utilities. Due to the proposed increases in animal units, this applicant is also requesting construction of one new 10,140± square-foot free stall barn, corrals totaling 5± acres in area, and a new wastewater pond 1.3± acres in size across the project site. Hours of operation are 24-hours a day, seven days a week. The dairy currently receives three visits for tallow and veterinary services every two weeks, and a total of four milk and feed truck trips per day. The proposed request is expected to increase the number of feed truck trips by one for a combined total of five milk and feed truck trips per day as part of this request; no increase to the current milk truck trips, tallow, or veterinary service trips, are proposed. All construction activities shall be in compliance with all SJVAPCD regulations and with Title 24, Green Building Code, which includes energy efficiency requirements.

Energy consuming equipment and processes include equipment, trucks, and the employee vehicles. These activities would not significantly increase Vehicle Miles Traveled (VMT), due to the number of vehicle trips not exceeding a total of 110 vehicle trips per day. The request does not include an increase in employee or visitor trips. The proposed request is expected to increase the number of feed truck trips by one, for a combined total of five trips for milk and feed per day. The number of milk truck, tallow truck, and veterinary trips are not expected to increase as part of this request. Additionally, the trucks are the main consumers of energy associated with this project but shall be required to meet all Air District regulations, including rules and regulations that increase energy efficiency for heavy trucks. Consequently, emissions would be minimal. Therefore, consumption of energy resources would be less-than significant without mitigation for the proposed project.

A referral response was received from the SJVAPCD indicating that emissions resulting from construction and/or operation of the project may exceed the District's thresholds of significance for carbon monoxide (CO), oxides of nitrogen (NOx), reactive organic gases (ROG), oxides of sulfur (SOx), (PM10), and particulate matter. The SJVAPCD recommended that a more detailed preliminary review of the project be conducted for the project's construction and operational emissions.

Construction and operational emissions were analyzed with the California Emissions Estimator Model (CalEEMOD), by Trinity Consultants, dated October 31, 2022. The analysis evaluated construction and operational ROG, NOx, CO, SO2, PM10, PM2.5, CO2, CH4, and N2O emissions. CalEEMod default equipment listing for general heavy industrial usages were utilized. Default horse power, daily operating hours, and load factors were also used. Operational mobile sources include a diesel-fueled solids manure removal trucks, commodity delivery trucks, a manure scraping tractor, a manure loading tractor, a bedding delivery tractor, and a feed delivery tractor. Other diesel-fueled sources that will not have an on-site increase in usage as a result of the project are feed loading tractor and milk tankers. The actual total construction activities were estimated to be eight months. The analysis found the average daily emissions for construction and operational activities associated with this project would not exceed 100 pounds per day for any criteria pollutant that has an ambient air quality standard and therefore are below the Air District's thresholds of significance.

Impacts to energy are considered to be less than significant.

Mitigation: None.

References: Application information; Referral response from the San Joaquin Valley Air Pollution Control District (SJVAPCD) dated July 21, 2021; Response to HRA/AAQA from the SJVAPCD, dated December 6, 2022; Health Risk Assessment (HRA) and Ambient Air Quality Analysis (AAQA), prepared by Trinity Consultants, dated October 2022; CEQA Guidelines; Title 16 of County Code; CA Building Code; Governor's Office of Planning and Research Technical Advisory, December 2018; Stanislaus County General Plan and Support Documentation[1].

VII. GEOLOGY AND SOILS -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			X	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?			X	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

Discussion: The USDA Natural Resources Conservation Service's Eastern Stanislaus County Soil Survey indicates that the property is comprised of 88.9%± Dinuba sandy loam, slightly saline-alkali, 0 to 1 percent slopes (DwA – California Revised Storie Index Rating: 68, Grade 2); 6.7%± Hilmar loamy sand, slightly saline-alkali, 0 to 1 percent slopes (HkbA – Storie Index Rating: 54, Grade 3); 3.9%± Dinuba sandy loam, very poorly drained variant, slightly saline- alkali, 0 to 1 percent slopes (DzA – Storie Index Rating: 38, Grade 4); and 0.6%± Hilmar loamy sand, 0 to 1 percent slopes (HfA – Storie Index Rating: 68, Grade 2).

As contained in Chapter 5 of the General Plan Support Documentation, the areas of the County subject to significant geologic hazard are located in the Diablo Range, west of Interstate 5; however, as per the California Building Code, all of Stanislaus County is located within a geologic hazard zone (Seismic Design Category D, E, or F) and a soils test may be required at building permit application. Results from the soils test will determine if unstable or expansive soils are present. If such soils are present, special engineering of the structure will be required to compensate for the soil deficiency. Any structures resulting from this project will be designed and built according to building standards appropriate to withstand shaking for the area in which they are constructed. An early consultation referral response received from the Department

of Public Works indicated that a grading, drainage, and erosion/sediment control plan for the project will be required, subject to Public Works review and Standards and Specifications. While the Department of Environmental Resources (DER) responded with no comment, any addition or expansion of a septic tank or alternative waste water disposal system would require the approval of the DER through the building permit process, which also takes soil type into consideration within the specific design requirements.

The project site is not located near an active fault or within a high earthquake zone. Landslides are not likely due to the flat terrain of the area.

DER, Public Works, and the Building Permits Division review and approve any building or grading permit to ensure their standards are met. Conditions of approval regarding these standards will be applied to the project. Impacts associated with geology and soils are considered to be less than significant.

Mitigation: None.

References: Application information; Referral response from the Stanislaus County Department of Public Works dated July 9, 2021; Stanislaus County General Plan and Support Documentation[1].

VIII. GREENHOUSE GAS EMISSIONS -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			**X**	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			**X**	

Discussion: Due to the proposed increases in animal units, this applicant is requesting construction of one new 10,140± square-foot free stall barn on APN 058-016-016, corrals totaling 5± acres in area on APN 058-015-012, and a new wastewater pond 1.3± acres in size on APN 058-015-008. Hours of operation are 24-hours a day, seven days a week. The dairy currently receives three visits for tallow and veterinary services every two weeks, and a total of four milk and feed truck trips per day. The proposed request is expected to increase the number of feed truck trips by one for a combined total of five milk and feed truck trips per day as part of this request; no increase to the current milk truck trips, tallow, or veterinary service trips are proposed.

The principal Greenhouse Gasses (GHGs) are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and water vapor (H2O). CO2 is the reference gas for climate change because it is the predominant greenhouse gas emitted. To account for the varying warming potential of different GHGs, GHG emissions are often quantified and reported as CO2 equivalents (CO2e). In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] No. 32), which requires the California Air Resources Board (ARB) design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020. Two additional bills, SB350 and SB32, were passed in 2015 further amending the states Renewables Portfolio Standard (RPS) for electrical generation and amending the reduction targets to 40% of 1990 levels by 2030.

A referral response was received from the SJVAPCD indicating that emissions resulting from construction and/or operation of the project may exceed the District's thresholds of significance for carbon monoxide (CO), oxides of nitrogen (NOx), reactive organic gases (ROG), oxides of sulfur (SOx), (PM10), and particulate matter. The SJVAPCD recommended that a more detailed preliminary review of the project be conducted for the project's construction and operational emissions.

Construction and operational emissions were analyzed with the California Emissions Estimator Model (CalEEMOD), by Trinity Consultants, dated October 31, 2022. The analysis evaluated construction and operational ROG, NOx, CO, SO2, PM10, PM2.5, CO2, CH4, and N2O emissions. CalEEMod default equipment listing for general heavy industrial usages

were utilized. Default horse power, daily operating hours, and load factors were also used. Operational mobile sources include a diesel-fueled solids manure removal trucks, commodity delivery trucks, a manure scraping tractor, a manure loading tractor, a bedding delivery tractor, and a feed delivery tractor. Other diesel-fueled sources that will not have an on-site increase in usage as a result of the project are feed loading tractor and milk tankers. The actual total construction activities were estimated to be eight months. The analysis found the average daily emissions for construction and operational activities associated with this project would not exceed 100 pounds per day for any criteria pollutant that has an ambient air quality standard and therefore are below the Air District's thresholds of significance. A more detailed discussion may be found in the Air Quality section of this checklist.

The SJVAPCD response indicated the project will be subject to District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), and Rule 2301 (Emission Reduction Credit Banking. The project may also be subject to the following rules: Regulation VIII, (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations), Rule 4550 (Conservation Management Practices), and Rule 4570 (Confined Animal Facilities). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants). The project may be subject to other applicable District permits and rules, which must be met as part of the District's Authority to Construct (ATC) permitting process.

The 2016 California Green Building Standards Code (CALGreen Code) went into effect on January 1, 2017, and includes mandatory provisions applicable to all new residential, commercial, and school buildings. The intent of the CALGreen Code is to establish minimum statewide standards to significantly reduce the greenhouse gas emissions from new construction. The Code includes provisions to reduce water use, wastewater generation, and solid waste generation. It is the intent of the CALGreen Code that buildings constructed pursuant to the Code achieve at least a 15 percent reduction in energy usage when compared to the state's mandatory energy efficiency standards contained in Title 24. The Code also sets limits on VOCs (volatile organic compounds) and formaldehyde content of various building materials, architectural coatings, and adhesives. With the requirements of meeting the Title 24, Green Building Code energy impacts from the project are considered to be less-than significant. A condition of approval will be added to this project to address compliance with Title 24, Green Building Code, which includes energy efficiency requirements.

Impacts associated with greenhouse gas emissions are expected to have a less than significant impact.

Mitigation: None.

References: Application information; Referral response from the San Joaquin Valley Air Pollution Control District (SJVAPCD), dated July 21, 2021; Response to HRA/AAQA from the SJVAPCD, dated December 6, 2022; Health Risk Assessment (HRA) and Ambient Air Quality Analysis (AAQA), prepared by Trinity Consultants, dated October 31, 2022; Stanislaus County General Plan and Support Documentation[1].

IX. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			**X**	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			**X**	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			**X**	

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			**X**	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			**X**	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			**X**	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			**X**	

Discussion: Cleaning chemicals are used to regularly clean the existing milk processing equipment in the milking parlor. These chemicals include acids, chlorine, and detergents which, after cleaning is complete, are discharged to the milking parlor sanitary sewer system after the equipment is rinsed. Iodine is applied to the cows' udders after milking; however, iodine is applied directly to the cows and is not discharged. The County Department of Environmental Resources – Hazardous Materials Division (DER HazMat) is responsible for overseeing hazardous materials. This project was referred to the DER Hazmat who responded that the applicant should contact DER for any appropriate permitting requirements for hazardous materials and/or wastes. This will be added as a condition of approval to the project. Pesticide exposure is a risk in areas located in the vicinity of agriculture. Sources of exposure include contaminated groundwater from drift from spray applications. Application of sprays is strictly controlled by the Agricultural Commissioner and can only be accomplished after first obtaining permits.

Animal waste resulting from daily operations will be managed through Waste and Nutrient Management Plans, which have been submitted to the Central Valley Regional Water Quality Control Board (CVRWQCB).

The project site is not listed on the EnviroStor database managed by the CA Department of Toxic Substances Control or within the vicinity of any airport. The site is located in a Local Responsibility Area (LRA) for fire protection, and is served by Mountain View Fire Protection District. The project was referred to the District and no comments have been received to date. The project was referred to the Environmental Review Committee (ERC), which responded with no comments. The project site is not within the vicinity of any airstrip or wildlands. No significant impacts associated with hazards or hazardous materials are anticipated to occur as a result of the proposed project.

Mitigation: None.

References: Application information; Department of Toxic Substances Control's data management system (EnviroStar); Referral response from Stanislaus County Environmental Review Committee dated July 16, 2021; Referral response from the Department of Environmental Resources Hazardous Materials Division, dated July 14, 2021; Stanislaus County General Plan and Support Documentation[1].

X. HYDROLOGY AND WATER QUALITY -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		**X**		

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			**X**	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:			**X**	
(i) result in substantial erosion or siltation on – or off-site;			**X**	
(ii) substantially increase the rate of amount of surface runoff in a manner which would result in flooding on- or off-site;			**X**	
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			**X**	
(iv) impede or redirect flood flows?			**X**	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			**X**	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			**X**	

Discussion: Dairies pose a number of potential risks to water quality, primarily related to the amount of manure and wastewater that they generate. Manure and wastewater from animal confinement facilities can contribute pollutants such as nutrients (nitrogen), ammonia, phosphorus, organic matter, sediments, pathogens, hormones, antibiotics, and total dissolved solids (salts). These pollutants, if uncontrolled, can cause several types of water quality impacts, including contamination of drinking water, interference with irrigation systems, and impairment of surface water and groundwater quality. Federal, state, and local regulations have been implemented to protect the quality of surface water and groundwater resources. The primary federal laws for protection of water quality are the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA). Federal and state regulations based on this underlying legislation range from establishing maximum contaminant levels to setting antidegradation policies.

The primary regulatory program for implementing water quality standards is the federal National Pollutant Discharge Elimination System (NPDES) Program. The United States Environmental Protection Agency (EPA) has delegated NPDES enforcement and administration to the State of California Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB (CVRWQCB) administers the federal NPDES program for dairies within Stanislaus County. The CVRWQCB adopted the General Waste Discharge Requirements and General NPDES Permit for Existing Milk Cow Dairy Concentrated Animal Feeding Operations (CAFO) within the Central Valley Region, Revised Order No. R5-2011-0091, in December 2011. The CAFO Order serves as a NPDES permit. Under the CAFO Order, owners and operators ("dischargers") of dairies are required to apply for and receive an NPDES permit if the dairy is an operation that stables or confines 700 or more mature dairy cows, whether milked or dry (a Large CAFO) and the operator discharges, or proposes to discharge, pollutants to the waters of the United States. This project requests to expand the herd from 442 mature cows to 1,500 mature cows and to increase support stock number from 600 to 1,200. The CAFO Order was written to follow the format of the 2007 General Order for Existing Milk Cow Dairies and Individual Waste Discharge Requirements as closely as possible, while incorporating requirements of the Federal CAFO rule.

Large CAFOs are required to prepare and implement a Nutrient Management Plan (NMP) and Waste Management Plan (WMP), which describe the regulatory requirements for the facility, and together they serve as the primary tool to prevent groundwater contamination and to establish best management practices (BMP) for dairy waste management. The General Order establishes a schedule for dischargers to develop and implement their WMP and NMP, and requires them to make facility modifications as necessary to protect surface water, improve storage capacity, and improve the facility's nitrogen balance before all infrastructure changes are completed. In addition, BMPs intended to minimize surface water discharges and subsurface discharges at dairies are required.

The WMP and NMP have been submitted to the CVRWQCB staff to determine if the amount of wastewater generated was in accordance with the standards outlined in the General Order and whether new individual WDRs are needed. The purpose of review of these plans and compliance with the General Order is to ensure that approved plans are designed and implemented to ensure that the impact of animal waste on surface and groundwater quality is minimized and poses a less than significant impact on water quality. According to the WMP, the total process wastewater generated daily will be 69,470 gallons per day under normal precipitation. The existing and required storage capacities were calculated to be 9,905,921 and 7,414,256 gallons, respectively. CVRWQCB staff is responsible for determining that the aforementioned plans are compliant with the General Order and that the existing lagoons are adequately sized to handle any additional waste resulting from the reorganization.

In May 2018, the CVRWQCB approved new Salt and Nitrate Control Programs. The Nitrate Control Program was developed to address widespread nitrate pollution in the Central Valley. The Board identified areas, referred to as Priority 1 and Priority 2 basins, where nitrates pose a high risk based on the presence of nitrates in groundwater that is being used for drinking water. The site is located within the Turlock Subbasin, which was included in one of these priority areas. Most nitrates in the Turlock Subbasin groundwater are from anthropogenic sources, such as nitrogen fertilizer, feedlot and dairy drainage, septic systems, or wastewater drainage. Nitrate concentrations are generally highest at shallow depths in the unconfined aquifer system but can reach deeper portions of aquifers by downward vertical hydraulic gradients, which can be exacerbated by pumping, or by intra-borehole flow through wells screened at multiple aquifer depths. During Water Year (WY) 2021, nitrate concentrations in the Turlock Subbasin groundwater ranged from not detected (ND) to 159 mg/L. In total, 92 wells (28.9% of all wells) had baseline values that are greater than the 10 mg/L MT, and the maximum nitrate concentration was measured during WY 2021 for 52 of these wells. The average of all nitrate baseline values was 11.7 mg/L, and the median was 7.5 mg/L. Elevated nitrate concentrations are observed primarily in the Western Principal Aquifers of the Turlock Subbasin, and in the western portion of the Eastern Principal Aquifer. Of the 198 wells in the Western Principal Aquifers, 70 have baseline values greater than the MT. Of the 166 wells in the Eastern Principal Aquifer, 65 have a baseline value greater than the MT. Higher concentrations were reported in the Western Upper Principal Aquifer than the Western Lower Principal Aquifer.

An email provided by CVRWQCB dated February 18, 2022, which was a direct response to a different project but included information relating to all current dairy projects, stated the proposed NMP is in agreement with the current Dairy General Order; however, data collected by the Central Valley Dairy Representative Monitoring Program (CVDRMP) has indicated that these nutrient management practices are not sufficient to prevent the pollution of groundwater from cropland. CVRWQCB is placing the review of all NMP & WMP on hold and operators are to proceed at their own discretion; therefore, the proposed project could result in degradation of groundwater resources. The CVRWQCB suggested the CAFO enrolls in the Central Valley Dairy Representative Monitoring Program (CVDRMP) to meet the requirements for groundwater monitoring. While the proposed dairy expansion is not anticipated to increase the potential for impacts to groundwater quality, because elevated nitrate levels have been observed from agricultural operations in general in the Central Valley, mitigation measures have been incorporated into the project requiring implementation of BMPs, compliance with their WMP and NMP, and enrollment in the CVDRMP. With mitigation in place impacts to hydrology and water quality are considered to be less than significant.

Stanislaus County adopted a Groundwater Ordinance in November 2014 (Chapter 9.37 of the County Code, hereinafter, the "Ordinance") that codifies requirements, prohibitions, and exemptions intended to help promote sustainable groundwater extraction in unincorporated areas of the County. The Ordinance prohibits the unsustainable extraction of groundwater and makes issuing permits for new wells, which are not exempt from this prohibition, discretionary. For unincorporated areas covered in an adopted GSP pursuant to SGMA, the County can require holders of permits for wells it reasonably concludes, are withdrawing groundwater unsustainably to provide substantial evidence that continued operation of such wells does not constitute unsustainable extraction and has the authority to regulate future groundwater extraction. The project site utilizes an existing septic system and on-site well and no additional septic systems or wells are included in the request. The project was referred to the Department of Environmental Resources and Environmental Review Committee, who had no comments regarding impacts to water. Any future proposals for new wells will be subject to review under the County's Groundwater Ordinance and Well Permitting Program.

The Sustainable Groundwater Management Act (SGMA) was passed in 2014 with the goal of ensuring the long-term sustainable management of California's groundwater resources. SGMA requires agencies throughout California to meet certain requirements including forming Groundwater Sustainability Agencies (GSA), developing Groundwater Sustainability Plans (GSP), and achieving balanced groundwater levels within 20 years. The site is located in the West Turlock Subbasin

covered by the West Turlock Subbasin GSA. The West Turlock Subbasin GSA (consisting of 12 public agencies) and the East Turlock Subbasin GSA (five agencies) are jointly developing a single GSP to manage groundwater sustainably through at least 2042. The West Turlock Subbasin Groundwater Sustainability Agency (GSA) and the East Turlock Subbasin GSA submitted the Groundwater Sustainability Plan (GSP) to California's Department of Water Resources (DWR) on January 28, 2022. DWR has posted the final GSP on its website and is in the process of adopting the final plan. The GSAs jointly prepared this first annual report for the Turlock Subbasin addressing groundwater and surface water conditions during Water Year (WY) 2021 and submitted the report to DWR. Total groundwater extractions in the Turlock Subbasin during WY 2021 were approximately 557,200 AFY. This total is based on both direct measurements by local water agencies and estimates. During WY 2021, agricultural groundwater extraction accounts for 92% (513,800 AFY) of the total pumping in the Turlock Subbasin, while urban groundwater extraction accounts for the remaining 8% (43,400 AFY). The proposed dairy expansion would be subject to the requirements of the GSP for the region, when adopted, which would further minimize impacts to groundwater supplies.

Areas subject to flooding have been identified in accordance with the Federal Emergency Management Act (FEMA). Run-off is not considered an issue because of several factors which limit the potential impact. These factors include a relative flat terrain of the subject site and relatively low rainfall intensities. Areas subject to flooding have been identified in accordance with the Federal Emergency Management Act (FEMA). The project site is located in FEMA Flood Zone X, which includes areas determined to be outside the 0.2% annual chance floodplains. As such, flooding is not considered to be an issue with respect to this project. Flood zone requirements will be addressed by the Building Permits Division during the building permit application process. The Stanislaus County Department of Public Works has reviewed the project and is requiring a grading, drainage, and erosion/sediment control plan for any on-site work that will alter the building footprint for the site. Consequently, run-off associated with the construction of any new structure will be reviewed as part of the overall building permit review process.

Impacts to hydrology and water quality are considered to be less-than significant with mitigation.

Mitigation:

1. The following Best Management Practices shall be implemented as applicable:
    - Positive drainage shall be included in project design and construction to ensure that excessive ponding does not occur. The design shall comply with Title 3, Division 2, Chapter 1, Article 22, Section 646.1 of the Food and Agriculture Code for construction and maintenance of dairy or facility surroundings, corrals, and ramps, as described below.
    - Dirt or unpaved corrals, or unpaved lanes, shall not be located closer than 25 feet from the milking barn or closer than 50 feet from the milk house. Corral drainage must be provided.
    - A paved (concrete or equivalent) ramp or corral shall be provided to allow the animals to enter and leave the milking barn. This paved area shall be curbed (minimum of 6 inches high and 6 inches wide) and sloped to a drain. Cow washing areas shall be paved (concrete or equivalent) and sloped to a drain. The perimeter of the area shall be constructed in a manner that will retain the wash water to a paved drained area. Paved access shall be provided to permanent feed racks, mangers, and water troughs. Water troughs shall be provided with: (1) a drain to carry the water from the corrals; and (2) pavement (concrete or equivalent) which is at least 10 feet wide at the drinking area.
    - The cow standing platform at permanent feed racks shall be paved with concrete or equivalent for at least 10 feet back of the stanchion line.
    - As unpaved areas are cleaned, depressions tend to form, allowing ponding and increased infiltration. Regular maintenance shall include filling of depressions. Personnel shall be taught the correct use of manure collection machines (wheel loaders or elevating scrapers).

    The dairy operator/property owner shall be responsible for verifying, to the satisfaction of the Planning Director, implementation of the aforementioned Best Management Practices. The dairy operator/property owner shall be responsible for paying the County's actual costs of verifying compliance. If the County finds any of the applicable Best Management Practices have not been implemented, the dairy operator/property owner shall implement said Best Management Practices within the time frame specified in writing by the County. The dairy operator/property owner's verification shall be submitted to the Stanislaus County Planning Department within 60-days of written notice being delivered to the dairy operator/property owner.

2. The applicant shall comply with requirements of the Nutrient Management Plan (NMP) and Waste Management Plan (WMP) submitted to the County, as part of the Use Permit approval. The application rates of liquid and/or solid manure identified within the NMP shall not result in total nitrogen applied to the land application areas exceeding 1.65 times total nitrogen that will be removed from the field in the harvested portion of the crop. Upon request, compliance shall be verified by the collection of nutrient samples for nitrogen, potassium, phosphorus, and salts prior to and during application periods to confirm agronomic rates within all portions of cropped areas receiving manure, and to protect water supplies. The dairy operator/property owner shall be responsible for hiring a qualified professional, approved by the Planning Director, to collect nutrient samples, interpret the results, and provide said results to the County for review. If determined necessary by the Planning Director, the dairy operator/property owner shall pay for the County's actual costs to hire a third party to review the annual results.

3. The applicant shall enroll in the Central Valley Dairy Representative Monitoring Program (CVDRMP) to meet the requirements for groundwater monitoring prior to increasing the herd.

References: Application information; Referral response from the Department of Public Works, July 9, 2021**;** Referral response from the Environmental Review Committee, dated July 16, 2021; Email from the Central Valley Regional Water Quality Control Board (CVRWQCB), dated February 18, 2022; West Turlock Subbasin and East Turlock Subbasin Groundwater Sustainability Agencies (GSAs) Turlock Subbasin Groundwater Sustainability Plan (GSP) First Annual Report Water Year 2021; Valley Water Collaborative Interactive Ambient Nitrate Map; Stanislaus County General Plan and Support Documentation[1].

XI. LAND USE AND PLANNING -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Physically divide an established community?			**X**	
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			**X**	

Discussion: The project site is designated Agriculture in the County General Plan and is zoned General Agriculture (A-2-40). This project is a request to expand the herd from 442 mature cows to 1,500 mature cows and to increase support stock number from 600 to 1,200. The existing dairy operation has been previously developed with areas for feed storage, waste containment, milking facility infrastructure, and utilities. Due to the proposed increases in animal units, this applicant is also requesting construction of one new 10,140± square-foot free stall barn on Assessor Parcel Number (APN) 058-016-016, corrals totaling 5± acres in area on APN 058-015-012, and a new wastewater pond 1.3± acres in size on APN 058-015-008. Consequently, additional waste will be generated. The dairy's existing Waste Management Plan (WMP) and Nutrient Management Plan (NMP) were revised to account for the increase in waste and resulting storage and disposal needs associated with the increase in herd size. The updated WMP estimates that the expansion will increase the daily manure production by 2,184± cubic feet for a total of 3,866.45 cubic feet (28,923.06 gallons) of manure per day, pre-separation, which equates to approximately 463,974 cubic feet (3,470,767 gallons) of manure per storage period (120 days). The estimated wastewater storage needs will be accommodated by the existing and proposed wastewater pond.

Dairies are considered to be a permitted agricultural use in the A-2 zoning district in Stanislaus County. Use permits are only processed for the expansion of dairy facilities when the Regional Water Quality Control Board (RWQCB) determines that Waste Discharge Requirements (WDRs) are required. The RWQCB has determined that the proposed project required amended Waste Discharge Requirements (WDR) which is subject to CEQA and, therefore, requires that the applicants obtain a Use Permit in accordance with §21.20.030(F) of the Stanislaus County Zoning Ordinance. Agricultural uses requiring a Use Permit which do not fall under Tier One, Two, or Three uses may be allowed when the Planning Commission finds that the establishment, maintenance, and operation of the proposed use or buildings applied for are consistent with the General Plan and will not, under the circumstances of the particular case, be detrimental to the health, safety, and general welfare of persons residing or working in the neighborhood of the use, and that it will not be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.

The project site is currently enrolled under California Land Conservancy ("Williamson Act") Contract No. 78-3115. Uses requiring use permits that are approved on lands under California Land Conservation Contracts (Williamson Act Contracts) shall be consistent with all of the following principles of compatibility:

1. The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in the A-2 zoning district;
2. The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in the A-2 zoning district; and
3. The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use. As a permitted agricultural use, the project is considered to be consistent with the Williamson Act Principals of Compatibility.

Based on the specific features and design of this project, it does not appear this project will impact the long-term productive agricultural capability of surrounding contracted lands in the A-2 zoning district. There is no indication this project will result in the removal of adjacent contracted land from agricultural use. The project was referred to the Department of Conservation, and no response has been received to date. This request will not physically divide an established community, nor conflict with any habitat conservation plans. Impacts associated with land use and planning are considered to be less than significant.

Mitigation: None.

References: Application information; Stanislaus County General Plan and Support Documentation[1].

XII. MINERAL RESOURCES -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?			**X**	
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?			**X**	

Discussion: The location of all commercially viable mineral resources in Stanislaus County has been mapped by the State Division of Mines and Geology in Special Report 173. There are no known significant resources on the site, nor is the project site located in a geological area known to produce resources.

Mitigation: None.

References: Stanislaus County General Plan and Support Documentation[1].

XIII. NOISE -- Would the project result in:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			**X**	
b) Generation of excessive groundborne vibration or groundborne noise levels?			**X**	

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			**X**	

Discussion: The Stanislaus County General Plan identifies noise levels up to 75 dB Ldn (or CNEL) as the normally acceptable level of noise for agricultural uses. The Stanislaus County General Plan identifies noise levels for residential or other noise-sensitive land uses of up to 55 hourly Leq, dBA and 75 Lmax, dBA from 7 a.m. to 10 p.m. and 45 hourly Leq, dBA and 65 Lmax, dBA from 10 p.m. to 7 a.m. Pure tone noises, such as music, shall be reduced by five dBA; however, when ambient noise levels exceed the standards, the standards shall be increased to the ambient noise levels. Noise impacts associated with on-site activities and traffic are not anticipated to exceed the normally acceptable level of noise. On-site grading and construction may result in a temporary increase in the area's ambient noise levels; however, noise impacts associated with on-site activities and traffic are not anticipated to exceed the normally acceptable level of noise. Permanent increases may result as the number of animal units is increased on-site; however, Stanislaus County has adopted a Right-to-Farm Ordinance (§9.32.050) which states that inconveniences associated with agricultural operations, such as noise, odors, flies, dust, or fumes shall not be considered to be a nuisance if agricultural operations are consistent with accepted customs and standards. The site itself is impacted by noise generated by vehicular traffic on West Linwood Avenue and S Mitchell Road, and neighboring dairy operations.

The site is not located within an airport land use plan. Impacts associated with noise are considered to be less than significant.

Mitigation: None.

References: Application information; Stanislaus County Noise Control Ordinance (Title 10); Stanislaus County General Plan and Support Documentation[1].

XIV. POPULATION AND HOUSING -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			**X**	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			**X**	

Discussion: The site is not included in the vacant sites inventory for the 2016 Stanislaus County Housing Element, which covers the 5th cycle Regional Housing Needs Allocation (RHNA) for the county and will therefore not impact the County's ability to meet their RHNA. No population growth will be induced nor will any existing housing be displaced as a result of this project. The project site is adjacent to large scale agricultural operations, and the nature of the use is considered consistent with the General Agriculture (A-2) zoning district.

As no employee housing is proposed, the project is not required to obtain a Permit to Operate Employee Housing through the Department of Environmental Resources, which addresses housing standards. Should any employee housing be proposed in the future, it will be evaluated to determine which permits are necessary or if environmental review is required. The provisions of the California Building Standards Code (Title 24) govern the construction of permanent buildings used for employee housing. Additionally, Title 25 of the California Code of Regulations includes specific requirements for the construction of housing, maintenance of grounds and buildings, minimum allowable sleeping space and facilities, sanitation, and heating.

Mitigation: None.

References: Application information; California Building Standards Code (Cal. Code Regs., Title 24); Employee Housing (Cal Code Regs., Title 25, Division 1, Chapter 1, Subchapter 3); Stanislaus County General Plan and Support Documentation[1].

XV. PUBLIC SERVICES --	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Would the project result in the substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:			**X**	
Fire protection?			**X**	
Police protection?			**X**	
Schools?			**X**	
Parks?			**X**	
Other public facilities?			**X**	

Discussion: The project site is served by the Mountain View Fire District for fire protection services, the Stanislaus County Sherriff for police services, the Chatom Union and Turlock Unified School Districts for schools, by the Turlock Irrigation District (TID) for electrical services, and by Stanislaus County for other public services such as environmental health, roads, and parks services. The County has adopted Public Facilities Fees, as well as one for Fire Facility Fees on behalf of the appropriate fire district, to address impacts to public services. Such fees are required to be paid at the time of building permit issuance. The project was referred to the appropriate public service agencies, as well as the Stanislaus County Environmental Review Committee (ERC). This project was circulated to all applicable school, fire, police, irrigation, and public works departments and districts during the early consultation referral period and no concerns regarding impacts to County services were identified. A referral response received from the Department of Public Works indicated that a grading, drainage, and erosion/sediment control plan for the project shall be submitted prior to the herd increase or issuance of any grading or building permit, an encroachment permit shall be required for the unpaved driveways, and a Storm Water Pollution Prevention Plan (SWPPP) will be required for future construction. Public Works also requested road dedication be provided for the half-width of Linwood and Mitchell Roads. These comments will be applied as conditions of approval. Impacts to Public Services are considered to be less than significant.

Mitigation: None.

References: Application information; Referral response from the Department of Public Works, dated July 9, 2021; Referral response from Stanislaus County Environmental Review Committee, July 16, 2021; Stanislaus County General Plan and Support Documentation[1].

XVI. RECREATION --	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			**X**	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			**X**	

Discussion: The project site is served by Stanislaus County for parks services. This project will not increase demands for recreational facilities, as such impacts typically are associated with residential development. Non-residential development pays parks fees through the payment of public facilities fees, which are collected during the issuance of a building permit. This requirement will be incorporated into the project as a development standard.

Impacts to recreation are considered to be less than significant.

Mitigation: None.

References: Application information; Stanislaus County General Plan and Support Documentation[1].

XVII. TRANSPORTATION-- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			**X**	
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			**X**	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			**X**	
d) Result in inadequate emergency access?			**X**	

Discussion: All three parcels of the project site have access to County-maintained West Linwood Avenue or South Mitchell Road, which are classified as 60-foot-wide local roads. Assessor Parcel Number (APN) 058-016-016 fronts on both West Linwood and South Mitchell Roads, and APNs 058-015-008 and 058-015-012 both front on South Mitchell Road. It is not anticipated that the project would substantially affect the level of service on West Linwood Avenue or South Mitchell Road. The project was referred to the Stanislaus County Department of Public Works, which has requested conditions of approval to address driveway approaches installed according to Public Works' Standards and Specifications, restrictions on loading, parking, unloading within the County right-of-way, the need for road reservations, and a grading, drainage, and sediment management plan. These conditions will be applied to the project.

Section 15064.3 of the CEQA Guidelines establishes specific considerations for evaluating a project's transportation impacts. The CEQA Guidelines identify vehicle miles traveled (VMT), which is the amount and distance of automobile travel attributable to a project, as the most appropriate measure of transportation impacts. A technical advisory on evaluating transportation impacts in CEQA published by the Governor's Office of Planning and Research (OPR) in December of 2018 clarified the definition of automobiles as referring to on-road passenger vehicles, specifically cars and light trucks. While heavy trucks are not considered in the definition of automobiles for which VMT is calculated for, heavy-duty truck VMT could be included for modeling convenience. According to the same technical advisory from OPR, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than significant transportation impact. There are

three tallow and veterinary trips every two weeks, which are not increasing as part of this request. Daily truck trips associated with milk pick up and feed delivery are increasing by one from a total of four to five daily trips. There are currently four employees who all live on-site, and the number of employees is not increasing as part of this request. VMT increase associated with the proposed project is less-than significant as the number of vehicle trips will not exceed 110 per day.

Transportation impacts associated with the project are considered to be less than significant.

Mitigation: None.

References: Application information; Governor's Office of Planning and Research Technical Advisory, December 2018; Referral response from the Department of Public Works, dated July 9, 2021; Stanislaus County General Plan and Support Documentation[1].

XVIII. TRIBAL CULTURAL RESOURCES -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California native American tribe, and that is:			**X**	
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or			**X**	
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set for the in subdivision (c) of Public Resource Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.			**X**	

Discussion: It does not appear that this project will result in significant impacts to any archaeological or cultural resources. The project site is already improved with multiple buildings. In accordance with SB 18 and AB 52, this project was not referred to the tribes listed with the Native American Heritage Commission (NAHC) as the project is not a General Plan Amendment and no tribes have requested consultation or project referral noticing. While the site is already developed, if any resources are found during future construction, construction activities would halt until a qualified survey takes place and the appropriate authorities are notified.

Mitigation: None.

References: Application information; Stanislaus County General Plan and Support Documentation[1].

XIX. UTILITIES AND SERVICE SYSTEMS -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

Discussion: Limitations on providing services have not been identified. The project proposes to utilize an existing well and existing septic facilities. The project was referred to the Turlock Irrigation District (TID) and no response has been received to date. Any improvements which impact irrigation facilities shall be subject to District standards and specifications. Any intensity of electrical utilities will be subject to any regulatory requirements during the building permitting phase. A referral response received from the Department of Public Works indicated that a grading, drainage, and erosion/sediment control plan for the project shall be submitted prior to the herd increase, or issuance of any building permit or grading permit. A Storm Water Pollution Prevention Plan (SWPPP) will be required for future construction prior to the approval of any grading. These comments will be applied as conditions of approval. The project was also referred to PG&E and AT&T and no response has been received to date.

No new wells or septic systems are proposed for this expansion; installation of any future wells or septic systems must be reviewed and approved by the Department of Environmental Resources (DER) and must adhere to current Local Agency Management Program (LAMP) standards. LAMP standards include minimum setbacks from wells to prevent negative impacts to groundwater quality. The project was referred to DER, who responded with no comments regarding wastewater. The project was also referred to the Environmental Review Committee who responded with no comment.

Impacts to utilities and services are considered to be less than significant.

Mitigation: None.

References: Referral response from Public Works, dated July 9, 2021; Referral response from the Environmental Review Committee (ERC), dated July 16, 2021; Stanislaus County General Plan and Support Documentation[1].

XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			**X**	
c) Require the installation of maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?			**X**	
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?			**X**	

Discussion: The Stanislaus County Local Hazard Mitigation Plan identifies risks posed by disasters and identifies ways to minimize damage from those disasters. The terrain of the site is relatively flat, and the site has access to two County-maintained roads. The site is located in a Local Responsibility Area (LRA) for fire protection and is served by Mountain View Fire Protection District. The project was referred to the District, and no comments have been received to date. California Building and Fire Code establishes minimum standards for the protection of life and property by increasing the ability of a building to resist intrusion of flame and burning embers. The building permit for the 10,140± square-foot free stall barn will be reviewed by the County's Building Permits Division and Fire Prevention Bureau to ensure all State of California Building and Fire Code requirements are met prior to construction. Wildfire risk and risks associated with postfire land changes are considered to be less-than significant.

Mitigation: None.

References: Application information; California Fire Code Title 24, Part 9; California Building Code Title 24, Part 2, Chapter 7; Stanislaus County Local Hazard Mitigation Plan; Stanislaus County General Plan and Support Documentation[1].

XXI. MANDATORY FINDINGS OF SIGNIFICANCE --	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			**X**	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			**X**	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			**X**	

Discussion: The proposed use is considered to be a permitted agricultural use. Discretionary approval is required for the expansion of the dairy to allow for amendments to the operation's Waste Discharge Requirements. The site is surrounded by A-2-40 zoned parcels improved with agricultural uses, including confined animal facilities, irrigated cropland,

an orchard, and scattered single-family dwellings in all directions. Development of the surrounding area is subject to the permitted uses and uses allowed when a use permit is obtained as permitted by the A-2 zoning district. Additionally, the majority of the surrounding parcels located within Stanislaus County are restricted by Williamson Act Contracts and are limited to the uses found to be compatible with the Williamson Act. Any uses beyond those uses permitted in the A-2 zoning district would require a General Plan Amendment and rezoning of the property which would be evaluated through additional environmental review which would take into consideration impacts from the loss of farmland and the potential for farmland conversion and cumulative impacts to the surrounding area. Review of this project has not indicated any features which might significantly impact the environmental quality of the site and/or the surrounding area.

Mitigation: None.

References: Application information**;** Initial Study; Stanislaus County General Plan and Support Documentation[1].

[1]Stanislaus County General Plan and Support Documentation adopted in August 23, 2016, as amended. ***Housing Element*** adopted on April 5, 2016.

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

DAIRY FACILITY INFORMATION

A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY: John Brasil Dairy #3

Physical address of dairy:

1707 S Mitchell RD	Turlock	Stanislaus	95380
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

Date facility was originally placed in operation: 11/01/1991

Regional Water Quality Control Board Basin Plan designation: San Joaquin River Basin

County Assessor Parcel Number(s) for dairy facility:

0058-0011-0011-0000 0058-0015-0008-0000 0058-0015-0012-0000 0058-0016-0016-0000 0058-0030-0007-0000

B. OPERATOR NAME: Brasil, John Telephone no.: (209) 632-7867 (Landline) (Cellular)

2613 S Mitchell RD	Turlock	CA	95380
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [X] Yes [ ] No

C. LEGAL OWNER NAME: Brasil, John Telephone no.: (209) 632-7867 (Landline) (Cellular)

2613 S Mitchell RD	Turlock	CA	95380
Mailing Address Number and Street	City	State	Zip Code

Owner should receive Regional Board correspondence (check): [X] Yes [ ] No

D. CONTACT NAME: Machado, Patrick Telephone no.: (Landline) (209) 678-6720 (Cellular)

Title: CCA # 385124

7112 Metcalf WAY	Hughson	CA	95326
Mailing Address Number and Street	City	State	Zip Code

CONTACT NAME: Kashefi, Kion Telephone no.: (Landline) (209) 988-1724 (Cellular)

Title: Dairy Specialist/CCA

624 E Service RD	Modesto	CA	95358
Mailing Address Number and Street	City	State	Zip Code

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

AVAILABLE NUTRIENTS

A. HERD INFORMATION

The milk cow dairy is currently regulated under individual Waste Discharge Requirements.

Total number of milk and dry cows combined as a baseline value in response to the Report of Waste Discharge (ROWD) request of October, 2005:

1,500 *milk and dry cows combined (regulatory review is required for any expansion)*

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Heifers (7-14 mo. to breeding)	Calves (4-6 mo.)	Calves (0-3 mo.)
Present count	1,500	1	400	400	400	0
Maximum count	1,500	1	400	400	400	0
Avg live weight (lbs)	950	1,000	700	500		
Daily hours on flush	22	0	10	10	10	0

Predominant milk cow breed: Jersey

Average milk production: 52 *pounds per cow per day*

B. IRRIGATION SOURCES

Irrigation Source Name	Type	Nitrogen (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Discharge Rate
TID Canal	Surface water (canal, river)	0.07	0.02	0.10	3,000 *gpm*

C. NUTRIENT IMPORTS

No nutrient imports entered.

D. NUTRIENT EXPORTS

Nutrient Type/Name	Quantity	Moisture	Nitrogen	Phosphorus (as P2O5)	Potassium (as K2O)
Manure	7,200.00 *ton*	18.6%	2.190%	0.560%	1.070%

Total nitrogen exported: 256,703.04 *lbs*

Total phosphorus exported: 28,685.10 *lbs*

Total potassium exported: 104,099.53 *lbs*

E. STORAGE PERIOD

Storage period is the maximum period of time anticipated between land application of process wastewater (from storage ponds/lagoons) to croplands. A qualified agronomist and civil engineer should collaborate and collectively consider predominant soil types, soil infiltration rates, maximum depth, available water, field capacity, permanent wilting point, allowable depletion, crop water use, evapotranspiration, precipitation, irrigation system capacity, water delivery constraints, crop nutrient requirements, soil nutrient adsorbtion/desorption, rooting depth, nutrient accumulation/availability for current and future crop needs, facility wide process wastewater storage capacity and other factors as deemed necessary across all croplands where process wastewater is applied in selecting a storage period. In many cases conflicts will arise between crop water demands, crop nutrient demands and insufficient process wastewater storage capacity. Process wastewater may not be the best choice as a source of either water and/or nutrients to meet crop demands throughout the year. Groundwater and surface water vulnerability has been considered.

The storage period selected in this Nutrient Management Plan is consistent with the storage period selected in the Waste Management Plan.

Storage period: 120 *days*

APPLICATION AREA

A. ASSESSOR PARCEL NUMBER: 0058-0015-0008-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0058-0015-0012-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0058-0016-0016-0000
Legal owner of parcel: Owned by Dairy

B. FIELD NAME: Dairy Field

Cropable acres: 64

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Wheat, silage, soft dough	Middle November	Middle April	64
Corn, silage	Middle May	Early September	64
Sorghum-Sudangrass, forage	Middle September	Early November	64

FIELD NAME: Lagoon Field

Cropable acres: 16

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Wheat, silage, soft dough	Middle November	Middle April	16
Corn, silage	Middle May	Early September	16
Sorghum-Sudangrass, forage	Middle September	Early November	16

FIELD NAME: Mulder Field

Cropable acres: 58

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Wheat, silage, soft dough	Middle November	Middle April	46
Corn, silage	Middle May	Late September	46

Sorghum-Sudangrass, forage	Middle September	Early November	58

C. LAND APPLICATION AREA FIELDS AND PARCELS

Field name	Cropable acres	Total harvests	Parcel number
Dairy Field	64	3	0058-0016-00160000
Lagoon Field	16	3	0058-0015-00080000
Mulder Field	58	3	0058-0015-00120000
Land application area totals	138	9	

Nutrient Management Plan Report
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NUTRIENT BUDGET

A. NUTRIENT BUDGET FOR CROP: Dairy Field / Wheat, silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	0.0	0.1	0.0	0.0
Nutrient source: Soil		50%	50%	50%	
Application method: Lab results					
Pre-irrigation prior to planting (with fertilizer)	1	90.0	15.0	75.0	90.1
Nutrient source: Retention pond (lagoon)		35%	50%	85%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	62.0
	0.1	0.0	0.1	

In season irrigation (with fertilizer)	2	60.0	15.0	75.0	120.2
Nutrient source: Retention pond (lagoon)		35%	50%	85%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	60.0
	0.1	0.0	0.1	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.3	0.1	0.4
Existing soil nutrient content	0.0	0.1	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	210.0	45.0	225.0
Other	0.0	0.0	0.0
Atmospheric deposition	4.7		
Nutrients applied	215.0	45.2	225.4
Potential crop nutrient removal	165.0	25.5	124.5
Nutrient balance	50.0	19.7	100.9
Applied to removal ratio	1.30	1.77	1.81

Fresh water applied: 1.57 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Dairy Field / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	0.0	0.1	0.0	0.0
Nutrient source: Soil		50%	50%	50%	
Application method: Lab results					

NUTRIENT BUDGET FOR CROP (CONTINUED): Dairy Field / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Pre-irrigation prior to planting (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	1	100.0 35%	9.0 50%	68.0 85%	100.1

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	48.0
	0.1	0.0	0.1	

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer) *Nutrient source:* Water only *Application method:* Surface	2	0.0 0%	0.0 0%	0.0 0%	0.2

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	48.0
	0.1	0.0	0.1	

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	5	50.0 35%	12.0 50%	60.0 85%	250.4

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	48.0
	0.1	0.0	0.1	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.6	0.2	0.9
Existing soil nutrient content	0.0	0.1	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	350.0	69.0	368.0
Other	0.0	0.0	0.0
Atmospheric deposition	4.7		
Nutrients applied	355.3	69.3	368.9
Potential crop nutrient removal	270.0	45.0	198.0
Nutrient balance	85.3	24.3	170.9
Applied to removal ratio	1.32	1.54	1.86

Fresh water applied: 3.31 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Dairy Field / Sorghum-Sudangrass, forage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

NUTRIENT BUDGET FOR CROP (CONTINUED): Dairy Field / Sorghum-Sudangrass, forage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content *Nutrient source:* Soil *Application method:* Lab results	1	0.0 50%	0.1 50%	0.0 50%	0.0
In season irrigation (no fertilizer) *Nutrient source:* Water only *Application method:* Surface	1	0.0 0%	0.0 0%	0.0 0%	0.1

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.2	64.0
	0.1	0.0	0.2	

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	2	140.0 35%	18.0 50%	120.0 85%	280.2

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	60.0
	0.1	0.0	0.1	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.3	0.1	0.4
Existing soil nutrient content	0.0	0.1	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	280.0	36.0	240.0
Other	0.0	0.0	0.0
Atmospheric deposition	4.7		
Nutrients applied	285.0	36.2	240.4
Potential crop nutrient removal	216.0	81.0	234.0
Nutrient balance	69.0	-44.8	6.4
Applied to removal ratio	1.32	0.45	1.03

Fresh water applied: 1.59 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Lagoon Field / Wheat, silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content *Nutrient source:* Soil *Application method:* Lab results	1	0.0 50%	0.1 50%	0.0 50%	0.0

NUTRIENT BUDGET FOR CROP (CONTINUED): Lagoon Field / Wheat, silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Pre-irrigation prior to planting (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	1	90.0 35%	15.0 50%	75.0 85%	90.1

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.2	16.0
	0.1	0.0	0.2	

In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	2	60.0 35%	15.0 50%	75.0 85%	120.2

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	15.0
	0.1	0.0	0.1	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.3	0.1	0.4
Existing soil nutrient content	0.0	0.1	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	210.0	45.0	225.0
Other	0.0	0.0	0.0
Atmospheric deposition	4.7		
Nutrients applied	215.0	45.2	225.4
Potential crop nutrient removal	165.0	25.5	124.5
Nutrient balance	50.0	19.7	100.9
Applied to removal ratio	1.30	1.77	1.81

Fresh water applied: 1.59 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Lagoon Field / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content *Nutrient source:* Soil *Application method:* Lab results	1	0.0 50%	0.1 50%	0.0 50%	0.0

NUTRIENT BUDGET FOR CROP (CONTINUED): Lagoon Field / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Pre-irrigation prior to planting (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	1	100.0 35%	14.0 50%	68.0 85%	100.1

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	12.0
	0.1	0.0	0.1	

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer) *Nutrient source:* Water only *Application method:* Surface	2	0.0 0%	0.0 0%	0.0 0%	0.2

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	12.0
	0.1	0.0	0.1	

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	5	50.0 35%	12.0 50%	60.0 85%	250.4

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	12.0
	0.1	0.0	0.1	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.6	0.2	0.9
Existing soil nutrient content	0.0	0.1	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	350.0	74.0	368.0
Other	0.0	0.0	0.0
Atmospheric deposition	4.7		
Nutrients applied	355.3	74.3	368.9
Potential crop nutrient removal	270.0	45.0	198.0
Nutrient balance	85.3	29.3	170.9
Applied to removal ratio	1.32	1.65	1.86

Fresh water applied: 3.31 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Lagoon Field / Sorghum-Sudangrass, forage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

NUTRIENT BUDGET FOR CROP (CONTINUED): Lagoon Field / Sorghum-Sudangrass, forage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	0.0	0.1	0.0	0.0
Nutrient source: Soil		50%	50%	50%	
Application method: Lab results					
In season irrigation (no fertilizer)	1	0.0	0.0	0.0	0.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	15.0
	0.1	0.0	0.1	

In season irrigation (with fertilizer)	2	140.0	26.0	175.0	280.2
Nutrient source: Retention pond (lagoon)		35%	50%	85%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	15.0
	0.1	0.0	0.1	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.3	0.1	0.4
Existing soil nutrient content	0.0	0.1	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	280.0	52.0	350.0
Other	0.0	0.0	0.0
Atmospheric deposition	4.7		
Nutrients applied	285.0	52.2	350.4
Potential crop nutrient removal	216.0	81.0	234.0
Nutrient balance	69.0	-28.8	116.4
Applied to removal ratio	1.32	0.64	1.50

Fresh water applied: 1.55 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Mulder Field / Wheat, silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	0.0	0.1	0.0	0.0
Nutrient source: Soil		50%	50%	50%	
Application method: Lab results					

NUTRIENT BUDGET FOR CROP (CONTINUED): Mulder Field / Wheat, silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Pre-irrigation prior to planting (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	1	90.0 35%	15.0 50%	75.0 85%	90.1

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	44.0
	0.1	0.0	0.1	

In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	2	60.0 35%	15.0 50%	75.0 85%	120.2

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	42.0
	0.1	0.0	0.1	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.3	0.1	0.4
Existing soil nutrient content	0.0	0.1	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	210.0	45.0	225.0
Other	0.0	0.0	0.0
Atmospheric deposition	4.7		
Nutrients applied	215.0	45.2	225.4
Potential crop nutrient removal	165.0	25.5	124.5
Nutrient balance	50.0	19.7	100.9
Applied to removal ratio	1.30	1.77	1.81

Fresh water applied: 1.54 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Mulder Field / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content *Nutrient source:* Soil *Application method:* Lab results	1	0.0 50%	0.1 50%	0.0 50%	0.0

NUTRIENT BUDGET FOR CROP (CONTINUED): Mulder Field / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Pre-irrigation prior to planting (with fertilizer)	1	100.0	14.0	80.0	100.1
Nutrient source: Retention pond (lagoon)		35%	50%	85%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	35.0
	0.1	0.0	0.1	

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	2	0.0	0.0	0.0	0.2
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	35.0
	0.1	0.0	0.1	

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer)	5	45.0	13.0	65.0	225.4
Nutrient source: Retention pond (lagoon)		35%	50%	85%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	35.0
	0.1	0.0	0.1	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.6	0.2	0.9
Existing soil nutrient content	0.0	0.1	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	325.0	79.0	405.0
Other	0.0	0.0	0.0
Atmospheric deposition	4.7		
Nutrients applied	330.3	79.3	405.9
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	90.3	34.3	207.9
Applied to removal ratio	1.38	1.76	2.05

Fresh water applied: 3.36 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Mulder Field / Sorghum-Sudangrass, forage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

NUTRIENT BUDGET FOR CROP (CONTINUED): Mulder Field / Sorghum-Sudangrass, forage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content *Nutrient source:* Soil *Application method:* Lab results	1	0.0 50%	0.1 50%	0.0 50%	0.0
In season irrigation (no fertilizer) *Nutrient source:* Water only *Application method:* Surface	1	0.0 0%	0.0 0%	0.0 0%	0.1

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	50.0
	0.1	0.0	0.1	

In season irrigation (with fertilizer) *Nutrient source:* Retention pond (lagoon) *Application method:* Pipeline	2	140.0 35%	26.0 50%	175.0 85%	280.2

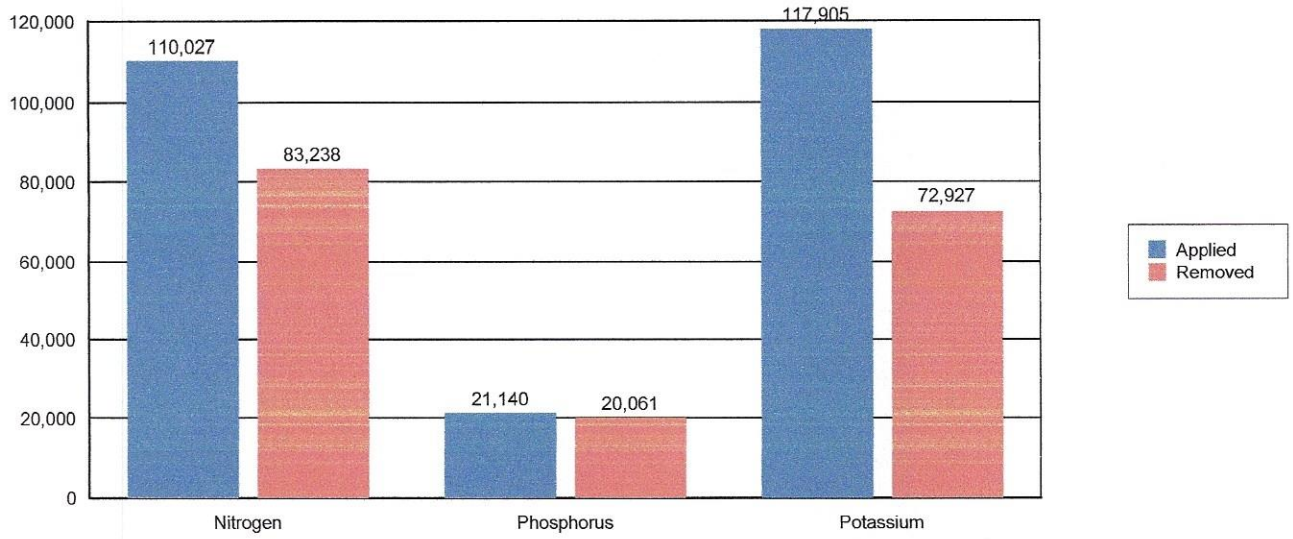
Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
TID Canal	0.1	0.0	0.1	50.0
	0.1	0.0	0.1	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.3	0.1	0.4
Existing soil nutrient content	0.0	0.1	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	280.0	52.0	350.0
Other	0.0	0.0	0.0
Atmospheric deposition	4.7		
Nutrients applied	284.9	52.2	350.4
Potential crop nutrient removal	216.0	81.0	234.0
Nutrient balance	68.9	-28.8	116.4
Applied to removal ratio	1.32	0.64	1.50

Fresh water applied: 1.43 *feet* Total harvests: 1

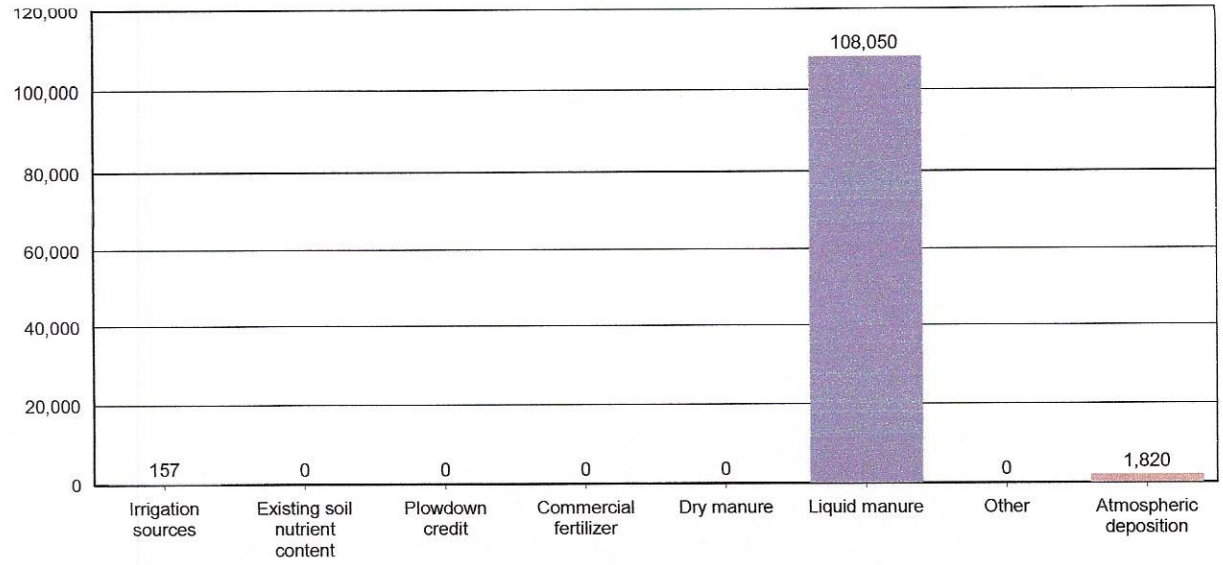
NUTRIENT APPLICATIONS, POTENTIAL REMOVAL, AND BALANCE

A. POUNDS OF NUTRIENT APPLIED VS. CROP REMOVAL POTENTIAL



	Total N (lbs)	Total P (lbs)	Total K (lbs)
Irrigation sources	157.2	44.9	224.6
Existing soil nutrient content	0.0	39.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	108,050.0	21,056.0	117,680.0
Other	0.0	0.0	0.0
Atmospheric deposition	1,820.0		
Nutrients applied to all crops	110,027.2	21,139.9	117,904.6
Potential crop nutrient removal	83,238.0	20,061.0	72,927.0
Nutrient balance	26,789.2	1,078.9	44,977.6
Applied to removal ratio	1.32	1.05	1.62

B. POUNDS OF NITROGEN APPLIED BY NUTRIENT SOURCE



	Total N (lbs)	Total P (lbs)	Total K (lbs)
Irrigation sources	157.2	44.9	224.6
Existing soil nutrient content	0.0	39.0	0.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	108,050.0	21,056.0	117,680.0
Other	0.0	0.0	0.0
Atmospheric deposition	1,820.0		
Nutrients applied to all crops	110,027.2	21,139.9	117,904.6
Potential crop nutrient removal	83,238.0	20,061.0	72,927.0
Nutrient balance	26,789.2	1,078.9	44,977.6
Applied to removal ratio	1.32	1.05	1.62

NUTRIENT BALANCE

A. WHOLE FARM BALANCE

	Total N (lbs)	Total P (lbs)	Total K (lbs)
Nutrients in storage from herd*			
Daily gross	1,529.3	251.7	738.4
Annual gross	558,182.2	91,866.3	269,524.8
Net to pond storage after ammonia losses (30% loss applied)	324,323.8	77,042.0	247,064.4
Net to drylot storage after ammonia losses (30% loss applied)	66,403.7	14,824.3	188,079.2
Net in storage (30% loss applied)	390,727.6	91,866.3	435,143.6
Irrigation sources	157.2	44.9	224.6
Atmospheric deposition	1,820.0		
Imports	0.0	0.0	0.0
Exports	256,703.0	28,685.1	104,099.5
Potential crop nutrient removal	83,238.0	20,061.0	72,927.0
Nutrient balance	52,763.7	43,165.1	258,341.6
Nutrient balance ratio	1.63	3.15	4.54

* Potassium excretion from milk cows and dry cows only.

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

SAMPLING AND ANALYSIS PLAN

A. MANURE SAMPLING AND ANALYSIS PLAN

Frequency	Sampling Methods	Source	Minimum data collection requirements	
			Field Analytes	Lab Analytes
Each application to each land application area	For each applied manure source, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. For each applied manure source, a scaled weight by truckload will be recorded.	List individual manure sources, e.g.: Corral solids Settling basin solids Freestall scrapings	Date applied and total weight (tons) applied	Percent moisture
Each offsite export of manure	For each manure source exported, a composite sample "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. For each manure source exported, a scaled weight by truckload will be recorded.	List individual manure sources, e.g.: Corral solids Settling basin solids Freestall scrapings	Date exported and total weight (tons) exported	Percent moisture

A. MANURE SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Annually	Annual estimation for total manure dry weight applied to each field will be quantified using the following: Dry weight applied from a source to a crop per application event = weight applied * (1 - (percent moisture / 100)) Dry weight applied to crop per application event = sum of dry weights applied from each source Dry weight applied to a crop = sum of dry weights applied during each application Dry weight applied to a field = sum of dry weights applied to each crop Annual estimation for total manure dry weight exported will be quantified using the following: Dry weight exported from a source per event = weight exported * (1 - (percent moisture / 100)) Dry weight exported per event = sum of dry weights exported from each source Dry weight exported to any offsite destination = sum of dry weights exported per event	List individual manure sources, e.g.: Corral solids Settling basin solids Freestall scrapings	Total dry weight (tons) manure applied annually to each land application area, and total dry weight (tons) manure exported offsite annually	None required

A. MANURE SAMPLING AND ANALYSIS PLAN (CONTINUED)

Frequency	Sampling Methods	Source	Minimum data collection requirements	
			Field Analytes	Lab Analytes
Twice per year	For each manure source, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual manure sources, e.g.: Corral solids Settling basin solids Freestall scrapings	None required	Total nitrogen, total phosphorus, total potassium, and percent moisture
Once every two years (biennially)	For each manure source, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual manure sources, e.g.: Corral solids Settling basin solids Freestall scrapings	None required	General minerals, including: calcium, magnesium, sodium, sulfate, chloride Fixed solids (ash)

B. PROCESS WASTEWATER SAMPLING AND ANALYSIS PLAN

Frequency	Sampling Methods	Source	Minimum data collection requirements	
			Field Analytes	Lab Analytes
Anually	A composite or grab sample prior to blending with irrigation water per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual ponds, e.g.: Pond 1 Treatment Lagoon 2	None required	pH, total dissolved solids, electrical conductivity, nitrate-nitrogen, ammonion-nitrogen, total Kjeldahl nitrogen, total phosphorus, and total potassium
Once every two years (biennially)	For each pond, a composite or grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual ponds, e.g.: Pond 1 Treatment Lagoon 2	None required	General minerals, including: calcium, magnesium, sodium, bicarbonate, carbonate, sulfate, and chloride

B. PROCESS WASTEWATER SAMPLING AND ANALYSIS PLAN (CONTINUED)

Frequency	Sampling Methods	Source	Minimum data collection requirements	
			Field Analytes	Lab Analytes
Each application	For each pond, a composite or grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual ponds, e.g.: Pond 1 Treatment Lagoon 2	Date applied and volume (gallons or acre-inches) applied	None required
Quarterly during one application event	For field measurement: For each pond, a composite or grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. For laboratory analyses: For each pond, a composite or grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual ponds, e.g.: Pond 1 Treatment Lagoon 2	Date applied and electrical conductivity	Nitrate-nitrogen (only when pond is aerated), un-ionized ammonia-nitrogen, total Kjeldahl nitrogen, total phosphorus, total potassium, and total dissolved solids

C. SOIL SAMPLING AND ANALYSIS PLAN

Frequency	Sampling Methods	Source	Minimum data collection requirements	
			Field Analytes	Lab Analytes

C. SOIL SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Once every five years for each land application area (may be distributed over a 5-year period by sampling 20% of the land application areas annually)	For each field, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual fields and field size, e.g.: Field 1 - 200 acres Field 2 - 200 acres Field 3 - 200 acres Field 4 - 200 acres Field 5 - 200 acres	None required	Soluble phosphorus
Fall pre-plant for each crop	For each field, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual fields and field size, e.g.: Field 1 - 200 acres Field 2 - 200 acres Field 3 - 200 acres Field 4 - 200 acres Field 5 - 200 acres	None required	0 to 1 foot: Electrical conductivity, nitrate-nitrogen, soluble phosphorus, potassium, and organic matter 1 to 2 feet: Nitrate-nitrogen
Spring pre-plant for each crop	For each field, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual fields and field size, e.g.: Field 1 - 200 acres Field 2 - 200 acres Field 3 - 200 acres Field 4 - 200 acres Field 5 - 200 acres	None required	0 to 1 foot: Nitrate-nitrogen and organic matter 1 to 2 foot: Nitrate-nitrogen

D. PLANT TISSUE SAMPLING AND ANALYSIS PLAN

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Each crop harvest from each land application area	For each field and crop, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. For each field and crop, a scaled weight by truckload will be recorded.	List individual fields and crop rotation, e.g.: Field 1 - corn/oat silage Field 2 - corn/oat silage Field 3 - alfalfa Field 4 - alfalfa Field 5 - alfalfa	Date harvested and total weight (tons) of harvested material removed from each land application area	Percent wet weight of harvested plant removed Laboratory analyses for total nitrogen, total phosphorus, total potassium (expressed on a dry weight basis), fixed solids (ash), and percent moisture

D. PLANT TISSUE SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Mid-season, as necessary to assess need for additional nitrogen fertilizer during the growing season (only required if Discharger wants to add fertilizer in excess of 1.4 times the nitrogen expected to be removed by the harvested portion of the crop)	For each field and crop, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual fields and crop rotation, e.g.: Field 1 - corn/oat silage Field 2 - corn/oat silage Field 3 - alfalfa Field 4 - alfalfa Field 5 - alfalfa	None required	Total nitrogen, expressed on a dry weight basis

E. IRRIGATION WATER SAMPLING AND ANALYSIS PLAN

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Each fresh water irrigation event for each land application area	List individual irrigation sources and the measurement method, e.g.: Irrigation Well 1 - inline totalizing flow meter Irrigation Well 2 - flow rate multiplied by runtime Canal 1 - flow rate multiplied by runtime	List individual irrigation sources, e.g.: Well 1 Canal 1 East River	Date applied and volume (gallons or acre-inches) applied	None required
One irrigation event during each irrigation season during actual irrigation events – for each irrigation water source (well and canal)	For each irrigation source, a grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. In lieu of sampling the irrigation water, the Discharger may provide equivalent data from the local irrigation district.	List individual irrigation sources, e.g.: Well 1 Canal 1 East River	None required	Electrical conductivity, total dissolved solids, and total nitrogen

F. GROUNDWATER MONITORING SAMPLING AND ANALYSIS PLAN

Frequency	Sampling Methods	Source	Minimum data collection requirements	
			Field Analytes	Lab Analytes
Every five years (may be distributed over a 5-year period by sampling 20% of the wells annually)	For each domestic and agricultural supply well, a grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual wells, e.g.: Domestic well at milkbarn DWMB1 Irrigation well #7	None required	General minerals, including: calcium, magnesium, sodium, bicarbonate, carbonate, sulfate, chloride Total dissolved solids
Annually	For each subsurface (tile) drainage system discharge point, a grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual subsurface (tile) drainage system discharge points, e.g.: Tile drain under Field 7 discharged into TID Lateral 5	Electrical condictivity and ammonium-nitrogen	Nitrate-nitrogen, total phosphorus, and total dissolved solids. If field measurement indicates the presence of ammonium-nitrogen, the Discharger shall collect a sample for laboratory analysis of ammonium-nitrogen.
Annually	For each domestic and agricultural supply well, a grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	List individual wells, e.g.: Domestic well at milkbarn DWMB1 Irrigation well #7	Electrical conductivity and ammonion-nitrogen	Nitrate-nitrogen. If field measurement indicates the presence of ammonium-nitrogen, the Discharger shall collect a sample for laboratory analysis of ammonium-nitrogen.

NUTRIENT MANAGEMENT PLAN REVIEW

A. NUTRIENT MANAGEMENT PLAN REVIEW

Person who created the NMP: Machado, Patrick *See above for contact information.*
Date the NMP was drafted: 12/18/2020
Person who approved the final NMP: Machado, Patrick *See above for contact information.*
Date of NMP implementation: 12/18/2020

ATTACHED MAP AND DOCUMENTATION REFERENCES

The following list, based upon user selections and data entries, describes the minimum required attachments that must be submitted with the Nutrient Management Plan for the reporting schedule of 'July 1, 2009'.

A. PRELIMINARY DAIRY FACILITY ASSESSMENT

The NMP will include the initial Preliminary Dairy Facility Assessment (Attachment A) and the annual updates as required by Monitoring and Reporting Program No. R5-2007-0035. Copies of these assessments shall be maintained for 10 years.

B. LAND AREA MAP(S)

Identify each land application area (under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) on a single published base map

1. A field identification system (Assessor's Parcel Number; land application area; crops grown); indication if each land application is owned, rented, or leased by the Discharger; indication of what type of waste is applied (solid manure only, wastewater only, or both solid manure and wastewater); drainage flow direction in each field, nearby surface waters, and storm water discharge points; tailwater and storm water drainage controls; subsurface (tile) drainage systems (including discharge points and lateral extent); irrigation supply wells and groundwater monitoring wells; sampling locations for discharges of storm water and tailwater to surface water from the field.

2. Process wastewater conveyance structures, discharge points and discharge mixing points with irrigation water supplies; pumping facilities; flow meter locations; drainage ditches and canals, culverts, draining controls (berms, levees, etc.), and drainage easements.

Application area map reference number: LAP

Setbacks, Buffers, and Other Alternatives to Protect Surface Water (see Technical Standard VII):

1. Identify all potential surface waters or conduits to surface water that are within 100 feet of any land application area.
2. For each land application area that is within 100 feet of a surface water or a conduit to surface water, identify the setback, vegetated buffer, or other alternative practice that will be implemented to protect surface water (Technical Standard VII).

Setbacks and buffers map reference number: LAP

C. PROCESS WASTEWATER WRITTEN AGREEMENTS

Provide copies of written agreements with third parties that receive process wastewater for their own use from the Discharger's dairy (Technical Standards V.A.1 and V.A.3).

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

SAMPLING AND ANALYSIS PLAN CERTIFICATION

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: John Brasil Dairy #3

Physical address of dairy:

1707 S Mitchell RD	Turlock	Stanislaus	95380
Physical Address Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

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 Sampling and Analysis plan.

CCA # 385124

TITLE/QUALIFICATIONS OF CERTIFIED NUTRIENT MANAGEMENT SPECIALIST

SIGNATURE OF TRAINED PROFESSIONAL — DATE: 12/18/2020

Patrick Machado
PRINT OR TYPE NAME

7112 Metcalf WAY; Hughson, CA 95326
MAILING ADDRESS

(209) 678-6720
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
John Brasil	
PRINT OR TYPE NAME	PRINT OR TYPE NAME
12/18/2020	
DATE	DATE

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

NUTRIENT BUDGET CERTIFICATION

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: John Brasil Dairy #3

Physical address of dairy:

1707 S Mitchell RD	Turlock	Stanislaus	95380
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

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.

CCA # 385124

TITLE/QUALIFICATIONS OF CERTIFIED NUTRIENT MANAGEMENT SPECIALIST

SIGNATURE OF TRAINED PROFESSIONAL — DATE: 12/18/2020

Patrick Machado
PRINT OR TYPE NAME

7112 Metcalf WAY; Hughson, CA 95326
MAILING ADDRESS

(209) 678-6720
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
John Brasil	
PRINT OR TYPE NAME	PRINT OR TYPE NAME
12/18/2020	
DATE	DATE

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

STATEMENTS OF COMPLETION

Waste Discharge Requirements General Order No. R5-2007-0035 for Existing Milk Cow Dairies (General Order) requires owners and operators of existing milk cow dairies (Dischargers) to develop and implement a Nutrient Management Plan for their land application areas (land under control of the Discharger, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient cycling). The Discharger is required to maintain the NMP at the dairy, make the NMP available to Central Valley Water Board staff during their inspections, and submit the NMP to the Executive Officer upon request.

The General Order requires the Discharger to submit two Statements of Completion during development of the NMP. The Discharger may use this form to comply with the General Order requirement to submit one or both of these Statements of Completion. Parts A and E must be completed for each Statement of Completion. Parts B, C and D are to be completed for the Statements of Completion due by 1 July 2008, 31 December 2008 and 1 July 2009, respectively. Both the owner and the operator of the dairy must sign this form in Part E below.

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: John Brasil Dairy #3

1707 S Mitchell RD	Turlock	Stanislaus	95380
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

Operator name: _____ Telephone no.: _____ (Landline) _____ (Cellular)

_____	_____	_____	_____
Mailing Address Number and Street	City	State	Zip Code

Legal owner name: Brasil, John Telephone no.: (209) 632-7867 (Landline) _____ (Cellular)

2613 S Mitchell RD	Turlock	CA	95380
Mailing Address Number and Street	City	State	Zip Code

B. STATEMENT OF COMPLETION DUE 1 JULY 2008

I have completed the following items of the Nutrient Management Plan (check the boxes of completed sections), which are due 1 July 2008:

☒ **Item I.A.1 Land Application Information**
Identification of land used for manure application and needed information on a facility map.

☒ **Item I.B Land Application Information**
Information list for information provided on map above.

☒ **Item I.C Land Application Information**
Copies of written third-party process wastewater agreements.

☒ **Item I.D Land Application Information**
Identification of fields under control of the discharger within five miles of the dairy where neither process wastewater nor manure is applied.

☒ **Item II Sampling and Analysis Plan**

☒ **Item IV Setbacks, Buffers, and Other Alternatives to Protect Surface Water**
Identification of all potential surface waters or conduits to surface waters within 100 feet of land application areas and appropriate protection.

☒ **Item VI Record-Keeping Requirements**
Identification of monitoring records that will be maintained as required in the production and land application areas.

Has Item II (Sampling and Analysis Plan) of the Nutrient Management Plan been certified by a Certified Nutrient Management Specialist as required in the General Order?

☒ Yes ☐ No

C. STATEMENT OF COMPLETION DUE 31 DECEMBER 2008

I have completed the following items of the Nutrient Management Plan (check the boxes of completed sections), which are due 31 December 2008:

☒ **Item V Field Risk Assessment**
Evaluation of the effectiveness of management practices used to control the discharge of waste constituents from land application areas by assessing the water quality monitoring results of discharges of manure, process wastewater, tailwater, subsurface (tile) drainage, or storm water from the land application areas.

D. STATEMENT OF COMPLETION DUE 1 JULY 2009

I have completed the following items of the Nutrient Management Plan (check the boxes of completed sections), which are due 1 July 2009:

☒ **Item I.A.2 Land Application Area Information**
Identification of process wastewater conveyance, mixing and drainage information for each land application area on a facility map.

☒ **Item III Nutrient Budget**
Established planned rates of nutrient applications by crop based on nutrient monitoring results for each land application area.

Has Item III (Nutrient Budget) of the Nutrient Management Plan been certified by a Certified Nutrient Management Specialist as required in the General Order?

☒ Yes ☐ No

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

E. CERTIFICATION STATEMENT

I certify under penalty of law that I have completed the items of the Nutrient Management Plan that are checked in Parts B, C and/or D above for the dairy identified in Part A above and that the appropriate certified nutrient management specialist has certified the items requiring such certification as noted in part B and/or D above and that I have personally examined and am familiar with the information submitted in Parts A, B, C and D of 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
John Brasil	
PRINT OR TYPE NAME	PRINT OR TYPE NAME
12/18/2020	
DATE	DATE

Waste Management Plan
For
John Brasil Dairy #3
Stanislaus County, CA

Prepared For:
John Brasil Dairy #3
1707 S. Mitchell Road
Turlock, CA 95380

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WASTE MANAGEMENT PLAN
FOR
JOHN BRASIL DAIRY #3
STANISLAUS COUNTY, CA

TABLE OF CONTENTS

1. NARRATIVE

INTRODUCTION

This Waste Management Plan (WMP) has been prepared at the request of the subject dairy's owner and/or operator to comply with Section H.1.b., *Waste Management Plan,* of Order No. R5-2013-0122, *Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies,* (Order) adopted by the California Regional Water Quality Control Board (CRWQCB) Central Valley Region. Per the requirements set forth by the aforementioned Order it is the intent of this plan to provide an evaluation of the existing milk cow facility's design, construction, operation, and maintenance for flood protection and waste containment and to determine whether the facility complies with Prohibition A.14, General Specifications B.1 through B.3, Pond Specifications C.1 through C.3, and Production Area Specifications D.1, D.4, and D.5. Should the evaluation provided by this plan determine that the existing facility does not comply with the requirements of the Order, then modifications will be proposed for the facility that will bring it into compliance and those modifications shall be made a part of this plan.

COMPLIANCE CRITERIA

As required by the Order this plan must evaluate the existing facility's compliance with Prohibition A.14, General Specifications B.1 through B.3, Pond Specifications C.1 through C.3, and Production Area Specifications D.1, D.4, and D.5. The criteria set forth by this Prohibition and General Specifications are as follows:

Prohibition A.14: *"The direct discharge of wastewater into groundwater via backflow through water supply or irrigation supply wells is prohibited."*

The water, irrigation, and wastewater systems of this facility have been examined by a Registered Civil Engineer licensed in the State of California. It has been determined and hereby documented that there are no existing conditions on the project site that would allow for direct discharge of wastewater into groundwater via backflow through water supply or irrigation supply wells.

General Specification B.1: *"The existing milk cow dairy shall have facilities that are designed, constructed, operated, and maintained to retain all facility process wastewater generated during the storage period (maximum period of time anticipated between land application of process wastewater), together with all precipitation on and drainage through manured areas, up to and including during a 25-year, 24-hour storm (see item II of Attachment B, which is attached to and made part of this Order)."*

Section 3.a. of this plan contains calculations that demonstrate the facility's ability to retain all process wastewater and precipitation generated by the 25-year, 24-hour storm. The tributary areas for storm drain runoff were determined by utilizing field measurements and aerial photography. The existing Wastewater Basins (WWS1 and WWS2) were field measured.

General Specification B.2: **"***In the Sacramento and San Joaquin River Basins, ponds and manured areas at existing milk cow dairies in operation on or before 27 November 1984 shall be protected from inundation or washout by overflow from any stream channel during 20-year peak stream flows. Existing milk cow dairies that were in operation on or before 27 November 1984 and that are protected against 100-year peak stream flows must continue to provide such protection. Existing milk cow dairies built or expanded after 27 November 1984 shall be protected against 100-year peak stream flows (Title 27 Section 22562(c))."*

The facility is in the San Joaquin River Basin and was constructed before 27 November 1984. However, the facility has been expanded since 27 November 1984 and thus must have protection against the 100-year storm event. The relevant Flood Zone Map published by the Federal Emergency Management Agency (FEMA) is Panel No. 06099C0800E. This map indicates that the existing dairy facility is in Zone X and is thus outside of the 1% annual chance, or 100-year, floodplain.

General Specification B.3: "*In the Tulare Lake Basin, existing milk cow dairies that existed as of 25 July 1975 shall be protected from inundation or washout from overflow from any stream channel during 20-year peak stream flows and existing milk cow dairies constructed after 25 July 1975 shall be protected from 100-year peak stream flows. Existing milk cow dairies expanded after 8 December 1984 shall be protected from 100-year peak stream flows."*

As the facility is in the San Joaquin River Basin this specification is not applicable.

Pond Specification C.1: *"The level of waste in the process wastewater retention ponds shall be kept a minimum of two (2) feet from the top of each aboveground embankment and a minimum of one (1) foot from the ground surface of each belowground pond. Less freeboard may be approved by the Executive Officer when 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, demonstrates that the structural integrity of the pond will be maintained with the proposed freeboard.*

2' of freeboard has been assigned to the wastewater retention ponds WWS1, WWS2, and WWS3 (proposed) as all have been or will be constructed above grade.

Pond Specification C.2: *"Ponds shall be managed and maintained to prevent breeding of mosquitoes and other vectors. In particular,*

a. Small coves and irregularities shall not be allowed around the perimeter of the water surface;

b. Weeds shall be minimized through control of water depth, harvesting, or other appropriate method;

c. Dead algae, vegetation, and debris shall not accumulate on the water surface; and

d. Management shall be in accordance with the requirements of the Mosquito Abatement District."

An Operations and Maintenance Plan addressing these items has been included in Section 3.a. and is hereby made a part of this plan.

Pond Specification C.3: "*Ponds designated to contain the 25-year, 24-hour storm event runoff must have a depth marker that clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation from a 25-year, 24-hour storm event."*

A marker meeting this specification will be installed in all the facility's ponds by the compliance date.

Production Area Specification D.1: *"All dirt or unpaved corrals shall be graded to promote drainage. Cow washing areas shall be paved (concrete or equivalent) and sloped to a drain. Water troughs, permanent feed racks, and mangers shall have paved access, and water troughs shall have a drain to carry water away from the corrals. (Cal Code Regs., title 3, § 646.1.)."*

Dirt or unpaved areas are graded to promote drainage. Any areas requiring improvement are noted on Exhibit Sheets 3 and 4.

All cow washing areas are paved with Portland Cement Concrete (PCC) and sloped to a drain which conveys wastewater to the retention ponds.

Water troughs, feed racks, and mangers have access paved with PCC. Water troughs have drains which convey wastewater to the retention ponds.

Production Area Specification D.4: *"All roofs, buildings, and non-manured areas located in the production area of the existing milk cow dairy shall be constructed or otherwise designed so that clean rainwater is diverted away from manured areas and waste containment facilities, unless such drainage is fully contained in the wastewater retention ponds. (Title 27, § 22562(b).)."*

The production area is designed such that rainwater that is not diverted away from manured areas and waste containment facilities is collected and conveyed to the wastewater retention ponds or to adjacent fields.

Production Area Specification D.5: *"Roof drainage from barns, milk houses, or shelters shall not drain into the corrals unless the corrals are properly graded and drained. (Cal Code Regs., title 3, § 661.)."*

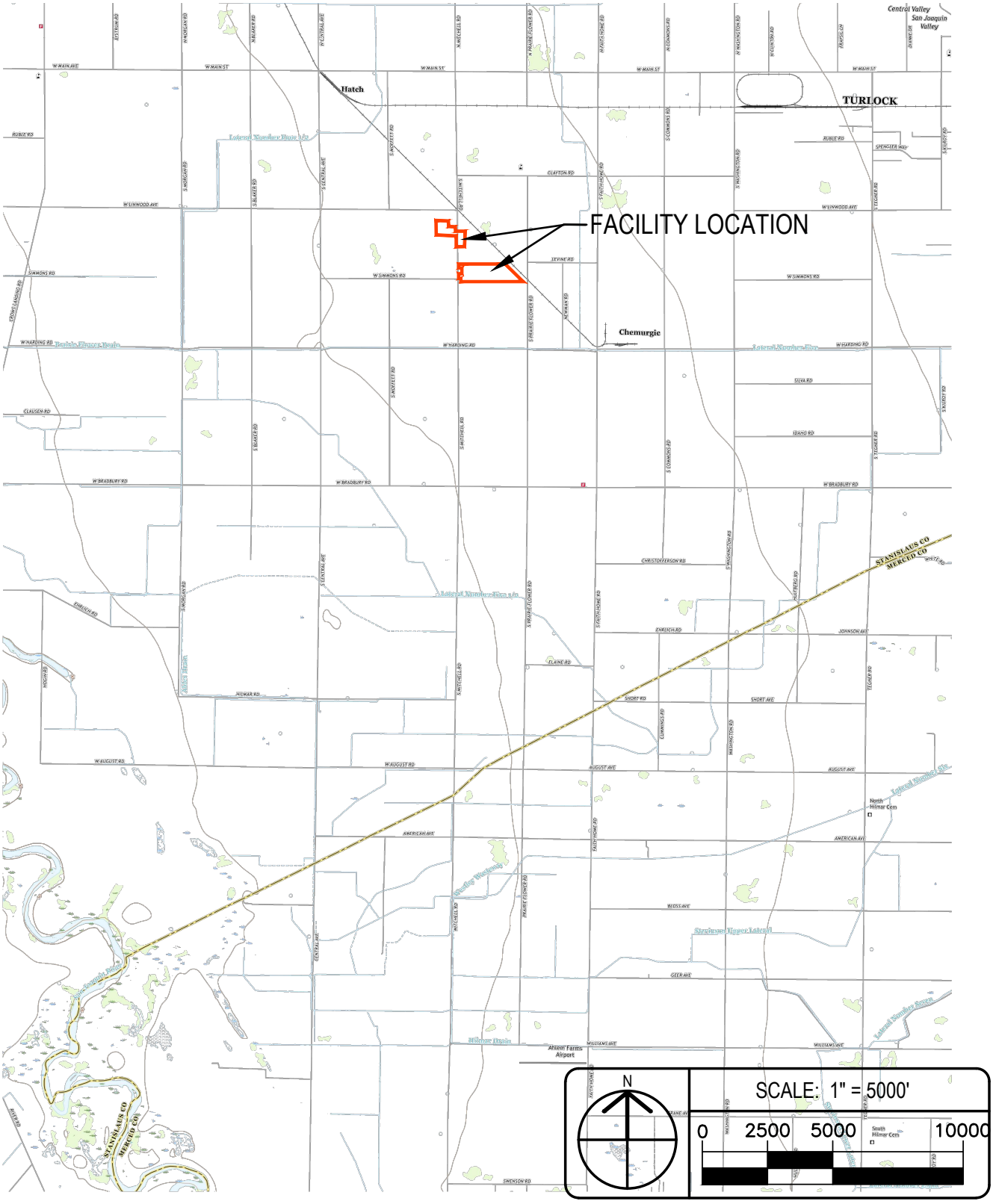
Roof drainage is collected by gutters, downspouts, and drains and is conveyed to the wastewater retention ponds or to adjacent fields.

RESULTS AND CONCLUSIONS

After conducting a visual inspection of the site, obtaining herd and facility information from the operator, performing the required measurements of facility improvements, and performing the calculations included in Attachment B it has been determined that the design, construction, operation, and waste containment of this facility are in compliance with Prohibition A.14 and General Specifications B.1 through B.3 and B.10 through B.16 of Order No. R5-2013-0122, *Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies.*

Some improvements will be required to ensure that the proposed facility expansion meets the General Order's requirements for flood protection. Those improvements are shown on Exhibit Sheets 3 and 4.

2. EXHIBITS



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VICINITY MAP
JOHN BRASIL DAIRY #3

STANISLAUS COUNTY, CA

WEST LINWOOD AVENUE

SOUTH MITCHELL ROAD

UNION PACIFIC RAILROAD

DAIRY PRODUCTION AREA

DAIRY FIELD
WASTEWATER APPLIED
47 AC.

DAIRY PRODUCTION AREA

LAGOON FIELD
WASTEWATER APPLIED
13 AC.

MULDER FIELD
WASTEWATER APPLIED
41 AC.

DAIRY PRODUCTION AREA

WEST SIMMONS ROAD

IRR

LEGEND

- LAND APPLICATION AREA
- IRRIGATION LINE
- IRRIGATION CONTROL BOX
- IRRIGATION STANDPIPE
- DOMESTIC WELL
- GENERAL SLOPE AND DIRECTION OF FLOW

DISCHARGE POINTS		
LAND APP. AREA	LATITUDE	LONGITUDE
DAIRY FIELD	N37° 28' 31.09"	W120° 56' 32.66"
LAGOON FIELD	N37° 28' 32.96"	W120° 56' 17.55"
MULDER FIELD	N37° 28' 25.39"	W120° 56' 14.87"

N

SCALE: 1" = 300'

0 150 300 600

SHEET 2 OF 7

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SITE MAP
LAND APPLICATION AREAS
JOHN BRASIL DAIRY #3
STANISLAUS COUNTY, CA

DRAWN BY: MS
DATE: 1/6/2021
FILE: 02_site.dwg
JOB NO.: 2018-038

REVISIONS		
SYMBOL	DESCRIPTION	APPD.

LEGEND

- ROOF AREA
- (P) ROOF AREA (PROPOSED)
- CORRAL AREA
- (P) CORRAL AREA (PROPOSED)
- IRRIGATION DITCH
- IRRIGATION LINE
- WASTEWATER LINE
- WASTEWATER LINE (PROPOSED)
- WASTEWATER SUMP WITH PUMP
- FLUSH SYSTEM DRAIN INLET
- FLUSH SYSTEM DRAIN INLET (PROPOSED)
- FLUSH SYSTEM DISCHARGE VALVE
- FLUSH SYSTEM DISCHARGE VALVE (PROPOSED)
- S MECHANICAL SEPARATOR (PROPOSED)
- W WELL
- GENERAL SLOPE AND DIRECTION OF FLOW
- INSPECTION POINT FOR MONITORING ANIMAL HOUSING AND FLUSH WATER CONVEYANCE SYSTEM

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SHEET 3 OF 7

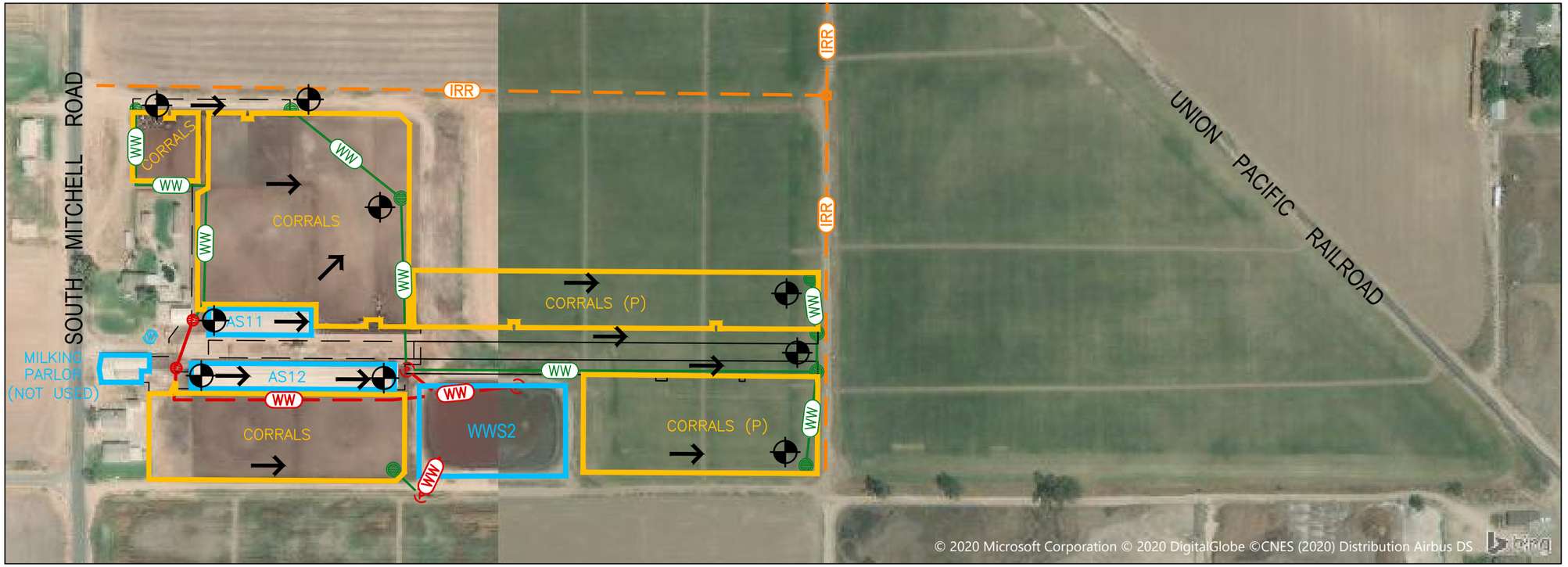
SITE MAP - PRODUCTION AREA

JOHN BRASIL DAIRY #3

STANISLAUS COUNTY, CA

SYMBOL	REVISIONS DESCRIPTION	APPD.

DRAWN BY: MS
DATE: 12/7/2020
FILE: 03_dpa.dwg
JOB NO.: 2018-038



LEGEND

- ROOF AREA
- CORRAL AREA
- (P) CORRAL AREA (PROPOSED)
- IRRIGATION LINE
- WASTEWATER LINE
- WASTEWATER LINE (PROPOSED)
- WASTEWATER SUMP WITH PUMP
- FLUSH SYSTEM DRAIN INLET
- FLUSH SYSTEM DRAIN INLET (PROPOSED)
- FLUSH SYSTEM DISCHARGE VALVE
- FLUSH SYSTEM DISCHARGE VALVE (PROPOSED)
- WELL
- GENERAL SLOPE AND DIRECTION OF FLOW
- INSPECTION POINT FOR MONITORING ANIMAL HOUSING AND FLUSH WATER CONVEYANCE SYSTEM

N

SCALE: 1" = 200'

0 100 200 400

SHEET 4 OF 7

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SITE MAP - PRODUCTION AREA

JOHN BRASIL DAIRY #3

STANISLAUS COUNTY, CA

DRAWN BY: MS
DATE: 1/6/2021
FILE: 04_dpo_heif.dwg
JOB NO.: 2018-038

SYMBOL	REVISIONS DESCRIPTION	APPD.

IMPERVIOUS AREA – IA1

IMPERVIOUS AREA – IA2

IMPERVIOUS AREA – IA3

AS1

AS2 (P)

AS3

AS4

EARTHEN AREA – EA1

HAY BARN

COMMODITY BARN

AS9

AS10

MILKING PARLOR

EARTHEN AREA – EA4

AS8

FEED STORAGE AREA

AS5

EARTHEN AREA – EA2

EARTHEN AREA – EA3

AS6

AS7

WWS1

DRY MANURE STORAGE AREA

WWS3 (PROPOSED)

LEGEND

ROOF AREA

EARTHEN AREA

IMPERVIOUS AREA

N

SCALE: 1" = 100'

0 50 100 200

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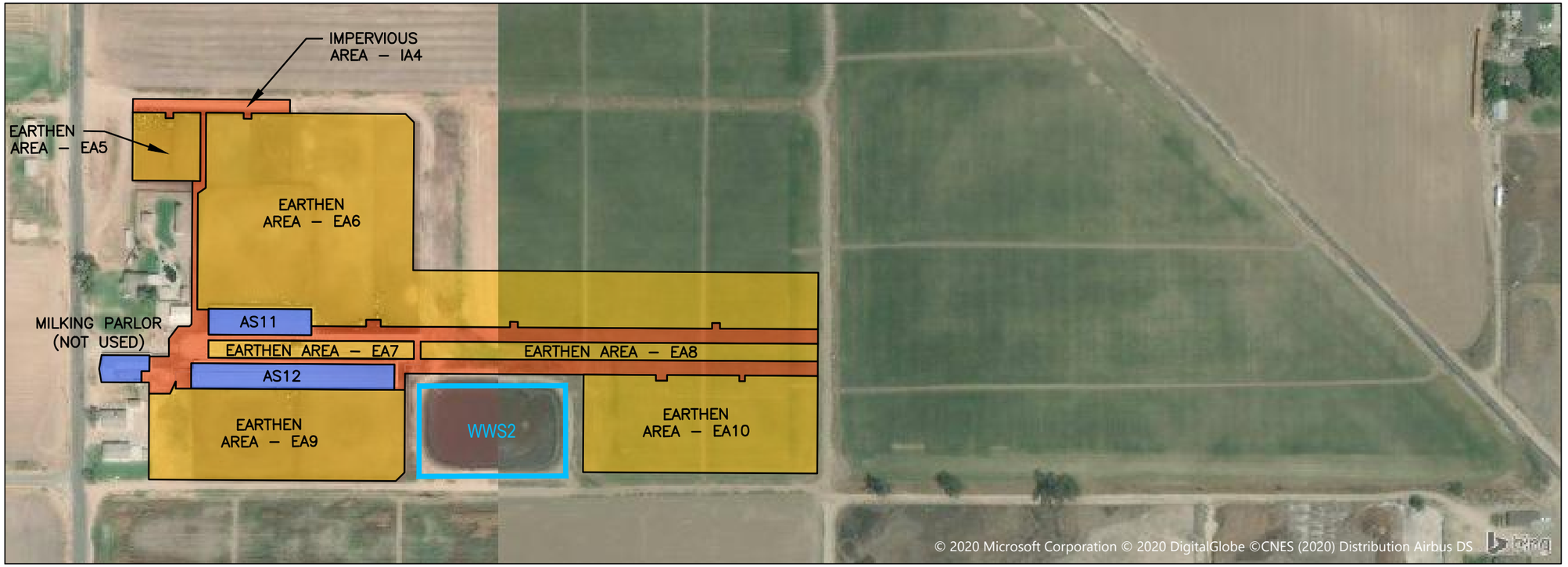
SHEET 5 OF 7

PRODUCTION AREA HYDROLOGIC MAP
JOHN BRASIL DAIRY #3
STANISLAUS COUNTY, CA

DRAWN BY: MS
DATE: 2/19/2019
FILE: 05_hydro.dwg
JOB NO.: 2018-038

SYMBOL	REVISIONS DESCRIPTION	APP'D.



LEGEND

- ROOF AREA
- EARTHEN AREA
- IMPERVIOUS AREA

N

SCALE: 1" = 200'

0 100 200 400

SHEET 6 OF 7

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PRODUCTION AREA HYDROLOGIC MAP
JOHN BRASIL DAIRY #3
STANISLAUS COUNTY, CA

DRAWN BY: MS
DATE: 1/6/2021
FILE: 06_hydro_heif.dwg
JOB NO.: 2018-038

SYMBOL	REVISIONS DESCRIPTION	APPD.

National Flood Hazard Layer FIRMette

FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- **SPECIAL FLOOD HAZARD AREAS**
  - Without Base Flood Elevation (BFE) *Zone A, V, A99*
  - With BFE or Depth *Zone AE, AO, AH, VE, AR*
  - Regulatory Floodway
- **OTHER AREAS OF FLOOD HAZARD**
  - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
  - Future Conditions 1% Annual Chance Flood Hazard *Zone X*
  - Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
  - Area with Flood Risk due to Levee *Zone D*
- **OTHER AREAS**
  - NO SCREEN — Area of Minimal Flood Hazard *Zone X*
  - Effective LOMRs
  - Area of Undetermined Flood Hazard *Zone D*
- **GENERAL STRUCTURES**
  - Channel, Culvert, or Storm Sewer
  - Levee, Dike, or Floodwall
- **OTHER FEATURES**
  - 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
  - Coastal Transect
  - 513 — Base Flood Elevation Line (BFE)
  - Limit of Study
  - Jurisdiction Boundary
  - Coastal Transect Baseline
  - Profile Baseline
  - Hydrographic Feature
- **MAP PANELS**
  - Digital Data Available
  - No Digital Data Available
  - Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/18/2019 at 11:47:55 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

3. DESIGN, CONSTRUCTION, OPERATION, AND MAINTENANCE DOCUMENTATION

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

DAIRY FACILITY INFORMATION

A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY: John Brasil Dairy #3

Physical address of dairy:

1707 S Mitchell RD	Turlock	Stanislaus	95380
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

TRS Data and Coordinates:

5S	9E	26	Mt. Diablo	37° 28' 35.32" N	120° 56' 27.40" W
Township (T_)	Range (R_)	Section (S_)	Baseline meridian	Latitude (N)	Longitude (W)

Date facility was originally placed in operation: 11/01/1991

Regional Water Quality Control Board Basin Plan designation: San Joaquin River Basin

County Assessor Parcel Number(s) for dairy facility:

0058-0015-0008-0000 0058-0015-0013-0000 0058-0016-0016-0000

B. OPERATOR NAME: Brasil, John Telephone no.: (209) 632-7867 (Landline) (Cellular)

2613 S Mitchell RD	Turlock	CA	95380
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [X] Yes [ ] No

C. LEGAL OWNER NAME: Brasil, John Telephone no.: (209) 632-7867 (Landline) (Cellular)

2613 S Mitchell RD	Turlock	CA	95380
Mailing Address Number and Street	City	State	Zip Code

Owner should receive Regional Board correspondence (check): [X] Yes [ ] No

D. CONTACT NAME: Sousa, Manny Telephone no.: (209) 238-3151 (Landline) (Cellular)

Title: Civil Engineer

P.O. Box 1613	Oakdale	CA	95361
Mailing Address Number and Street	City	State	Zip Code

HERD AND MILKING EQUIPMENT

A. HERD AND MILKING

The milk cow dairy is currently regulated under individual Waste Discharge Requirements.

Total number of milk and dry cows combined as a baseline value in response to the Report of Waste Discharge (ROWD) request of October, 2005:

1,500 milk and dry cows combined (regulatory review is required for any expansion)

Type of Animal	Present Count	Maximum Count	Daily Flush Hours	Avg Live Weight (lbs)
Milk Cows	1,500	1,500	22	950
Dry Cows	1	1	0	1,000
Bred Heifers (15-24 mo.)	400	400	10	700
Heifers (7-14 mo.)	400	400	10	500
Calves (4-6 mo.)	400	400	10	
Calves (0-3 mo.)	0	0	0	

Predominant milk cow breed: Jersey

Average milk production: 52 pounds per cow per day

Average number of milk cows per string sent to the milkbarn: 215 milk cows per string

Number of milkings per day: 2.0 milkings per day

Number of times milk tank is emptied/filled each day: 2.0 per day

Number of hours spent milking each day: 22.0 hours per day

B. MILKBARN EQUIPMENT AND FLOOR WASH

Bulk tank wash and sanitizing: 3.0 run cycles/wash

Bulk tank wash vat volume: 40 gallons/cycle

Bulk tank wash wastewater: 240.0 gallons/day

Pipeline wash and sanitizing: 3.0 run cycles/wash

Pipeline wash vat volume: 40 gallons/cycle

Pipeline wash wastewater: 240.0 gallons/day

Reused / recycled water is the source of parlor floor wash water: [X] Yes [ ] No

Milkbarn / parlor floor wash volume: 5,000 gallons/day

Plate coolers type: Well Water Cooled (Water Reused/Recycled)

Plate coolers volume: 18,139 gallons/day

Vacuum pumps / air compressors / chillers type: Mechanically/Air Cooled

Vacuum pumps / air compressors / chillers volume: 0 gallons/day

Milkbarn and equipment wastewater volume generated daily: 18,619 gallons/day

C. OTHER WATER USES

Reused/recycled water is the source of herd drinking water: [ ] Yes [X] No

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Bred Heifers (7-14 mo.)	Calves (4-6 mo.)	Calves (0-3 mo.)
Number of cows drinking from reusable water:	0 *of 1,500*	0 *of 1*	0 *of 400*	0 *of 400*	0 *of 400*	0 *of 0*
Gallons per head per day:	0	0	0	0	0	0

Total reusable water consumed by herd: 0 gallons/day

Reused/recycled water is the source of sprinkler pen water: [ ] Yes [X] No

Number of sprinklers in the holding pen: 0 sprinklers

Duration of each sprinkler cycle: 1.0 minutes

Number of sprinkler pen runs/milking: 1 cycles/milking

Flow rate for each sprinkler head: 1.0 gallons/minute

Total sprinkler pen wastewater volume: 0 gallons/day

Total fresh water used in manure flush lane system(s): 0 gallons/day

D. MISCELLANEOUS EQUIPMENT

No miscellaneous equipment entered.

E. MILKBARN AND EQUIPMENT SUMMARY

Number of days in storage period: 120 days

Water available for reuse/recycle: 18,139 gallons/day

Recycled water reused: 5,000 gallons/day

Recycled water leaving system: 0 gallons/day

Reusable water balance: 13,139 gallons/day

Volume of milkbarn and equipment wastewater generated for storage period: 2,234,280 gallons/storage period

MANURE AND BEDDING SOLIDS

A. IMPORTED AND FACILITY GENERATED BEDDING

Bedding Type	Imported or Generated (tons)	Density (lbs/cu. ft.)	Applied Separation Efficiency (default)	Solids to Pond (cu. ft./period)
Facility generated bedding	120	40.0	50%	3,000
			Total:	3,000

B. SOLIDS SEPARATION PROCESS

Combined manure solids separation efficiency (weight basis): 40 %

Description of all solids separation equipment used in flushed lane manure management systems:

Processing pit and mechanical manure separator

C. MANURE AND BEDDING SOLIDS SUMMARY

	cubic feet		gallons	
	day	storage period	day	storage period
Manure generated by the herd (pre-separation):	3,866.45	463,974	28,923.06	3,470,767
Manure generated by the herd sent to pond(s):	2,735.94	328,312	20,466.23	2,455,947
Manure generated by the herd sent to dry lot(s):	708.97	85,076	5,303.43	636,412
Manure solids (herd) removed by separation:	204.07	24,488	1,526.55	183,186
Liquid component in separated solids not send to pond(s):	217.48	26,097	1,626.85	195,222
Imported and facility generated bedding sent to pond(s):	25.00	3,000	187.01	22,442
Total manure and bedding sent to pond(s):	2,760.94	331,312	20,653.24	2,478,389
Residual manure solids and bedding sent to pond(s) w/factor:	165.55	19,866	1,238.42	148,610
	cubic feet per year		gallons per year	
Residual manure solids and bedding sent to pond(s) w/factor:	60,427		452,023	

RAINFALL AND RUNOFF

A. RAINFALL ESTIMATES

Rainfall station nearest the facility: Turlock

25 year/24 hour storm event (default NOAA Atlas 2, 1973): 2.50 inches/storage period

25 year/24 hour storm event (user-override): _____ inches/storage period

Storage period rainfall (default DWR climate data): 8.56 inches/storage period

Storage period rainfall (user-override): _____ inches/storage period

Flood zone: Zone X

B. IMPERVIOUS AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24hr Storm Runoff Coefficient	Storage Period Runoff Coefficient	Runoff Destination
Dry Manure Storage Area	63,000	1	0.95	0.50	Drains into pond(s).
Feed Storage Area	62,600	1	0.95	0.50	Drains into pond(s).
Impervious Area - IA1	14,400	1	0.95	0.50	Drains into pond(s).
Impervious Area - IA2	830	1	0.95	0.50	Drains into pond(s).
Impervious Area - IA3	33,600	1	0.95	0.50	Drains into pond(s).
Impervious Area 4 - IA4	70,100	1	0.95	0.50	Drains into pond(s).

Surface area that does not run off into pond(s):	0	sq. ft.
Surface area that runs off into pond(s):	244,530	sq. ft.
Total surface area:	244,530	sq. ft.
Runoff from normal storage period rainfall:	652,419	gallons/storage period
Runoff from normal storage period rainfall with 1.5 factor:	978,628	gallons/storage period
25 year/24 hour storm event runoff:	362,031	gallons/storage period
Total surface area runoff:	1,014,450	gallons/storage period
Total surface area runoff with 1.5 factor:	1,340,660	gallons/storage period

C. ROOF AREAS

Name	Surface Area (sq. ft.)	Quantity	Runoff Destination
Animal Shelter - AS1	9,750	1	Field
Animal Shelter - AS10	8,835	1	Wastewater pond
Animal Shelter - AS11	8,372	1	Wastewater pond
Animal Shelter - AS12	16,200	1	Wastewater pond
Animal Shelter - AS2	10,140	1	Field
Animal Shelter - AS3	6,256	1	Field
Animal Shelter - AS4	6,324	1	Field
Animal Shelter - AS5	6,810	1	Field
Animal Shelter - AS6	7,920	1	Field
Animal Shelter - AS7	7,040	1	Field
Animal Shelter - AS8	6,300	1	Wastewater pond
Animal Shelter - AS9	5,040	1	Wastewater pond
Commodity Barn	3,040	1	Wastewater pond
Hay Barn	5,600	1	Wastewater pond
Milking Parlor	5,670	1	Wastewater pond
Milking Parlor (not used)	3,900	1	Wastewater pond
Storage Building	2,050	1	Wastewater pond

Surface area that does not run off into pond(s):	54,240	sq. ft.
Surface area that runs off into pond(s):	65,007	sq. ft.
Total surface area:	119,247	sq. ft.
Runoff from normal storage period rainfall:	346,884	gallons/storage period
Runoff from normal storage period rainfall with 1.5 factor:	520,326	gallons/storage period
25 year/24 hour storm event runoff:	101,310	gallons/storage period
Total surface area runoff:	448,194	gallons/storage period
Total surface area runoff with 1.5 factor:	621,636	gallons/storage period

D. EARTHEN AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24 Storm Coefficient	Storage Period Coefficient	Runoff Destination
Earthen Area - EA1	71,200	1	0.35	0.20	Drains into pond(s).
Earthen Area - EA10	71,400	1	0.35	0.20	Drains into pond(s).
Earthen Area - EA2	20,450	1	0.35	0.20	Drains into pond(s).
Earthen Area - EA3	19,200	1	0.35	0.20	Drains into pond(s).
Earthen Area - EA4	18,500	1	0.35	0.20	Drains into pond(s).
Earthen Area - EA5	14,300	1	0.35	0.20	Drains into pond(s).
Earthen Area - EA6	207,100	1	0.35	0.20	Drains into pond(s).
Earthen Area - EA7	11,200	1	0.35	0.20	Drains into pond(s).
Earthen Area - EA8	21,750	1	0.35	0.20	Drains into pond(s).
Earthen Area - EA9	72,700	1	0.35	0.20	Drains into pond(s).

Surface area that does not run off into pond(s): 0 sq. ft.

Surface area that runs off into pond(s): 527,800 sq. ft.

Total surface area: 527,800 sq. ft.

Runoff from normal storage period rainfall: 563,279 gallons/storage period

Runoff from normal storage period rainfall with 1.5 factor: 844,919 gallons/storage period

25 year/24 hour storm event runoff: 287,891 gallons/storage period

Total surface area runoff: 851,170 gallons/storage period

Total surface area runoff with 1.5 factor: 1,132,810 gallons/storage period

E. TAILWATER MANAGEMENT

No fields with tailwater entered.

LIQUID STORAGE

A. POND OR BASIN DESCRIPTION: WWS

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	560 ft.	Earthen Depth (ED):	14 ft.
Earthen Width (EW):	165 ft.	Side Slope (S):	1.5 ft. (h:1v)
Free Board (FB):	2 ft.	Dead Storage Loss (DS):	1.0 ft.

Calculations			
Liquid Length (LL):	554 ft.	Storage Volume Adjusted for Dead Storage Loss:	843,530 cu. ft.
Liquid Width (LW):	159 ft.		
Pond Surface Area:	92,400 sq. ft.	Pond Marker Elevation:	11.2 ft.
Storage Volume:	908,208 cu. ft.	Evaporation Volume:	469,168 gals/period
		Adjusted Surface Area:	87,261 sq. ft.

POND OR BASIN DESCRIPTION: WWS2

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	260 ft.	Earthen Depth (ED):	11 ft.
Earthen Width (EW):	160 ft.	Side Slope (S):	2.0 ft. (h:1v)
Free Board (FB):	2 ft.	Dead Storage Loss (DS):	1.0 ft.

Calculations			
Liquid Length (LL):	252 ft.	Storage Volume Adjusted for Dead Storage Loss:	257,451 cu. ft.
Liquid Width (LW):	152 ft.		
Pond Surface Area:	41,600 sq. ft.	Pond Marker Elevation:	8.2 ft.
Storage Volume:	283,176 cu. ft.	Evaporation Volume:	202,483 gals/period
		Adjusted Surface Area:	37,660 sq. ft.

POND OR BASIN DESCRIPTION: WWS3 (proposed)

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	560 ft.	Earthen Depth (ED):	10 ft.
Earthen Width (EW):	100 ft.	Side Slope (S):	3.0 ft. (h:1v)
Free Board (FB):	2 ft.	Dead Storage Loss (DS):	2.0 ft.

Calculations			
Liquid Length (LL):	548 ft.	Storage Volume Adjusted for Dead Storage Loss:	223,248 cu. ft.
Liquid Width (LW):	88 ft.		
Pond Surface Area:	56,000 sq. ft.	Pond Marker Elevation:	7.1 ft.
Storage Volume:	269,824 cu. ft.	Evaporation Volume:	250,539 gals/period
		Adjusted Surface Area:	46,598 sq. ft.

Potential storage losses (due to dead storage): 136,979.0 cubic feet - or - 1,024,674.1 gallons

Liquid storage surface area: 174,614 sq. ft.

Rainfall onto retention pond(s): 1,013,860 gallons/storage period

Rainfall runoff into retention pond(s): 1,562,582 gallons/storage period

Normal rainfall onto retention pond(s) with 1.5 factor: 1,520,790 gallons/storage period

Normal rainfall runoff into retention pond(s) with 1.5 factor: 2,343,873 gallons/storage period

Storage period evaporation (default): 11.50 inches/storage period

Storage period evaporation (user-override): inches/storage period

Storage period evaporation volume: 922,190 gallons/storage period

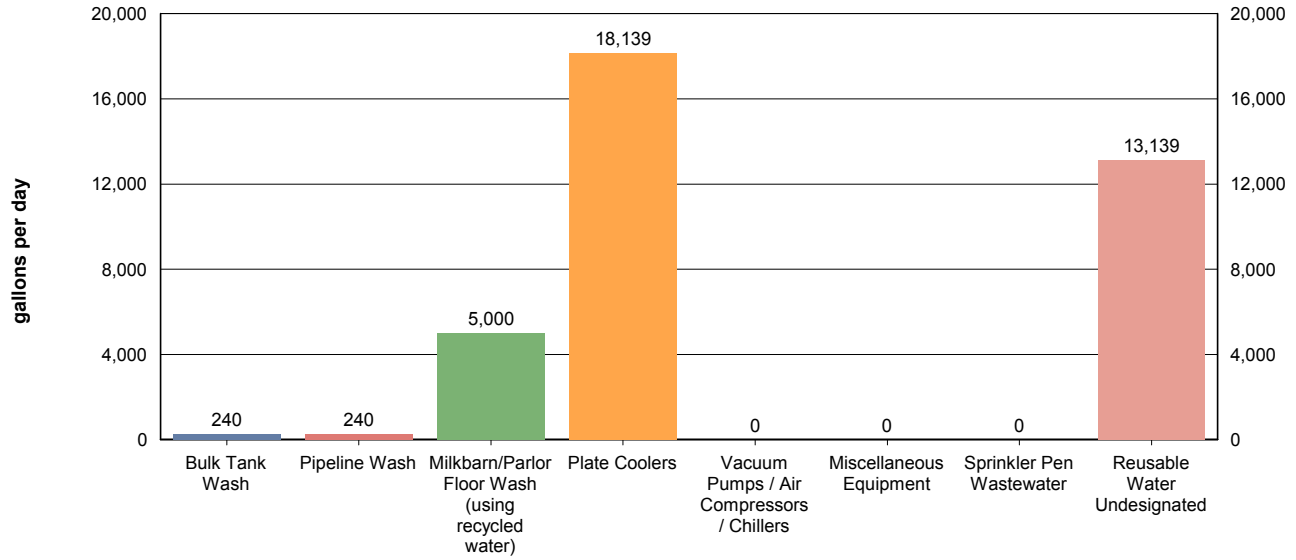
Manure and bedding sent to pond(s): 2,478,389 gallons/storage period

Milkbarn water sent to pond(s): 2,234,280 gallons/storage period

Fresh flush water for storage period: 0 gallons/storage period

CHARTS

A. MILKBARN WASTEWATER SENT TO POND(S)

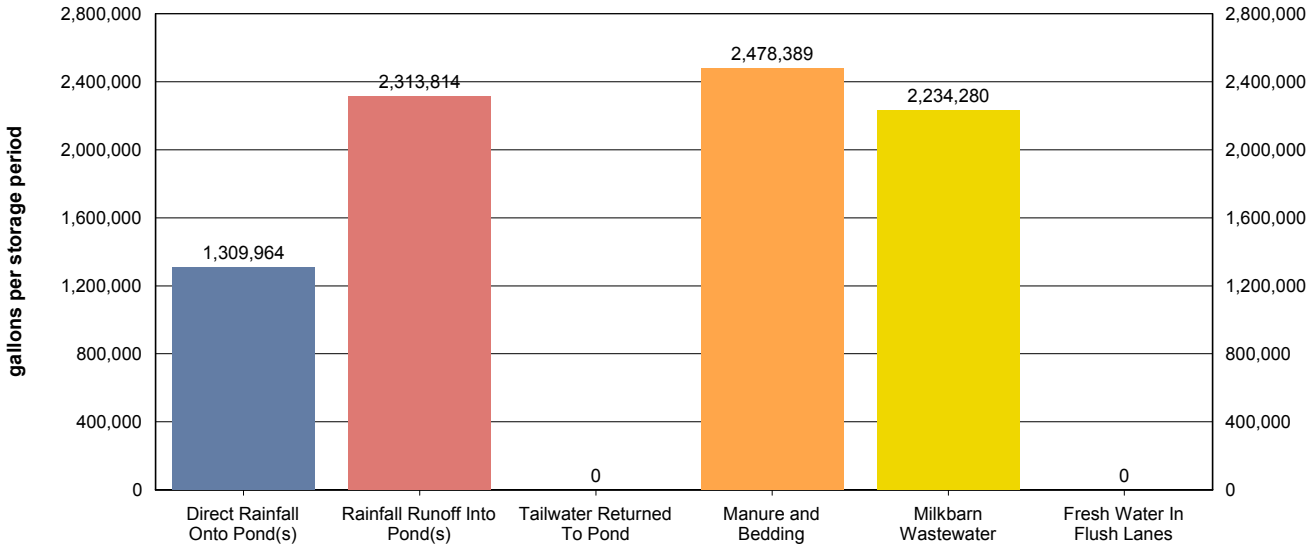


Values shown in chart are approximate values per day.

Total milkbarn wastewater generated daily: 18,619 gallons/day

Total milkbarn wastewater generated per period: 2,234,280 gallons/storage period

B. PROCESS WASTEWATER (NORMAL PRECIPITATION)

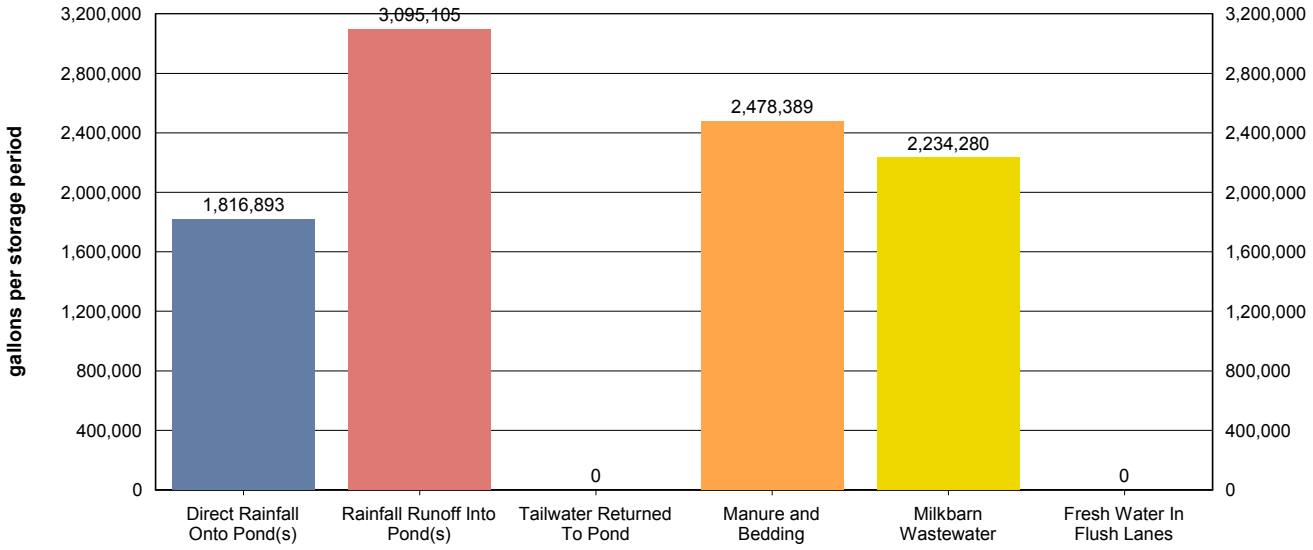


Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	69,470	gallons/day
Total process wastewater generated per period:	8,336,446	gallons/storage period
Total process wastewater removed due to evaporation:	922,190	gallons/storage period
Total storage capacity required:	7,414,256	gallons
	991,142	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	9,905,921	gallons
	1,324,229	cu. ft.

Considering normal precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

C. PROCESS WASTEWATER (NORMAL PRECIPITATION WITH 1.5 FACTOR)

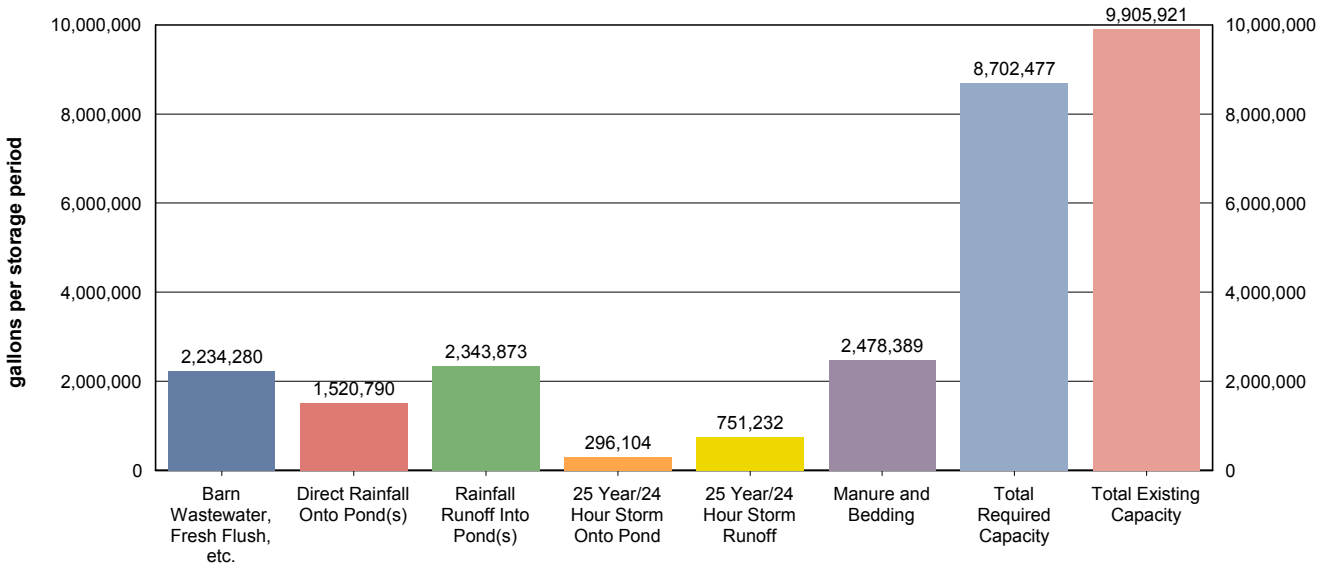


Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	80,206	gallons/day
Total process wastewater generated per period:	9,624,667	gallons/storage period
Total process wastewater removed due to evaporation:	922,190	gallons/storage period
Total storage capacity required:	8,702,477	gallons
	1,163,352	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	9,905,921	gallons
	1,324,229	cu. ft.

Considering factored precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

D. STORAGE VOLUME ASSESSMENT (NORMAL PRECIPITATION WITH 1.5 FACTOR)



Values shown in chart are approximate values for storage period.

Storage period:	120	days
Barn wastewater, fresh flush water, and tailwater:	2,234,280	gallons/storage period
Manure and bedding sent to pond:	2,478,389	gallons/storage period
Precipitation onto pond:	1,520,790	gallons/storage period
Precipitation runoff:	2,343,873	gallons/storage period
25 year/24 hour storm onto pond:	296,104	gallons/storage period
25 year/24 hour storm runoff:	751,232	gallons/storage period
Residual solids after liquids have been removed (liquid equivalent):	148,610	gallons/storage period
Total process wastewater removed due to evaporation:	922,190	gallons/storage period
Total required capacity:	8,702,477	gallons/storage period
Total existing capacity:	9,905,921	gallons/storage period
Existing capacity meets estimated storage needs:	[X] Yes [ ] No	

OPERATION AND MAINTENANCE PLAN

The goal of the Operation and Maintenance Plan is to eliminate discharges of waste or storm water to surface waters from the production area and the protection of underlying soils and ground water.

A. POND MAINTENANCE

i. FREEBOARD MONITORING

1. Freeboard will be monitored monthly from June 1 through September 1 (dry season) and weekly from October 1 through May 31 (wet season). The results will be recorded on a Dairy Production Area Visual Inspection Form.
2. Freeboard will be monitored during and after each significant storm event and the results recorded on a Production Area Significant Storm Event Inspection Form.
3. Ponds will be photographed on the first day of each month. Pond photos will be labeled and maintained with the dairy's monitoring records.

ii. PREPARATION FOR MAINTAINING WINTER STORAGE CAPACITY

1. The retention pond(s) will begin to be lowered to the minimum operating level on or before a designated date each year.
2. The minimum operating level will include the necessary storage volume as identified in Section II.A in Attachment B of the General Order.

iii. OTHER POND MONITORING

1. At the time of each monitoring for freeboard, the pond(s) will be inspected for evidence of excessive odors, mosquito breeding, algae, or equipment damage; and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Other Pond Monitoring.
2. At the time of each monitoring during and after each significant storm event, the ponds will be inspected for evidence of any discharge and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Production Area Significant Storm Event Inspection Form.

iv. SOLIDS REMOVAL PROCEDURES

1. The average thickness of the solids accumulated on the bottom of the pond(s) will be measured on the designated interval using the owner, operator, and/or designer specified procedure.
2. Once solids/sludge on the bottom of the pond(s) reach the owner, operator, and/or designer specified critical thickness, solids/sludge will be removed so that adequate capacity is maintained.
3. When necessary, solids/sludge will be removed using the owner, operator, and/or designer specified methods for protecting any pond liner.

OPERATIONS AND MAINTENANCE PLAN FOR POND: WWS

Dry season freeboard monitoring will occur on the 1st of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 1.0 feet above the pond invert beginning in October of each year.

Sludge accumulation will be measured annually.

The following method will be used to measure solids/sludge accumulation:

Sludge thickness will be measured with a probe after lowering of process wastewater.

When solids/sludge accumulate to a thickness of 2.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids are typically removed with a backhoe or excavator.

OPERATIONS AND MAINTENANCE PLAN FOR POND: WWS2

Dry season freeboard monitoring will occur on the 1st of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 2.0 feet above the pond invert beginning in October of each year.

Sludge accumulation will be measured annually.

The following method will be used to measure solids/sludge accumulation:

Sludge thickness will be measured with a probe after lowering of process wastewater.

When solids/sludge accumulate to a thickness of 2.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids will be removed with an excavator.

OPERATIONS AND MAINTENANCE PLAN FOR POND: WWS3 (proposed)

Dry season freeboard monitoring will occur on the 1st of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 2.0 feet above the pond invert beginning in October of each year.

Sludge accumulation will be measured annually.

The following method will be used to measure solids/sludge accumulation:

Solids will be measured manually with care taken not to damage the basin liner.

When solids/sludge accumulate to a thickness of 2.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

The proposed WWS3 will be lined. Solids from the higher elevations may be removed with an excavator so long as care is taken not to damage the liner. Solids from the lower elevations or bottom of the basin must be removed with an agitator or similar equipment in a manner that will not damage the liner.

B. RAINFALL COLLECTION SYSTEM MAINTENANCE

i. Annually, rainfall collection systems will be assessed to ensure:

1. Conveyances are free of debris and operating within designer/manufacturer specifications.
2. Components are properly fastened according to designer/manufacturer specifications.
3. All downspouts and related infrastructure are connected to conveyances that divert water away from manured areas.
4. Water from the rainfall collection system(s) is diverted to an appropriate destination.

Buildings with rooftop rainfall collection systems	Quantity	Surface Area (sq. ft.)
Animal Shelter - AS1	1	9,750
Animal Shelter - AS10	1	8,835
Animal Shelter - AS11	1	8,372

Animal Shelter - AS12	1	16,200
Animal Shelter - AS2	1	10,140
Animal Shelter - AS3	1	6,256
Animal Shelter - AS4	1	6,324
Animal Shelter - AS5	1	6,810
Animal Shelter - AS6	1	7,920
Animal Shelter - AS7	1	7,040
Animal Shelter - AS8	1	6,300
Animal Shelter - AS9	1	5,040
Commodity Barn	1	3,040
Hay Barn	1	5,600
Milking Parlor	1	5,670
Milking Parlor (not used)	1	3,900
Storage Building	1	2,050

Assessment for buildings with rooftop rainfall collection systems will occur on or before: 1st of October

Assessment for other rainfall collections systems will occur on or before: 1st of October

Description of how rainfall collection systems will be assessed:

Rainfall collection systems will be inspected, cleared, and repaired as necessary prior to the rain season.

C. CORRAL MAINTENANCE

i. Monthly from June 1st through September 30th (dry season) and weekly from October 1st through May 31st (wet season), the perimeter of the corrals and pens will be assessed to ensure that runon and runoff controls such as berms are functioning correctly, and that all water that contacts waste is collected and diverted into the wastewater retention pond (s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Corrals.

ii. The corrals will be assessed by the designated date to determine:

1. Whether manure needs to be removed from the corrals based on the owner, operator, and/or designer specified conditions.

2. Whether there are depressions within the corrals that should be filled/groomed to prevent ponding.

iii. Removal of manure and/or regrading, when necessary, will be completed on or before the designated month/day of each year.

Day of the month dry season assessment will occur: 1st of each month

Day of the week wet season assessment will occur: Monday

Solid manure removal and regrading assessment will occur on or before: 1st of October

Conditions requiring manure removal and/or regrading:

Corrals will be scraped and cleaned twice per year to prevent manure buildup.

Solid manure removal and/or regrading will occur on or before: 1st of November

D. FEED STORAGE AREA MAINTENANCE

i. During the dry season and prior to the wet season, the perimeter of storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, feed storage area(s) will be assessed to determine if there are depressions within any feed storage area that should be filled or repaired to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 1st of each month

Day of the week wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 1st of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 1st of December

E. SOLID MANURE STORAGE AREA MAINTENANCE

i. During the dry season and prior to the wet season, the perimeter of manure storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, manure storage area(s) will be assessed to determine if there are depressions within any manure storage area that should be filled to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 1st of each month

Day of the month wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 1st of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 1st of November

F. ANIMAL HOUSING AND FLUSH WATER CONVEYANCE SYSTEM MAINTENANCE

i. A map will be attached that identifies critical points for monitoring the animal housing and flush water conveyance system to verify that water is being managed as identified in this Waste Management Plan. These points will be maintained at owner, operator, and/or designer specified intervals.

Animal housing area assessment will occur on or before: 1st of October

Animal housing drainage system maintenance will occur on or before: 1st of October

Animal housing area drainage system assessment and maintenance methods:

Animal housing drainage system will be monitored daily and will be cleared and repaired as necessary.

G. MORTALITY MANAGEMENT

i. Dead animals will be stored, removed, and disposed of properly.

Rendering company or landfill name: Sisk Tallow

Rendering company or landfill telephone number: (209) 667-1451

H. ANIMALS AND SURFACE WATER MANAGEMENT

i. A system will be in place, monitored, and maintained to prevent animals from entering any surface waters when a stream or other surface water crosses or adjoins the corral(s).

Does a stream or any other surface water cross or adjoin the corrals? [ ] Yes [X] No

I. MONITORING SALT IN ANIMAL RATIONS

i. The combined quantity of minerals as salt in animal drinking water and feed rations will be reviewed by a qualified nutritionist on a routine basis to verify that minerals are limited to the amount required to maintain animal health and optimum production . As feed rations change, mineral content may change.

Assessment interval: Annually

J. CHEMICAL MANAGEMENT

i. Chemicals and other contaminants handled at the facility will not be disposed of in any manure or process wastewater, storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants.

No chemicals entered.

REQUIRED ATTACHMENTS

The following list, based upon user selections and data entries, describes the minimum required attachments that must be submitted with the Waste Management Plan for the reporting schedule of 'July 1, 2010'.

A. SITE MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: structures used for animal housing, milk parlor, and other buildings; corrals and ponds; solids separation facilities (settling basins or mechanical separators); other areas where animal wastes are deposited or stored; feed storage areas; drainage flow directions and nearby surface waters; all water supply wells (domestic, irrigation, and barn wells) and groundwater monitoring wells.

Production area map reference number: Exhibit Sheet 3

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: a field identification system (Assessor's Parcel Number; field by name or number; total acreage of each field; crops grown; indication if each field is owned, leased, or used pursuant to a formal agreement); indication of what type of waste is applied (solid manure only, wastewater only, or both solid manure and wastewater); drainage flow direction in each field, nearby surface waters, and storm water discharge points; tailwater and storm water drainage controls; subsurface (tile) drainage systems (including discharge points and lateral extent); irrigation supply wells and groundwater monitoring wells; sampling locations for discharges of storm water and tailwater to surface water from the field.

Application area map reference number: Exhibit Sheet 2

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all cropland (land that is part of the dairy but not used for dairy waste application) including the following in sufficient detail: Assessor's Parcel Number, total acreage, crops grown, and information on who owns or leases the field. The Waste Management Plan shall indicate if such cropland is covered under the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Order No. R5-2006-0053 for Coalition Group or Order No. R5-2006-0054 for Individual Discharger, or updates thereto).

Non-application area map reference number: n/a

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all off-property domestic wells within 600 feet of the production area or land application area(s) associated with the dairy and the location of all municipal supply wells within 1,500 feet of the production area or land application area(s) associated with the dairy.

Well area map reference number: Exhibit Sheets 2 & 3

Provide a site map (or maps) of appropriate scale to show property boundaries and a vicinity map, north arrow and the date the map was prepared. The map shall be drawn on a published base map (e.g., a topographic map or aerial photo) using an appropriate scale that shows sufficient details of all facilities.

Vicinity map reference number: Exhibit Sheet 1

B. PROCESS WASTEWATER MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: process wastewater conveyance structures, discharge points, and discharge /mixing points with irrigation water supplies; pumping facilities and flow meter locations; upstream diversion structures, drainage ditches and canals, culverts, drainage controls (berms/levees, etc.), and drainage easements; and any additional components of the waste handling and storage system.

Production infrastructure system area map reference number: Exhibit Sheets 2 & 3

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: process wastewater conveyance structures, discharge points and discharge mixing points with irrigation water supplies; pumping facilities ; flow meter locations; drainage ditches and canals, culverts, drainage controls (berms, levees, etc.), and drainage easements.

Land application infrastructure system area map reference number: Exhibit Sheet 2

C. EXCESS PRECIPITATION CONTINGENCY REPORT

There were no attachment references entered or required for this attachment section.

D. OPERATION AND MAINTENANCE PLAN

Attach a map that identifies critical points for monitoring the system to verify that water is being managed as identified in this Waste Management Plan (see Attachment B, Pg B-7 V.F, V.G, and V.H for additional requirements).

Animal housing assessment map reference number: Exhibit Sheet 3

E. FLOOD PROTECTION / INUNDATION REPORT

Provide an engineering report showing that the facility has adequate flood protection.

Flood zone map and/or document reference number: Exhibit Sheet 5

F. BACKFLOW PROTECTION

Attach documentation from a trained professional (i.e. a person certified by the American Backflow Prevention Association, an inspector from a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training), as specified in Required Reports and Notices H.1 of Waste Discharge Requirements General Order No. R5-2007-0035, that there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the Site Map.

Backflow documentation reference number: WMP Section 3.c.

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

CERTIFICATION

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: John Brasil Dairy #3

Physical address of dairy:

1707 S Mitchell RD	Turlock	Stanislaus	95380
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

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)

CIVIL ENGINEER'S WET STAMP

5/26/2021

SIGNATURE OF CIVIL ENGINEER DATE

Manny Sousa
PRINT OR TYPE NAME

P.O. Box 1613; Oakdale, CA 95361
MAILING ADDRESS

(209) 238-3151
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.

John Brasil	John Brasil
SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
John Brasil	JOHN BRASIL
PRINT OR TYPE NAME	PRINT OR TYPE NAME
3-15-21	3-15-21
DATE	DATE

SOUSA
ENGINEERING
INFRASTRUCTURE-DEVELOPMENT-
AGRICULTURE

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VECTOR CONTROL PLAN
FOR
JOHN BRASIL DAIRY #3
STANISLAUS COUNTY, CA

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1. INTRODUCTION

Vector control is an important aspect of disease prevention and public health. Without proper management, agricultural production facilities can create or enhance opportunities for vectors to develop and proliferate. Certain land management practices can reduce vector populations thereby reducing long–term vector treatment costs, reducing the amount of pesticides used in vector control operations, helping to protect public health, and contributing to an integrated pest management (IPM) approach to vector control.

Integrated Pest Management is an approach that focuses on site–specific, scientifically sound decisions to manage pest populations by matching a wide variety of techniques with the conditions found on site. These techniques are commonly grouped into four categories:

1. Source reduction or physical control—environmental manipulation that results in a reduction of vector development sites.
2. Biological Control—use of biological agents to limit vector populations
3. Chemical Control—larvicides (materials that kill immature larval vectors and mosquitoes) and adulticides (materials that kill adult vectors and mosquitoes)
4. Cultural Control—change the behavior of people so that their actions prevent the development of vectors or the transmission of vector–borne disease.

Through the adoption of these policies and procedures, this Plan will provide an outline to effectively control vectors by physical, cultural, and biological means.

The Vector Reduction Best Management Practices (BMPs) referred to in this document are the recommended land management practices that can provide a reduction in vector populations by various means including: reducing or eliminating breeding areas, increasing the efficacy of biological controls, increasing the efficacy of chemical controls, and improving access for control operations.

While it is generally accepted that vector production from all sources may be reduced through the widespread implementation of vector Reduction BMPs, these policies specifically target the most severe vector problems with the greatest likelihood of responding through the use of BMPs.

2. BEST MANAGEMENT PRACTICES (BMPs)

a. Land Application Areas: for Land Application Areas, the following are areas of concern and recommended BMPs for vector control:

Common Vector Development Areas

- Vegetated ditches
- Seepage or flooding of fallow fields
- Irrigation tail water return sumps
- Blocked ditches or culverts
- Leaky water control structures
- Irrigated pastures
- Low areas caused by improper grading
- Broken or leaky irrigation pipes or valves

Special Concerns

Agricultural practices vary among growers, locations, and conventional or organic production methods. Pesticide regulations can affect the ability to use chemical control. The Best Management Practices below are offered as tools to balance the economic and agronomic requirements of the growers and land owners with the need for effective vector control.

General Vector Reduction Principles

1. Prevent or eliminate unnecessary standing water that stands for more than 72 –96 hours during mosquito season which can start as early as March and extend through October depending on weather.
2. Maintain access for Abatement District staff to monitor and treat mosquito breeding sources.
3. Minimize emergent vegetation and surface debris on the water.
4. Contact the County Department of Environmental Health or Mosquito Abatement District for technical guidance or assistance in implementing vector reduction BMPs.

Vector Reduction BMPs for Land Application Areas

Ditches and Drains

DD-1 Construct or improve ditches with at least 2:1 slopes and a minimum 4-foot bottom. Consider a 3:1 slope or greater to discourage burrowing animal damage, potential seepage problems, and prevent unwanted vegetation growth. Other designs may be approved by the MVCD based on special circumstances.

DD-2 Keep ditches clean and well–maintained. Periodically remove accumulated sediment and vegetation. Maintain ditch grade to prevent areas of standing water.

DD-3 Design irrigation systems to use water efficiently and drain completely to avoid standing water.

Irrigated Pastures

IP-1 Grade field to achieve efficient use of irrigation water. Use NRCS guidelines for irrigated pastures. Initial laser leveling and periodic maintenance to repair damaged areas are needed to maintain efficient water flow.

IP-2 Irrigate only as frequently as is needed to maintain proper soil moisture. Check soil moisture regularly until you know how your pasture behaves

IP-3 Do not over fertilize. Excess fertilizers can leach into irrigation tail water, making mosquito production more likely in ditches or further downstream

IP-4 Apply only enough water to wet the soil to the depth of rooting.

IP-5 Drain excess water from the pasture within 24 hours following each irrigation. This prevents scalding and reduces the number of weeds in the pasture. good check slopes are needed to achieve drainage. A drainage ditch may be used to remove water from the lower end of the field.

IP-6 Inspect fields for drainage and broken checks to see whether re–leveling or reconstruction of levees is needed. Small low areas that hold water can be filled and replanted by hand. Broken checks create cross–leakage that provide habitat for vectors.

IP-7 Keep animals off the pasture while the soil is soft. An ideal mosquito habitat is created in irrigated pastures when water collects in hoof prints of livestock that were run on wet fields or left in the field during irrigation. Keeping animals off wet fields until soils stiffen also protects the roots of the forage crop and prevents soil compaction that interferes with plant growth.

IP-8 Break up pastures into smaller fields so that the animals can be rotated from one field to another. This allows fields to dry between irrigations and provides a sufficient growth period between grazings. It also prevents hoof damage (pugging), increases production from irrigated pastures, and helps improve water penetration into the soil by promoting a better root system.

b. Dairy Production Area (DPA): for the Dairy Production Area, the following are areas of concern and recommended BMPs for vector control:

Common Vector Development Areas
- Wastewater lagoons
- Animal washing areas

- Drain ditches
- Sumps/ponds
- Watering troughs

Special Concerns
Dairy and associated agricultural practices vary; however, these practices need to consider mosquito and vector control issues. The Best Management Practices for Vector Reduction below offer options to balance the requirements of the dairy operators with the need for effective vector control.

General Vector Control Principles
1. Prevent or eliminate unnecessary standing water that remains for more than 72 –96 hours during mosquito season which can start as early as March and extend through October depending on weather.
2. Maintain access for Abatement District staff to monitor and treat mosquito breeding sources.
3. Minimize emergent vegetation and surface debris on the water.
4. Contact the County Department of Environmental Health or Mosquito Abatement District for technical guidance or assistance in implementing vector reduction BMPs.

Vector Reduction BMPs for Dairy Production Area

DA-1 All holding ponds should be surrounded by lanes of adequate width to allow safe passage of vector control equipment. This includes keeping the lanes clear of any materials or equipment (e.g. trees, calf pens, hay stacks, silage, tires, equipment, etc.).

DA-2 If fencing is used around the holding ponds, it should be placed on the outside of the lanes with gates provided for vehicle access.

DA-3 It is recommended that all interior banks of the holding ponds should have a grade of at least 2:1.

DA-4 An effective solids separation system should be utilized such as a mechanical separator or two or more solids separator ponds. If ponds are used, they should not exceed sixty feet in surface width.

DA-5 Drainage lines should not by–pass the separator ponds whenever possible, except those that provide for normal corral run–off and do not contain solids. All drain inlets must be sufficiently graded to prevent solids accumulation.

DA-6 Floating debris should be minimized in all ponds; mechanical agitators may be used to break up crusts.

DA-7 Vegetation should be controlled regularly to prevent emergent vegetation and barriers to access. This includes access lanes, interior pond embankments and any weed growth that might become established within the pond surface.

DA-8 Dairy wastewater discharged for irrigation purposes should be managed so that it does not stand for more than three days.

DA-9 All structures and water management practices should meet current California Regional Water Quality Control Board requirements.

DA-10 Tire sidewalls or other objects that will not hold water should be used to hold down tarps (e.g. on silage piles). Whole tires or other water–holding objects should be replaced.

3. CONTACT INFORMATION

a. Stanislaus County Department of Environmental Health
3800 Cornucopia Way, Suite C
Modesto, CA 95358
Phone: (209)525-6700

b. Turlock Mosquito Abatement District
4412 N. Washington Road
Turlock, CA 95380
Phone: (209) 634-1234

Health Risk Assessment and Ambient Air Quality Analysis

Brasil Dairy #3 Facility

1707 S. Mitchell Road
Turlock, CA 95380
Stanislaus County

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1. EXECUTIVE SUMMARY

This document contains the health risk assessment (HRA) and ambient air quality analysis (AAQA) performed on behalf of Sousa Engineering for the Brasil Dairy #3 facility operation in Stanislaus County, California. As part of the development requirements for the project, an assessment is required of the potential risk to the population attributable to emissions of hazardous air pollutants from the proposed dairy expansion and an ambient air quality analysis of the criteria pollutants compared to the California and national ambient air quality standards.

Emissions of hazardous air pollutants attributable to proposed construction activities, animal movement, manure management and on-site mobile sources were calculated using generally accepted emission factors and the California Emissions Estimator Model version 2020.4.0 (CalEEMod). Ambient air concentrations were predicted with dispersion modeling to arrive at a conservative estimate of increased individual carcinogenic risk that might occur as a result of continuous exposure over a 70-year lifetime. Similarly, concentrations of compounds with non-cancer adverse health effects were used to calculate hazard indices (HIs), which are the ratio of expected exposure to acceptable exposure.

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has set the level of significance for carcinogenic risk to twenty in one million (20×10^{-6}), which is understood as the possibility of causing twenty additional cancer cases in a population of one million people. The level of significance for acute and chronic non-cancer risk is a hazard index of 1.0. The maximum predicted cancer risk among the modeled receptors is 15.1 in one million, which is below the significance level of twenty in one million. The maximum predicted acute and chronic non-cancer hazard indices among the modeled receptors are 0.148 and 0.123, respectively, which is below the significance level for chronic and acute significance level.

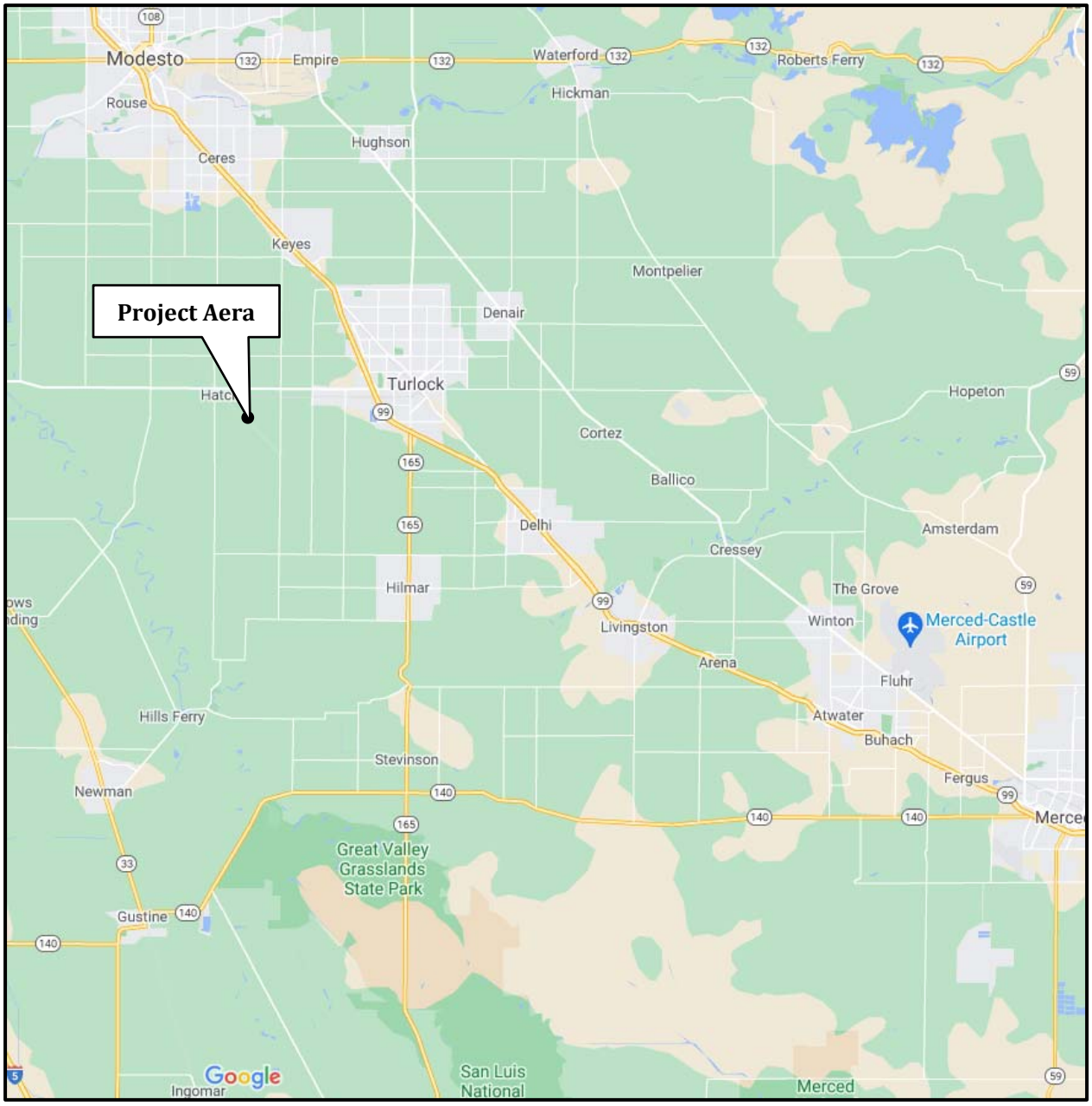
In accordance with the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015a) and polices (SJVAPCD 2015b; SJVAPCD 2015c) the potential health risk attributable to the proposed project is determined to be less than significant.

Emissions of criteria pollutants attributable to proposed construction activities animal movement, manure management and on-site mobile sources were calculated using generally accepted emission factors. The SJVAPCD has developed screening levels for requiring an AAQA. The SJVAPCD recommends that an AAQA be performed for all criteria pollutants when emissions of any criteria pollutant resulting from project construction or operational activities exceed the 100 pounds per day screening level, after compliance with Rule 9510 requirements and implementation of all enforceable mitigation measures. The proposed project's construction and operational activities will not exceed 100 pounds per day of any criteria pollutant that has an ambient air quality standard. Therefore, an AAQA is not required, and the proposed Project is considered less than significant for ambient air quality impacts.

2. INTRODUCTION

This Health Risk Assessment (HRA) is provided as a service of Trinity Consultants, performed on behalf of Sousa Engineering for the Brasil Dairy #3 facility operation in Stanislaus County, California (**Figure 2-1**). As part of the development requirements for the property, an HRA and AAQA are required.

Figure 2-1. Location Map



2.1. PROJECT DESCRIPTION

The existing dairy is located at 1707 S Mitchell Road in Turlock, California, which is in the County of Stanislaus. The facility will not be located within 1,000 feet of a K-12 school.

The proposed structure construction would occur within two phases. Phase 1 Construction would include the construction of a new animal housing structure totaling 10,140 square feet. Phase 2 Construction would include the construction of new animal housing structures totaling 59,983 square feet. Phase 1 Construction was estimated to take approximately two months and Phase 2 construction was estimated to take approximately six months. All construction is expected to be completed within five years of issuance of a Conditional Use Permit (CUP).

After modification, the dairy will house approximately 2,700 head of cattle. The existing and proposed herd configuration is provided in Table 2-1. The dairy will continue to operate 24 hours per day and 365 days per year.

Table 2-1. Herd Configuration – Existing and Proposed

Cow Type	Current	Proposed	Increment
Milk Cows	600	1,500	900
Dry Cows	200	0	-200
Support Stock	600	1,200	600
TOTAL	**1,400**	**2,700**	**1,300**

As stated in the GAMAQI (2015, p 96-97), SJVAPCD has developed screening levels for requiring an Ambient Air Quality Analysis (AAQA). The SJVAPCD recommends that an AAQA be performed for all criteria pollutants when emissions of any criteria pollutant resulting from project construction or operational activities exceed the 100 pounds per day screening level, after compliance with Rule 9510 requirements and implementation of all enforceable mitigation measures.

As shown below in **Table 3-1**, average daily emissions for construction and operational activities associated with this Project would not exceed 100 pounds per day for any criteria pollutant that has an ambient air quality standard. *Therefore, an AAQA is not required for this Project.*

Table 3-1. Average Daily Criteria Pollutant Emissions

Emissions Source	Pollutant (lbs/day)				
	NOX	CO	SOX	PM_{10}	$PM_{2.5}$
Construction Emissions					
Year 2023	11.05	11.65	0.02	1.04	0.67
Operational Emissions					
Cow Housing	-	-	-	9.14	1.04
Mobile Sources	0.12	0.99	0.002	0.01	0.01
Total Average Daily Operational Emissions	**0.12**	**0.99**	**0.002**	**9.15**	**1.05**
SJVAPCD AAQA Screening Threshold	**100**	**100**	**100**	**100**	**100**
Is Threshold Exceeded?	No	No	No	No	No

4. RISK ASSESSMENT METHODOLOGY

This section describes the methodology used to predict the potential health risk to the population attributable to emissions of hazardous air pollutants from the proposed expansion of the dairy operation.

4.1. HAZARD IDENTIFICATION

The basis for evaluating potential health risk is the identification of sources of hazardous air pollutants (HAPs). The proposed dairy expansion will include sources with the potential to emit HAPs.

Construction equipment sources include diesel-fueled dozers, loaders, backhoes, excavators, graders, cranes, forklifts, generator sets, concrete/industrial saws, and welders. CalEEMod default equipment listing for general heavy industrial usages were utilized. Default horsepower, daily operating hours, and load factors were also used. Operational mobile sources include a diesel-fueled solids manure removal trucks, commodity delivery trucks, a manure scraping tractor, a manure loading tractor, a bedding delivery tractor, and a feed delivery tractor. Other diesel-fueled sources that will not have an on-site increase in usage as a result of the Project are feed loading tractor and milk tankers. There will also be emissions from the housing barns, milk barn, lagoons, solid manure storage and land application areas associated with increased herd size. HRA emission sources are listed in **Table 4-1**.

Table 4-1. Sources of Potential Emissions

Source ID	Description
SMTI	Solid Manure Truck Idling
SMTT	Solid Manure Truck Travel
MLT	Manure Loading Tractor
FBDT1-2	Feed and Bedding Delivery Tractor
SB16-19	Shade Barns
FS1-10	Free Stall Barns
MILK1	Milk Parlor
LAGOON1-3	Lagoons
SMS	Solid Manure Storage
LLA	Liquid Land Application
SLA	Solids Land Application
CTI	Commodity Truck Idling
CTT	Commodity Truck Travel
CR20	Corrals
MST	Manure Scraping Tractor
CONST1-2	Construction Activities

Table 4-2 lists the toxic substances emitted from each of these activities and also presents the classification of these species as to their potential for producing carcinogenic and non-cancer acute or chronic health impacts, if any.

Table 4-2. Chemicals of Potential Concern

CAS	Pollutant	Source	Cancer	Non-Cancer	
				Acute	Chronic
9901	Diesel Exhaust, Particulate Matter	Tractors, Diesel Trucks	X		X
9960	Sulfates	Animal Movement		X	X
50000	Formaldehyde	Animal Movement	X	X	X
56235	Carbon tetrachloride	Animal Movement, Lagoons	X	X	X
67630	Isopropyl Alcohol	Animal Movement		X	X
67663	Chloroform	Animal Movement, Lagoons	X	X	X
71432	Benzene	Animal Movement, Lagoons	X	X	X
71556	1,1,1-trichloroethane	Lagoons		X	X
74873	Methyl Chloride	Animal Movement	X	X	X
75003	Ethyl Chloride	Animal Movement			X
75070	Acetaldehyde	Animal Movement	X		X
75150	Carbon disulfide	Animal Movement		X	X
75252	Tribromomethane *	Lagoons			
75694	Trichloromonofluoromethane *	Lagoons			
76131	1,1,2-Trichloro-1,2,2-trifluoroethane	Lagoons			X
78933	Methyl Ethyl Ketone (MEK)	Animal Movement, Lagoons		X	X
79005	1,1,2-Trichloroethane	Animal Movement	X		
79016	Trichloroethylene	Animal Movement, Lagoons	X		X
79345	1,1,2,2-Tetrachloroethane	Animal Movement	X		
91203	Naphthalene	Animal Movement	X		X
95501	1,2-Dichlorobenzene *	Animal Movement, Lagoons			
95636	1,2,4-Trichlorobenzene *	Lagoons			
96128	1,2-Dibromo-3-chloropropane	Animal Movement	X		X
96184	1,2,3-Trichloropropane *	Animal Movement			
98828	Cumene *	Animal Movement			
100414	Ethylbenzene	Animal Movement			X
100425	Styrene	Animal Movement, Lagoons		X	X
100447	Benzyl chloride	Animal Movement	X	X	X
106467	1,4-Dichlorobenzene	Animal Movement, Lagoons	X		X
106934	1,2-Dibromoethane (EDB)	Animal Movement	X		X
106990	1,3-Butadiene	Lagoons	X		X
107062	1,2-Dichloroethane (EDC)	Animal Movement	X		X
107131	Acrylonitrile	Animal Movement	X		X
108054	Vinyl acetate	Animal Movement, Lagoons			X
108101	Methyl Isobutyl Ketone *	Animal Movement, Lagoons			
108883	Toluene	Animal Movement, Lagoons		X	X
108907	Chlorobenzene	Animal Movement			X
110543	Hexane	Animal Movement			X
110827	Cyclohexane *	Animal Movement, Lagoons			
115071	Propylene	Lagoons			X

CAS	Pollutant	Source	Cancer	Non-Cancer	
				Acute	Chronic
120821	1,2,4-Trichlorobenzene *	Animal Movement			
123728	Butyraldehyde *	Animal Movement			
123911	1,4 Dioxane	Animal Movement	X	X	X
127184	Tetrachloroethene	Animal Movement	X	X	X
541731	1,3-Dichlorobenzene *	Animal Movement, Lagoons			
764410	t-1,4-Dichloro-2-butene *	Animal Movement			
1330207	Xylene Isomers	Animal Movement, Lagoons		X	X
4170303	Crotonaldehyde *	Animal Movement			
7429905	Aluminum *	Animal Movement			
7439921	Lead	Animal Movement	X		
7439965	Manganese	Animal Movement			X
7439976	Mercury	Animal Movement		X	X
7440020	Nickel	Animal Movement	X	X	X
7440360	Antimony *	Animal Movement			
7440382	Arsenic	Animal Movement	X	X	X
7440393	Barium *	Animal Movement			
7440439	Cadmium	Animal Movement	X		X
7440473	Chromium *	Animal Movement			
7440508	Copper	Animal Movement		X	X
7440622	Vanadium	Animal Movement	X		
7440666	Zinc	Animal Movement			X
7664417	Ammonia	Animal Movement, Lagoons Wastewater Application		X	X
7723140	Phosphorus *	Animal Movement			
7726956	Bromine	Animal Movement			X
7782492	Selenium	Animal Movement			X
7782505	Chlorine	Animal Movement		X	X
18540299	Hexavalent Chromium	Animal Movement	X	X	X

*Health risk assessment values have not yet been assigned for this chemical.

4.2. EXPOSURE ASSESSMENT

4.2.1. Source Emissions and Characterization

Peak one-hour emission rates and annual-averaged emission rates were calculated for all pollutants for each modeled source. Emissions attribute to animal movement and manure management were estimated by the SJVAPCD using PM_{10} emission factors and HAPs speciation spreadsheets. The project applicant provided cattle numbers. Emissions for tractors were calculated using the EPA's *Nonroad Compression-Ignition Engines - Exhaust Emission Standards* for the appropriate engine horsepower (HP) and year and load factors for the appropriate engine horsepower from California Emissions Estimator Model (CalEEMod) Appendix D, Tables 3.3 and 3.4. Diesel truck running and idling emissions are based on EMFAC2021 emission factors specific to Stanislaus County for vehicle category "T7 Single Other Class 8." Diesel trucks were assumed to have 15 minutes of idling per visit. The new lagoon's H_2S emissions were assumed to be 10% of the NH3 lagoon emissions. This assumption was taken from the SJVAPCD's dairy calculator.

The actual total construction activities were estimated to be eight months. Therefore, a one-year exposure HRA was conducted and added to the operational HRA results. Construction emissions will be restricted to occur between the hours of 7am and 5pm.

The calculation worksheets and CalEEMod output files for the emissions are provided in **Appendix A**. Hourly and annual emissions for each source are also provided in the HARP output files, electronic copies of which are provided in **Appendix B**.

4.2.2. Dispersion Modeling

A version of EPA's AMS/EPA Regulatory Model - AERMOD (recompiled for the Lakes ISC-AERMOD View interface) was used to predict the dispersion of emissions from the dairy expansion. The construction activities, animal housing areas, milk barn, lagoons, solid manure storage and land application areas were modeled as area sources. Unit emission rates for the area sources of 1 g/sec divided by the area of the source were input into AERMOD. The travel route for the feed delivery tractor, bedding delivery tractor, commodity delivery trucks and manure removal trucks were modeled as line sources, which represents a series of volume sources, with a unit emission rate of 1 g/sec. The manure scraping tractor, the manure loading tractor, commodity truck idling and manure removal truck idling were modeled as point sources, with a unit emission rate of 1 g/sec. Modeled sources are identified in **Table 4-1**.

All of the AERMOD regulatory default parameters were employed. Rural dispersion parameters were used because the facility and surrounding land are considered "rural" under the Auer land use classification method. The AERMOD files are provided in electronic format in **Appendix B.**

4.2.2.1. Meteorological Data

The SJVAPCD provided meteorological data for Modesto, California to be used for projects within Stanislaus County. SJVAPCD-approved, AERMET processed meteorological datasets for calendar years 2013 through 2017[1] was input into AERMOD. This was the most recent available dataset available at the time the modeling runs were conducted.

4.2.2.2. Receptors

Existing land uses in the area where the proposed dairy expansion will be located are predominantly agriculture. There are scattered rural residences in the general area of the project; most of which are associated with local agricultural operations. A total of 207 off-site receptors of residences and workers were assessed during the preparation of this HRA. Coordinates for the point of maximum impact (PMI) receptors are provided in **Table 4-3**.

4.2.3. HARP Post-Processing

The files generated in AERMOD were uploaded to the Air Dispersion Modeling and Risk Assessment Tool (ADMRT) program in the Hotspots Analysis and Reporting Program Version 2 (HARP 2) (CARB 2015). ADMRT post-processing was used to assess the potential for excess cancer risk and chronic and acute non-cancer effects using the most recent health effects data from the California EPA Office of Environmental Health Hazard Assessment (OEHHA). ADMRT site parameters were set for mandatory minimum exposure pathways for carcinogenic risk. The deposition rate was set to 0.02 m/s. Risk reports were generated for carcinogenic risk,

[1] Provided via website, San Joaquin Valley Air Pollution Control District (SJVAPCD), ftp://12.219.204.27/public/Modeling/Meteorological_Data/AERMET_v16216/Modesto_23258/

non-carcinogenic chronic risk and non-carcinogenic acute risk. Site parameters are included in the HARP output files.

4.3. RISK CHARACTERIZATION

For permitting and CEQA purposes, SJVAPCD has set the level of significance for carcinogenic risk at 20 in one million, which is understood as the possibility of causing twenty additional cancer cases in a population of one million people (SJVAPCD 2015b). The level of significance for chronic and acute non-cancer risk is a hazard index of one (SJVAPCD 2015c).

HARP 2 post-processing was used to assess the potential for the following: excess cancer risk, acute non-cancer effects, and chronic non-cancer effects. Total cancer risk was predicted for inhalation and non-inhalation pathways at each receptor. The hazard index is computed by endpoint as the sum of the hazard indices for all relevant pollutants, the highest of which is designated as the total hazard index.

The carcinogenic risk predicted at the potentially impacted receptors does not exceed the significance level of twenty in one million (20×10^{-6}). The health hazard index (HI) for chronic and acute non-cancer risk is below the significance level of 1.0 at all modeled receptors. The excess cancer risk, acute non-cancer HI, and chronic non-cancer HI for the maximum modeled receptor are provided in **Table 4-3**. The HARP2 output files for cancer, acute, and chronic risks are provided in electronic format on **Appendix B.**

As shown below in **Table 4-3,** the maximum predicted cancer risk is 15.1E-06. Cancer risks are primarily attributable to emissions of naphthalene and DPM through the inhalation pathway. Carcinogenic risks are tabulated by pollutant in **Table 4-4**.

The maximum predicted acute non-cancer hazard index is 0.148. Acute risks are primarily attributable to emissions of ammonia, which affects the respiratory system and eyes. Acute risks are tabulated by pollutant in **Table 4-5**.

The maximum predicted chronic non-cancer hazard index is 0.123. Chronic risks, tabulated by pollutant in **Table 4-6**, are primarily attributable to emissions of arsenic which affect the respiratory system, the skin, cardiovascular system and the central nervous system.

Table 4-3. Risk Predicted By HARP

	Maximum Lifetime Excess Cancer Risk	Maximum Non-Cancer Chronic Hazard Index	Maximum Non-Cancer Acute Hazard Index
Construction	1.28E-06	1.43E-03	0.00E+00
Operational	13.9E-06	1.21E-01	1.48E-01
Total	15.1E-06	1.23E-01	1.48E-01
Receptor #, Name	66, Off-Site Residence	66, Off-Site Residence	16, Off-site Residence
UTM Easting (m)	682120.95	682120.95	681866.3
UTM Northing (m)	4149298.43	4149298.43	4149929.22

Table 4-4. Risk by Pollutant – Maximum Cancer Risk at Receptor #66

CHEM	INHAL	SOIL	DERM	MOTHER	WATER	FISH	CROP	BEEF	DAIRY	PIG	CHICK	EGG	TOTAL
Naphthalene	4.09E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.09E-06
DieselExhPM	1.98E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-06
Arsenic	3.12E-07	1.37E-06	5.86E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.74E-06
Acrylonitrile	1.63E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.63E-06
TetraClEthane	1.18E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-06
Benzyl Chloride	9.91E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.91E-07
EDB	7.37E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.37E-07
Perc	6.53E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.53E-07
Cr(VI)	5.80E-07	2.00E-08	2.84E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.01E-07
DBCP	5.32E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.32E-07
p-DiClBenzene	3.89E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.89E-07
1,4-Dioxane	1.75E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E-07
Benzene	9.86E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.86E-08
1,1,2TriClEthan	9.76E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.76E-08
Acetaldehyde	6.40E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.40E-08
EDC	5.68E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.68E-08
Formaldehyde	4.22E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.22E-08
Lead	2.39E-09	1.70E-08	3.63E-10	1.87E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E-08
Ethyl Benzene	1.96E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.96E-08
CCl4	1.35E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-08
TCE	1.35E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-08
Nickel	1.04E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.04E-08
Chloroform	3.83E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.83E-09
SUM	1.37E-05	1.41E-06	5.92E-08	1.87E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-05

Table 4-5. Risk by Pollutant – Maximum Acute Noncancer Risk at Receptor #16

CHEM	CV	CNS	IMMUN	KIDNEY	GILV	REPRO /DEVEL	RESP	SKIN	EYE	BONE /TEETH	ENDO	BLOOD	ODOR	GENERAL	MAX
Arsenic	3.82E-03	3.82E-03	0.00E+00	0.00E+00	0.00E+00	3.82E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.82E-03
Copper	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.31E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.31E-05
Mercury	0.00E+00	3.18E-04	0.00E+00	0.00E+00	0.00E+00	3.18E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.18E-04
Nickel	0.00E+00	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03
SULFATES	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.90E-03
Vanadium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.78E-05	0.00E+00	4.78E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.78E-05
NH3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.41E-01	0.00E+00	1.41E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.41E-01
1,4-Dioxane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-04	0.00E+00	1.61E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-04
Acetaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-03	0.00E+00	1.25E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-03
Benzene	0.00E+00	0.00E+00	3.14E-03	0.00E+00	0.00E+00	3.14E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.14E-03	0.00E+00	0.00E+00	3.14E-03
Benzyl Chloride	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-03	0.00E+00	1.37E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-03
CS2	0.00E+00	1.31E-04	0.00E+00	0.00E+00	0.00E+00	1.31E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.31E-04
CCl4	0.00E+00	5.75E-06	0.00E+00	0.00E+00	5.75E-06	5.75E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.75E-06
Chloroform	0.00E+00	1.63E-04	0.00E+00	0.00E+00	0.00E+00	1.63E-04	1.63E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.63E-04
Formaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.64E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.64E-03
Isopropyl Alcoh	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.15E-04	0.00E+00	1.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.15E-04
MEK	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.18E-04	0.00E+00	2.18E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.18E-04
Perc	0.00E+00	8.30E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.30E-05	0.00E+00	8.30E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.30E-05
Styrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.98E-06	9.98E-06	0.00E+00	9.98E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.98E-06
Toluene	0.00E+00	6.18E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.18E-05	0.00E+00	6.18E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.18E-05
Xylenes	0.00E+00	2.27E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.27E-05	0.00E+00	2.27E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.27E-05
H2S	0.00E+00	1.26E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-02
SUM	3.82E-03	1.72E-02	4.81E-03	0.00E+00	5.75E-06	7.58E-03	1.48E-01	0.00E+00	1.47E-01	0.00E+00	0.00E+00	3.14E-03	0.00E+00	0.00E+00	1.48E-01

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Table 4-6. Risk by Pollutant – Maximum Chronic Noncancer Risk at Receptor #66

CHEM	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/ DEVEL	RESP	SKIN	EYE	BONE/ TEETH	ENDO	BLOOD	ODOR	GENERAL	MAX
DieselExhPM	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E-03
Arsenic	8.53E-02	8.53E-02	0.00E+00	0.00E+00	0.00E+00	8.53E-02	8.53E-02	8.53E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.53E-02
Cr(VI)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.35E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.95E-07	0.00E+00	0.00E+00	6.35E-06
Manganese	0.00E+00	1.53E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.53E-02
Mercury	0.00E+00	6.83E-04	0.00E+00	6.83E-04	0.00E+00	6.83E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.83E-04
Nickel	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.08E-05	9.07E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.07E-04	0.00E+00	0.00E+00	9.07E-04
Selenium	3.56E-06	3.56E-06	0.00E+00	0.00E+00	3.56E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.56E-06
NH3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E-02
1,4-Dioxane	2.41E-06	0.00E+00	0.00E+00	2.41E-06	2.41E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.41E-06
p-DiClBenzene	0.00E+00	1.36E-05	0.00E+00	1.36E-05	1.36E-05	0.00E+00	1.36E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-05
Acetaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.10E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.10E-05
Acrylonitrile	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.65E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.65E-04
Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.67E-04	0.00E+00	0.00E+00	3.67E-04
CS2	0.00E+00	1.48E-05	0.00E+00	0.00E+00	0.00E+00	1.48E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.48E-05
CCl4	0.00E+00	2.52E-06	0.00E+00	0.00E+00	2.52E-06	2.52E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.52E-06
Chlorobenzn	0.00E+00	0.00E+00	0.00E+00	2.99E-06	2.99E-06	2.99E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-06
Chloroform	0.00E+00	0.00E+00	0.00E+00	7.50E-07	7.50E-07	7.50E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.50E-07
Ethyl Chloride	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.33E-08	4.33E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.33E-08
Ethyl Benzene	0.00E+00	0.00E+00	0.00E+00	1.26E-06	1.26E-06	1.26E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-06	0.00E+00	0.00E+00	0.00E+00	1.26E-06
EDB	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.11E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.11E-03
EDC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.20E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.20E-06
Formaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.49E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.49E-04
Hexane	0.00E+00	3.18E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.18E-07
Isopropyl Alcoh	0.00E+00	0.00E+00	0.00E+00	6.03E-07	0.00E+00	6.03E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.03E-07
Naphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.22E-03
Perc	0.00E+00	0.00E+00	0.00E+00	9.92E-04	9.92E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.92E-04
Styrene	0.00E+00	4.16E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.16E-06
Toluene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-05
Vinyl Acetate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E-05
Xylenes	0.00E+00	9.56E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.56E-06	0.00E+00	9.56E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.56E-06
TCE	0.00E+00	3.58E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.58E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.58E-06
H2S	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.08E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.08E-03
Sum	8.53E-02	1.01E-01	0.00E+00	1.70E-03	1.02E-03	9.01E-02	1.23E-01	8.53E-02	2.32E-05	0.00E+00	1.26E-06	1.27E-03	0.00E+00	0.00E+00	1.23E-01

5. CONCLUSIONS

In accordance with the *Guide for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015a) and San Joaquin Valley Air Pollution Control District policies (SJVAPCD 2015b; SJVAPCD 2016c), the unmitigated potential health risk attributable to the Brasil Dairy #3 facility for chronic and acute non-carcinogenic and carcinogenic risk is determined to be less than significant based on the following conclusion:

- Potential chronic carcinogenic risk from the facility expansion is *below* the significance level of twenty in one million at each of the modeled receptors.
- The hazard index for the potential chronic non-cancer risk from the facility expansion is *below* the significance level of 1.0 at each of the modeled receptors.
- The hazard index for the potential acute non-cancer risk from the facility expansion is *below* the significance level of 1.0 at each of the modeled receptors.

Additionally, the ambient air quality impact is determined to be less than significant based on the following conclusions:

- The average daily emissions for construction and operational activities associated with this Project would not exceed 100 pounds per day for any criteria pollutant that has an ambient air quality standard.

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APPENDIX A: EMISSION ESTIMATION WORKSHEETS

Rev. January 6, 2020

Pre-Project Facility Information

1. Does this facility house Holstein or Jersey cows? Jersey
   Most facilities house Holstein cows unless explicitly stated on the PTO or application.
2. Does the facility have an anaerobic treatment lagoon? no
3. Does the facility land apply liquid manure? yes
   Answering "yes" assumes worst case.
4. Does the facility land apply solid manure? yes
   Answering "yes" assumes worst case.
5. Is any scraped manure sent to a lagoon/storage pond? no
   Answering "yes" assumes worst case.

Pre-Project Herd Size

Herd	Flushed Freestalls	Scraped Freestalls	Flushed Corrals	Scraped Corrals	Total # of Animals
Milk Cows	600				600
Dry Cows		200			200
Support Stock (Heifers, Calves, and Bulls)	300		100	200	600
Large Heifers					0
Medium Heifers					0
Small Heifers					0
Bulls					0

	Calf Hutches				Calf Corrals		
	Aboveground Flushed	Aboveground Scraped	On-Ground Flushed	On-Ground Scraped	Flushed	Scraped	Total # of Calves
Calves							0

Total Herd Summary

Total Milk Cows	600
Total Mature Cows	800
Support Stock (Heifers, Calves, and Bulls)	600
Total Calves	0
Total Dairy Head	1,400

Pre-Project Silage Information

Feed Type	Max # Open Piles	Max Height (ft)	Max Width (ft)
Corn			
Alfalfa			
Wheat			

Post-Project Facility Information

1. Does this facility house Holstein or Jersey cows? Jersey
   Most facilities house Holstein cows unless explicitly stated on the PTO or application.
2. Does the facility have an anaerobic treatment lagoon? no
3. Does the facility land apply liquid manure? yes
   Answering "yes" assumes worst case.
4. Does the facility land apply solid manure? yes
   Answering "yes" assumes worst case.
5. Is any scraped manure sent to a lagoon/storage pond? no
   Answering "yes" assumes worst case.
6. Does this project result in an increase or relocation of uncovered surface area for any lagoon/storage pond? yes

NOTE: An increase in total lagoon/storage pond surface area may result in an increase in H2S emissions. The District's Technical Services Division may need to conduct H2S modeling.

Post-Project Herd Size

Herd	Flushed Freestalls	Scraped Freestalls	Flushed Corrals	Scraped Corrals	Total # of Animals
Milk Cows	1,500				1,500
Dry Cows					0
Support Stock (Heifers, Calves, and Bulls)	1,000			200	1,200
Large Heifers					0
Medium Heifers					0
Small Heifers					0
Bulls					0

	Calf Hutches				Calf Corrals		
	Aboveground Flushed	Aboveground Scraped	On-Ground Flushed	On-Ground Scraped	Flushed	Scraped	Total # of Calves
Calves							0

Total Herd Summary

Total Milk Cows	1,500
Total Mature Cows	1,500
Support Stock (Heifers, Calves, and Bulls)	1,200
Total Calves	0
Total Dairy Head	2,700

Post-Project Silage Information

Feed Type	Max # Open Piles	Max Height (ft)	Max Width (ft)
Corn			
Alfalfa			
Wheat			

This spreadsheet serves only as a resource to calculate potential emissions from dairies, and may not reflect the final emissions used by the District due to parameters not addressed in this spreadsheet and/or omissions from the spreadsheet. Any other permittable equipment (e.g. IC engines, gasoline tanks, etc.) at a facility will need to be calculated separately. All final calculations used in permitting projects will be conducted by District staff.

Control Measure	PM10 Control Efficiency
Shaded corrals (milk and dry cows)	16.7%
Shaded corrals (heifers and bulls)	8.3%
Downwind shelterbelts	12.5%
Upwind shelterbelts	10%
Freestall with no exercise pens and non-manure based bedding	90%
Freestall with no exercise pens and manure based bedding	80%
Fibrous layer in dusty areas (i.e. hay, etc.)	10%
Bi-weekly corral/exercise pen scraping and/or manure removal using a pull type manure harvesting equipment in morning hours when moisture in air except during periods of rainy weather	15%
Sprinkling of open corrals/exercise pens	12.5%
Feeding young stock (heifers and calves) near dusk	10%

Pre-Project PM10 Mitigation Measures

Pre-Project PM10 Mitigation Measures

	Housing Name(s) or #(s)	Type of Housing	Type of cow	Total # of cows in Each Housing Structure(s)	Maximum Design Capacity of Each Structure	# of Combined Housing Structures in row	Shaded Corrals	Downwind Shelterbelts	Upwind Shelterbelts	No exercise pens, non-manure bedding	No exercise pens, manure bedding	Fibrous layer	Bi-weekly scraping Corrals/Pens	Sprinkling Corrals/Pens	Feed Young Stock Near Dusk
1	Free Stall 1	freestall	dry cows	200	200	1	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	Free Stall 3	freestall	milk cows	90	90	1	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	Free Stall 4	freestall	milk cows	90	90	1	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	Free Stall 5	freestall	milk cows	90	90	1	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	Free Stall 6	freestall	milk cows	90	90	1	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	Free Stall 7	freestall	milk cows	90	90	1	☐	☐	☐	☐	☐	☐	☐	☐	☐
7	Free Stall 8	freestall	milk cows	75	75	1	☐	☐	☐	☐	☐	☐	☐	☐	☐
8	Free Stall 9	freestall	milk cows	75	75	1	☐	☐	☐	☐	☐	☐	☐	☐	☐
10	Corral 20	open corral	support stock	200	200	1	☐	☐	☐	☐	☐	☐	☐	☐	☑
11	Corral 21	open corral	support stock	100	100	1	☐	☐	☐	☐	☐	☐	☐	☐	☐
12	Shade Barn 16	loafing barn	support stock	100	100	1	☐	☐	☐	☐	☐	☐	☐	☐	☐
13	Shade Barn 17	loafing barn	support stock	200	200	1	☐	☐	☐	☐	☐	☐	☐	☐	☐
			Pre-Project Total # of Cows	1,400											

Pre-Project PM10 Control Efficiencies and Emission Factors

	Housing Name(s) or #(s)	Type of Housing	Type of cow	Total # of cows in Each Housing Structure(s)	Maximum Design Capacity of Each Structure	Uncontrolled EF (lb/hd-yr)	Shaded Corrals	Downwind Shelterbelts	Upwind Shelterbelts	No exercise pens, non-manure bedding	No exercise pens, manure bedding	Fibrous layer	Bi-weekly scraping Corrals/Pens	Sprinkling Corrals/Pens	Feed Young Stock Near Dusk	Controlled EF (lb/hd-yr)
1	Free Stall 1	freestall	dry cows	200	200	1.370										1.37
2	Free Stall 3	freestall	milk cows	90	90	1.370										1.37
3	Free Stall 4	freestall	milk cows	90	90	1.370										1.37
4	Free Stall 5	freestall	milk cows	90	90	1.370										1.37
5	Free Stall 6	freestall	milk cows	90	90	1.370										1.37
6	Free Stall 7	freestall	milk cows	90	90	1.370										1.37
7	Free Stall 8	freestall	milk cows	75	75	1.370										1.37
8	Free Stall 9	freestall	milk cows	75	75	1.370										1.37
10	Corral 20	open corral	support stock	200	200	10.550									10%	9.50
11	Corral 21	open corral	support stock	100	100	10.550										10.55
12	Shade Barn 16	loafing barn	support stock	100	100	5.280										5.28
13	Shade Barn 17	loafing barn	support stock	200	200	5.280										5.28
			Pre-Project Total # of Cows	1,400												

Increase in Emissions

SSIPE (lb/yr)							
	NOx	SOx	PM10	CO	VOC	NH3	H2S
Milking Parlor	0	0	0	0	240	90	0
Cow Housing	0	0	3,336	0	6,629	14,337	0
Liquid Manure	0	0	0	0	1,904	5,691	N/A
Solid Manure	0	0	0	0	340	1,492	0
Feed Handling	0	0	0	0	10,460	0	0
Total	**0**	**0**	**3,336**	**0**	**19,573**	**21,610**	**N/A**

Total Daily Change in Emissions (lb/day)							
	NOx	SOx	PM10	CO	VOC	NH3	H2S
Milking Parlor	0.0	0.0	0.0	0.0	0.7	0.2	0.0
Cow Housing	0.0	0.0	9.4	0.0	18.5	39.0	0.0
Liquid Manure	0.0	0.0	0.0	0.0	5.3	15.6	N/A
Solid Manure	0.0	0.0	0.0	0.0	1.0	4.0	0.0
Feed Handling	0.0	0.0	0.0	0.0	28.6	0.0	0.0
Total	**0.0**	**0.0**	**9.4**	**0.0**	**54.1**	**58.8**	**N/A**

Total Annual Change in Non-Fugitive Emissions (Major Source Emissions) (lb/yr)							
	NOx	SOx	PM10	CO	VOC	NH3	H2S
Milking Parlor	0	0	0	0	0	0	0
Cow Housing	0	0	0	0	0	0	0
Liquid Manure	0	0	0	0	924	0	N/A
Solid Manure	0	0	0	0	0	0	0
Feed Handling	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**924**	**0**	**N/A**

Name	Cow Housing Summary			
Applicability	Use this spreadsheet to enter data from the Engineer's Dairy Calculator. Entries here will be linked to other worksheets. After completion, proceed to RMR worksheet for further entries.			
Author or updater	Matthew Cegielski	*Last Update*	September 24, 2018	
Facility:	Brasil Dairy	0	Not Set	
ID#:				
Project #:				

*Notes:

Potential to Emit - Cow Housing

Housing Name(s) or #(s)	Type of Cow	# of Cows	VOC (lb/hr)	VOC (lb/yr)	NH_3 (lb/hr)	NH_3 (lb/yr)	PM_{10} (lb/hr)	PM_{10} (lb/yr)
Free Stall 1	Milk	250	0.1000	878	0.2542	2,229	0.0042	69
Free Stall 2	Milk	250	0.1875	1,660	0.4292	3,750	0.0375	343
Free Stall 3	Milk	125	0.0250	203	0.0583	525	0.0083	48
Free Stall 4	Milk	125	0.0250	203	0.0583	525	0.0083	48
Free Stall 5	Milk	125	0.0250	203	0.0583	525	0.0083	48
Free Stall 6	Milk	125	0.0250	203	0.0583	525	0.0083	48
Free Stall 7	Milk	125	0.0250	203	0.0583	525	0.0083	48
Free Stall 8	Milk	125	0.0375	307	0.0833	750	0.0083	68
Free Stall 9	Milk	125	0.0375	307	0.0833	750	0.0083	68
Free Stall 10	Milk	125	0.0958	830	0.2125	1,875	0.0208	171
Corral 20	Support Stock	200	-0.0042	-32	0.0000	0	0.0000	0
Corral 21	Support Stock	0	-0.0333	-304	-0.0458	-393	-0.1208	-1,055
Shade Barn 16	Support Stock	100	0.0000	-16	0.0000	0	0.0000	0
Shade Barn 17	Support Stock	200	-0.0042	-32	0.0000	0	0.0000	0
Shade Barn 18	Support Stock	500	0.1625	1,440	0.2250	1,965	0.2708	2,376
Shade Barn 19	Support Stock	200	0.0667	576	0.0917	786	0.1208	1,056

Copy and paste values from the corresponding table in the Engineer Dairy Calculator's RMR Summary worksheet. Paste values only with matched destination formatting. Ensure the same names are lined up by row number. Zero and null entries will be highlighted in red after entry.

SSIPE RMR Summary							
	PM10 lb/hr	PM10 lb/yr	VOC lb/hr	VOC lb/yr	NH3 lb/hr	NH3 lb/yr	H2S lb/yr
Milking Parlor	-	-	0.03	240	0.01	90	-
Cow Housing	0.38	3,336	0.76	6,629	1.64	14,337	-
Liquid Manure	-	-	0.22	1,904	0.65	5,691	-
Solid Manure	-	-	0.04	340	0.17	1,492	-
Feed Handling	-	-	1.19	10,460	-	-	-
Lagoon/Storage Pond	-	-	0.11	949	0.10	876	88
Land Application (Liquid)	-	-	0.11	986	0.55	4,782	-
Land Application (Solid)	-	-	0.02	183	0.06	548	-
Solid Manure Storage	-	-	0.02	146	0.10	876	-

SSIPE Total Herd Summary	
Change in Milk Cows	900
Change in Dairy Head	1,300
Change in Dairy Head (Flushed)	1,500

PM_{10} based Agricultural Emissions from Operations generating Dust from Livestock Soil

Use this spreadsheet when the emissions are from a Feedlot Soil sources or Cow Housing and the PM_{10} rates are known (e.g. Dairy operations). Ammonia and PM_{10} Emission rates linked to Cow Housing worksheet. No entries required on this worksheet. Zero and null entries will be highlighted in red after entry.

Author or updater	Matthew Cegielski
Last Update	September 24, 2018
Facility:	Brasil Dairy
ID#:	0
Project #:	0

Formula

Emission are calculated by the multiplication of the PM_{10} Rates and the Emission Factors.

			Free Stall 1		Free Stall 2		Free Stall 3		Free Stall 4		Free Stall 5		Free Stall 6		Free Stall 7		Free Stall 8		Free Stall 9		Free Stall 10		Corral 20		Corral 21		Shade Barn 16		Shade Barn 17		Shade Barn 18		Shade Barn 19	
			lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
PM_{10} Emissions Rates			4.17E-03	6.90E+01	3.75E-02	3.43E+02	8.33E-03	4.80E+01	8.33E-03	4.80E+01	8.33E-03	4.80E+01	8.33E-03	4.80E+01	0.01	48.00	8.33E-03	6.80E+01	8.33E-03	6.80E+01	2.08E-02	1.71E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-01	2.38E+03	1.21E-01	1.06E+03
Substances	**CAS#**	**Dust* lb/lb PM_{10}**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**
Aluminum	**7429905**	4.66E-02	1.94E-04	3.22E+00	1.75E-03	1.60E+01	3.88E-04	2.24E+00	3.88E-04	2.24E+00	3.88E-04	2.24E+00	3.88E-04	2.55E-01	3.88E-04	2.24E+00	3.88E-04	3.17E+00	3.88E-04	3.17E+00	9.71E-04	7.97E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-02	1.11E+02	5.63E-03	4.92E+01
Antimony	**7440360**	1.90E-05	7.92E-08	1.31E-03	7.13E-07	6.52E-03	1.58E-07	9.12E-04	1.58E-07	9.12E-04	1.58E-07	9.12E-04	1.58E-07	1.04E-04	1.58E-07	9.12E-04	1.58E-07	1.29E-03	1.58E-07	1.29E-03	3.96E-07	3.25E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.15E-06	4.51E-02	2.30E-06	2.01E-02
Arsenic	**7440382**	1.60E-05	6.67E-08	1.10E-03	6.00E-07	5.49E-03	1.33E-07	7.68E-04	1.33E-07	7.68E-04	1.33E-07	7.68E-04	1.33E-07	7.68E-04	1.33E-07	7.68E-04	1.33E-07	1.09E-03	1.33E-07	1.09E-03	3.33E-07	2.74E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.33E-06	3.80E-02	1.93E-06	1.69E-02
Barium	**7440393**	4.69E-04	1.95E-06	3.24E-02	1.76E-05	1.61E-01	3.91E-06	2.25E-02	3.91E-06	2.25E-02	3.91E-06	2.25E-02	3.91E-06	2.25E-02	3.91E-06	2.25E-02	3.91E-06	3.19E-02	3.91E-06	3.19E-02	9.77E-06	8.02E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E-04	1.11E+00	5.67E-05	4.95E-01
Bromine	**7726956**	4.40E-05	1.83E-07	3.04E-03	1.65E-06	1.51E-02	3.67E-07	2.11E-03	3.67E-07	2.11E-03	3.67E-07	2.11E-03	3.67E-07	2.11E-03	3.67E-07	2.11E-03	3.67E-07	2.99E-03	3.67E-07	2.99E-03	9.17E-07	7.52E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E-05	1.05E-01	5.32E-06	4.65E-02
Chromium	**7440473**	1.40E-05	5.83E-08	9.66E-04	5.25E-07	4.80E-03	1.17E-07	6.72E-04	1.17E-07	6.72E-04	1.17E-07	6.72E-04	1.17E-07	6.72E-04	1.17E-07	6.72E-04	1.17E-07	9.52E-04	1.17E-07	9.52E-04	2.92E-07	2.39E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.79E-06	3.33E-02	1.69E-06	1.48E-02
Copper	**7440508**	1.32E-04	5.50E-07	9.11E-03	4.95E-06	4.53E-02	1.10E-06	6.34E-03	1.10E-06	6.34E-03	1.10E-06	6.34E-03	1.10E-06	6.34E-03	1.10E-06	6.34E-03	1.10E-06	8.98E-03	1.10E-06	8.98E-03	2.75E-06	2.26E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.58E-05	3.14E-01	1.60E-05	1.39E-01
Hexavalent Chromium**	**18540299**	7.00E-07	2.92E-09	4.83E-05	2.63E-08	2.40E-04	5.83E-09	3.36E-05	5.83E-09	3.36E-05	5.83E-09	3.36E-05	5.83E-09	3.36E-05	5.83E-09	3.36E-05	5.83E-09	4.76E-05	5.83E-09	4.76E-05	1.46E-08	1.20E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.90E-07	1.66E-03	8.48E-08	7.39E-04
Lead	**7439921**	3.50E-05	1.46E-07	2.42E-03	1.31E-06	1.20E-02	2.92E-07	1.68E-03	2.92E-07	1.68E-03	2.92E-07	1.68E-03	2.92E-07	1.68E-03	2.92E-07	1.68E-03	2.92E-07	2.38E-03	2.92E-07	2.38E-03	7.29E-07	5.99E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.48E-06	8.32E-02	4.23E-06	3.70E-02
Manganese	**7439965**	7.59E-04	3.16E-06	5.24E-02	2.85E-05	2.60E-01	6.33E-06	3.64E-02	6.33E-06	3.64E-02	6.33E-06	3.64E-02	6.33E-06	3.64E-02	6.33E-06	3.64E-02	6.33E-06	5.16E-02	6.33E-06	5.16E-02	1.58E-05	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.06E-04	1.80E+00	9.17E-05	8.02E-01
Mercury	**7439976**	4.00E-06	1.67E-08	2.76E-04	1.50E-07	1.37E-03	3.33E-08	1.92E-04	3.33E-08	1.92E-04	3.33E-08	1.92E-04	3.33E-08	1.92E-04	3.33E-08	1.92E-04	3.33E-08	2.72E-04	3.33E-08	2.72E-04	8.33E-08	6.84E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.08E-06	9.50E-03	4.83E-07	4.22E-03
Nickel	**7440020**	7.00E-06	2.92E-08	4.83E-04	2.63E-07	2.40E-03	5.83E-08	3.36E-04	5.83E-08	3.36E-04	5.83E-08	3.36E-04	5.83E-08	3.36E-04	5.83E-08	3.36E-04	5.83E-08	4.76E-04	5.83E-08	4.76E-04	1.46E-07	1.20E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.90E-06	1.66E-02	8.46E-07	7.39E-03
Phosphorus	**7723140**	4.01E-02	1.67E-04	2.77E+00	1.51E-03	1.38E+01	3.35E-04	1.93E+00	3.35E-04	1.93E+00	3.35E-04	1.93E+00	3.35E-04	1.93E+00	3.35E-04	1.93E+00	3.35E-04	2.73E+00	3.35E-04	2.73E+00	8.36E-04	6.86E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-02	9.54E+01	4.85E-03	4.24E+01
Selenium	**7782492**	1.00E-06	4.17E-09	6.90E-05	3.75E-08	3.43E-04	8.33E-09	4.80E-05	8.33E-09	4.80E-05	8.33E-09	4.80E-05	8.33E-09	4.80E-05	8.33E-09	4.80E-05	8.33E-09	6.80E-05	8.33E-09	6.80E-05	2.08E-08	1.71E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-07	2.38E-03	1.21E-07	1.06E-03
Sulfates	**9960**	7.28E-03	3.03E-05	5.03E-01	2.73E-04	2.50E+00	6.07E-05	3.50E-01	6.07E-05	3.50E-01	6.07E-05	3.50E-01	6.07E-05	3.50E-01	6.07E-05	3.50E-01	6.07E-05	4.95E-01	6.07E-05	4.95E-01	1.52E-04	1.25E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.97E-03	1.73E+01	8.80E-04	7.69E+00
Vanadium	**7440622**	3.00E-05	1.25E-07	2.07E-03	1.13E-06	1.03E-02	2.50E-07	1.44E-03	2.50E-07	1.44E-03	2.50E-07	1.44E-03	2.50E-07	1.44E-03	2.50E-07	1.44E-03	2.50E-07	2.04E-03	2.50E-07	2.04E-03	6.25E-07	5.13E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.13E-06	7.13E-02	3.63E-06	3.17E-02
Zinc	**7440666**	3.42E-04	1.43E-06	2.36E-02	1.28E-05	1.17E-01	2.85E-06	1.64E-02	2.85E-06	1.64E-02	2.85E-06	1.64E-02	2.85E-06	1.64E-02	2.85E-06	1.64E-02	2.85E-06	2.33E-02	2.85E-06	2.33E-02	7.13E-06	5.85E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.26E-05	8.13E-01	1.98E-03	1.73E+01
Ammonia	**7664417**		2.54E-01	2.23E+03	4.20E-01	3.75E+03	5.83E-02	5.24E+02	5.83E-02	5.24E+02	5.83E-02	5.24E+02	5.83E-02	5.24E+02	5.83E-02	5.24E+02	8.33E-02	7.50E+02	8.33E-02	7.50E+02	2.13E-01	1.88E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.25E-01	1.97E+03	9.17E-02	1.80E+02

Agricultural Miscellaneous Emissions from Dairy Operations (Cow Housing)

Use this spreadsheet to characterize the miscellaneous emissions from Dairy sources when VOC rates are known. VOC emission rates linked to Cow Housing worksheet. No entries required on this worksheet. Zero and null entries will be highlighted in red after entry

Author or updater	Matthew Cegielski
Last Update	September 24, 2018
Facility:	Brasil Dairy
ID#:	0
Project #:	0

Formula

Emissions are calculated by the multiplication of the VOC Rates, and Emission Factors.

			Free Stall 1		Free Stall 2		Free Stall 3		Free Stall 4		Free Stall 5		Free Stall 6		Free Stall 7		Free Stall 8		Free Stall 9		Free Stall 10		Corral 20		Corral 21		Shade Barn 16		Shade Barn 17		Shade Barn 18		Shade Barn 19	
			lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
VOC Emission Rates			**1.00E-01**	**878.0**	**1.88E-01**	**1,660.0**	**2.50E-02**	**203.0**	**2.50E-02**	**203.0**	**2.50E-02**	**203.0**	**2.50E-02**	**203.0**	**2.50E-02**	**203.0**	**3.75E-02**	**307.0**	**3.75E-02**	**307.0**	**9.58E-02**	**830**	0.00E+00	0.0	0.00E+00	0.0	0.00E+00	0.0	0.00E+00	0.0	**1.63E-01**	**1,440.0**	**6.67E-02**	**576.0**
Substances	**CAS#**	**Volatiles (lb/lb VOC)**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**	**LB/HR**	**LB/YR**
1,1,2,2-Tetrachloroethane	79345	8.73E-06	8.73E-07	7.66E-03	1.64E-06	1.45E-02	2.18E-07	1.77E-03	2.18E-07	1.77E-03	2.18E-07	1.77E-03	2.18E-07	2.02E-04	2.18E-07	1.77E-03	3.27E-07	2.68E-03	3.27E-07	2.68E-03	8.37E-07	7.25E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.42E-06	1.26E-02	5.82E-07	5.03E-03
1,1,2-Trichloroethane	79005	2.28E-04	2.28E-05	1.98E-01	4.24E-05	3.75E-01	5.65E-06	4.59E-02	5.65E-06	4.59E-02	5.65E-06	4.59E-02	5.65E-06	4.59E-02	5.65E-06	4.59E-02	8.48E-06	6.94E-02	8.48E-06	6.94E-02	2.17E-05	1.88E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.67E-05	3.25E-01	1.51E-05	1.30E-01
1,2,3-Trichloropropane	96184	2.76E-04	2.76E-05	2.42E-01	5.18E-05	4.58E-01	6.90E-06	5.60E-02	6.90E-06	5.60E-02	6.90E-06	5.60E-02	6.90E-06	5.60E-02	6.90E-06	5.60E-02	1.04E-05	8.47E-02	1.04E-05	8.47E-02	2.65E-05	2.29E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.49E-05	3.97E-01	1.84E-05	1.59E-01
1,2,4-Trichlorobenzene	120821	7.79E-04	7.79E-05	6.84E-01	1.46E-04	1.29E+00	1.95E-05	1.58E-01	1.95E-05	1.58E-01	1.95E-05	1.58E-01	1.95E-05	1.58E-01	1.95E-05	1.58E-01	2.92E-05	2.39E-01	2.92E-05	2.39E-01	7.47E-05	6.47E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E-04	1.12E+00	5.19E-05	4.49E-01
1,2-Diboromo-3-chloropropane	96128	4.94E-05	4.94E-06	4.34E-02	9.26E-06	8.20E-02	1.24E-06	1.00E-02	1.24E-06	1.00E-02	1.24E-06	1.00E-02	1.24E-06	1.00E-02	1.24E-06	1.00E-02	1.85E-06	1.52E-02	1.85E-06	1.52E-02	4.73E-06	4.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.03E-06	7.11E-02	3.29E-06	2.85E-02
1,2-Dichlorobenzene	95501	5.48E-04	5.48E-05	4.81E-01	1.03E-04	9.10E-01	1.37E-05	1.11E-01	1.37E-05	1.11E-01	1.37E-05	1.11E-01	1.37E-05	1.11E-01	1.37E-05	1.11E-01	2.06E-05	1.68E-01	2.06E-05	1.68E-01	5.25E-05	4.55E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.91E-05	7.89E-01	3.65E-05	3.16E-01
1,3-Dichlorobenzene	541731	4.90E-04	4.90E-05	4.30E-01	9.19E-05	8.13E-01	1.23E-05	9.95E-02	1.23E-05	9.95E-02	1.23E-05	9.95E-02	1.23E-05	9.95E-02	1.23E-05	9.95E-02	1.84E-05	1.50E-01	1.84E-05	1.50E-01	4.70E-05	4.07E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.96E-05	7.06E-01	3.27E-05	2.82E-01
1,4 Dioxane	123911	1.41E-03	1.41E-04	1.24E+00	2.64E-04	2.34E+00	3.53E-05	2.86E-01	3.53E-05	2.86E-01	3.53E-05	2.86E-01	3.53E-05	2.86E-01	3.53E-05	2.86E-01	5.29E-05	4.33E-01	5.29E-05	4.33E-01	1.36E-04	1.17E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.29E-04	2.03E+00	9.40E-05	8.12E-01
1,4-Dichlorobenzene	106467	5.19E-04	5.19E-05	4.56E-01	9.73E-05	8.62E-01	1.30E-05	1.05E-01	1.30E-05	1.05E-01	1.30E-05	1.05E-01	1.30E-05	1.05E-01	1.30E-05	1.05E-01	1.95E-05	1.59E-01	1.95E-05	1.59E-01	4.97E-05	4.31E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.43E-05	7.47E-01	3.46E-05	2.99E-01
Acetaldehyde	75070	2.41E-03	2.41E-04	2.12E+00	4.52E-04	4.00E+00	6.03E-05	4.89E-01	6.03E-05	4.89E-01	6.03E-05	4.89E-01	6.03E-05	4.89E-01	6.03E-05	4.89E-01	9.04E-05	7.40E-01	9.04E-05	7.40E-01	2.31E-04	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.92E-04	3.47E+00	1.61E-04	1.39E+00
Acrylonitrile	107131	2.43E-04	2.13E-01	4.56E-05	4.03E-01	6.08E-06	4.93E-02	6.08E-06	4.93E-02	6.08E-06	4.93E-02	6.08E-06	4.93E-02	6.08E-06	4.93E-02	6.08E-06	4.93E-02	9.11E-06	7.46E-02	9.11E-06	7.46E-02	2.33E-05	2.02E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.96E-05	3.50E-01	1.62E-05	1.40E-01
Benzene	71432	3.19E-04	3.19E-05	2.80E-01	5.98E-05	5.30E-01	7.98E-06	6.48E-02	7.98E-06	6.48E-02	7.98E-06	6.48E-02	7.98E-06	6.48E-02	7.98E-06	6.48E-02	1.20E-05	9.79E-02	1.20E-05	9.79E-02	3.06E-05	2.65E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.18E-05	4.59E-01	2.13E-05	1.84E-01
Benzyl chloride	100447	2.89E-04	2.54E-01	5.42E-05	4.80E-01	7.23E-06	5.87E-02	7.23E-06	5.87E-02	7.23E-06	5.87E-02	7.23E-06	5.87E-02	7.23E-06	5.87E-02	7.23E-06	5.87E-02	1.08E-05	8.87E-02	1.08E-05	8.87E-02	2.77E-05	2.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.70E-05	4.16E-01	1.93E-05	1.66E-01
Butyraldehyde	123728	1.14E-04	1.14E-05	1.00E-01	2.14E-05	1.89E-01	2.85E-06	2.31E-02	2.85E-06	2.31E-02	2.85E-06	2.31E-02	2.85E-06	2.31E-02	2.85E-06	2.31E-02	4.28E-06	3.50E-02	4.28E-06	3.50E-02	1.09E-05	9.46E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.85E-05	1.64E-01	7.60E-06	6.57E-02
Carbon Disulfide	75150	2.49E-03	2.49E-04	2.19E+00	4.67E-04	4.13E+00	6.23E-05	5.05E-01	6.23E-05	5.05E-01	6.23E-05	5.05E-01	6.23E-05	5.05E-01	6.23E-05	5.05E-01	9.34E-05	7.64E-01	9.34E-05	7.64E-01	2.39E-04	2.07E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.05E-04	3.59E+00	1.66E-04	1.43E+00
Carbon tetrachloride	56235	5.87E-06	5.15E-02	1.10E-05	9.74E-02	1.47E-06	1.19E-02	1.47E-06	1.19E-02	1.47E-06	1.19E-02	1.47E-06	1.19E-02	1.47E-06	1.19E-02	1.47E-06	1.19E-02	2.20E-06	1.80E-02	2.20E-06	1.80E-02	5.63E-06	4.87E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.54E-06	8.45E-02	3.91E-06	3.39E-02
Chlorobenzene	108907	2.72E-04	2.72E-05	2.39E-01	5.10E-05	4.52E-01	6.80E-06	5.52E-02	6.80E-06	5.52E-02	6.80E-06	5.52E-02	6.80E-06	5.52E-02	6.80E-06	5.52E-02	1.02E-05	8.35E-02	1.02E-05	8.35E-02	2.61E-05	2.26E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.42E-05	3.92E-01	1.81E-05	1.57E-01
Chloroform	67663	1.31E-04	1.31E-05	1.15E-01	2.46E-05	2.17E-01	3.28E-06	2.66E-02	3.28E-06	2.66E-02	3.28E-06	2.66E-02	3.28E-06	2.66E-02	3.28E-06	2.66E-02	4.91E-06	4.02E-02	4.91E-06	4.02E-02	1.26E-05	1.09E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.13E-05	1.89E-01	8.73E-06	7.55E-02
Chloromethane	74873	7.93E-05	6.96E-01	1.49E-04	1.32E+00	1.98E-05	1.61E-01	1.98E-05	1.61E-01	1.98E-05	1.61E-01	1.98E-05	1.61E-01	1.98E-05	1.61E-01	1.98E-05	1.61E-01	2.97E-05	2.43E-01	2.97E-05	2.43E-01	7.60E-05	6.58E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-04	1.14E+00	5.29E-05	4.57E-01
Crotonaldehyde	4170303	1.41E-04	1.41E-05	1.24E-01	2.64E-05	2.34E-01	3.53E-06	2.86E-02	3.53E-06	2.86E-02	3.53E-06	2.86E-02	3.53E-06	2.86E-02	3.53E-06	2.86E-02	5.29E-06	4.33E-02	5.29E-06	4.33E-02	1.35E-05	1.17E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.29E-05	2.03E-01	9.40E-06	8.12E-02
Cyclohexane	110827	6.83E-04	6.00E+00	1.28E-03	1.13E+01	1.71E-04	1.39E+00	1.71E-04	1.39E+00	1.71E-04	1.39E+00	1.71E-04	1.39E+00	1.71E-04	1.39E+00	1.71E-04	1.39E+00	2.56E-04	2.10E+00	2.56E-04	2.10E+00	6.55E-04	5.67E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.11E-03	9.84E+00	4.55E-04	3.93E+00
Ethyl Chloride	75003	2.39E-04	2.10E-01	4.48E-05	3.97E-01	5.98E-06	4.85E-02	5.98E-06	4.85E-02	5.98E-06	4.85E-02	5.98E-06	4.85E-02	5.98E-06	4.85E-02	5.98E-06	4.85E-02	8.96E-06	7.34E-02	8.96E-06	7.34E-02	2.29E-05	1.98E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.88E-05	3.44E-01	1.59E-05	1.38E-01
Ethylbenzene	100414	3.47E-04	3.05E-01	6.51E-05	5.76E-01	8.68E-06	7.04E-02	8.68E-06	7.04E-02	8.68E-06	7.04E-02	8.68E-06	7.04E-02	8.68E-06	7.04E-02	8.68E-06	7.04E-02	1.30E-05	1.07E-01	1.30E-05	1.07E-01	3.33E-05	2.88E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.64E-05	5.00E-01	2.31E-05	2.00E-01
Ethylene Dibromide (EDB)	106934	3.06E-04	2.69E-01	5.74E-05	5.08E-01	7.65E-06	6.21E-02	7.65E-06	6.21E-02	7.65E-06	6.21E-02	7.65E-06	6.21E-02	7.65E-06	6.21E-02	7.65E-06	6.21E-02	1.15E-05	9.39E-02	1.15E-05	9.39E-02	2.93E-05	2.54E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.97E-05	4.41E-01	2.04E-05	1.76E-01
Ethylene Dichloride (EDC)	107062	5.89E-06	5.17E-02	1.10E-05	9.78E-02	1.47E-06	1.20E-02	1.47E-06	1.20E-02	1.47E-06	1.20E-02	1.47E-06	1.20E-02	1.47E-06	1.20E-02	1.47E-06	1.20E-02	2.21E-06	1.81E-02	2.21E-06	1.81E-02	5.64E-06	4.89E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.57E-06	8.48E-02	3.93E-06	3.39E-02
Formaldehyde	50000	3.98E-04	3.98E-05	3.49E-01	7.46E-05	6.61E-01	9.95E-06	8.08E-02	9.95E-06	8.08E-02	9.95E-06	8.08E-02	9.95E-06	8.08E-02	9.95E-06	8.08E-02	1.49E-05	1.22E-01	1.49E-05	1.22E-01	3.81E-05	3.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.47E-05	5.73E-01	2.65E-05	2.29E-01
Hexane	110543	8.12E-04	7.13E-01	1.52E-04	1.35E+00	2.03E-05	1.65E-01	2.03E-05	1.65E-01	2.03E-05	1.65E-01	2.03E-05	1.65E-01	2.03E-05	1.65E-01	2.03E-05	1.65E-01	3.05E-05	2.49E-01	3.05E-05	2.49E-01	7.78E-05	6.74E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.32E-04	1.17E+00	5.41E-05	4.68E-01
Isopropyl Alchol	67630	1.62E-03	1.42E+00	3.04E-04	2.69E+00	4.06E-05	3.29E-01	4.06E-05	3.29E-01	4.06E-05	3.29E-01	4.06E-05	3.29E-01	4.06E-05	3.29E-01	4.06E-05	3.29E-01	6.08E-05	4.97E-01	6.08E-05	4.97E-01	1.55E-04	1.34E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.63E-04	2.33E+00	1.08E-04	9.33E-01
Isopropylbenzene (Cumene)	98828	5.61E-05	5.61E-06	4.93E-02	1.05E-05	9.31E-02	1.40E-06	1.14E-02	1.40E-06	1.14E-02	1.40E-06	1.14E-02	1.40E-06	1.14E-02	1.40E-06	1.14E-02	2.10E-06	1.72E-02	2.10E-06	1.72E-02	5.38E-06	4.66E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.12E-06	8.08E-02	3.74E-06	3.23E-02
Methyl Ethyl Ketone (2-butanone)	78933	1.46E-03	1.28E+01	2.74E-03	2.42E+01	3.65E-04	2.96E+00	3.65E-04	2.96E+00	3.65E-04	2.96E+00	3.65E-04	2.96E+00	3.65E-04	2.96E+00	3.65E-04	2.96E+00	5.48E-04	4.48E+00	5.48E-04	4.48E+00	1.40E-03	1.21E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.37E-03	2.10E+01	9.73E-04	8.41E+00
Methyl Isobutyl Ketone	108101	7.09E-05	6.23E-01	1.33E-04	1.18E+00	1.77E-05	1.44E-01	1.77E-05	1.44E-01	1.77E-05	1.44E-01	1.77E-05	1.44E-01	1.77E-05	1.44E-01	1.77E-05	1.44E-01	2.66E-05	2.18E-01	2.66E-05	2.18E-01	6.79E-05	5.88E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E-04	1.02E+00	4.73E-05	4.08E-01
Napthalene	91203	1.16E-03	1.02E+00	2.18E-04	1.93E+00	2.90E-05	2.35E-01	2.90E-05	2.35E-01	2.90E-05	2.35E-01	2.90E-05	2.35E-01	2.90E-05	2.35E-01	2.90E-05	2.35E-01	4.35E-05	3.56E-01	4.35E-05	3.56E-01	1.11E-04	9.63E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.89E-04	1.67E+00	7.73E-05	6.68E-01
Perchloroethylene	127184	6.51E-04	5.72E-01	1.22E-04	1.08E+00	1.63E-05	1.32E-01	1.63E-05	1.32E-01	1.63E-05	1.32E-01	1.63E-05	1.32E-01	1.63E-05	1.32E-01	1.63E-05	1.32E-01	2.44E-05	2.00E-01	2.44E-05	2.00E-01	6.24E-05	5.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-04	9.37E-01	4.34E-05	3.75E-01
Styrene	100425	3.59E-05	3.15E-01	6.73E-05	5.96E-01	8.98E-06	7.29E-02	8.98E-06	7.29E-02	8.98E-06	7.29E-02	8.98E-06	7.29E-02	8.98E-06	7.29E-02	8.98E-06	7.29E-02	1.35E-05	1.10E-01	1.35E-05	1.10E-01	3.44E-05	2.98E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.83E-05	5.17E-01	2.39E-05	2.07E-01
t-1,4-Dichloro-2-buteno	764410	8.92E-04	8.92E-05	7.83E-01	1.67E-04	1.48E+00	2.23E-05	1.81E-01	2.23E-05	1.81E-01	2.23E-05	1.81E-01	2.23E-05	1.81E-01	2.23E-05	1.81E-01	3.35E-05	2.74E-01	3.35E-05	2.74E-01	8.59E-05	7.40E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-04	1.28E+00	5.95E-05	5.14E-01
Toluene	108883	1.07E-03	1.07E-04	9.39E-01	2.01E-04	1.78E+00	2.68E-05	2.17E-01	2.68E-05	2.17E-01	2.68E-05	2.17E-01	2.68E-05	2.17E-01	2.68E-05	2.17E-01	4.01E-05	3.28E-01	4.01E-05	3.28E-01	1.03E-04	8.88E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.74E-04	1.54E+00	7.13E-05	6.16E-01
Trichlorofluoromethane*	75694	1.08E-07	1.08E-08	9.48E-05	2.03E-08	1.79E-04	2.70E-09	2.19E-05	2.70E-09	2.19E-05	2.70E-09	2.19E-05	2.70E-09	2.19E-05	2.70E-09	2.19E-05	4.05E-09	3.32E-05	4.05E-09	3.32E-05	1.04E-08	8.96E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.76E-08	1.56E-04	7.20E-09	6.22E-05
Vinyl acetate	108054	1.97E-03	1.97E-04	1.73E+00	3.69E-04	3.27E+00	4.93E-05	4.00E-01	4.93E-05	4.00E-01	4.93E-05	4.00E-01	4.93E-05	4.00E-01	4.93E-05	4.00E-01	7.39E-05	6.05E-01	7.39E-05	6.05E-01	1.89E-04	1.64E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.20E-04	2.84E+00	1.31E-04	1.13E+00
Xylenes	1330207	1.80E-03	1.80E-04	1.58E+00	3.38E-04	2.99E+00	4.50E-05	3.65E-01	4.50E-05	3.65E-01	4.50E-05	3.65E-01	4.50E-05	3.65E-01	4.50E-05	3.65E-01	6.75E-05	5.53E-01	6.75E-05	5.53E-01	1.73E-04	1.49E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.93E-04	2.59E+00	1.20E-04	1.04E+00

Name	Agricultural Miscellaneous Emissions from Dairy Operations (Milk Parlors)					
Applicability	Use this spreadsheet to characterize the miscellanous emissions from Dairy sources when VOC rates are known. VOC emission rates linked to RMR worksheet. Enter VOC and NH_3 rates if there is more than one Milk Parlor.					
Author or updater	Matthew Cegielski		*Last Update*	August 26, 2016		
Facility:	Brasil Dairy					
ID#:	0					
Project #:	0					
More than one Milk Parlor?	N		**Formula**			
Inputs	VOC lb/yr	NH_3 lb/yr	Select N or Y from the dropdown. If there is more than one Milk Parlor, enter VOC and NH_3 rates. Toxic emissions are calculated by the multiplication of the VOC Rates and Emission Factors.			
Milk Parlor 1	240	90				
Milk Parlor 2	0	0	lb/hr	lb/yr	lb/hr	lb/yr
VOC Emission Rates			**2.74E-02**	**2.40E+02**	**0.00E+00**	**0.00E+00**

Substances	CAS#	Toxic EF's (lb/lb VOC)*	LB/HR	LB/YR	LB/HR	LB/YR
1,1,2,2-Tetrachloroethane	**79345**	8.73E-06	2.39E-07	2.10E-03	0.00E+00	0.00E+00
1,1,2-Trichloroethane	**79005**	2.26E-04	6.19E-06	5.42E-02	0.00E+00	0.00E+00
1,2,3-Trichloropropane	**96184**	2.76E-04	7.56E-06	6.62E-02	0.00E+00	0.00E+00
1,2,4-Trichlorobenzene	**120821**	7.79E-04	2.13E-05	1.87E-01	0.00E+00	0.00E+00
1,2-Dibromo-3-chloropropane	**96128**	4.94E-05	1.35E-06	1.19E-02	0.00E+00	0.00E+00
1,2-Dichlorobenzene	**95501**	5.48E-04	1.50E-05	1.32E-01	0.00E+00	0.00E+00
1,3-Dichlorobenzene	**541731**	4.90E-04	1.34E-05	1.18E-01	0.00E+00	0.00E+00
1,4 Dioxane	**123911**	1.41E-03	3.86E-05	3.38E-01	0.00E+00	0.00E+00
1,4-Dichlorobenzene	**106467**	5.19E-04	1.42E-05	1.25E-01	0.00E+00	0.00E+00
Acetaldehyde	**75070**	2.41E-03	6.60E-05	5.78E-01	0.00E+00	0.00E+00
Acrylonitrile	**107131**	2.43E-04	6.66E-06	5.83E-02	0.00E+00	0.00E+00
Benzene	**71432**	3.19E-04	8.74E-06	7.66E-02	0.00E+00	0.00E+00
Benzyl chloride	**100447**	2.89E-04	7.92E-06	6.94E-02	0.00E+00	0.00E+00
Butyraldehyde	**123728**	1.14E-04	3.12E-06	2.74E-02	0.00E+00	0.00E+00
Carbon Disulfide	**75150**	2.49E-03	6.82E-05	5.98E-01	0.00E+00	0.00E+00
Carbon tetrachloride	**56235**	5.87E-05	1.61E-06	1.41E-02	0.00E+00	0.00E+00
Chlorobenzene	**108907**	2.72E-04	7.45E-06	6.53E-02	0.00E+00	0.00E+00
Chloroform	**67663**	1.31E-04	3.59E-06	3.14E-02	0.00E+00	0.00E+00
Chloromethane	**74873**	7.93E-04	2.17E-05	1.90E-01	0.00E+00	0.00E+00
Crotonaldehyde	**4170303**	1.41E-04	3.86E-06	3.38E-02	0.00E+00	0.00E+00
Cyclohexane	**110827**	6.83E-03	1.87E-04	1.64E+00	0.00E+00	0.00E+00
Ethyl Chloride	**75003**	2.39E-04	6.55E-06	5.74E-02	0.00E+00	0.00E+00
Ethylbenzene	**100414**	3.47E-04	9.51E-06	8.33E-02	0.00E+00	0.00E+00
Ethylene Dibromide (EDB)	**106934**	3.06E-04	8.38E-06	7.34E-02	0.00E+00	0.00E+00
Ethylene Dichloride (EDC)	**107062**	5.89E-05	1.61E-06	1.41E-02	0.00E+00	0.00E+00
Formaldehyde	**50000**	3.98E-04	1.09E-05	9.55E-02	0.00E+00	0.00E+00
Hexane	**110543**	8.12E-04	2.22E-05	1.95E-01	0.00E+00	0.00E+00
Isopropyl Alchol	**67630**	1.62E-03	4.44E-05	3.89E-01	0.00E+00	0.00E+00
Isopropylbenzene (Cumene)	**98828**	5.61E-05	1.54E-06	1.35E-02	0.00E+00	0.00E+00
Methyl Ethyl Ketone (2-butanone)	**78933**	1.46E-02	4.00E-04	3.50E+00	0.00E+00	0.00E+00
Methyl Isobutyl Ketone	**108101**	7.09E-04	1.94E-05	1.70E-01	0.00E+00	0.00E+00
Napthalene	**91203**	1.16E-03	3.18E-05	2.78E-01	0.00E+00	0.00E+00
Perchloroethylene	**127184**	6.51E-04	1.78E-05	1.56E-01	0.00E+00	0.00E+00
Styrene	**100425**	3.59E-04	9.84E-06	8.62E-02	0.00E+00	0.00E+00
t-1,4-Dichloro-2-butene	**764410**	8.92E-04	2.44E-05	2.14E-01	0.00E+00	0.00E+00
Toluene	**108883**	1.07E-03	2.93E-05	2.57E-01	0.00E+00	0.00E+00
Trichlorofluoromethane*	**75694**	1.08E-07	2.96E-09	2.59E-05	0.00E+00	0.00E+00
Vinyl acetate	**108054**	1.97E-03	5.40E-05	4.73E-01	0.00E+00	0.00E+00
Xylenes	**1330207**	1.80E-03	4.93E-05	4.32E-01	0.00E+00	0.00E+00
Ammonia	**7664417**		1.03E-02	9.00E+01	0.00E+00	0.0

Name	Agricultural Lagoon Emissions from Dairy Operations
Applicability	Use this spreadsheet when the emissions are from a Dairy Lagoon sources and the VOC rates are known. The VOC rates are linked to the RMR worksheet cells VOC rates in 'Lagoon/Storage Pond row'. Enter values into the Lagoon area calculator on the right to determine area fraction(s). Total ammonia value is linked to the RMR worksheet cells, 'Lagoon/Storage Pond'. Individual Lagoon values are calculated by multiplying the total lagoon ammonia by their area fraction. Entries required in yellow areas, output in gray areas.

Author or updater	Matthew Cegielski	*Last Update*	September 12, 2018	
Facility:	Brasil Dairy			
ID#:	0			
Project #:	0			

Inputs	lb/hr	lb/yr	**Formula**
VOC Rate	0.11	949	Emissions are calculated by the multiplication of the VOC rates, area fracton, and emission factors.

			Lagoon Area Fraction		**0.46**		**0.21**		**0.33**	
Substances	**CAS#**	**Emissions Factors lb/VOC***	**LB/HR**	**LB/YR**	**Lagoon LB/HR**	**Lagoon LB/YR**	**Lagoon 2 LB/HR**	**Lagoon 2 LB/YR**	**Lagoon 3 LB/HR**	**Lagoon 3 LB/YR**
1,1,2,2-Tetrachloroethane	**79345**	3.44E-02	3.72E-03	3.26E+01	1.70E-03	1.49E+01	7.72E-04	6.76E+00	1.25E-03	1.09E+01
1,1,2-Trichloroethane	**79005**	7.94E-03	8.60E-04	7.53E+00	3.94E-04	3.45E+00	1.78E-04	1.56E+00	2.88E-04	2.52E+00
1,2,4-Trimethylbenzene	**95636**	2.94E-02	3.18E-03	2.79E+01	1.46E-03	1.28E+01	6.60E-04	5.78E+00	1.07E-03	9.34E+00
1,2-Dichlorobenzene	**95501**	6.25E-02	6.77E-03	5.93E+01	3.10E-03	2.71E+01	1.40E-03	1.23E+01	2.27E-03	1.99E+01
1,3-Dichlorobenzene	**541731**	4.94E-02	5.35E-03	4.69E+01	2.45E-03	2.14E+01	1.11E-03	9.72E+00	1.79E-03	1.57E+01
1,3-Dichloropropene	**542756**	7.44E-03	8.06E-04	7.06E+00	3.69E-04	3.23E+00	1.67E-04	1.46E+00	2.70E-04	2.36E+00
1,4 Dioxane	**123911**	2.50E-02	2.71E-03	2.37E+01	1.24E-03	1.09E+01	5.62E-04	4.92E+00	9.07E-04	7.95E+00
1,4-Dichloro-2-butene	**764410**	6.88E-02	7.45E-03	6.52E+01	3.41E-03	2.99E+01	1.54E-03	1.35E+01	2.49E-03	2.19E+01
1,4-Dichlorobenzene	**106467**	5.19E-02	5.62E-03	4.92E+01	2.57E-03	2.25E+01	1.17E-03	1.02E+01	1.88E-03	1.65E+01
Acetaldehyde	**75070**	1.56E-02	1.69E-03	1.48E+01	7.75E-04	6.79E+00	3.51E-04	3.07E+00	5.67E-04	4.97E+00
Acrylonitrile	**107131**	7.31E-03	7.92E-04	6.94E+00	3.63E-04	3.18E+00	1.64E-04	1.44E+00	2.65E-04	2.32E+00
Benzene	**71432**	2.88E-03	3.11E-04	2.73E+00	1.43E-04	1.25E+00	6.46E-05	5.66E-01	1.04E-04	9.14E-01
Benzyl chloride	**100447**	3.13E-02	3.39E-03	2.97E+01	1.55E-03	1.36E+01	7.02E-04	6.15E+00	1.13E-03	9.93E+00
Carbon disulfide	**75150**	3.94E-02	4.27E-03	3.74E+01	1.95E-03	1.71E+01	8.84E-04	7.75E+00	1.43E-03	1.25E+01
Chlorobenzene	**108907**	1.31E-02	1.42E-03	1.25E+01	6.51E-04	5.70E+00	2.95E-04	2.58E+00	4.76E-04	4.17E+00
Cumene	**98828**	1.94E-02	2.10E-03	1.84E+01	9.61E-04	8.42E+00	4.35E-04	3.81E+00	7.03E-04	6.16E+00
Cyclohexane	**110827**	8.19E-03	8.87E-04	7.77E+00	4.06E-04	3.56E+00	1.84E-04	1.61E+00	2.97E-04	2.60E+00
Ethyl Chloride	**75003**	4.63E-03	5.01E-04	4.39E+00	2.29E-04	2.01E+00	1.04E-04	9.10E-01	1.68E-04	1.47E+00
Ethylbenzene	**100414**	1.00E-02	1.08E-03	9.49E+00	4.96E-04	4.34E+00	2.25E-04	1.97E+00	3.63E-04	3.18E+00
Ethylene Dibromide (EDB)	**106934**	1.44E-02	1.56E-03	1.36E+01	7.13E-04	6.24E+00	3.23E-04	2.83E+00	5.22E-04	4.57E+00
Ethylene Dichloride (EDC)	**107062**	4.06E-03	4.40E-04	3.86E+00	2.01E-04	1.76E+00	9.12E-05	7.99E-01	1.47E-04	1.29E+00
Formaldehyde	**50000**	8.13E-03	8.80E-04	7.71E+00	4.03E-04	3.53E+00	1.82E-04	1.60E+00	2.95E-04	2.58E+00
Hexane	**110543**	4.31E-03	4.67E-04	4.09E+00	2.14E-04	1.87E+00	9.69E-05	8.49E-01	1.56E-04	1.37E+00
Isopropyl Alchol	**67630**	7.50E-03	8.13E-04	7.12E+00	3.72E-04	3.26E+00	1.68E-04	1.48E+00	2.72E-04	2.38E+00
Methyl Ethyl Ketone	**78933**	1.38E-02	1.49E-03	1.30E+01	6.82E-04	5.97E+00	3.09E-04	2.71E+00	4.99E-04	4.37E+00
Methyl Isobutyl Ketone	**108101**	1.13E-02	1.23E-03	1.07E+01	5.61E-04	4.91E+00	2.54E-04	2.23E+00	4.10E-04	3.60E+00
Napthalene	**91203**	1.88E-01	2.03E-02	1.78E+02	9.30E-03	8.14E+01	4.21E-03	3.69E+01	6.80E-03	5.96E+01
Perchloroethylene	**127184**	1.75E-01	1.90E-02	1.66E+02	8.68E-03	7.60E+01	3.93E-03	3.44E+01	6.35E-03	5.56E+01
Styrene	**100425**	1.63E-02	1.76E-03	1.54E+01	8.06E-04	7.06E+00	3.65E-04	3.20E+00	5.90E-04	5.17E+00
Toluene	**108883**	1.25E-02	1.35E-03	1.19E+01	6.20E-04	5.43E+00	2.81E-04	2.46E+00	4.54E-04	3.97E+00
Trichloroethylene	**79016**	1.12E-02	1.21E-03	1.06E+01	5.55E-04	4.86E+00	2.51E-04	2.20E+00	4.06E-04	3.56E+00
Xylenes	**1330207**	1.88E-02	2.03E-03	1.78E+01	9.30E-04	8.14E+00	4.21E-04	3.69E+00	6.80E-04	5.96E+00
Ammonia	**7664417**				4.577E-02	4.010E+02	2.073E-02	1.816E+02	3.349E-02	2.934E+02

Table 1. Truck Travel: Diesel Particulate Matter Increased Emissions

Type of Vehicles	Source	Round Trip Distance (mi)	Emission Factor (g/mi)	Increase in Trucks/Year	Emissions (lb/yr)	Emissions (lb/day)
Milk Tankers		0.00	0.02	0	0.00E+00	0.00E+00
Commodity Delivery	CTT	0.20	0.02	365	3.95E-03	1.08E-05
Manure Transport	SMTT	0.18	0.02	580	5.67E-03	1.55E-05

Note 1: Running emission factors for vehicle category "T7 Single Other Class 8" were obtained from the EMFAC2021 Web Database for Stanislaus County (2021) with an Aggregate Fleet Mix Traveling 10 MPH.
Note 2: Increases in trucks/yr is from the Initial Study, page 17

Table 2. Truck Idling: Diesel Particulate Matter Increased Emissions

Type of Vehicles	Source	Emission Factor (g/hr-vehicle)	Minutes Idling/Truck	Increase in Trucks/Year	Emissions (lb/yr)	Emissions (lb/day)
Milk Tankers		0.002	15	0	0.00E+00	0.00E+00
Commodity Delivery	CTI	0.002	15	365	4.17E-04	1.14E-06
Manure Transport	SMTI	0.002	15	580	6.62E-04	1.81E-06

Note 1: Running emission factors for vehicle category "T7 Single Other Class 8" were obtained from the EMFAC2021 Web Database for Stanislaus County (2021) with an Aggregate Fleet Mix Idling.
Note 2: Increases in trucks/yr is from the Initial Study, page 17

Table 3. Tractors: Diesel Particulate Matter Increased Emissions

	Source (# Volume Sources)	HP	Load Factor	Hours/Year	Emission Factor (g/hp-hr)	Emissions (lb/yr)	Emissions (lb/day)
Feed Loading		0	0.37	0	1.49E-02	0.00E+00	0.00E+00
Bedding Delivery	FBDT1-2	525	0.37	4	1.49E-02	2.55E-02	6.39E-03
Manure Scraping	MST	125	0.37	6	1.49E-02	9.12E-03	4.56E-03
Manure Loading	MLT	150	0.37	15	1.49E-02	2.74E-02	0.00E+00
Feed Delivery	FBDT1-2	445	0.37	365	1.49E-02	1.98E+00	5.41E-03

Note1 : Emissions based on EPA's *Nonroad Compression-Ignition* Engines - Exhaust Emission Standards for the appropriate year and HP
https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA05.pdf
Note 2: Increase in hours/day was provided by the project applicant

Table 4. Truck Travel: NOx Increased Emissions

	Source	Round Trip Distance (mi)	Emission Factor (g/mi)	Increase in Trucks/Year	Emissions (lb/yr)	Emissions (lb/Max hr)
Milk Tankers		0.00	7.18	0	0.00E+00	0.00E+00
Commodity Delivery	CTT	0.20	7.18	365	1.17E+00	3.19E-03
Manure Transport	SMTT	0.18	7.18	580	1.67E+00	2.89E-03

Note 1: Running emission factors for vehicle category "T7 Single Other Class 8" were obtained from the EMFAC2021 Web Database for Stanislaus County (2021) with an Aggregate Fleet Mix Traveling 10 MF
Note 2: Increases in trucks/yr is from the applicant

Table 5. Truck Idling: NOx Increased Emissions

Type of Vehicles	Source	Emission Factor (g/hr-vehicle)	Minutes Idling/Truck	Increase in Trucks/Year	Emissions (lb/yr)	Emissions (lb/Max hr)
Milk Tankers		1.06	15	0	0.00E+00	5.86E-04
Commodity Delivery	CTI	1.06	15	365	2.14E-01	5.86E-04
Manure Transport	SMTI	1.06	15	580	3.40E-01	5.86E-04

Note 1: Running emission factors for vehicle category "T7 Single Other Class 8" were obtained from the EMFAC2021 Web Database for Stanislaus County (2021) with an Aggregate Fleet Mix Idling.
Note 2: Increases in trucks/yr is from the Initial Study, page 17

Table 6. Tractors: NOx Increased Emissions

	Source (# Volume Sources)	HP	Load Factor	Hours/day	Hours/Year	Days/Year	Emission Factor (g/hp-hr)	Emissions (lb/yr)	Emissions (lb/Max hr)
Feed Loading	0	0	0.37	0	0	0	2.98E-01	0.000E+00	0.00E+00
Bedding Delivery	FBDT1-2	525	0.37	1	4	4	2.98E-01	5.11E-01	1.28E-01
Manure Scraping	MST	125	0.37	3	6	2	2.98E-01	1.82E-01	0.00E+00
Manure Loading	MLT	150	0.37	0	15	1.5	2.98E-01	5.47E-01	0.00E+00
Feed Delivery	FBDT1-2	445	0.37	1	365	365	2.98E-01	3.95E+01	1.08E-01

Note1 : Emissions based on EPA's *Nonroad Compression-Ignition* Engines - Exhaust Emission Standards for the appropriate year and HP https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA05.pdf
Note 2: Increase in hours/day was provided by the project applicant
Note 3: Load factors from CalEEMod's Appendix D Table 3.3 *OFFROAD Default Horsepower and Load Factors*

Table 7. Truck Travel: SOx Increased Emissions

Type of Vehicles	Source	Round Trip Distance (mi)	Emission Factor (g/mi)	Increase in Trucks/Year	Emissions (lb/yr)	Emissions (lb/Max 24-hr)	Emissions (lb/Max 3-hr)	Emissions (lb/Max 1-hr)
Milk Tankers	MTT	0.00	0.03	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Commodity Delivery	CTT	0.20	0.03	365	4.77E-03	1.31E-05	1.31E-05	1.31E-05
Manure Transport	SMTT	0.18	0.03	580	6.85E-03	2.36E-05	1.18E-05	1.18E-05

Note 1: Running emission factors for vehicle category "T7 Single Other Class 8" were obtained from the EMFAC2021 Web Database for Stanislaus County (2021) with an Aggregate Fleet Mix Traveling 10 MPH.
Note 2: Increases in trucks/yr is from the applicant

Table 8. Truck Idling: SOx Increased Emissions

Type of Vehicles	Source	Emission Factor (g/hr-vehicle)	Minutes Idling/Truck	Increase in Trucks/Year	Emissions (lb/yr)	Emissions (lb/Max 24-hr)	Emissions (lb/Max 3-hr)	Emissions (lb/Max 1-hr)
Milk Tankers	MTI	0.002	15	0	0.00E+00	3.07E-06	1.02E-06	1.02E-06
Commodity Delivery	CTI	0.002	15	365	3.74E-04	1.02E-06	1.02E-06	1.02E-06
Manure Transport	SMTI	0.002	15	580	5.94E-04	2.05E-06	1.02E-06	1.02E-06

Note 1: Running emission factors for vehicle category "T7 Single Other Class 8" were obtained from the EMFAC2021 Web Database for Stanislaus County (2021) with an Aggregate Fleet Mix Idling.
Note 2: Increases in trucks/yr is from the Initial Study, page 17

Table 9. Tractors: SOx Increase Emissions

	Source (# Volume Sources)	HP	Load Factor	Hours/day	Hours/Year	Days/Year	Emission Factor (g/hp-hr)	Emissions (lb/yr)	Emissions (lb/Max 24-hr)	Emissions (lb/Max 3-hr)	Emissions (lb/Max 1-hr)
Feed Loading	0	0	0.37	0	0	0	5.00E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bedding Delivery	FBDT1-2	525	0.37	1	4	4	5.00E-03	8.57E-03	2.14E-03	2.14E-03	2.14E-03
Manure Scraping	MST	125	0.37	3	6	2	5.00E-03	3.06E-03	1.53E-03	0.00E+00	0.00E+00
Manure Loading	MLT	150	0.37	0	15	1.5	5.00E-03	9.18E-03	0.00E+00	0.00E+00	0.00E+00
Feed Delivery	FBDT1-2	445	0.37	1	365	365	5.00E-03	6.62E-01	1.81E-03	1.81E-03	1.81E-03

Note1 : Emissions based on CalEEmod's Appendix D, dafualts for the appropriate year and HP
Note 2: Increase in hours/day was provided by the project applicant
Note 3: Load factors from CalEEMod's Appendix D Table 3.3 *OFFROAD Default Horsepower and Load Factors*

Table 10. Truck Travel: CO Increased Emissions

Type of Vehicles	Source	Round Trip Distance (mi)	Emission Factor (g/mi)	Increase in Trucks/Year	Emissions (lb/Max 8-yr)	Emissions (lb/Max hr)
Milk Tankers	MTT	0.00	1.25	0	0.00E+00	0.00E+00
Commodity Delivery	CTT	0.20	1.25	365	5.57E-04	5.57E-04
Manure Transport	SMTT	0.18	1.25	580	1.01E-03	5.03E-04

Note 1: Running emission factors for vehicle category "T7 Single Other Class 8" were obtained from the EMFAC2021 Web Database for Stanislaus County (2021) with an Aggregate Fleet Mix Traveling 10
Note 2: Increases in trucks/yr is from the applicant

Table 11. Truck Idling: CO Increased Emissions

Type of Vehicles	Source	Emission Factor (g/hr-vehicle)	Minutes Idling/Truck	Increase in Trucks/Year	Emissions (lb/Max 8-hr)	Emissions (lb/Max hr)
Milk Tankers	MTI	0.98	15	0	5.43E-04	5.43E-04
Commodity Delivery	CTI	0.98	15	365	5.43E-04	5.43E-04
Manure Transport	SMTI	0.98	15	580	1.09E-03	5.43E-04

Note 1: Running emission factors for vehicle category "T7 Single Other Class 8" were obtained from the EMFAC2021 Web Database for Stanislaus County (2021) with an Aggregate Fleet Mix Idling.
Note 2: Increases in trucks/yr is from the Initial Study, page 17

Table 12. Tractors: CO Increase Emissions

	Source (# Volume Sources)	HP	Load Factor	Hours/day	Hours/Year	Days/Year	Emission Factor (g/hp-hr)	Emissions (lb/yr)	Emissions (lb/Max 8-hr)	Emissions (lb/Max hr)
Feed Loading	0	0	0.37	0	0	0	2.61E+00	0.00E+00	0.00E+00	0.00E+00
Bedding Delivery	FBDT1-2	525	0.37	1.00	4	4.00	3.73E+00	6.39E+00	1.60E+00	1.60E+00
Manure Scraping	MST	125	0.37	3.00	6	2.00	3.73E+00	2.28E+00	0.00E+00	0.00E+00
Manure Loading	MLT	150	0.37	0.00	15	1.50	3.73E+00	6.84E+00	0.00E+00	0.00E+00
Feed Delivery	FBDT1-2	445	0.37	1	365	365	2.61E+00	3.46E+02	9.47E-01	9.47E-01

Note1 : Emissions based on EPA's *Nonroad Compression-Ignition* Engines - Exhaust Emission Standards for the appropriate year and HP
https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA05.pdf
Note 2: Increase in hours/day was provided by the project applicant
Note 3: Load factors from CalEEMod's Appendix D Table 3.3 *OFFROAD Default Horsepower and Load Factors*

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Brasil Dairy Phase 1

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	10.14	1000sqft	0.23	10,140.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction takes place over 2 month period.

Demolition -

Grading -

Vehicle Trips - Operational emissions not calculated.

Consumer Products - Operational emissions not calculated.

Area Coating - Operational emissions not calculated.

Landscape Equipment - Operational emissions not calculated.

Energy Use - Operational emissions not calculated.

Water And Wastewater - Operational emissions not calculated.

Solid Waste - Operational emissions not calculated.

Brasil Dairy Phase 1 - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	36.00
tblConstructionPhase	NumDays	2.00	4.00
tblConstructionPhase	NumDays	1.00	2.00
tblConstructionPhase	PhaseEndDate	6/7/2023	2/28/2023
tblConstructionPhase	PhaseEndDate	1/18/2023	1/9/2023
tblConstructionPhase	PhaseEndDate	1/16/2023	1/3/2023
tblConstructionPhase	PhaseStartDate	1/19/2023	1/10/2023
tblConstructionPhase	PhaseStartDate	1/17/2023	1/4/2023
tblConstructionPhase	PhaseStartDate	1/14/2023	1/1/2023
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24NG	3.84	0.00
tblEnergyUse	T24E	1.75	0.00
tblEnergyUse	T24NG	16.86	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	16.70	0.00
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	WD_TR	4.96	0.00
tblWater	IndoorWaterUseRate	3,114,937.50	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0144	0.1440	0.1481	2.6000e-004	0.0130	6.8500e-003	0.0198	5.6800e-003	6.3000e-003	0.0120	0.0000	23.2765	23.2765	6.9500e-003	1.3000e-004	23.4887
Maximum	**0.0144**	**0.1440**	**0.1481**	**2.6000e-004**	**0.0130**	**6.8500e-003**	**0.0198**	**5.6800e-003**	**6.3000e-003**	**0.0120**	**0.0000**	**23.2765**	**23.2765**	**6.9500e-003**	**1.3000e-004**	**23.4887**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0144	0.1440	0.1481	2.6000e-004	6.1700e-003	6.8500e-003	0.0130	2.5100e-003	6.3000e-003	8.8200e-003	0.0000	23.2765	23.2765	6.9500e-003	1.3000e-004	23.4887
Maximum	**0.0144**	**0.1440**	**0.1481**	**2.6000e-004**	**6.1700e-003**	**6.8500e-003**	**0.0130**	**2.5100e-003**	**6.3000e-003**	**8.8200e-003**	**0.0000**	**23.2765**	**23.2765**	**6.9500e-003**	**1.3000e-004**	**23.4887**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**52.43**	**0.00**	**34.31**	**55.81**	**0.00**	**26.38**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2023	3-31-2023	0.1595	0.1595
		Highest	0.1595	0.1595

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2023	1/3/2023	5	2	
2	Grading	Grading	1/4/2023	1/9/2023	5	4	
3	Building Construction	Building Construction	1/10/2023	2/28/2023	5	36	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	6.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3000e-004	6.1900e-003	3.9200e-003	1.0000e-005		2.3000e-004	2.3000e-004		2.1000e-004	2.1000e-004	0.0000	0.8550	0.8550	2.8000e-004	0.0000	0.8619
Total	**5.3000e-004**	**6.1900e-003**	**3.9200e-003**	**1.0000e-005**	**5.3000e-004**	**2.3000e-004**	**7.6000e-004**	**6.0000e-005**	**2.1000e-004**	**2.7000e-004**	**0.0000**	**0.8550**	**0.8550**	**2.8000e-004**	**0.0000**	**0.8619**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0495	0.0495	0.0000	0.0000	0.0500
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0495**	**0.0495**	**0.0000**	**0.0000**	**0.0500**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.1000e-004	0.0000	2.1000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3000e-004	6.1900e-003	3.9200e-003	1.0000e-005		2.3000e-004	2.3000e-004		2.1000e-004	2.1000e-004	0.0000	0.8550	0.8550	2.8000e-004	0.0000	0.8619
Total	**5.3000e-004**	**6.1900e-003**	**3.9200e-003**	**1.0000e-005**	**2.1000e-004**	**2.3000e-004**	**4.4000e-004**	**2.0000e-005**	**2.1000e-004**	**2.3000e-004**	**0.0000**	**0.8550**	**0.8550**	**2.8000e-004**	**0.0000**	**0.8619**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0495	0.0495	0.0000	0.0000	0.0500
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0495**	**0.0495**	**0.0000**	**0.0000**	**0.0500**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0106	0.0000	0.0106	5.1400e-003	0.0000	5.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8700e-003	0.0204	0.0111	3.0000e-005		8.4000e-004	8.4000e-004		7.7000e-004	7.7000e-004	0.0000	2.4762	2.4762	8.0000e-004	0.0000	2.4962
Total	**1.8700e-003**	**0.0204**	**0.0111**	**3.0000e-005**	**0.0106**	**8.4000e-004**	**0.0115**	**5.1400e-003**	**7.7000e-004**	**5.9100e-003**	**0.0000**	**2.4762**	**2.4762**	**8.0000e-004**	**0.0000**	**2.4962**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	6.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1585	0.1585	0.0000	0.0000	0.1599
Total	**7.0000e-005**	**5.0000e-005**	**6.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1585**	**0.1585**	**0.0000**	**0.0000**	**0.1599**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.1400e-003	0.0000	4.1400e-003	2.0000e-003	0.0000	2.0000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8700e-003	0.0204	0.0111	3.0000e-005		8.4000e-004	8.4000e-004		7.7000e-004	7.7000e-004	0.0000	2.4762	2.4762	8.0000e-004	0.0000	2.4962
Total	**1.8700e-003**	**0.0204**	**0.0111**	**3.0000e-005**	**4.1400e-003**	**8.4000e-004**	**4.9800e-003**	**2.0000e-003**	**7.7000e-004**	**2.7700e-003**	**0.0000**	**2.4762**	**2.4762**	**8.0000e-004**	**0.0000**	**2.4962**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	6.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1585	0.1585	0.0000	0.0000	0.1599
Total	**7.0000e-005**	**5.0000e-005**	**6.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1585**	**0.1585**	**0.0000**	**0.0000**	**0.1599**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0114	0.1155	0.1278	2.1000e-004		5.7600e-003	5.7600e-003		5.3000e-003	5.3000e-003	0.0000	18.0375	18.0375	5.8300e-003	0.0000	18.1834
Total	**0.0114**	**0.1155**	**0.1278**	**2.1000e-004**		**5.7600e-003**	**5.7600e-003**		**5.3000e-003**	**5.3000e-003**	**0.0000**	**18.0375**	**18.0375**	**5.8300e-003**	**0.0000**	**18.1834**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.4800e-003	4.5000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.2000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.6300	0.6300	0.0000	1.0000e-004	0.6584
Worker	4.7000e-004	3.3000e-004	4.0700e-003	1.0000e-005	1.3400e-003	1.0000e-005	1.3500e-003	3.6000e-004	1.0000e-005	3.6000e-004	0.0000	1.0698	1.0698	3.0000e-005	3.0000e-005	1.0790
Total	**5.1000e-004**	**1.8100e-003**	**4.5200e-003**	**2.0000e-005**	**1.5600e-003**	**2.0000e-005**	**1.5700e-003**	**4.2000e-004**	**2.0000e-005**	**4.3000e-004**	**0.0000**	**1.6998**	**1.6998**	**3.0000e-005**	**1.3000e-004**	**1.7375**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0114	0.1155	0.1278	2.1000e-004		5.7600e-003	5.7600e-003		5.3000e-003	5.3000e-003	0.0000	18.0375	18.0375	5.8300e-003	0.0000	18.1833
Total	**0.0114**	**0.1155**	**0.1278**	**2.1000e-004**		**5.7600e-003**	**5.7600e-003**		**5.3000e-003**	**5.3000e-003**	**0.0000**	**18.0375**	**18.0375**	**5.8300e-003**	**0.0000**	**18.1833**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.4800e-003	4.5000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.2000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.6300	0.6300	0.0000	1.0000e-004	0.6584
Worker	4.7000e-004	3.3000e-004	4.0700e-003	1.0000e-005	1.3400e-003	1.0000e-005	1.3500e-003	3.6000e-004	1.0000e-005	3.6000e-004	0.0000	1.0698	1.0698	3.0000e-005	3.0000e-005	1.0790
Total	**5.1000e-004**	**1.8100e-003**	**4.5200e-003**	**2.0000e-005**	**1.5600e-003**	**2.0000e-005**	**1.5700e-003**	**4.2000e-004**	**2.0000e-005**	**4.3000e-004**	**0.0000**	**1.6998**	**1.6998**	**3.0000e-005**	**1.3000e-004**	**1.7375**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Brasil Dairy Phase 2

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	59.98	1000sqft	1.38	59,983.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction occurs during 6-month period

Trips and VMT -

Grading -

Vehicle Trips - Operational emissions not calculated.

Consumer Products - Operational emissions not calculated.

Area Coating - Operational emissions not calculated.

Landscape Equipment - Operational emissions not calculated.

Energy Use - Operational emissions not calculated.

Water And Wastewater - Operational emissions not calculated.

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Solid Waste - Operational emissions not calculated.

Construction Off-road Equipment Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	200.00	117.00
tblConstructionPhase	NumDays	4.00	10.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	PhaseEndDate	12/13/2023	8/31/2023
tblConstructionPhase	PhaseEndDate	3/8/2023	3/21/2023
tblConstructionPhase	PhaseEndDate	3/2/2023	3/7/2023
tblConstructionPhase	PhaseStartDate	3/9/2023	3/22/2023
tblConstructionPhase	PhaseStartDate	3/3/2023	3/8/2023
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24NG	3.84	0.00
tblEnergyUse	T24E	1.75	0.00
tblEnergyUse	T24NG	16.86	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	77.25	0.00
tblVehicleTrips	ST_TR	6.42	0.00
tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	WD_TR	3.93	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblWater	IndoorWaterUseRate	14,406,875.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1061	0.8172	0.8651	1.7100e-003	0.0743	0.0346	0.1090	0.0309	0.0333	0.0642	0.0000	145.0635	145.0635	0.0227	1.9700e-003	146.2160
Maximum	**0.1061**	**0.8172**	**0.8651**	**1.7100e-003**	**0.0743**	**0.0346**	**0.1090**	**0.0309**	**0.0333**	**0.0642**	**0.0000**	**145.0635**	**145.0635**	**0.0227**	**1.9700e-003**	**146.2160**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1061	0.8172	0.8651	1.7100e-003	0.0432	0.0346	0.0778	0.0159	0.0333	0.0491	0.0000	145.0634	145.0634	0.0227	1.9700e-003	146.2158
Maximum	**0.1061**	**0.8172**	**0.8651**	**1.7100e-003**	**0.0432**	**0.0346**	**0.0778**	**0.0159**	**0.0333**	**0.0491**	**0.0000**	**145.0634**	**145.0634**	**0.0227**	**1.9700e-003**	**146.2158**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**41.90**	**0.00**	**28.59**	**48.64**	**0.00**	**23.43**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**3-1-2023**	**5-31-2023**	0.4644	0.4644
2	**6-1-2023**	**8-31-2023**	0.4545	0.4545
		Highest	0.4644	0.4644

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/1/2023	3/7/2023	5	5	
2	Grading	Grading	3/8/2023	3/21/2023	5	10	
3	Building Construction	Building Construction	3/22/2023	8/31/2023	5	117	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Site Preparation Phase): 4.69

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	26.00	10.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0157	0.0000	0.0157	7.5100e-003	0.0000	7.5100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8300e-003	0.0311	0.0166	4.0000e-005		1.2700e-003	1.2700e-003		1.1700e-003	1.1700e-003	0.0000	3.7786	3.7786	1.2200e-003	0.0000	3.8091
Total	**2.8300e-003**	**0.0311**	**0.0166**	**4.0000e-005**	**0.0157**	**1.2700e-003**	**0.0169**	**7.5100e-003**	**1.1700e-003**	**8.6800e-003**	**0.0000**	**3.7786**	**3.7786**	**1.2200e-003**	**0.0000**	**3.8091**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	6.0000e-005	7.5000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1981	0.1981	1.0000e-005	1.0000e-005	0.1998
Total	**9.0000e-005**	**6.0000e-005**	**7.5000e-004**	**0.0000**	**2.5000e-004**	**0.0000**	**2.5000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.1981**	**0.1981**	**1.0000e-005**	**1.0000e-005**	**0.1998**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.1100e-003	0.0000	6.1100e-003	2.9300e-003	0.0000	2.9300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8300e-003	0.0311	0.0166	4.0000e-005		1.2700e-003	1.2700e-003		1.1700e-003	1.1700e-003	0.0000	3.7786	3.7786	1.2200e-003	0.0000	3.8091
Total	**2.8300e-003**	**0.0311**	**0.0166**	**4.0000e-005**	**6.1100e-003**	**1.2700e-003**	**7.3800e-003**	**2.9300e-003**	**1.1700e-003**	**4.1000e-003**	**0.0000**	**3.7786**	**3.7786**	**1.2200e-003**	**0.0000**	**3.8091**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	6.0000e-005	7.5000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1981	0.1981	1.0000e-005	1.0000e-005	0.1998
Total	**9.0000e-005**	**6.0000e-005**	**7.5000e-004**	**0.0000**	**2.5000e-004**	**0.0000**	**2.5000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.1981**	**0.1981**	**1.0000e-005**	**1.0000e-005**	**0.1998**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0354	0.0000	0.0354	0.0171	0.0000	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6700e-003	0.0723	0.0435	1.0000e-004		3.0200e-003	3.0200e-003		2.7800e-003	2.7800e-003	0.0000	9.0520	9.0520	2.9300e-003	0.0000	9.1252
Total	**6.6700e-003**	**0.0723**	**0.0435**	**1.0000e-004**	**0.0354**	**3.0200e-003**	**0.0384**	**0.0171**	**2.7800e-003**	**0.0199**	**0.0000**	**9.0520**	**9.0520**	**2.9300e-003**	**0.0000**	**9.1252**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.8800e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4953	0.4953	1.0000e-005	1.0000e-005	0.4996
Total	**2.2000e-004**	**1.5000e-004**	**1.8800e-003**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**6.2000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4953**	**0.4953**	**1.0000e-005**	**1.0000e-005**	**0.4996**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0138	0.0000	0.0138	6.6800e-003	0.0000	6.6800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6700e-003	0.0723	0.0435	1.0000e-004		3.0200e-003	3.0200e-003		2.7800e-003	2.7800e-003	0.0000	9.0520	9.0520	2.9300e-003	0.0000	9.1251
Total	**6.6700e-003**	**0.0723**	**0.0435**	**1.0000e-004**	**0.0138**	**3.0200e-003**	**0.0168**	**6.6800e-003**	**2.7800e-003**	**9.4600e-003**	**0.0000**	**9.0520**	**9.0520**	**2.9300e-003**	**0.0000**	**9.1251**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.8800e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4953	0.4953	1.0000e-005	1.0000e-005	0.4996
Total	**2.2000e-004**	**1.5000e-004**	**1.8800e-003**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**6.2000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4953**	**0.4953**	**1.0000e-005**	**1.0000e-005**	**0.4996**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0891	0.6851	0.7378	1.2900e-003		0.0301	0.0301		0.0291	0.0291	0.0000	106.2355	106.2355	0.0180	0.0000	106.6865
Total	**0.0891**	**0.6851**	**0.7378**	**1.2900e-003**		**0.0301**	**0.0301**		**0.0291**	**0.0291**	**0.0000**	**106.2355**	**106.2355**	**0.0180**	**0.0000**	**106.6865**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.9000e-004	0.0240	7.3100e-003	1.1000e-004	3.5000e-003	1.5000e-004	3.6500e-003	1.0100e-003	1.4000e-004	1.1500e-003	0.0000	10.2376	10.2376	5.0000e-005	1.5500e-003	10.6995
Worker	6.5600e-003	4.5900e-003	0.0573	1.6000e-004	0.0189	1.0000e-004	0.0190	5.0200e-003	9.0000e-005	5.1200e-003	0.0000	15.0666	15.0666	3.9000e-004	4.0000e-004	15.1963
Total	**7.1500e-003**	**0.0286**	**0.0646**	**2.7000e-004**	**0.0224**	**2.5000e-004**	**0.0227**	**6.0300e-003**	**2.3000e-004**	**6.2700e-003**	**0.0000**	**25.3041**	**25.3041**	**4.4000e-004**	**1.9500e-003**	**25.8959**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0891	0.6851	0.7378	1.2900e-003		0.0301	0.0301		0.0291	0.0291	0.0000	106.2354	106.2354	0.0180	0.0000	106.6864
Total	**0.0891**	**0.6851**	**0.7378**	**1.2900e-003**		**0.0301**	**0.0301**		**0.0291**	**0.0291**	**0.0000**	**106.2354**	**106.2354**	**0.0180**	**0.0000**	**106.6864**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.9000e-004	0.0240	7.3100e-003	1.1000e-004	3.5000e-003	1.5000e-004	3.6500e-003	1.0100e-003	1.4000e-004	1.1500e-003	0.0000	10.2376	10.2376	5.0000e-005	1.5500e-003	10.6995
Worker	6.5600e-003	4.5900e-003	0.0573	1.6000e-004	0.0189	1.0000e-004	0.0190	5.0200e-003	9.0000e-005	5.1200e-003	0.0000	15.0666	15.0666	3.9000e-004	4.0000e-004	15.1963
Total	**7.1500e-003**	**0.0286**	**0.0646**	**2.7000e-004**	**0.0224**	**2.5000e-004**	**0.0227**	**6.0300e-003**	**2.3000e-004**	**6.2700e-003**	**0.0000**	**25.3041**	**25.3041**	**4.4000e-004**	**1.9500e-003**	**25.8959**

APPENDIX B: AERMOD AND HARP2 ELECTRONIC FILES

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
1010 10th Street, Suite 3400, Modesto, CA 95354
Planning Phone: (209) 525-6330 Fax: (209) 525-5911
Building Phone: (209) 525-6557 Fax: (209) 525-7759

Stanislaus County

Planning and Community Development

Mitigation Monitoring and Reporting Program

Adapted from CEQA Guidelines APPENDIX G Environmental Checklist Form, Final Text, January 1, 2020

May 11, 2023

1. Project title and location:	Use Permit Application No. PLN2021-0033 – John Brasil Dairy 1707 and 2300 S Mitchell Road between W Linwood Avenue and Simmons Road, in the Turlock area (APN: 058-015-008, 058-015-012, and 058-016-016).
2. Project Applicant name and address:	John Brasil 2613 South Mitchell Road Turlock, CA 95380
3. Person Responsible for Implementing Mitigation Program (Applicant):	John Brasil
4. Contact person at County:	Teresa McDonald, Associate Planner, (209) 525-6330

MITIGATION MEASURES AND MONITORING PROGRAM:

List all Mitigation Measures by topic as identified in the Mitigated Negative Declaration and complete the form for each measure.

X. HYDROLOGY AND WATER QUALITY

No.1 Mitigation Measure: The following Best Management Practices shall be implemented as applicable:

- Positive drainage shall be included in project design and construction to ensure that excessive ponding does not occur. The design shall comply with Title 3, Division 2, Chapter 1, Article 22, Section 646.1 of the Food and Agriculture Code for construction and maintenance of dairy or facility surroundings, corrals, and ramps, as described below.
- Dirt or unpaved corrals, or unpaved lanes, shall not be located closer than 25 feet from the milking barn or closer than 50 feet from the milk house. Corral drainage must be provided.
- A paved (concrete or equivalent) ramp or corral shall be provided to allow the animals to enter and leave the milking barn. This paved area shall be curbed (minimum of 6 inches high and 6 inches wide) and sloped to a drain. Cow washing areas shall be paved (concrete or equivalent) and sloped to a drain. The perimeter of the area shall be constructed in a manner that will retain the wash water to a paved drained area. Paved access shall be provided to permanent feed racks, mangers, and water troughs. Water troughs shall be provided with: (1) a drain to carry the water from the corrals; and (2) pavement (concrete or equivalent) which is at least 10 feet wide at the drinking

area.

- The cow standing platform at permanent feed racks shall be paved with concrete or equivalent for at least 10 feet back of the stanchion line.
- As unpaved areas are cleaned, depressions tend to form, allowing ponding and increased infiltration. Regular maintenance shall include filling of depressions. Personnel shall be taught the correct use of manure collection machines (wheel loaders or elevating scrapers).

The dairy operator/property owner shall be responsible for providing, to the satisfaction of the Planning Director, documentation of the implementation of the aforementioned Best Management Practices. The dairy operator/property owner shall be responsible for paying the County's actual costs of verifying compliance. If the County finds any of the applicable Best Management Practices have not been implemented, the dairy operator/property owner shall implement said Best Management Practices within the time frame specified in writing by the County.

Who Implements the Measure:	Dairy Operator/Property Owner
When should the measure be implemented:	Prior to increase in herd size
When should it be completed:	Prior to increase in herd size
Who verifies compliance:	Stanislaus County Department of Planning and Community Development
Other Responsible Agencies:	Department of Environmental Resources, Milk and Dairy Inspections

No.2 Mitigation Measure: The applicant shall comply with requirements of the Nutrient Management Plan (NMP) and Waste Management Plan (WMP) submitted to the County, as part of the Use Permit approval. The application rates of liquid and/or solid manure identified within the NMP shall not result in total nitrogen applied to the land application areas exceeding 1.65 times total nitrogen that will be removed from the field in the harvested portion of the crop. Upon request, compliance shall be verified by the collection of nutrient samples for nitrogen, potassium, phosphorus, and salts prior to and during application periods to confirm agronomic rates within all portions of cropped areas receiving manure, and to protect water supplies. The dairy operator/property owner shall be responsible for hiring a qualified professional, approved by the Planning Director, to collect nutrient samples, interpret the results, and provide said results to the County for review. If determined necessary by the Planning Director, the dairy operator/property owner shall pay for the County's actual costs to hire a third party to review the annual results.

Who Implements the Measure:	Dairy Operator/Property Owner
When should the measure be implemented:	Prior to increase in herd size
When should it be completed:	Ongoing
Who verifies compliance:	Stanislaus County Department of Planning and Community Development

	Other Responsible Agencies:	None

No.3	Mitigation Measure:	The applicant shall enroll in the Central Valley Dairy Representative Monitoring Program (CVDRMP) to meet the requirements for groundwater monitoring. Documentation reflecting enrollment shall be provided to the Stanislaus County Department of Planning and Community Development prior to increasing the herd.
	Who Implements the Measure:	Dairy Operator/Property Owner
	When should the measure be implemented:	Prior to increase in herd size
	When should it be completed:	Prior to increase in herd size
	Who verifies compliance:	Stanislaus County Department of Planning and Community Development
	Other Responsible Agencies:	None

I, the undersigned, do hereby certify that I understand and agree to be responsible for implementing the Mitigation Program for the above listed project.

Signature on file _____

Signature Date

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
1010 10TH Street, Suite 3400, Modesto, CA 95354
Planning Phone: (209) 525-6330 Fax: (209) 525-5911
Building Phone: (209) 525-6557 Fax: (209) 525-7759

MITIGATED NEGATIVE DECLARATION

NAME OF PROJECT: Use Permit Application No. PLN2021-0033 – John Brasil Dairy

LOCATION OF PROJECT: 1769, 1707, 2230, 2324, and 2300 S Mitchell Road, in the Turlock area. (APNs: 058-015-008, 058-015-012, and 058-016-016).

PROJECT DEVELOPER: John Brasil Dairy

DESCRIPTION OF PROJECT: To expand an existing dairy facility located on two parcels across a total of 135.5± acres, in the General Agriculture (A-2-40) zoning district, to allow the herd size to increase from 442 mature cows to 1,500 and from 600 support stock to 1,200, and to allow construction of a 10,140± square-foot new free stall barn, corrals totaling 5± acres in area, and a new wastewater pond.

Based upon the Initial Study, dated **May 11, 2023,** the Environmental Coordinator finds as follows:

1. This project does not have the potential to degrade the quality of the environment, nor to curtail the diversity of the environment.

2. This project will not have a detrimental effect upon either short-term or long-term environmental goals.

3. This project will not have impacts which are individually limited but cumulatively considerable.

4. This project will not have environmental impacts which will cause substantial adverse effects upon human beings, either directly or indirectly.

The aforementioned findings are contingent upon the following mitigation measures (if indicated) which shall be incorporated into this project:

1. The following Best Management Practices shall be implemented as applicable: Positive drainage shall be included in project design and construction to ensure that excessive ponding does not occur. The design shall comply with Title Three, Division Two, Chapter One, Article 22, Section 646.1 of the Food and Agriculture Code for construction and maintenance of dairy or facility surroundings, corrals, and ramps, as described below. Dirt or unpaved corrals, or unpaved lanes, shall not be located closer than 25 feet from the milking barn or closer than 50 feet from the milk house. Corral drainage must be provided. A paved (concrete or equivalent) ramp or corral shall be provided to allow the animals to enter and leave the milking barn. This paved area shall be curbed (minimum of 6 inches high and 6 inches wide) and sloped to a drain. Cow washing areas shall be paved (concrete or equivalent) and sloped to a drain. The perimeter of the area shall be constructed in a manner that will retain the wash water to a paved drained area. Paved access shall be provided to permanent feed racks, mangers, and water troughs. Water troughs shall be provided with: (1) a drain to carry the water from the corrals; and (2) pavement (concrete or equivalent) which is at least 10 feet wide at the drinking area. The cow standing platform at permanent feed racks shall be paved with concrete or equivalent

for at least 10 feet back of the stanchion line. As unpaved areas are cleaned, depressions tend to form, allowing ponding and increased infiltration. Regular maintenance shall include filling of depressions. Personnel shall be taught the correct use of manure collection machines (wheel loaders or elevating scrapers). The dairy operator/property owner shall be responsible for verifying, to the satisfaction of the Planning Director, implementation of the aforementioned Best Management Practices. The dairy operator/property owner shall be responsible for paying the County's actual costs of verifying compliance. If the County finds any of the applicable Best Management Practices have not been implemented, the dairy operator/property owner shall implement said Best Management Practices within the time frame specified in writing by the County. The dairy operator/property owner's verification shall be submitted to the Stanislaus County Planning Department within 60-days of written notice being delivered to the dairy operator/property owner.

2. The applicant shall comply with requirements of the Nutrient Management Plan (NMP) and Waste Management Plan (WMP) submitted to the County, as part of the Use Permit approval. The application rates of liquid and/or solid manure identified within the NMP shall not result in total nitrogen applied to the land application areas exceeding 1.65 times total nitrogen that will be removed from the field in the harvested portion of the crop. Upon request, compliance shall be verified by the collection of nutrient samples for nitrogen, potassium, phosphorus, and salts prior to and during application periods to confirm agronomic rates within all portions of cropped areas receiving manure, and to protect water supplies. The dairy operator/property owner shall be responsible for hiring a qualified professional, approved by the Planning Director, to collect nutrient samples, interpret the results, and provide said results to the County for review. If determined necessary by the Planning Director, the dairy operator/property owner shall pay for the County's actual costs to hire a third party to review the annual results.

3. The applicant shall enroll in the Central Valley Dairy Representative Monitoring Program (CVDRMP) to meet the requirements for groundwater monitoring prior to increasing the herd.

The Initial Study and other environmental documents are available for public review at the Department of Planning and Community Development, 1010 10th Street, Suite 3400, Modesto, California.

Initial Study prepared by: Teresa McDonald, Associate Planner.

Submit comments to: Stanislaus County
Planning and Community Development Department
1010 10th Street, Suite 3400
Modesto, California 95354

18 July 2023

Teresa McDonald
Associate Planner
County of Stanislaus
1010 10th Street, Suite 3400
Modesto, CA 95354

CERTIFIED MAIL NO.
7021-2720-0003-0982-8681

COMMENTS ON STANISLAUS COUNTY CEQA REFERRAL INITIAL STUDY AND NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE JOHN BRASIL DAIRY EXPANSION PROJECT (USE PERMIT APPLICATION NO. PLN2021-0033), STATE CLEARINGHOUSE NUMBER 2021070146

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) is a state agency with the statutory responsibility to protect water quality in California's Central Valley. (Wat. Code, § 13000 et seq.) In support of this mission, the Central Valley Water Board regulates discharges of waste, including from dairies, that have the potential to affect surface water and groundwater. The Central Valley Water Board has established a regulatory program that regulates discharges of waste from dairy facilities throughout the Central Valley.

The Central Valley Water Board, in its role as responsible agency, has reviewed the "*CEQA REFERRAL INITIAL STUDY AND NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION*" (IS/MND) prepared by the Stanislaus County Planning and Community Development Department (County) for the John Brasil Dairy (Dairy) Expansion Project. The Dairy is physically located at 1707 and 2300 South Mitchell Road in the Turlock area (APN: 058-015-008, 058-015-012, and 058-016-016). Consistent with the Central Valley Water Board's obligations as a responsible agency, this comment letter reviews the scope and content of the environmental information germane to the Board's statutory responsibilities included in the environmental document for the proposed project.

Project Description/Summary

The proposed project evaluated in the IS/MND is a request to expand the herd of an existing dairy facility located on three parcels across a total of 135.5± acres, in Stanislaus County's General Agriculture (A-2-40) zoning district. The applicant proposes to expand the herd from 442 mature cows to 1,500 mature cows, consisting of primarily milk cows and no dry cows. Under this request, the applicant also proposes to increase support stock number from 600 to 1,200. The increase to support stock will consist of 400 heifers 7-14 months old; 400 heifers 4-8 months old; and 400 calves 4-6 months old. Additionally, the applicant proposes to construct a 10,140± square-foot free stall barn on Assessor

Parcel Number (APN) 058-016-016, corrals totaling 5± acres in area on APN 058-015-012, and a new wastewater pond 1.3± acres in size on APN 058-015-008. The applicant anticipates an increase of 2,184± cubic feet of additional manure per day generated on the facility from the proposed herd expansion for a total of 3,866± cubic feet of manure per day.

Nutrients produced from the herd will be utilized to fertilize approximately 72± acres of irrigated cropland located across the project site. Hours of operation are 24-hours a day, seven days a week. The dairy currently receives three visits for tallow and veterinary services every two weeks, and a total of four milk and feed truck trips per day. The proposed request is expected to increase the number of feed truck trips by one for a combined total of five milk and feed truck trips per day as part of this request; no increase to the current milk truck trips, tallow, or veterinary service trips are proposed.

Central Valley Water Board Comments

For the reasons discussed below, the Central Valley Water Board believes that the Initial Study (IS) is inadequate to properly inform decisionmakers and the public of the proposed project's potentially significant environmental impacts and does not include sufficient description of mitigation measures that would reduce those impacts to less than significant. The County should prepare an Environmental Impact Report (EIR) rather than a mitigated negative declaration (MND) because there is a fair argument that the proposed project could result in significant water quality impacts.

1. Section X, Discussion paragraph 2, incorrectly asserts that the Dairy is regulated under the Central Valley Water Board's Order R5-2011-0091, *General Waste Discharge Requirements and General NPDES Permit for Existing Milk Cow Dairy Concentrated Feeding Operations within the Central Valley Region*. This Order was rescinded on 20 February 2020 and will not be replaced (see https://www.waterboards.ca.gov/centralvalley/water_issues/confined_animal_facilities/program_regs_requirements/dairy/). The Dairy is actually regulated under Order R5-2013-0122, *Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies* (Dairy General Order), under which the Dairy was enrolled on approximately 29 June 2007.

   It may be appropriate to revise the discussion of permit requirements in paragraphs 2-4 to reflect the requirements of the Dairy General Order. However, it should also be noted that the Dairy General Order prohibits enrolled dairies from expanding (Dairy General Order, Prohibition A.15; and see Att. E, Definition 15), so the proposed expansion can only legally proceed after the Central Valley Water Board provides appropriate authorization under a new waste discharge requirements (WDRs) order. The establishment of waste discharge requirements for individual facilities generally can take 18 months or longer, even in ideal circumstances. Adding to the complexity of the regulatory situation is the fact that the State Water Board is currently conducting a review of the Dairy General Order, which the State

Water Board has indicated is likely to result in an order directing the Central Valley Water Board to reconsider significant aspects of its CAF program. These directives will be announced before the Central Valley Water Board will be able to develop and issue permit requirements for proposed dairy expansions or new dairies. Therefore, while the Board will accept any report of waste discharge (i.e., permit application) submitted to obtain individual requirements, it is temporarily deferring work on such requirements until the State Water Board finalizes its review of the Reissued Dairy General Order.

For many non-dairy permittees, this type of delay is mitigated by the provisions of Water Code section 13264, which allows facilities to operate according to their proposed plan of operation while the Board works to develop robust and enforceable permits. However, one limitation in Water Code section 13264 is that it only applies to facilities that do not threaten to create or exacerbate a condition of pollution or nuisance (as defined by Wat. Code, § 13050). Unfortunately for dairies in the Central Valley, even the most effective suite of management practices has not yet proven effective at limiting groundwater impacts to levels that would not be considered pollution or nuisance. Therefore, a facility that proposes to expand may not begin to operate at its expanded capacity until permit requirements are established by the Board.

2. In addition to the issue noted in #1, Section X, Discussion paragraph 2 incorrectly states "Large CAFOs are required to prepare and implement a Nutrient Management Plan (NMP) and Waste Management Plan (WMP), which describe the regulatory requirements for the facility, and together they serve as the primary tool to prevent groundwater contamination and to establish best management practices (BMP) for dairy waste management." NMPs and WMPs are Discharger-developed plans for implementing BMPs to meet Dairy General Order requirements, not descriptions of regulatory requirements.
3. Section X, Discussion paragraph 6, contains contradictory evaluation of whether the proposed project would violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Paragraph 6 states that "the proposed project could result in degradation of groundwater resources." A few sentences later, paragraph 6 states, "[w]hile the proposed dairy expansion is not anticipated to increase the potential for impacts to groundwater quality..." Given the County's conclusion that the proposed project may result in "degradation of groundwater resources," it is not clear why the County does not anticipate that the project would result in increased potential for impacts to groundwater quality. The County should perform a more robust evaluation of the potential water quality impacts of the proposed project and provide a more thorough discussion of its findings resolving the inconsistency noted above.
4. Based on the IS, the proposed project is anticipated to result in an "increase of 2,184± cubic feet of additional manure per day generated on the facility from the proposed herd expansion for a total of 3,866± cubic feet of manure per day." (Initial Study, § 8.) In other words, under the proposed project, the amount of manure

generated, stored, and disposed of by the dairy will increase by approximately 130 percent. As noted on IS/MND page 17, paragraph 2, most nitrates in local groundwater are from anthropogenic sources, including dairy and wastewater drainage. Nevertheless, the IS/MND contains little discussion of whether and how the proposed project's significant increase in waste generation, storage, and disposal could impact the environment prior to mitigation. Further, as discussed in the following comment, it is not clear that the potential impacts of the proposed project could be fully mitigated. Thus, there is a fair argument that this increase in waste generated, stored, and disposed at the Dairy could have a significant impact on the environment by causing or contributing to degradation and/or pollution of underlying groundwater. The County should prepare an EIR evaluating the scope and likelihood of potential water quality impacts that could foreseeably result from the proposed project.

5. The Project Description and Section X mitigation measures do not specify whether the proposed wastewater pond would be designed and constructed to Tier 1 or Tier 2 specifications, as those terms are described in the Dairy General Order. The designs of wastewater ponds can vary, such that some ponds pose a larger threat than others to groundwater quality. The IS/MND does not provide sufficient information for the Central Valley Water Board or the public to determine whether the construction and operation of the proposed pond could impact groundwater quality or otherwise violate applicable waste discharge requirements.

6. The mitigation measures discussed in Section X are known to be inadequate to prevent impacts to groundwater. As described in IS/MND Section X, Discussion paragraph 6, the Central Valley Dairy Representative Monitoring Program (CVDRMP) has indicated that nutrient management practices required by the Dairy General Order "are not sufficient to prevent the pollution of groundwater from cropland" where dairy waste is applied. (See SRMR, pp. 30, 32-33.) Despite the County's acknowledgement that Dairy General Order requirements are inadequate to mitigate groundwater quality impacts, the majority of mitigation measures identified in Section X are similar or identical to the requirements of the Dairy General Order. In particular:

   - Mitigation X.1, bullets 1, 3, and 4 describe management practices involving proper drainage in compliance with California Code of Regulations, title 3, section 646.1, and paving of certain production areas. Dairy General Order Provisions D.1, D.2, D.4. and D.6 likewise require proper drainage in accordance with California Code of Regulations, title 3, section 646.1, and paving of certain production areas.
   - Mitigation X.2 describes compliance with the Nutrient Management Plan (NMP) and Waste Management Plan (WMP) submitted to the County, application of manure to land application areas at a rate not to exceed 1.65 times total nitrogen removed via harvest, and, upon request by the County, compliance sampling. The NMP and WMP submitted to the County are the same as the NMP and WMP that the Dairy is required to maintain and implement pursuant to Dairy

General Order Provisions J.1.b and J.1.c and Attachments B and C. The 1.65 ratio of nitrogen application to removal ratio is drawn directly from the Dairy General Order (see Att. C, p. C-11). The Dairy General Order likewise provides for required and on-request nutrient sampling (see Monitoring and Reporting Program Order R5-2013-0122 (MRP), pp. MRP-2 to MRP-4).

- Mitigation X.3 describes enrollment of the Dairy under the CVDRMP to meet requirements for groundwater monitoring prior to increasing herd size. The Dairy General Order and MRP likewise require the Dairy to either conduct individual groundwater monitoring or enroll in the CVDRMP.

Because the majority of mitigation measures described in Section X have been deemed generally insufficient to protect against groundwater quality impacts, the Central Valley Water Board disagrees that the measures discussed will mitigate or prevent water quality impacts that could foreseeably result from the proposed project. The County should reevaluate its Section X mitigation measures and either identify additional mitigation measures that would provably (i.e. provide a strong level of proof of mitigation) mitigate the potentially significant groundwater quality impacts of the proposed project or prepare an EIR.

7. As noted in the Central Valley Water Board's 23 July 2021 *Comments to Request for Review for the Early Consultation, Use Permit Application No. PLN2021-0033 – John Brasil Dairy Project, SCH#2021-7-146, Stanislaus County*, dischargers whose projects disturb one or more acres, or less than one acre but are part of a larger common plan of development that totals one or more acres of land disturbance, are required to obtain coverage under the State Water Board's Order WQ 2022-0057-DWQ,[1] *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit). The proposed project involves the construction of corrals totaling approximately five acres, a wastewater pond totaling approximately 1.3 acres, and a free stall barn totaling approximately 10,140 square feet. The IS/MND does not contain any discussion of the potential water quality impacts that could arise from the proposed construction activities, nor mitigation measures, such as enrollment under and compliance with the Construction General Permit.

Thank you for the opportunity to comment on this IS/MND. If you have questions about these comments, please contact me at (916) 464-4724 or by email at Daniel.Gamon@waterboards.ca.gov.

Daniel Gamon Digitally signed by Daniel Gamon
Date: 2023.07.17 13:56:29 -07'00'
Water Boards

Daniel Gamon, PG, CHg
Senior Engineering Geologist

cc: State Clearinghouse, state.clearinghouse@opr.ca.gov

SUMMARY OF RESPONSES FOR ENVIRONMENTAL REVIEW REFERRALS

PROJECT: USE PERMIT APPLICATION NO. PLN2021-0033 - JOHN BRASIL DAIRY

REFERRED TO:				RESPONDED		RESPONSE			MITIGATION MEASURES		CONDITIONS	
	2 WK	30 DAY	PUBLIC HEARING NOTICE	YES	NO	WILL NOT HAVE SIGNIFICANT IMPACT	MAY HAVE SIGNIFICANT IMPACT	NO COMMENT NON CEQA	YES	NO	YES	NO
CA DEPT OF FISH & WILDLIFE	X	X	X		X							
CA DEPT OF CONSERVATION	X	X	X		X							
CA OPR STATE CLEARINGHOUSE	X	X	X		X							
CA RWQCB CENTRAL VALLEY REGION	X	X	X	X			X			X		X
COOPERATIVE EXTENSION	X	X	X		X							
FIRE PROTECTION DIST: MOUNTAIN VIEW	X	X	X		X							
GSA: WEST TURLOCK SUBBASIN	X	X	X		X							
IRRIGATION DISTRICT: TURLOCK	X	X	X		X							
MOSQUITO DISTRICT: TURLOCK	X	X	X		X							
MT VALLEY EMERGENCY MEDICAL	X	X	X		X							
PACIFIC GAS & ELECTRIC	X	X	X		X							
RAILROAD: UNION PACIFIC	X	X	X		X							
SAN JOAQUIN VALLEY APCD	X	X	X	X				X		X	X	
SCHOOL DISTRICT 1: CHATOM UNION	X	X	X		X							
SCHOOL DISTRICT 2: TURLOCK UNIFIED	X	X	X		X							
STAN CO AG COMMISSIONER	X	X	X		X							
STAN CO BUILDING PERMITS DIVISION	X	X	X		X							
STAN CO CEO	X	X	X		X							
STAN CO DER	X	X	X	X				X		X	X	
STAN CO ERC	X	X	X	X				X		X		X
STAN CO FARM BUREAU	X	X	X		X							
STAN CO HAZARDOUS MATERIALS	X	X	X	X				X		X	X	
STAN CO MILK AND DAIRY	X	X	X		X							
STAN CO PUBLIC WORKS	X	X	X	X				X		X	X	
STAN CO SHERIFF	X	X	X		X							
STAN CO SUPERVISOR DIST 2: CHIESA	X	X	X		X							
STAN COUNTY COUNSEL	X	X	X		X							
STANISLAUS FIRE PREVENTION BUREAU	X	X	X		X							
STANISLAUS LAFCO	X	X	X		X							
SURROUNDING LAND OWNERS		X	X		X							
STATE OF CA SWRCB DIVISION OF DRINKING WATER DIST. 10	X	X	X		X							
TELEPHONE COMPANY: AT&T	X	X	X		X							
US FISH & WILDLIFE	X	X	X		X							

UP PLN2021-0033

JOHN BRASIL DAIRY

Planning Commission
August 17, 2023

Overview

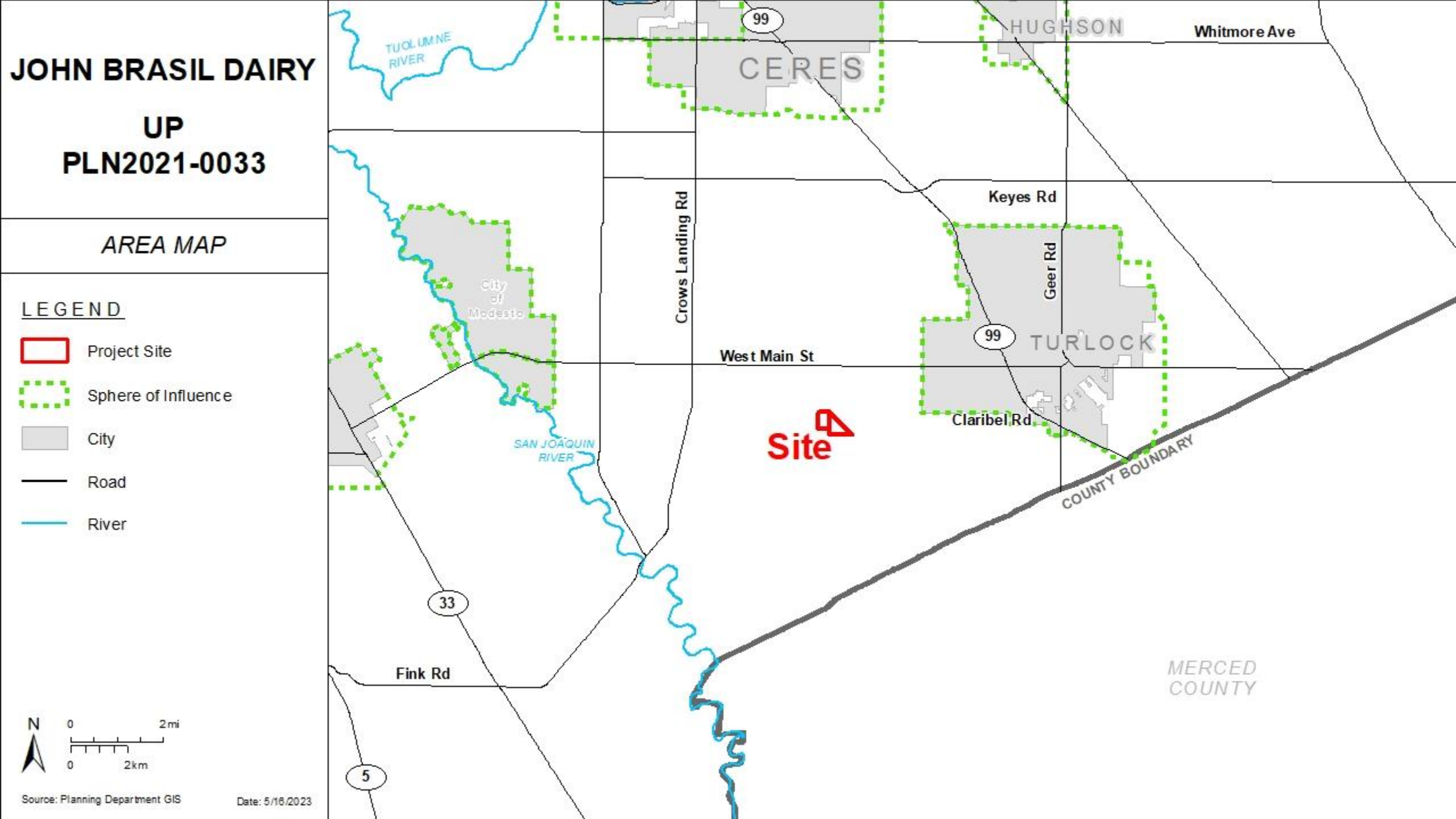
- Use Permit

- Request to expand an existing dairy facility operating on 135.5± acres, in the General Agriculture (A-2-40) zoning district.

JOHN BRASIL DAIRY

UP
PLN2021-0033

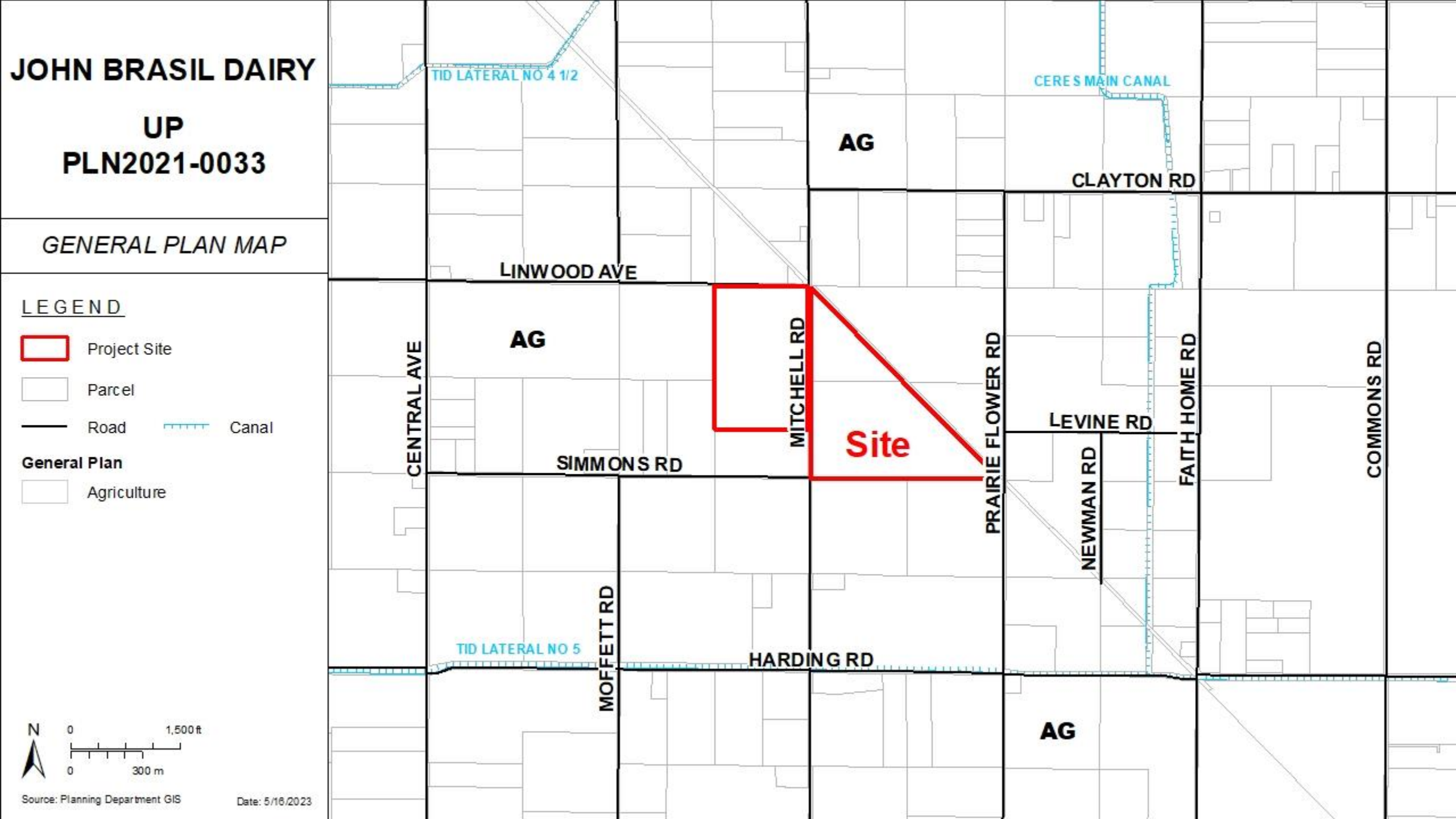
AREA MAP



JOHN BRASIL DAIRY

UP
PLN2021-0033

GENERAL PLAN MAP



JOHN BRASIL DAIRY

UP
PLN2021-0033

ZONING MAP

LEGEND

- Project Site
- Parcel
- Road
- Canal

Zoning Designation

- General Agriculture 40 Acre

N 0 1,500 ft 0 300 m

Source: Planning Department GIS

Date: 5/16/2023

JOHN BRASIL DAIRY

UP
PLN2021-0033

2022 AERIAL AREA MAP

LEGEND

- Project Site
- Road
- Canal

N

0 1,500 ft

0 300 m

Source: Planning Department GIS

Date: 5/16/2023

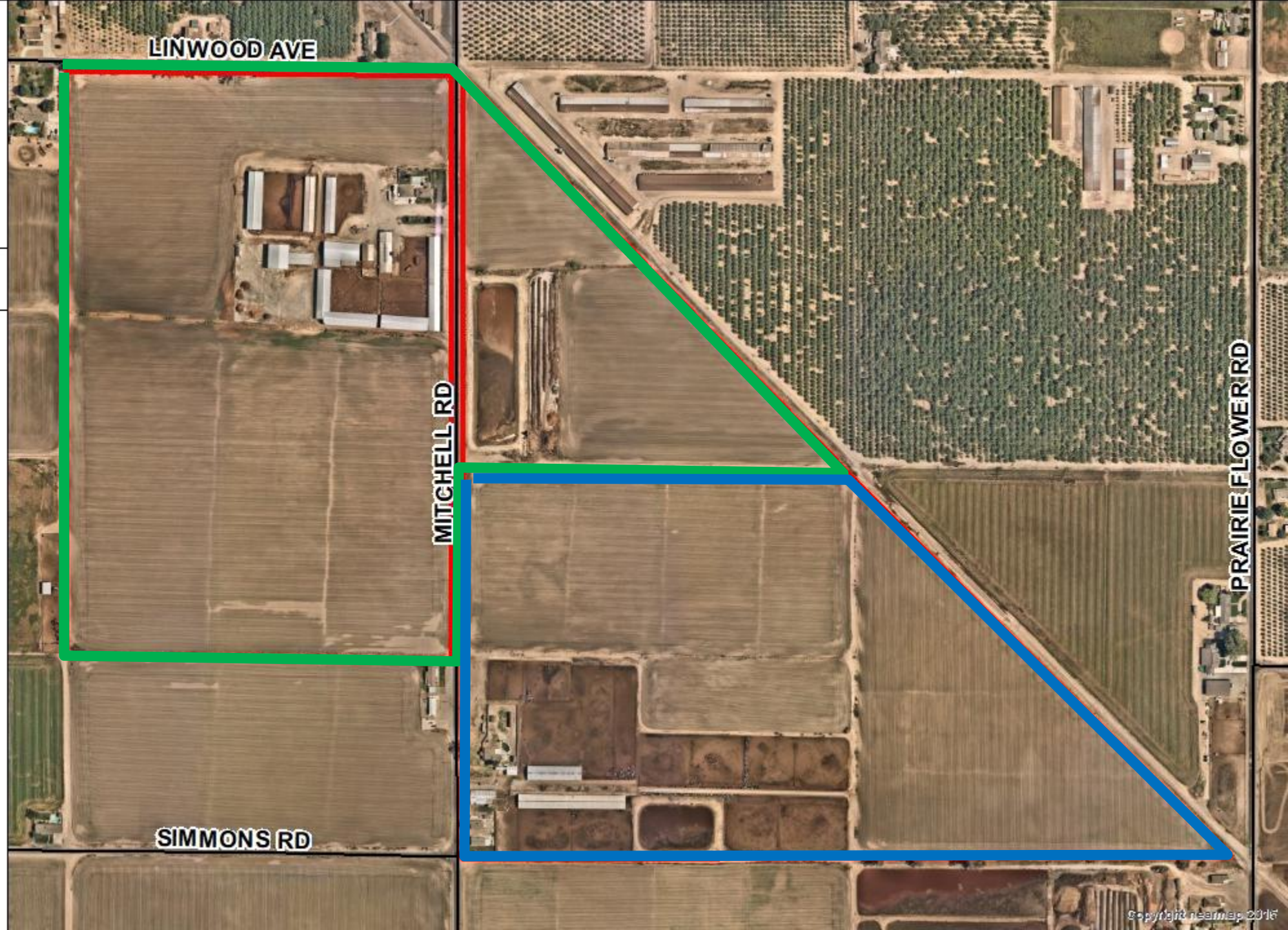
JOHN BRASIL DAIRY

UP
PLN2021-0033

2022 AERIAL SITE MAP

LEGEND

- Project Site
- Road
- APN 058-016-016 & 058-015-008
- APN 058-015-012



N

0 400 ft

0 100 m

Source: Planning Department GIS

Date: 5/16/2023

JOHN BRASIL DAIRY

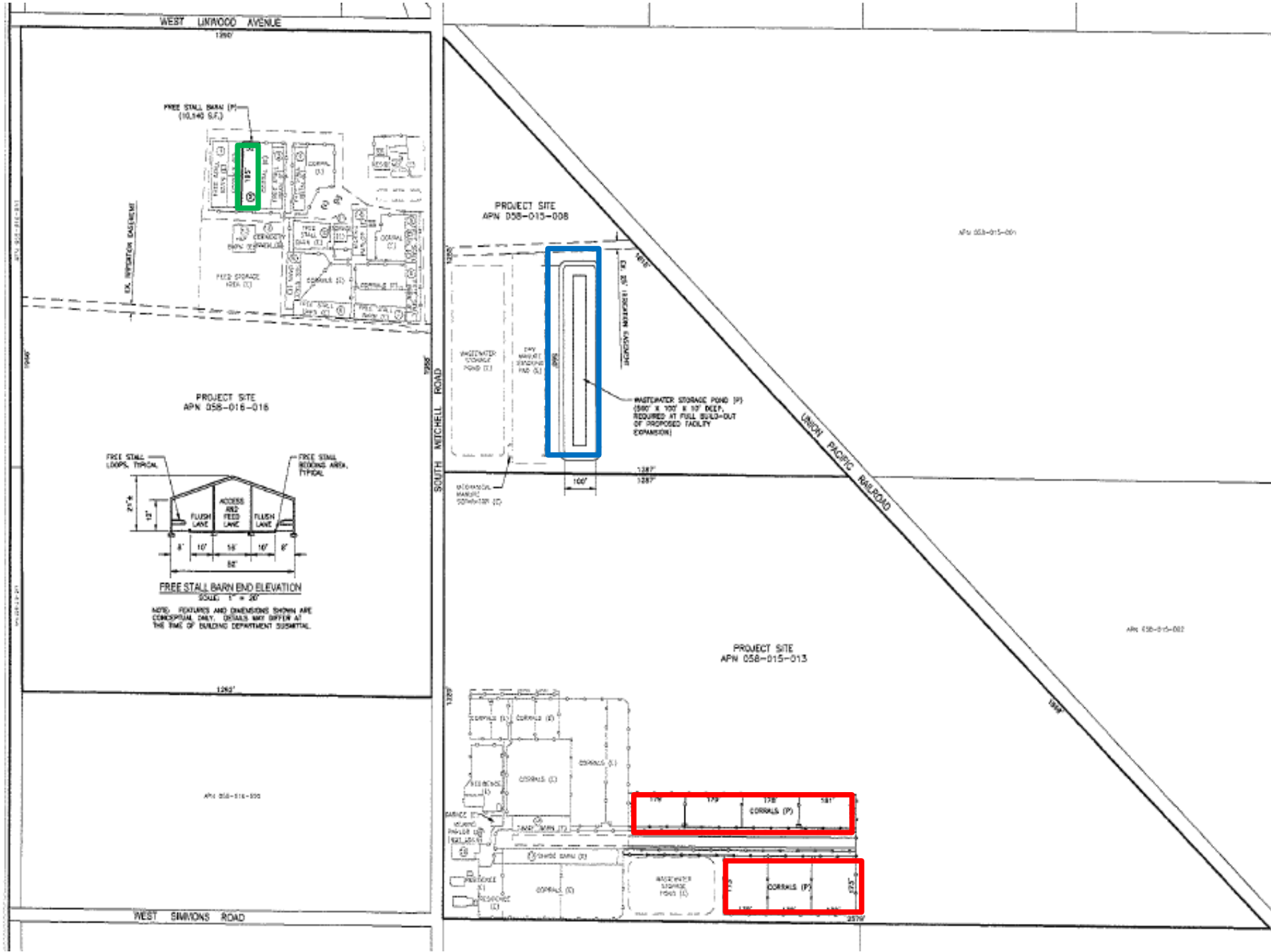
UP PLN2021-0033

SITE PLAN

Proposed freestall barn

Proposed corrals

Proposed wastewater pond



Issue No. 1

- Central Valley Regional Water Quality Control Board
  - Comments received in response to the Initial Study(IS) and Mitigated Negative Declaration (MND) prepared for the project
    - Mitigation measures (MM) not sufficient
    - County should prepare an Environmental Impact Report (EIR) rather than a MND
- Under California Environmental Quality Act (CEQA) Regional Water is a responsible state agency with responsibility to protect water quality in California's Central Valley.

Issue No. 1

- Dairies subject to obtaining a permit, waiver, order or Waste Discharge Requirements (WDRs) that requires CEQA review as requested from Regional Water requires a use permit (UP)
- County's purpose of requiring use permits for new or expanding dairies is to provide dairy operators with an environmental document and determination under CEQA
- Regional Water uses the approved CEQA document and determination in issuing the required permit, waiver, order or individual WDRs for the new facility or expansion.

Issue No. 1

- Previous requests relied on WDR issued by Regional Water
  - Haven’t been issuing WDR, relying on State Water Code (which is now in question): discharge not create or threaten to create a condition of pollution or nuisance.
- Herd expansion requires Regional Water approval, timing of MM measures reflects that

Issue No. 1

- UP heard by PC since review of NMP & WMP on hold:
  - PLN2021-0056 N&C Silveira Dairy – Hultberg Road
    - Included similar MM to this request and additional ones
    - No response from Regional Water received
    - Approved by PC
  - PLN2021-0030 – Silva Holsteins Dairy
    - Included same MM as prior UP
    - Regional Water responded that MM were not adequate, recommended EIR
    - Staff recommended continuance
    - Approved by PC

Issue No. 2

- Temporary Mobile Home Permit (TMHP) for a full-time employee
  - Not in compliance
  - Condition placed on the project to ensure compliance prior to expansion

General Plan and Zoning Ordinance Consistency

- Land Use Element designation of Agriculture
- Zoning designation of General Agriculture (A-2-40)
  - Confined Animal Facilities (CAF) (dairies) are permitted agricultural uses
  - A use permit is required for new or expanding CAFs
- Project site enrolled in a Williamson Act Contract

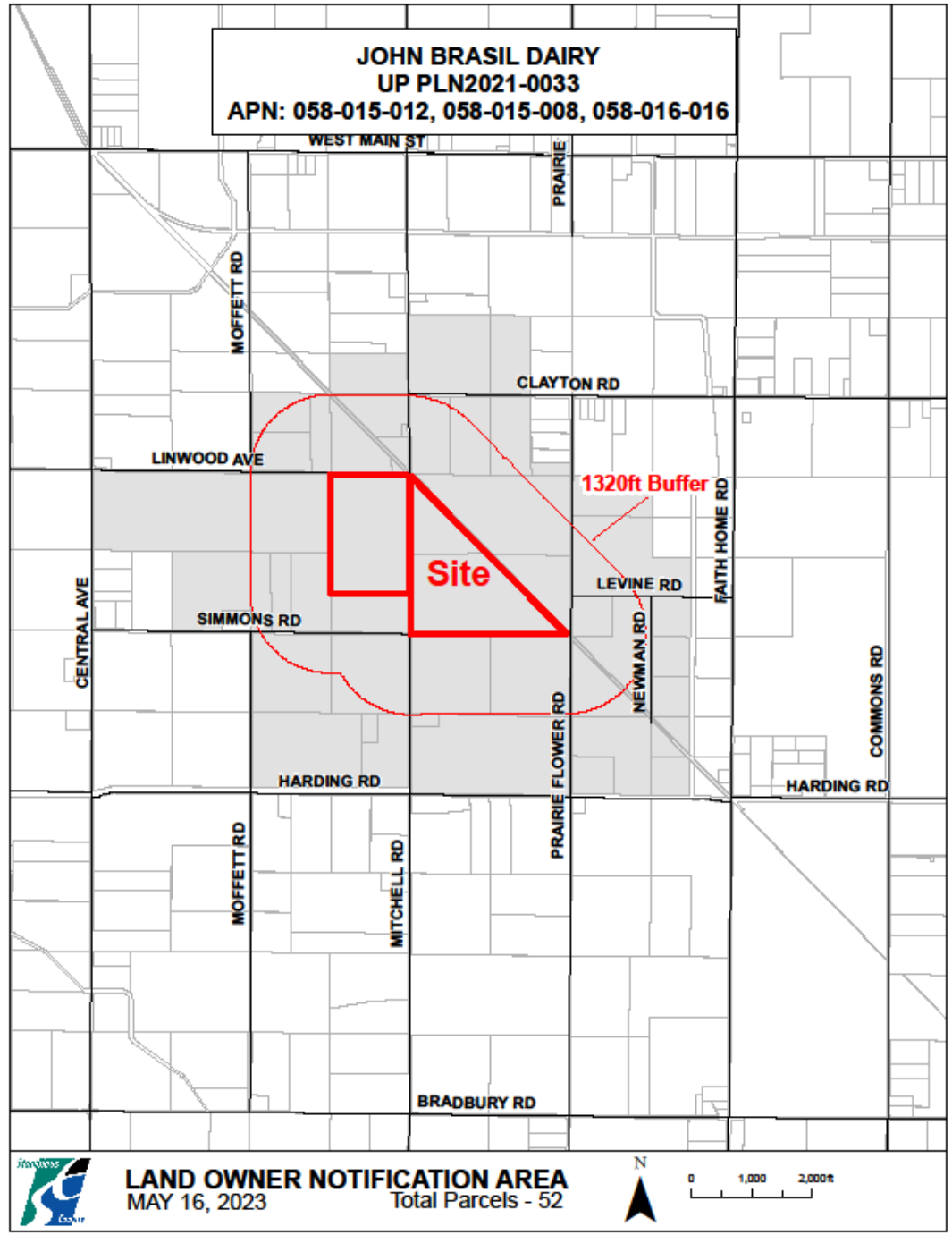
Environmental Review

- CEQA
- Mitigated Negative Declaration
  - Mitigation Measures incorporated to mitigate potential impacts to water quality including:
    - Requirements to follow best management practices
    - Compliance with Nutrient & Waste Management Plan (NMP & WMP)
    - Enrollment in the Central Valley Dairy Representative Monitoring Program (CVDRMP)

Recommendation

- Findings – Exhibit A
  - Environmental Determination
  - Use Permit Finding
  - Williamson Act Findings
  - Road Improvement Finding
  - Project Approval

Questions


JOHN BRASIL DAIRY
UP PLN2021-0033
APN: 058-015-012, 058-015-008, 058-016-016
WEST MAIN ST
PRAIRIE
MOFFETT RD
CLAYTON RD
LINWOOD AVE
1320ft Buffer
Site
FAITH HOME RD
LEVINE RD
CENTRAL AVE
SIMMONS RD
NEWMAN RD
COMMONS RD
PRAIRIE FLOWER RD
HARDING RD
HARDING RD
MOFFETT RD
MITCHELL RD
BRADBURY RD
LAND OWNER NOTIFICATION AREA
MAY 16, 2023
Total Parcels - 52
N
0
1,000
2,000ft